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COUNTY PALATINE OF LANCASTER.

REPORT
OF THE
MEDICAL OFFICER OF HEALTH
FOR THE YEAR 1896.

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

(Presented to the County Council, November 4th, 1897.)



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PUBLIC HEALTH COMMITTEE.

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The Vice-Chairman of the County Council:

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

For the Year ending December 31st, 1896.

*To the Right Hon. the Chairman and Members of the County
Council of the County Palatine of Lancaster.*

GENTLEMEN,

I beg to submit to you my eighth Annual Report on the health and sanitary condition of the Administrative County for the year 1896. As in previous years, I have briefly reviewed each report received from District Medical Officers of Health, and drawn attention to sanitary matters which seemed to me of special importance. It is pleasing to observe that the County vital statistics have been on the whole satisfactory, and bear favourable comparison with 1895.

The Reports received from Medical Officers of Health number 135, of which 114 refer to Urban and 21 to Rural Districts. Brierfield alone has failed to send an annual report, and I suggest that the Urban District Council be communicated with on the subject.

There are still 48 Authorities who do not print the reports of their Medical Officers of Health. For the first time printed reports were received from Audenshaw, Church, Failsworth, Prestwich, Waterloo-with-Seaforth, Limehurst (R.), and Wigan (R.) (Div. 1); while Levenshulme and Leigh (R.) have again reverted to manuscript or typewritten reports. I have frequently referred to the advantages of printed reports in rousing public interest on sanitary questions.

Monthly returns of deaths and cases of infectious disease notified or ascertained are furnished from all the County Districts, with the exception of Blackpool (B.), Lancaster (B.), and Little Crosby, and I now take the opportunity of thanking those Medical Officers of Health to whom the County is indebted for services promptly performed.

Contributions have been paid out of the Exchequer Contribution Account towards the salaries of the sanitary officers of 106 Authorities in the County, 85 being Urban and 21 Rural. The total payments amounted to £6,287 14s. 8d., of which Medical Officers of Health received £3,135 16s. 1d., and Inspectors of Nuisances £3,151 18s. 7d.

Efforts have been made to induce Local Authorities to provide accommodation for the isolation of persons suffering from infectious diseases, and although little practical work has so far resulted, much is expected from the important Committees recently formed by the County Council, under the Isolation Hospitals Act, 1893, in the Fylde, Preston, Garstang, and Bury Unions.

Although sanitation has received more than the usual attention throughout the County, further progress might be made in respect of dairies and cowsheds, factories and workshops, scavenging and refuse removal, and water supply. In order to enforce the carrying out of the law relating to public health, the County Council should have power similar to that given to the Local Government Board by Section 299, Public Health Act, 1875, of appointing some person to perform the duty of a defaulting Authority. In certain Urban Districts Medical Officers of Health have had occasion to draw attention from time to time to the water supply, which is impure and obtained from polluted gathering grounds, but no improvement has taken place, and persons drinking the water are daily exposed to the risk of dangerous epidemic disease. In some of the

Rural Districts the water supply is liable to surface contamination, and in summer much inconvenience arises from difficulty in obtaining water—yet only one complaint has been received by the County Council from a Parish Council, under the Local Government Act, 1894, Section 16, respecting default of the Rural District Council in supplying a pure and wholesome water to their district.

I am, Gentlemen,

Your obedient Servant,

EDWARD SERGEANT,

County Medical Officer of Health.

Preston, October 21st, 1897.

THE COUNTY.

Area and Population.—During the year the Township of Dalton, forming part of the Kendal Union, with a population of 117 and an area of 2,167 acres, was transferred to the County of Westmorland. The area of the Administrative County of Lancaster now comprises 1,111,053 acres and a population of 1,826,838, as estimated at the middle of 1896 by the Medical Officers of Health of the various districts. The total increase of the population amounted to 43,269, while the natural increase of births over deaths was 20,665. Within the County are 136 Districts, including 19 Municipal Boroughs, 96 Urban Districts, and 21 Rural Districts. Further particulars as to the area and population of these districts are given in the following table:—

	Area in Acres (per Census Returns).	Population Estimated by Medical Officers of Health, 1896.	Persons per Acre.	Acres per Person.
Municipal Boroughs ...	81,357	591,243	7·26	0·13
Urban Sanitary Districts	268,967	957,401	3·55	0·28
Rural Sanitary Districts.	760,729	278,194	0·36	2·73
Administrative County ..	1,111,053	1,826,838	1·64	0·60

Births registered in the County Districts under review amounted to 52,318, of which 44,910 were in the Urban, and 7,408 in the Rural Districts. The general birth-rate corresponded to 28·73 per 1,000 of the population, or 29·11 for the Urban and 26·62 for the Rural Districts. As compared with 1895, although there were only 494 fewer births, the rates, calculated on the estimated population, were reduced 1·09 in the County, 1·12 in the Urban, and 0·95 in the Rural Districts. According to the Registrar-General, the birth-rate of England

and Wales in 1896 was 29·7 per 1,000, which is lower than the rate in any other year on record excepting 1894, and 1·3 per 1,000 below the mean rate in the ten years, 1886-95. In 33 of the large English towns the birth-rate was equal to 30·7 per 1,000, or 1·59 higher than the urban rate of the Administrative County. Particulars of the sex of children born have this year been obtained, and the following table gives the result:—

	Males.	Females.	Total.
Urban Districts	23,377	21,533	44,910
Rural Districts.....	3,712	3,696	7,408
County	27,089	25,229	52,318

Tables I. and III. in the Appendix show that the birth-rates of the County Districts varied from 45·7 in Abram, 41·2 Hindley, 41·0 Ince-in-Makerfield, 40·2 Ashton-in-Makerfield and Pemberton, 39·8 Atherton and Haydock, 39·7 West-houghton, and 39·1 Prescott, to 19·4 in Castleton, 19·0 in Norden, 17·2 Wardle, 16·0 Moss Side, 15·1 Heaton Norris, 14·4 Grange, and 14·2 Little Woolton.

Deaths show a marked reduction as compared with the previous year; the total amounted to 31,653, with sex distribution as below:—

	Males.	Females.	Total.
Urban Districts.....	13,393	14,016	27,409
Rural Districts.....	2,133	2,111	4,244
County	15,526	16,127	31,653

It will be observed that in both Urban and Rural Districts the births of males exceed those of females. In Urban Districts, where women more commonly compete with men in factory and other laborious occupations, the disproportion in number between the two sexes is further increased by a greater female mortality, while in Rural Districts males have presumably to bear the greater burden of labour, and as a result their mortality is greater than that of females.

The following table shows that the gross death-rate for the County corresponded to 17·38 per 1,000 of the population, being 17·76 in Urban and 15·25 in the Rural Districts :—

	Birth-rate per 1,000 of the population.	Per 1,000 of the population.		Death-rate from the seven principal Zymotic Diseases.	Rate of Infant Mor- tality measured by the proportion of deaths of Infants under 1 year to 1,000 births.	
		Urban Death- rate.	Rural Death- rate.			
England and Wales	29·7	17·7	15·8	2·18	148	
		17·1				
33 large English Towns...	30·7	18·9	...	2·86	167	
Administrative County of Lancaster.	Urban...	29·11	17·76	...	2·09	161
	Rural ...	26·62	...	15·25	1·14	121
Urban & Rural Districts combined.....	28·73	17·38		1·94	155	

After deducting 1,404 deaths not belonging to the County, which took place in the workhouses, asylums, hospitals, and

other public institutions, the corrected death-rate is only 16·61 per 1,000 as compared with 18·3, the corrected rate for 1895. The average for the County during the seven years 1889-95 was 18·7. According to the Registrar-General the death-rate of England and Wales was 17·1, and he remarks that this rate is lower than in any previous year excepting 1894; compared with the rate in the ten years 1886-95 the death-rate in 1896 shows a decrease of 1·7 per 1,000. In 33 large towns the death-rate averaged 18·9 or 1·52 per 1,000 higher than the County rate.

The highest death-rates in the Urban Districts were recorded in Longridge 24·8, Leyland and Ormskirk 23·6, Chorley (B.) 22·6, Royton 22·5, Orrell 21·6, Ashton-under-Lyne (B.) 21·4, Ince-in-Makerfield 21·3, Kearsley and Leigh 21·1, and Middleton (B.) 21·0. The rates were exceptionally low in Birkdale 12·0, Moss Side and Ormskirk (R.) 11·8, Great Crosby 11·7, Withington 11·5, Blackrod and Morecambe 11·3, Levenshulme 11·2, Withnell 11·1, Billinge 11·0, Lytham 10·7, Carnforth and Irlam 9·6, Grange 9·2, Urmston 8·7, St. Annes-on-the-Sea 7·3, Little Crosby 6·2, Little Woolton 5·8, and Childwall 4·8.

Infant Mortality—The proportion of deaths of children under one year of age to each 1000 registered births was equal to 155 in the County, 161 in the Urban, and 121 in the Rural Districts. These rates compare favourably with the previous year, when the County rate was 171 (Urban 178 and Rural 127). The mean proportion attained in the seven preceding years 1889-95 was 154. Throughout England and Wales the ratio of infant deaths was 148, and in 33 of the large English towns it averaged 167. The infant rate varied from 232 in Crompton, 227 Royton, 217 Chorley (B.), 216 Farnworth, 216 Kearsley, 211 Bacup (B.), and 200 Audenshaw to 85 in Bury (R.), 81 Levenshulme, 81 Prestwich, 80 Grange, 72 Ulverston (R.), 62 Carnforth, 58 Little Woolton, 34 St. Annes-on-the-Sea, and Little Crosby nil.

The reduction in the infant mortality was mainly owing to climatic conditions which did not favour the production of diarrhœa in the summer months. Unfortunately the lives of infants are still prejudicially affected by the gross ignorance which is displayed by so many mothers respecting the feeding and bringing up of infants. In many of the homes of the improvident class there is no attempt at cleanliness, and children, if they do not succumb to some form of filth disease, pass through the ordeal of early life, stunted in growth, and enfeebled in constitution. With the educational advantages now so readily obtainable, it is hoped that the rising generation will acquire the elementary knowledge which is so necessary to the well-being of the young. In some of the large English towns, lady inspectors have been profitably employed in teaching the doctrine of cleanliness to the residual population, and by practically showing how children should be fed and cared for.

In several reports of District Medical Officers of Health, references are made to the injurious consequences of mothers working in mills too soon after confinement and leaving their young to be nursed by strangers. Dr. Young (Royton) remarks that "the relatively large number of deaths due to diseases of the pulmonary and digestive organs would go to show that a large amount of preventible disease exists among young infants, and in all probability may be attributed to improper feeding, or to the fact that many of the parents have to work in the mills and entrust their babies to inexperienced nurses. It is evident that more care and attention is necessary in the feeding and protection against severe weather of young infants than is usually given in the district. It cannot, therefore, be too frequently impressed on mothers that human milk is the infant's natural food, and on this it will consequently thrive best; that fresh cows' milk is the next best substitute, and that artificial foods should not be resorted to until after the others have failed, which it is pretty certain will not often happen if

proper discretion be used." Dr. Hosegood (Swinton and Pendlebury) remarks that in factory districts "it is often the case that circumstances compel young mothers to resume their work before they have properly recovered from the effects of childbirth, and the results to both mother and child are too frequently seen in the wasting of the latter and perhaps the permanent physical weakening or disabling of the former." It is pointed out that by Section 17 of the Factory and Workshop Act, 1891, the employment of a woman in a factory or workshop within four weeks after she has given birth to a child is prohibited, but unfortunately it is the duty of no one to see this section of the Act enforced. In looking through the infant mortality statistics, the effect of heredity is observed in the loss during the first three months of life due to prematurity or some form or other of congenital debility which renders the children inviable. Dr. Railton (Withington) is of opinion that putting aside the deaths occasioned by congenital weakness or unavoidable disease, there still remains about two-thirds of the total deaths "which might, in part, if not wholly, have been avoided. When mothers can be taught to realise the fragile nature of their infants' lives, the necessity for their food to consist of breast milk rather than of the numberless preparations sold as substitutes for it, their susceptibility to cold and to infectious diseases, then may we hope that the number of deaths amongst infants will diminish."

The Seven Principal Zymotic Diseases, viz., small-pox, measles, scarlet fever, diphtheria, whooping cough, fever, and diarrhœa caused 3,548 deaths, corresponding to an annual death-rate of 1·94 for the County, or 2·09 for the Urban and 1·14 for the Rural Districts. As compared with 1895 there were 754 fewer zymotic deaths, and the reduction in the rate was equal to 0·48 per 1,000. In the whole of England and Wales the zymotic rate showed a slight advance during 1896, being 2·18, while in 33 of the large English towns it rose to 2·86. The highest rates were recorded in Abram (4·37), Ashton-in-

Makerfield (4·27), Lathom and Burscough (4·23), Gorton (3·9), Atherton (3·86), Huyton-with-Roby (3·67), Colne (B.) (3·65), Tyldesley (3·64), Audenshaw (3·62), Pemberton (3·6), Prescott (3·54), Aspull (3·35), Orrell (3·33), Royton (3·23), Hindley (3·15), Swinton and Pendlebury (3·12), Eccles (B.) (3·07), Little Hulton (3·06), and Warrington (B.) (3·06). In the following districts low rates prevailed, viz.:—Carnforth (0·74), Garstang (R.) (0·74), Heaton Norris (0·72), Levenshulme (0·7), Urmston (0·7), Clitheroe (R.) (0·7), Skelmersdale (0·69), Ormskirk (R.) (0·65), Ulverston (R.) (0·63), Croston (0·46), Birkdale (0·42), Fulwood (0·39), and there were no zymotic deaths in Allerton, Blackrod, Grange, Little Crosby, Little Woolton, Lytham, and St. Annes-on-the-Sea. The zymotic death-rate for each district in the County will be found in Tables I. and III., and below is given the death-rate from each of the principal zymotic diseases:—

	ANNUAL DEATH-RATE PER 1,000.							
	Seven Principal Zymotic diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	"Fever" (Typhoid, Typhus, & Continued Fever)	Diarrhoea.
Administrative County of Lancaster	1·94	0·005	0·49	0·24	0·09	0·36	0·23	0·48
Urban Sanitary Districts	2·09	0·005	0·55	0·26	0·14	0·39	0·24	0·52
Rural Sanitary Districts	1·14	0·003	0·18	0·16	0·07	0·23	0·19	0·28
England and Wales...	2·18	0·02	0·56	0·18	0·29	0·41	0·17	0·55

Small-pox was notified as the cause of 83 cases of illness and 10 deaths, against 100 cases and 19 deaths in the previous year. The County death-rate from this disease corresponded to one-fourth the rate of England and Wales. Small-pox appeared in 21 districts, and most seriously attacked Dalton-in-Furness (11 cases), Garston (5 cases, 1 death), Heywood (B.) (13 cases, 4 deaths), Ince-in-Makerfield (9 cases), Lancaster (B.) (7 cases, 1 death), Royton (13 cases). One death occurred in each of the following districts, viz., Castleton, Hindley, Pemberton, and Whiston (R.).

The disease broke out in January and terminated in July; there were 34 cases and 3 deaths in the 1st quarter, 44 cases and 7 deaths in the 2nd quarter, and 3 cases in the July month of the 3rd quarter. On three occasions small-pox was imported into the County; at Dalton the outbreak was supposed to be due to infection acquired during the unpacking of clothing of a relative who had died on board a ship on his way home from South Africa. Several cases at Lancaster (B.) and neighbourhood were distinctly traced to a man who recklessly left Gloucester while capable of distributing infection. At Heywood (B.) the illness of two factory operatives was attributed to sorting infected cotton.

Tramp infection has also, on more than one occasion, been suspected and shown the desirability of repressive measures, as advocated in previous reports. It may be observed that in the recent report of the Royal Commission on Vaccination, reference is made to the circumstance that outbreaks of small-pox have not unfrequently had their origin in the introduction of the disease to common lodging-houses by tramps wandering from place to place, and the following recommendations appear:—

- (i.) "That common shelters which are not now subject to the law relating to common lodging-houses should be made subject to such law.

- (ii.) "That there should be power given to the Local Authority to require medical examination of all persons entering common lodging-houses and casual wards, to see if they are suffering from small-pox, and to offer a reward for prompt information of the presence of the disease.
- (iii.) "That the Local Authority have power to order the keeper of a common lodging-house in which there has been small-pox to refuse fresh admissions for such time as may be required by the Local Authority.
- (iv.) "That the Local Authority should be empowered to require the temporary closing of any common lodging-house in which small-pox has occurred.
- (v.) "That the Local Authority should have power to offer free lodgings to any inmate of a common lodging-house or casual ward who may reasonably be suspected of being liable to convey small-pox.
- (vi.) "That the Sanitary Authority should give notice to all adjoining Sanitary Authorities of the occurrence of small-pox in a common lodging-house or casual ward.
- (vii.) "That, where the disease occurs, the Public Vaccinator or the Medical Officer of Health should attend and vaccinate the inmates of such lodging-houses or wards, except such as should be unwilling to submit themselves to the operation."

It is also satisfactory to note that the Commissioners uphold so powerfully the medical and scientific aspects of vaccination, and express a hope that their report "will stimulate belief in the efficacy of vaccination, that it will remove some misapprehensions, and reassure some who take an exaggerated view of the risks connected with the operation, as well as lead to a more ready enforcement of the law by Local Authorities" (par. 522). The protective value of re-vaccination is admitted, and it is recommended "that steps should be taken to impress on parents the importance of having their children re-vaccinated

not later than at the age of 12 years." Another important suggestion which will meet with approval is "that sanitation and vaccination, concerning as they both do the health of the people, should be under the jurisdiction of a single Authority, and that the Sanitary Authority is the most appropriate one for that purpose." As the Sanitary Authorities are much more numerous than Vaccination Authorities, and have under their jurisdiction frequently very small populations, some scheme of grouping areas for vaccination purposes might be adopted, with supervisory power entrusted to an Authority having jurisdiction over a wider area, such as the County Council.

Measles prevailed extensively in many districts, and gave rise to 902 deaths, equivalent to a County rate of 0·49 per 1,000; in the Urban Districts 0·56, and Rural Districts 0·18. In the previous year the rate of mortality for the County was 0·5, and 0·23 in 1894. The rate for England and Wales corresponded to 0·56, and 0·71 for the large English towns. In the first quarter measles caused the highest mortality. During April a decline was observable, which continued to the end of September, and from this month to the end of the year the fatalities again increased. In the following districts the high death-rates indicate an unusual prevalence of the disease, viz.:—Longridge 3·21, Ashton-in-Makerfield 2·82, Audenshaw 2·61, Lathom and Burscough 2·45, Atherton 2·26, Colne (B.) 2·26, Huyton-with-Roby 2·16, Tyldesley 2·14, Abram 2·08, Orrell 1·96, and Prescot 1·85.

In taking measures for preventing the spread of measles much assistance has been afforded by school authorities in giving information to the sanitary officials concerning sick children, and in excluding from school all members of the invaded households. Ability to recognise the early symptoms of the infectious diseases liable to attack the young should be considered as one of the essential qualifications of teachers, and it would be well if the Education Department took this matter

into consideration. When infectious disease is prevalent, a medical inspection should periodically take place of children attending school, and Dr. Railton (Withington) remarks that "in some cases it appears desirable to have the children in schools inspected daily by a medical man for a short period after the removal of an infectious pupil. It would hardly be necessary to commence inspection before the end of the week after the child has left, nor continue it for more than a week." Medical Officers of Health differ with respect to the value of school closure, but the balance of opinion is in favour of this action being taken when the usual means of controlling the disease have failed. In 33 districts school closure was resorted to, for instance, in Aspull, Colne (B.), Darwen (B.), Pemberton, Rawtenstall (B.), Swinton and Pendlebury, Southport (B.), and Tyldesley, and the effect in curtailing the spread of disease gave ample satisfaction. Dr. Theodore Thomson, in a special report to the Local Government Board, points out that "closure of particular schools on account of measles prevalence, has for its object not merely safeguarding children attending these schools from attack, but is intended also—and mainly—to check spread of the disease throughout the neighbourhood." It will be probably admitted that school closure in Rural Districts is of more value than in Urban Districts, and often the closure need not be extended beyond the infant department. Care must be exercised as to when school closure should take place, and, as Dr. McNaught (Rawtenstall B.) observes, "it is no use waiting till every child has been exposed to the infection and then asking for steps to be taken. Closing a school can only be useful at a period before one-third of the children have become affected." The period of closure has varied from three to six weeks; in one district a week's closure was adopted, and, remembering the incubative period of measles, it is not surprising to find that little good resulted.

Scarlet Fever occasioned 9,134 cases of illness and 452 deaths, as compared with 8,608 cases and 421 deaths recorded

in the previous year. The death-rate corresponded to 0·24 in the County, 0·26 in Urban, and 0·16 in the Rural Districts. In England and Wales the rate was 0·18, and in the large English towns 0·22. The distribution of this disease in the County Districts during the past two years has been far from satisfactory. The case mortality, equal to 4·9 per cent., shows that the mildness of the attacks referred to in my Report for last year still continues. The highest death-rates were attained in Castleton 2·23, Rainford 1·62, Little Lever 0·88, Horwich 0·87, Swinton and Pendlebury 0·82, and Whitworth 0·79. The disease prevailed most extensively in the third quarter; the last quarter coming next, and in the second quarter the cases were least numerous. Among the causes given for the spread of this disease may be mentioned the impossibility of securing home isolation, and to the inadequacy of hospital accommodation. The distribution of disease which is favoured by the aggregation in schools will always have to be borne in mind, and during the year it was deemed necessary to close 17 schools for scarlet fever in the following Urban Districts; Aspull, Littleborough, Norden, Rainford, Darwen (B.), Hurst, Lathom and Burscough, Southport (B.), Ulverston, Upholland, and in the Rural Districts of Bolton, Burnley, Clitheroe, Fylde, Garstang, Ulverston, and Whiston. Dr. Watkins (Newton-in-Makerfield) is of opinion that many cases of scarlet fever were overlooked, and owing to their mildness did not come under the observation of medical men; such cases no doubt would act as active centres for the spread of infection. Dr. Crocker (Eccles B.) believes that emanations from soil polluted by excrement, urine, and other polluting matters, may, under certain atmospheric conditions play an important part in the spread of scarlet fever.

Whooping Cough continued from the previous year to spread epidemically; 672 deaths took place, with a County rate of 0·36 per 1,000, or 0·39 in the Urban and 0·23 in the Rural Districts. In 1895 there were 678 deaths, and in 1894

540 deaths. England and Wales gave a rate of 0·41, and the large English towns 0·57. The mortality was the heaviest in the 2nd quarter, next came the 1st quarter, and the least in the 3rd quarter. The deaths were numerous in the following districts:—Warrington (B.) 48, Darwen (B.) 28, Accrington (B.) 21, Chadderton 19, Lancaster (B.) 19, and Gorton 18. Beyond the closure of schools in Aspull and in the Rural Districts of Blackburn, Clitheroe, Lunesdale, Ormskirk, and Preston, very little was done. In a few districts printed information is left at the houses where whooping cough has appeared, with respect to nursing and the care to be taken to avoid lung complications, and to the desirability of separating the sick from the healthy.

Diphtheria was the cause of 182 deaths, with a rate of 0·09 for the County, 0·14 in Urban, and 0·07 in Rural Districts. This disease has decreased during the last five years, and the rate of mortality compares favourably with England and Wales (0·29) and the large English towns (0·38). Table V. shows that diphtheria was most prevalent in the first and last quarters of the year, least prevalent in the third quarter. The following districts had a somewhat extensive prevalence, viz.:—Accrington (B.), 40 cases 2 deaths; Chadderton, 21 cases 2 deaths; Eccles (B.), 25 cases 2 deaths; Gorton, 35 cases 8 deaths; Horwich, 31 cases 5 deaths; Newton-in-Makerfield, 17 cases 5 deaths; and Padiham, 23 cases 9 deaths. In many instances the disease was associated with insanitary conditions, as dampness of dwelling, defective drainage, or some form of filth nuisance. To assist medical men in the diagnosis of diphtheria, arrangements have been made by the Councils of Atherton, Haydock, Moss Side, Withington, and Ormskirk (R.) for the bacteriological examination of material obtained from the throats of patients suspected to be suffering from diphtheria. In a large area like the Administrative County of Lancaster a bacteriologist might with advantage be appointed. The various Urban and Rural Authorities would then be able to take advantage of his services

in the bacteriological examinations now adopted in cases of diphtheria and typhoid fever, and valuable research work could be carried out in respect to water, sewage, milk, and other foods. The propagation and distribution of infectious disease could be more scientifically investigated, and no doubt the information thus obtained would indicate the lines of practical work and help materially the enforcement of sanitary reform.

Membranous Croup, which is indistinguishable from diphtheria, contributed 226 deaths, equal to a County rate of 0·12 per 1,000, and it is interesting to note that in the preceding two years the rate was exactly the same, while it was 0·15 in 1893, 0·14 in 1892, and 0·15 in 1891. The highest number of deaths took place in the following districts, viz. :—Accrington (B.) 10, Chorley (B.) 13, Haslingden (B.) 10, Leigh 7, Middleton (B.) 10, Nelson (B.) 8, Radcliffe 7, Ramsbottom 7, Tyldesley 7, Whitworth 8, and Bury (R.) 6. The monthly incidence of the disease corresponded closely with that of diphtheria.

Fever, including typhus, enteric or typhoid, and simple or ill-defined forms of continued fever, contributed 439 deaths, of which typhus caused 1, continued fever 20, and typhoid fever 418. The County rate corresponded to 0·23, Urban 0·24, and Rural districts 0·19. The rates were practically the same as in the previous year, and were in excess of the rates recorded in England and Wales (0·17) and in the large English towns (0·19). There were 2,287 cases notified or ascertained, against 2,213 in the previous year. The case mortality was equal to 19·1 per cent., as compared with a percentage of 18·4 in 1895, 17·3 in 1894, and 27·5 in 1893. The monthly incidence of "fever" is given on Table V., the fatalities approaching the highest point in August (45) and lowest in June (4). The prevalence of the disease was most marked in Accrington (B.), 54 cases 10 deaths; Ashton-under-Lyne (B.), 71 cases 15 deaths;

Blackpool (B.), 66 cases 13 deaths ; Chorley (B.), 53 cases 12 deaths ; Lancaster (B.), 64 cases 11 deaths ; Leigh, 70 cases 13 deaths ; Radcliffe, 50 cases 10 deaths ; Swinton and Pendlebury, 80 cases 11 deaths ; Widnes (B.), 217 cases 34 deaths ; Farnworth, 32 cases 10 deaths ; Haslingden (B.), 32 cases 10 deaths ; and Tyldesley, 49 cases 10 deaths. Typhoid fever is one of the diseases amenable to sanitation, and is distinctly preventible. It originates in filth in some form or other, and its presence should always be regarded with suspicion. Of the various influences mentioned in connection with the production of typhoid fever, infected milk, polluted water, defective sewerage, and impurities obtained from ashpits, or the close proximity to houses of the accumulations of manure stand out prominently. The association of this disease with privy-middens is referred to in the reports received from Adlington, Aspull, Dalton-in-Furness, Eccles (B.), Garston, Haydock, Horwich, Huyton-with-Roby, Leigh, Little Lever, Southport (B.), Turton, and Wigan (R.) (Div. 1). Dr. Crocker (Eccles B.), in reference to ashpits, writes :—

“ When we consider that all these structures are drained, and that the joints of the pipes are not perfect, and that there are no means of flushing these pipes, which become partly choked with fine ashes and organic matter, the adjoining soil consequently becoming contaminated from the leaking joints, the conditions are such that if we wanted to cultivate typhoid germs on a large scale we could not devise a better plan than that of these structures and their connections. All that is wanted under such circumstances is the introduction of a few typhoid germs and the summer heat will do the rest.” Dr. Vernon (Southport B.) states that “ there is another factor, however, at work here which to my mind is not duly appreciated here or anywhere else. I allude to the ‘ midden privy.’ This unhappy store-place for human excreta and breeding ground for germs of disease, so deeply rooted in the good graces of Lancashire and other parts of the north of England, is to my mind directly

responsible for a share—and no inconsiderable one—in causing the greater prevalence of infectious diseases amongst working-class populations than amongst populations with better sanitary conveniences. I think it acts in two ways—first by reducing the tone of health generally and undermining the resisting power against infection, and secondly by fostering the growth of the bacteria of such diseases as may happen to break out in a locality.”

Within the last few years it has been shown conclusively that shell-fish, such as oysters and mussels, may, when living in water contaminated with sewage, acquire certain germs liable to give rise to disease in human beings. When shell-fish are eaten raw the microbes enter the system with every chance of successful propagation. The danger to the public is distinctly serious when it is admitted that oyster dealers, “for the sake of producing plumpness, place oysters in the mouths of fresh-water creeks in close proximity to sewers.” At least three of the District Medical Officers of Health report that typhoid fever has been traced to the eating of shell-fish. In my summary for Blackpool (B.) reference is made to raw mussels—taken from a part of the coast where the seawater is polluted by sewage—as being the vehicle of infection. Dr. Anderson, the Medical Officer of Health, is of opinion that “the sewage of the town became infected during June, July, and August with the enteric bacillus, and that this infected the mussels, the infection lasting until they were collected in September, when the climatic conditions are eminently favourable to the spread of the disease.”

It is interesting to know that during the year bacteriologists have developed a method which will aid medical men in the diagnosis of typhoid fever. This disease has hitherto been difficult to diagnose owing to the characteristic symptoms being often delayed; with the assistance of the microscope the diagnosis may be declared on the seventh day, and from a public health point of view it is

important as allowing early precautionary measures to be taken. Professor Delépine, of Owens College, has carefully investigated the new bacteriological process, and arrangements can be entered into with him for such examinations. Dr. Railton (Withington) gives the following description of the method:—"A minute quantity of serum of the blood of the patient is placed under the microscope, in contact with a few drops of a culture of typhoid bacillus. If the patient be suffering from enteric or typhoid fever the bacilli become rapidly motionless, and soon become massed together in clumps. If on the other hand healthy blood is used or the blood of a patient affected by any other disease, the bacilli continue to move about most actively and are not collected together in masses."

Diarrhœa showed a very satisfactory diminution, only 891 deaths being credited to this cause as compared with 1,687 deaths in the previous year. The County rate was equal to 0·48 per 1,000—0·52 in Urban and 0·28 in Rural Districts. The rate for England and Wales corresponded to 0·55, and in the large English towns 0·79, so that the County rate may be considered as satisfactory. Compared with 1895, the decrease in the diarrhœa rate equalled 0·47, but the comparison with the rates given in the table below for 1894, 1892, and 1891 is not favourable:—

	1896.	1895.	1894.	1893.	1892.	1891.	1890.
Administrative County..	0·48	0·95	0·32	1·21	0·39	0·44	0·54
Urban Districts	0·52	1·04	0·35	1·30	0·43	0·47	0·60
Rural Districts.....	0·28	0·44	0·16	0·77	0·20	0·28	0·26
England and Wales.....	0·55	0·88	0·34	0·96	0·48	0·44	0·56
33 Large English Towns	0·79	1·19	0·50	1·22	0·71	*0·65	*0·78

* 28 Large English Towns.

The small diarrhœa mortality was no doubt influenced by the comparatively cold weather experienced in the summer. The pronounced rise in the mortality from this disease, does not usually take place until the four foot earth thermometer attains about 56° Fahr.; in many districts this height was not reached. The deaths were fewest in April (24), May (22), and December (23), while the maximum mortality was recorded in July (197), August (256), and September (83)—(see Table V.). In the previous year diarrhœa assumed its maximum severity in September, 1894 in August, and 1893 in July. The following districts had rates above the average, viz. :—Little Hulton 1·81, Whitefield 1·77, Leigh 1·53, Morecambe 1·25, Reddish 1·18, Garston 1·12, Radcliffe 1·11, and Farnworth 1·04. Dr. Limrick (Great Crosby) refers to the constant flushing of the sewers and house drains, cleansing of the roads, back passages, and general surroundings of dwellings as preventives of diarrhœa, while Dr. Loynd (Oswaldtwistle) lays much stress on the necessity of infants being kept clean, and fed with food wholesome and free from contamination. He observes that “the closets of the houses where deaths resulted from diarrhœa, are on the old system, being either tanks or open ash middens, into which the excreta empties.”

Influenza caused fewer deaths than in any year since 1890, when the disease assumed so much prominence. The total deaths amounted to 140, equal to 26 per cent. of the mortality recorded in the previous year. The prevalence was most marked in the December quarter, and comparatively few cases occurred during the summer and autumn. Since the commencement of epidemic influenza, the following deaths have been recorded :—1890 (67), 1891 (647), 1892 (551), 1893 (465), 1894 (213), and 1895 (526). The deaths were most numerous in Accrington (B.) 7, Chorley (B.) 11, Failsworth 8, Fleetwood 6, Withington 10, and Clitheroe (R.) 5.

Respiratory Diseases, comprising bronchitis, pneumonia, and pleurisy, contributed 6,436 deaths, or rather more than

one-fifth of the total mortality. The rate for the County corresponded to 3.53, or 3.64 in the Urban and 2.9 in the Rural Districts. As compared with 1895 there were 500 fewer deaths from respiratory affections, equal to a diminution in the rate of 0.38 per 1,000. Exceptional rates prevailed in Ormskirk 7.30, Upholland 5.85, Skelmersdale 5.55, Aspull 5.36, Abram 5.2, Heywood (B.) 5.16, Leyland 5.16, Leigh 5.1, Hindley 5.08, and Royton 5.0. Deaths from heart disease were fewer than in the previous year, and gave a rate corresponding to 1.21 per 1,000, against a rate of 1.27 in 1895, and an average of 1.26 for the preceding quinquennium.

Phthisis gave rise to 2,214 deaths, equal to a County rate of 1.21, being 1.25 in the Urban and 1.02 in the Rural Districts. It is satisfactory to be able to record a decrease of 111 deaths from this preventible disease as compared with 1895. The rates were above the average in Fleetwood 2.53, Longridge 2.52, Heywood (B.) 2.36, Billinge 2.35, Leyland 2.33, Ashton-in-Makerfield 2.16, Levenshulme 2.11, and Hurst 2.02. In reference to the marked reduction of phthisis in Bacup (B.), Dr. Brown, Medical Officer of Health, writes that "it is partly due to the improved conditions in regard to ventilation, cubic space, and better light of our mills, factories, and weaving sheds, also to less overcrowding in the homes of the people, and to the preventive measures which are to some extent carried out in homes where a patient is suffering from phthisis."

The Infectious Disease (Notification) Act was adopted by seven additional districts, viz., Farnworth, Fulwood, Levenshulme, Little Lever, Longridge, Ramsbottom, and Blackburn (R.). The Act is now in force in 123 districts, 104 Urban and 19 Rural, representing 93 per cent. of the entire County.

The following 13 districts remain unprotected by the provisions of the Act, viz., Astley Bridge, Bacup (B.), Childwall,

Hindley, Kearsley, Leyland, Little Hulton, Mossley (B.), Orrell, Skelmersdale, Wardle, Bury (R.), and Leigh (R.). In the Borough of Mossley a system of voluntary notification is in operation. Since the termination of 1896 I may say that two of the above-mentioned districts have decided to adopt the Act.

The Medical Officers of Health of Fleetwood, Warrington (R.), and Wigan (R.) (Div. 1) recommend the inclusion of measles among the notifiable diseases; Dr. Hannah (Ashton-in-Makerfield) would like to have the notification of measles tried for a limited period, and Dr. Hayward (Haydock) suggests that notification should be limited to the first cases of measles which occur in families. It may be of interest to know that after trial the notification of measles has been revoked in Whitworth, Clayton-le-Moors, Great Crosby, Lunesdale (R.), Prestwich, and Accrington (B.). Very few of the large Authorities care to incur the cost of notifying this disease and providing increased hospital accommodation and additions to the permanent staff which would be rendered essential for dealing effectually with the information received. In small districts where it is possible to enforce stringent precautions in each case of measles, notification may be adopted with advantage, but from my experience of notification of measles in the Borough of Bolton (1877-9) as applied for the first time in England, I do not think that large Urban Authorities are prepared for its adoption.

By taking advantage of the information obtainable from school teachers, by periodical medical examination of the scholars, and by special house-to-house enquiries made on the occurrence of measles in a district, the sanitary officials are enabled to take the only precautionary measures, such as (*a*) school closure, (*b*) exclusion from school of all members of infected families, (*c*) home isolation, and (*d*) disinfection, which seem to be practicable in most districts at the present time.

There were altogether 14,898 cases of infectious disease notified, as compared with 15,664 in the previous year; the following table gives particulars as to the notifications from each disease, &c.:—

Diseases.	1896.			1895.		
	Urban Sanitary District.	Rural Sanitary District.	Total.	Urban Sanitary District.	Rural Sanitary District.	Total.
Small-pox	80	3	83	94	8	102
Scarlet Fever ...	7976	1158	9134	7565	1043	8608
Diphtheria	703	111	814	649	188	837
Croup	241	17	258	176	16	192
Typhus Fever ...	4	...	4	...	...	...
Typhoid Fever...	1891	246	2137	1824	217	2041
Continued Fever	136	10	146	164	8	172
Puerperal Fever.	177	13	190	130	24	154
Erysipelas.....	1207	157	1364	960	121	1081
Measles	539	135	674	2307	101	2408
Whooping Cough	14	...	14	...	...	...
Chicken Pox.....	...	...	...	...	...	...
Rötheln	2	25	27	31	21	52
Relapsing Fever.	12	1	13	7	...	7
English Cholera.	39	...	39	7	1	8
Diarrhœa	...	...	...	...	...	...
Not classified ...	1	...	1	2	...	2
Total.....	13022	1876	14898	13916	1748	15664

Isolation Hospitals.—In the 28 districts provided with hospitals (see Table A), information was received concerning 5,590 cases of infectious disease, and 1,390 or 24·8 per cent. received hospital isolation. The total cases of scarlet fever in these districts amounted to 3,563, and 1,088 or 30·5 per cent. were removed to hospitals. The mortality of patients treated in the hospitals was equal to 3·3 per cent. as compared with a case mortality of 5·1 in districts without hospital provision. The extent to which removal to hospital may be carried out was shown in the Boroughs of Warrington and Blackpool,

where 92 and 77 per cent. of the scarlet fever cases were removed respectively. The following table gives the position of the various County districts in regard to hospital provision:—

	Boroughs	Urban Sanitary Districts	Rural Sanitary Districts	Total.	Estimated Population.	Acreage. (Census 1891.)
Districts with Hospitals	8	15	5	28	640814	236230
Districts with Small-pox Hospitals only... ..	5	9	2	16	252755	70778
Districts with Hospital Schemes in progress or under consideration..	2	13	6	21	251921	281620
Districts claiming the privilege of sending patients to Hospitals in other Districts	3	31	3	37	439341	113481
Districts without Hospital accommodation	1	27	5	33	236119	407893
Districts giving no information on this point	...	1	...	1	5888	1051
Total	19	96	21	136	1826838	1111053

There still remain 33 districts without hospital provision ; and 37 districts claim to have the privilege of removing patients to hospitals belonging to other Authorities, from the latter districts only 15·6 per cent. of the infectious cases were removed ; from 14 districts the removals amounted to 21, and from 9 districts nil. An Inquiry was held on June 2nd by Dr. Theodore Thomson, Medical Inspector of the Local Government Board, with reference to an appeal of the Fylde Rural District Council against the Fylde, Preston, and Garstang Small-pox Hospital Order, 1895, and the Fylde Joint Hospital District Order, 1895, made by the County Council in pursuance of the powers conferred upon them by the Joint Hospitals Act, 1893. Both

TABLE (A).

HOSPITAL PROVISION IN VARIOUS DISTRICTS OF THE ADMINISTRATIVE COUNTY.

(PARTICULARS TAKEN FROM THE HEALTH REPORTS FOR THE YEAR 1896.)

Districts with Hospitals.	Districts with Small-Pox Hospitals only.	Districts with Hospital Schemes in progress or under consideration.	Districts claiming the Privilege of sending Patients to Hospitals as printed in parentheses.	Districts without Hospital Accommodation.
URBAN. Ashton-in-Makerfield. Ashton-under-Lyne B. Birkdale. Blackpool B. Darwen B. *Fleetwood (Port). Garston. Heywood B. †Hindley. Ince-in-Makerfield. Lancaster B. *Morecambe. Ormskirk. Pemberton. Rainford (Cottage). Southport B. Warrington B. Widnes B. Atherton. } Leigh. } Joint. Tyldesley. } (Astley). Leigh R. } Farnworth. } Little Hulton. } Joint. Little Lever. } RURAL. Bolton. *Ormskirk. *Sefton. Whiston.	URBAN. *Accrington B. Chadderton. } Crompton. } Joint. Royton. } *Haslingden B. *Horwich. *Mossley B. *Nelson B. *Oswaldtwistle. *Rawtenstall B. *Standish. Walton-le-Dale (Cottage). *Whitworth (Cottage). *Withnell. RURAL. *Wigan, Div. 1 do. Div. 2 } (Cottage).	Adlington. } Chorley B. } Joint. Leyland. } Chorley R. } Padiham. } Burnley R. } Burnley Joint. Skelmersdale. } Preston R. } Joint for Fulwood. } Infectious Longridge. } Diseases. Garstang R. } Fleetwood. } Kirkham. } Lytham. } Joint for St. Annes- } Infectious on-the-Sea. } Diseases. Fylde R. } Colne B. } Radcliffe. } Joint for Ramsbottom. } all Infectious Whitefield. } Diseases. Bury R. }	URBAN. Aspull (Wigan). *Audenshaw (Hyde). *†Bacup B. (Sourhall, Todmorden). *Barrowford (Nelson) Castleton (Rochdale). Denton (Hyde). Droylsden (Hyde). Eccles B. (Salford). Failsworth (Monsall). Golborne (Astley, Joint). Gorton (Monsall). Great Crosby (Bootle). Haydock (St. Helens). Heaton Norris (Hyde). *Hurst (Ashton-under-Lyne). Huyton-with-Roby (Whiston R.). *Irlam (Salford). *Lathom and Burscough (Ormskirk R.). *Lees (Chadderton). Levenshulme (Stockport). Litherland (Bootle). *Little Woolton (Whiston R.). Middleton B. (Rochdale). Moss Side (Monsall). Much Woolton (Whiston R.). Newton-in-Makerfield (Warrington). Prescot (Whiston R.). Prestwich (Monsall). Stretford (Monsall). Swinton and Pendlebury (Children's Hospital, Pendlebury and Monsall). *†Trawden (Nelson). Urmston (Salford). Waterloo (Bootle). Withington (Monsall). RURAL. Barton-upon-Irwell (Salford). Limehurst (Ashton B. and Oldham B.). Warrington (Warrington B.).	URBAN. Abram. Allerton. Astley Bridge. Billinge. Blackrod. Carnforth. Childwall. Church. Clayton-le-Moors. Clitheroe B. Croston. Dalton-in-Furness. Gauge. Great Harwood. Kearsley. Littleborough. Little Crosby. Milnrow. Norden. Orrell. Reddish. Rishton. Turton. Ulverston. Upholland. Wardle. Westhoughton. Worsley. RURAL. Blackburn. Clitheroe. Lancaster. Lunesdale. Ulverston.
(28)	(16)	(21)	(37)	(33)

*Not used during the year.

†Reserved for Small-Pox only.

of these appeals were dismissed by the Local Government Board on the 5th of August, and the action of the Council with respect to the formation of separate hospital areas for small-pox and for ordinary infectious diseases received confirmation. The first meeting of the newly formed Preston, Fulwood, and Longridge Hospital Committee took place on the 30th of April, and Committees representing The Fylde, Preston, and Garstang (Small-pox) and The Fylde (Joint) held their meetings on the 7th of December. Now that these Committees are duly formed, after considerable trouble, it is hoped that the duties assigned to them will be conscientiously carried out without any unnecessary delay. The other Hospital Committees engaged in providing accommodation are the Burnley (Joint), including Padiham and Burnley (R.), the Chorley (B.), Chorley (R.), Adlington and Leyland (Joint), and Walton-le-Dale Urban District, and little progress so far can be reported. The Joint Hospital Committee for Atherton, Leigh (U. and R.), and Tyldesley has done good work, and is now engaged in completing a considerable hospital extension.

Two Conferences were held at Radcliffe, November 12th and 26th, respecting the joint provision at Ainsworth of hospitals for the isolation of small-pox and other infectious diseases by the districts of Radcliffe, Whitefield, Ramsbottom, and Bury (R.), comprising an area of 25,446 acres, with a population (Census 1891) of 60,121. There is reason to believe that this combination will be happily carried out, and that facilities will be offered to other Authorities within a radius of eight miles for the treatment of their small-pox cases on fair and equitable conditions.

The Royal Commission on Vaccination report as to small-pox that, "in order to maintain in efficiency the primary essential condition of a system of isolation, viz.: the immediate isolation of a person attacked by the disease, it is requisite to have a hospital always ready with sufficient accommodation for the reception of all such cases, and there

are no means of estimating what extent of accommodation will suffice to meet at all times the necessities of a particular town. It is certain that the disease spreads more rapidly, and its contagion seems to operate more actively at one time than another."—(par. 501). It has always to be borne in mind that more hospital accommodation will be required where vaccination has been neglected than where the laws relating to vaccination have been enforced.

Disinfection.—More than half of the County Districts are without appliances for securing the efficient disinfection of bedding, clothing, and other articles that may have become infected. As instances of districts without these necessary sanitary provisions may be mentioned the Boroughs of Bacup, Clitheroe, Colne, Middleton, and Nelson, the Urban Districts of Ashton-in-Makerfield, Heaton Norris, Padiham, Radcliffe, and Ramsbottom, and the Rural Districts of Chorley, Clitheroe, Fylde, Garstang, Lunesdale, Sefton, Ulverston, &c. Action is being taken by many of these Authorities to provide suitable apparatus, and reliance is chiefly placed on steam in three forms, known as (*a*) current or steam in motion, (*b*) super-heated or steam at a temperature higher than that at which it can condense—steam can exist at any pressure, but the temperature does not correspond to the pressure; (*c*) super-heated steam, or steam at the temperature at which it can condense and the temperature depends on the pressure. Mr. Defries states that "the condensing point rises as the pressure increases, and by sufficiently increasing the pressure saturated steam can be obtained of any temperature whatever."

Sanitary Administration.—As usual, I have summarised the reports received from Medical Officers of Health, and special notice has been directed to the sanitary work carried out in each district. In a few instances I have had to complain of the paucity of information supplied, but on the whole there is evidence of an increasing interest being taken by

Authorities in matters relating to the sanitation of their districts. I have observed that the Nuisance Inspectors in some districts are much overburdened with extraneous duties, and the time allowed them for sanitary work is far too limited. As pointed out in my Report for last year, the duties of a Sanitary Inspector as defined by the Memorandum of the Local Government Board are sufficiently onerous to require whole time services in most districts, without the addition of responsibilities in no way connected with sanitation.

House-to-house inspection is carried out in many districts, but the advantage of this class of work in ascertaining the existence of conditions injurious to health is not sufficiently recognised. In 30 Urban and 4 Rural Districts action has been taken to improve the housing of the working classes; several back-to-back houses have been closed or converted into through houses, as, for instance, in Abram, Ashton-under-Lyne (B.), Reddish, and Clitheroe (B.). Reports on insanitary property have been presented to the Authorities of Accrington (B.), Childwall, Clitheroe (B.), Darwen (B.), Eccles (B.), Ince-in-Makerfield, and Ormskirk, while closing orders or actual demolition have rewarded the efforts of the officials of Failsworth, Fulwood, Garston, Gorton, Lancaster (B.), Leigh, Levenshulme, Prescott, Prestwich, Warrington (B.), Whiston (R.), &c.

Privy middens are responsible for a large proportion of nuisances in this County and many of the filth diseases. The common custom of depositing excretal matters and household refuse liable to putrefaction in middens built close to dwellings is offensive; but the danger to health is intensified when these places are used for the reception, without previous disinfection, of typhoid and diarrhœa dejecta, urine from scarlet fever patients, purulent and other discharges, which may become pulverised and be disseminated throughout the neighbourhood. Immediate removal of such matters should be aimed at, and with this object in view water-carriage deserves the favour of

Sanitary Authorities. Pending its adoption in districts special pails might be usefully supplied to all infected houses, and these should be collected daily in suitable closed carts and their contents destroyed by fire.

The provisions of the Canal Boats Acts have been enforced in the various districts through which the canals run. The following inspections are reported:—131 in Eccles (B.), 38 Heywood (B.), 100 Ince-in-Makerfield, 36 Lancaster (B.), 54 Lathom and Burscough, 64 Leigh, 44 Littleborough, 52 Middleton (B.), 118 Warrington (B.), 219 Widnes (B.), 25 Bury (R.), 17 Garstang (R.), 41 Lancaster (R.), 51 Ormskirk (R.), 27 Warrington (R.), &c. Infringements of the Regulations were observed in only 24 instances; with these exceptions the boats were conducted in a satisfactory manner.

Common lodging-houses receive little attention in the majority of the districts, and very few seem to have adopted the Model Bye-laws of the Local Government Board. In Bacup (B.) the Chief Constable says that the lodging-houses are inadequate, in Haslingden (B.) some were found overcrowded, in Warrington (B.) fines of £3 0s. 6d. were inflicted for infringement of the bye-laws, and in Warrington (R.) one person was summoned for keeping an unregistered lodging-house. In Accrington (B.) the Medical Officer of Health recommends the Corporation to erect a lodging-house in order to provide for the wants of the Borough.

Slaughter-houses are as a rule periodically inspected, but many of them do not comply with sanitary requirements, and although licensed or registered are not subject to bye-laws. The situation of private slaughter-houses is not always satisfactory, and being scattered over the district efficient inspection is difficult if not impossible. Dr. Jenkins (Lytham) draws attention to the unsuitability of their position, "which was no doubt well chosen when they were built, but has become very unsuitable on account of the new dwelling-houses erected in

their vicinity. . . . Next to their number and construction, the accommodation has undoubtedly become inadequate for the number of butchers that are establishing themselves in the rapidly increasing town. As it is, some of the slaughter-houses are used by more than one firm, and it becomes a matter of great difficulty for the Inspector to bring home any breach of the Regulations to the real culprits. . . . Doubtless before long it will be found advisable to remove these slaughter-houses and to construct a public abattoir at a greater distance from residential property." Mr. Norman, Chief Inspector, Warrington (B.), reports that "the inspection of slaughter-houses, which are scattered over the Borough, is a matter of great difficulty, and the only way of simplifying the labour of inspection and having all carcases of animals slaughtered and intended for human food inspected before being offered for sale, would be accomplished by the erection of a public slaughter-house." Similar recommendations are contained in the Reports of Medical Officers of Health of the Boroughs of Ashton-under-Lyne, Bacup, Haslingden, Middleton, Nelson, and the Urban District of Leigh.

Retail bakehouses, except in the large Urban Districts, are seldom referred to in the Reports of Medical Officers, notwithstanding the duties with respect to them imposed on sanitary officials by the Factory and Workshop Acts of 1878 and 1883, and the Act passed so recently as 1895. It may be mentioned that "a retail bakehouse is defined as any bakehouse or place where the bread, biscuits, or confectionery baked in which are not sold wholesale but by retail in some shop or place occupied together with such bakehouse;" therefore it may be inferred that any bakehouse from which any part of the goods baked therein are sold wholesale should be considered a "wholesale" bakehouse, and therefore under the control of the Factory Inspector.

Factory Inspection has been carried out more or less efficiently in 22 districts, and the improvements effected have

chiefly related to the closet system, which in many mills is far from satisfactory. No reference is made to the information respecting workshops, which under Sec. 41, Factory and Workshop Act, 1895, the Factory Inspector has from the commencement of 1896 to forward to the Sanitary Authority. In some districts neglect has arisen owing to sanitary officials not knowing exactly their position under the complicated series of Acts of Parliament dealing with factories. Reference to the various Factory Acts passed from 1878-95 show that the following sanitary provisions are in force:—By Part 1, Section 4, of the Factory and Workshop Act, 1878, in case of nuisance arising from any drain, water closet, privy, ashpit, water supply nuisance, or other matter relating to public health, remediable under the Public Health Act, the Inspector under the Act may, for the purpose of remedying the nuisance, take with him into the factory a Medical Officer of Health, or Inspector of Nuisances, or other officer of the Sanitary Authority.

By Section 3 (1) of the 1895 Act, where notice of an act of neglect or default has been given by a Factory Inspector to a Sanitary Authority, failure within one month on the part of the Sanitary Authority to inform the Inspector of the proceedings taken, gives the Inspector power to initiate like proceedings and recover from the Sanitary Authority the expenses of the proceedings.

The Factory and Workshop Act, 1878, Part 2 Section 33, enacts that for the purpose of securing cleanliness in every factory and workshop, all inside walls and ceilings shall be painted with oil or varnished once in seven years, or lime-washed once at least within 14 months; or if painted or varnished they shall be washed with hot water and soap once at least within every 14 months. By Section 34, bakehouses in districts with a population more than 5,000 have to observe similar Regulations, and Section 27 (1), Act 1895, requires all bakehouses to comply, whatever the population of the districts in which they are situated. The Factory and Workshop Act,

1883, Section 17 (1) enacts that the provision as to bakehouses shall be enforced by the Local Authority of the district in which the retail bakehouse is situate, and not by an Inspector under the Factory and Workshop Act, 1878, and for the purpose of this Section the Medical Officer of Health of the Local Authority shall have and exercise all such powers of entry, inspection, taking of legal proceedings and otherwise, as an Inspector under the Factory and Workshop Act, 1878. By Section 3 (2) Factory and Workshop Act, 1891, in respect to *workshops*, "a Sanitary Authority and their officials shall, without prejudice to their other powers, have all such entry, inspection, taking legal proceedings or otherwise, as an Inspector under the principal Act."

Section 7 (1) Factory and Workshop Act, 1891, provides that every factory of which the construction commenced after the first day of January, 1892, and in which more than 40 persons are employed, shall be furnished with a certificate from the Sanitary Authority of the district as to the efficiency of the means of escape in the case of fire, and under the 1895 Act, Section 10 (5) the Factory Inspector can take action with respect to fire escapes. The Local Authority is made responsible by Section 1 (1) of the 1895 Act for the prevention of overcrowding in factories and workshops, each person employed is now required to have 250 cubic feet of air space and 400 cubic feet per head during any period of overtime.

The Factory Inspector is responsible for enforcing (Section 6 of the 1895 Act) the penalty for allowing wearing apparel to be made, cleansed, or repaired in any dwelling-house whilst any inmate is suffering from scarlet fever or small-pox, and he has also to take action when notified under Section 29 by the Medical Attendant as to the existence of certain diseases, *i.e.*, lead, phosphorus, or arsenical poisoning or anthrax occurring in a factory or workshop. Under the Factory Acts, the power given to Sanitary Officials to enter factories is somewhat indefinite except after notification from the Factory

Inspector of certain defects remediable under the law relating to public health, and the Inspector may accompany the Sanitary Official in such visits. Section 101 of the Factory and Workshop Act, 1878, exempts factories from the provisions of Section 91 of the Public Health Act, 1875, but declares that the Public Health Act shall apply to buildings in which persons are employed, whatever their number may be, in like manner as it applies to buildings where more than twenty are employed, so that all factories should, therefore, be inspected like other houses from time to time for the purpose of examining as to the existence of any nuisance calling for abatement.

The Report of Dr. Barr (Bury R.) contains a précis of the important evidence he gave before the Committee appointed by Parliament to inquire into the working of the Cotton Cloth Factories Act, 1889. The Committee heard the evidence of 85 witnesses, including 2 factory inspectors, 5 medical men, 11 manufacturers, 9 managers, 4 overlookers, and 54 weavers or representatives of the Weavers' Association, and supplemented this evidence by bacteriological and chemical research. The information contained in my last year's Report relating to the health aspect of factory employment was placed before the Committee, and I had the honour of personally giving further evidence on the subject. The Report of the Committee, which was presented on the 17th of August, 1897, contains the following summarised recommendations :—

- (i.) "That an additional record of the reading of the hygrometers be taken between 7 and 8 a.m. each day.
- (ii.) "That improvements be made in the statistics relating to industrial mortality.
- (iii.) "That no alteration be made to Schedule A. of the Cotton Cloth Factories Act.
- (iv.) "That in cases where artificial humidity is used the source should always be pure water.
- (v.) "That the roofs of all weaving sheds be whitened in summer, and the whitewashing to be maintained to the satisfaction of the Inspector.

- (vi.) "That in weaving sheds in which "live" steam is employed, the steam-pipes used for humidification, when the temperature is 70° or over, be as small as possible, and be covered with the best non-conducting substance, the size of the pipes and the nature of the covering to be decided by the Inspector.
- (vii.) "That in all new mills cloak-rooms be provided, and in old mills the establishment of cloak-rooms be strongly recommended.
- (viii.) "That as regards humidified sheds, the whole of the sanitary clauses of the Factory Acts be administered by the Inspectors under the Cotton Cloth Factories Act."

Many of the improvements recommended have been already carried out voluntarily, in some cases "with satisfactory results both to employers and employed." The Committee recommend that "the arrangements for ventilation shall be such as will secure that no greater proportion than nine-tenths of a volume of CO₂ per 1,000 volumes of air shall be contained in the air of the sheds." This limit will secure to each person employed an amount of ventilation corresponding to about 2,000 cubic feet per hour, and no doubt a material improvement will be effected in the health and comfort of the workers.

Dairies, Cowsheds, and Milk-shops.—There are now 63 districts in which Regulations under the Dairies, Cowsheds, and Milk-shops Order are in force, the matter is under consideration in 5 districts, and in the 68 districts remaining there are apparently no Regulations. The inspections under the Local Government Board Order are, with few exceptions, very unsatisfactorily carried out, and the conditions of the cowsheds in the larger proportion of the districts are distinctly insanitary. Medical Officers of Health describe the cowsheds in many districts as "dirty, stuffy, and dark," frequently they are small and dilapidated, and "the excreta is not removed

often enough from the shippon, and the work is seldom thoroughly done." Water for swilling is not often used, and there is general inattention to lime-washing, and "dust is allowed to collect on the walls and deposit thickly on the window-sills and all surfaces capable of receiving it." Dr. Neech (Atherton) also calls attention to the importance of cleanliness of the cow itself, and especially the udder, of the hands of the milker, and of the milk utensils. Milk obtained under such conditions is very liable to contamination, and it is no surprise to find in the reports of Medical Officers of Health references made to the spread of disease from this source. Dr. McNaught (Rawtenstall B.) remarks on "the enormous effect produced by the contamination of milk in the dairy on the health of the population," and particularly on the large infant mortality from which we suffer; and Dr. Booth (St. Annes) states that "milk is of such vast importance to the health of the district, especially the infantile portion of it, and, on the other hand, is so liable to become tainted or even infected if overcrowding of cattle or insufficient care is taken in storing that every endeavour should be made to get these defects remedied." The rural portion of the county is most to blame in regard to the inspection of cowsheds, and it is surprising to find such districts as Chorley, Fylde, Garstang, Lancaster, Limehurst, Lunesdale, Ormskirk, and Wigan without any Regulations; in fact some of the Authorities seem to be afraid of putting in force the Order of the Local Government Board owing to the wholesale alterations to the cowsheds which would follow efficient inspection. In urban districts more careful inspection is carried out, and in two or three instances Urban Authorities extend their inspection to rural districts from which the milk in their districts is obtained. But as a rule Authorities exercise no supervision over the milk distributed in their districts when introduced from farms outside their boundaries, and they are without any check against the introduction of disease due to its contamination.

In order to secure greater efficiency and uniformity in carrying out the Regulations under the Local Government Board Orders relating to Dairies, Cowsheds, and Milk-shops, it seems to me desirable that the responsibility of inspection should be entrusted to County Councils concurrently with the existing Urban and Rural District Councils. If these duties were placed in the hands of special inspectors appointed so as to be independent of local influences, there is reason to expect that improvements in dairies and cowsheds would be more efficiently performed than by the fully employed Inspectors of the existing sanitary districts.

The Smoke Nuisance received attention from 38 Authorities, and the observations taken, amounting to 2,066, show an increase of 640 in the number reported in the previous year. In few districts is serious action taken to reduce this nuisance, for, although so many observations were made, only 7 resulted in legal proceedings. Not a single prosecution was the outcome of the 720 observations in Ashton-under-Lyne (B.), 433 in Swinton and Pendlebury, and 203 in Radcliffe; but the emission of black smoke must have frequently exceeded the liberal time limits adopted in these districts. By allowing the emission of more than 10 minutes of black smoke per hour Authorities practically sanction the continuance of a nuisance which is so harmful to the health and comfort of the people under their charge. The time limits for black smoke vary from 20 minutes per hour at Burnley (R.), to $2\frac{1}{2}$ at Leigh, and 2 at Lancaster (B.). To reduce smoke and secure more uniformity of action in respect of the mode of observation and remedial measures, I again take the opportunity of recommending that County Councils be given concurrent powers with Local Authorities for carrying out Section 91, Public Health Act, 1875. This would lead to the appointment of Inspectors, whose duties would require them to see to the abatement of the nuisance complained of. Further particulars of the action taken by the County districts respecting smoke are given in the following tabular form :—

	No. of Smoke Observa- tions.	Time limit per hour— Minutes.	No. of Legal Pro- ceedings.	REMARKS on action taken.
URBAN DISTRICTS.				
Accrington (Boro)	20	8	...	Black smoke shows an increase of 1·3 compared with previous year.
Ashton-under-Lyne (Boro)	720	8	...	
Atherton	14	Not fixed	...	Much room for im- provement.
Bacup (Boro)	Many	10	...	
Birkdale.....	3	Not fixed	...	13 exceeded limit. Order granted with costs. 4 Orders of abate- ment obtained; 3 had to pay penal- ties and costs.
Church	6	...	...	
Clayton-le-Moors	12	5	...	
Colne (Boro)	6	Not fixed	...	
Darwen (Boro)	40	15	...	
Eccles (Boro)	107	4	1	
Failsworth.....	77	...	5	
Farnworth.....	25	10	...	
Fulwood.....	20	...	...	
Garston	38	4	...	1 notice issued.
Gorton	6	8	...	
Heywood (Boro)	27	10	...	
Horwich.....	3	...	...	Fined 5/- and costs. 2 Orders made.
Lancaster (Boro)	50	2	...	
Leigh	Numerous.	2½	...	
Levenshulme	8	...	...	
Middleton (Boro)	77	12	1	
Milnrow.....	33	8	...	
Moss Side	8	...	...	
Much Woolton	Numerous.	3	...	
Norden	2	...	...	
Pemberton.....	Frequent.	...	...	
Prestwich	14	5	...	6 exceeded limit.
Radcliffe	203	10	...	
Ramsbottom	28	12	...	
Stretford	5	3	...	Penalties (30/-) im- posed by Sanitary Committee.
Swinton and Pendlebury..	433	5	...	
Warrington (Boro)	25	6	...	
Withington	3	...	...	
Withnell	4	5	...	
Worsley	2	...	...	
RURAL DISTRICTS.				
Burnley	25	20	...	
Bury	22	...	...	
Chorley	Several	...	...	
	2066		7	

Scavenging and Refuse Removal.—This work is described as satisfactory in 99 districts, fairly satisfactory in 17, not satisfactory in 12, and no proper system in 8 districts. The Authorities carry out the scavenging in 82 district, 28 contract for it, in 10 it is done either by contract or by arrangement with farmers, while in 16 districts the tenants are held responsible for the removal of refuse. Scavenging should always be carried out by the officials of the Sanitary Authority. When contracted for, efficiency is seldom secured. Many of the Medical Officers amply bear out this opinion: for instance, Dr. Harrison (Haslingden B.) states "that there is no comparison between contracting and doing the work ourselves, as, during the year, we have had no complaint whatever." He also remarks that "the deposit of ashes and refuse on tips is not only a source of danger to the public health, but is also a waste of matter which can be turned to profit." The difficulty in finding suitable tips for depositing refuse in many districts points to the necessity of providing "destructors" which can be worked with great economy. Street sweeping is complained of as neglected or unsatisfactory in Droylsden, Kearsley, Lathom and Burscough, Leigh, St. Annes-on-the-Sea, and in the Rural Districts of Blackburn, Bury, Chorley, Garstang, Ormskirk, Preston, and Wigan. When Authorities set an example by carrying out their public duties as to cleanliness more hope may be entertained respecting the observance of personal cleanliness. Dr. Parker (Ince-in-Makerfield) reports that "during the past five years a large number of side streets that had been for years a filthy abomination of mud and household refuse have been drained, metalled, curbed, channelled, and paved. . . . The effect of this work soon makes itself apparent on the adjacent houses, the walls becoming drier and the houses cleaner, the people themselves finding it much easier to keep their dwellings clean, while the young children have at least a clean, dry surface to play about on." In certain districts it might be an advantage to ask the Local Government Board to make an Order under

Section 42, Public Health Act, 1875, which enacts that "every Local Authority may, and when required by Order of the Local Government Board shall, themselves undertake or contract for the removal of house refuse from premises, the cleansing of earth closets, privies, ashpits, and cesspools, either for the whole or any part of their district. Moreover, every Urban Authority and any Rural Authority invested by the Local Government Board with the requisite powers may, and when required by the Order of the said Board shall, themselves undertake or contract for the proper cleansing of streets, and may also themselves undertake or contract for the proper watering of streets for the whole or any part of their district."

Drainage and Sewage Disposal.—Comparatively few Authorities flush the sewers and house drains; where flushing is attended to the drains do not give off unpleasant smells, to the danger and annoyance of the inhabitants. In Great Crosby, Mr. Hall (Surveyor and Inspector) reports that "the flushing of the house drains disclosed some 110 stoppages, which were duly cleared. This periodical removal of such defects and the systematic thorough washing-out of the whole of the drains connected with the houses must have a very beneficial result on the sewerage system of the district generally and assist in maintaining the healthiness of the locality." In Waterloo-with-Seaforth the sewers have been provided with 22 flushing chambers, each capable of discharging from 800 to 1,000 gallons of water into the sewers. House drains are also regularly flushed at considerable expense. The testing of drains by smoke is being more extensively applied, and to show the value of this means of discovering defects, it may be mentioned that in Blackpool (B.) of 1,117 house drains inspected 419, or 37 per cent., were found satisfactory; whilst in 1895 only 11 per cent. of the house drains examined came out satisfactorily. At Failsworth and Radcliffe the blowing of steam into the sewers was a source of complaint and danger to health. Action can be taken to prevent this

nuisance under Section 17 of the Public Health Acts Amendment Act, 1890; no person is allowed to turn into any sewer any waste steam, condensing water, heated water, or other liquid (at a temperature higher than 110° Fahr.) which either alone or in combination with the sewage causes a nuisance or is injurious to health. Reference is made in several reports to the unventilated condition of the sewers, and in few instances, where manholes have been insufficient and badly placed, serious complaints have been made; in one district the Medical Officer of Health was forced to recommend the blocking up of the "most objectionable manholes in the town" until air shafts can be erected to allow the evolution of gas from the sewer to take place innocuously.

Much progress has been made by Authorities in carrying out schemes of sewerage and sewage treatment. Altogether 31 outfall works have been completed during the year, of which 12 are in the area of the Mersey and Irwell Watershed and 19 in the Ribble Watershed area. The following table gives the position of the various County Authorities in respect of their schemes:—

Authorities with	Mersey and Irwell Watershed.		Ribble Watershed.	
	1896.	1895.	1896.	1895.
Works in operation	48	36	26	7
Works being constructed ...	14	20	13	17
Schemes sanctioned	1	1	2	0
Schemes submitted to the L.G.B.	...	...	...	1
Schemes under consideration ...	...	...	...	3
Schemes inefficient	...	...	...	10
No scheme	2	2	1	1
Total...	65	59	42	39

The energy which has been displayed throughout the County during the past five years by public Authorities and manufacturers in making provision for the purification of sewage and polluting trade products, has made itself felt in the cleaner condition of our rivers, and there is reason to hope that the progress will continue, and danger to health from river pollution will soon cease to exist. Mr. Naylor (Ribble Watershed) says, "speaking generally, most of the Authorities and manufacturers too, have now got purification plant sufficient for their needs. But this is only half the battle; the plant suffices only if maintained in condition; indeed, as most of it has been put down under pressure, there is nothing to spare in the way of either tank space or filter area, and as soon as the one or the other is neglected, and its capacity decreased, a bad effluent is bound to follow. Much careful inspection will be required to make a permanent and visible effect upon the rivers, and the Committee, if I may say so, will have to be prepared to take prompt action in cases of default, or to be content to let the expenses already incurred, as well as the future maintaining cost, be of little avail."

Water Supply.—The summarised reports of Medical Officers of Health show the position of each district in respect of water supply. The remarks I made last year are applicable to the present state of things, and in only few instances can any improvement be recorded. As mentioned on previous occasions, the water supplied from the reservoirs belonging to Accrington (B.) and the adjoining districts is still loaded with vegetable organisms, and gives evidence in the summer of want of filtration. The water of Haslingden (B.), Little Lever, Radcliffe, Ramsbottom, &c., supplied by the Bury Corporation continues to be "often very dirty from vegetable deposit," and the Holden Wood water is, according to Dr. Harrison, "obviously entirely unfit for drinking purposes." Filtration is needed, and the manuring of the gathering ground for agricultural purposes should be discontinued. Again, Dr.

Parker (Lancaster R.) complains of the unsatisfactory water supplied to Cockerham, Thurnham, and Glasson Dock. For seven years annual complaints have been made and "no notice has been taken of the matter." In view of the possible distribution of epidemic disease, due to contaminated water, Local Authorities ought to insist on the purity of the water supplied in their districts, and it seems to me that legal action might very properly be taken under the Waterworks Clauses Act, 1847, where it can be shown that the water is not "pure and wholesome."

Sale of Food and Drugs Act.—Dr. Campbell Brown, the Public Analyst for the Administrative County, has submitted the following Report on the proceedings taken under the Sale of Food and Drugs Act:—

"During the year under review 1,755 samples have been analysed, including 1,308 purchased by Superintendents of Police, 345 samples (all butter and margarine) by the Inspector for the Agricultural Society, and 102 by Inspectors for District Councils and private purchasers. Of these 204 were found to be offences, or 11·6 per cent. They are classified as follows:—

422	samples of Milk	... ..	of which 32 were offences.
611	„ Butter	... ..	144 „
5	„ Bread and Flour		
51	„ Coffee	... ..	3 „
3	„ Tea and Cocoa		
307	„ Beer and Spirits	..	13 „
2	„ Confectionery		
18	„ Drugs		
81	„ Small Groceries		
255	„ Miscellaneous	..	12 „

Total 1755 samples, of which 204 were offences.

"The proportion of offences is 11·6, considerably higher than last year. This figure is not comparable with the figures in any previous year, and it does not represent the average

extent of adulteration throughout the County. The figure is greatly increased by the peculiar circumstances under which the Agricultural Society's Inspector's samples are taken. No less than 36·2 per cent. of the samples submitted by him were found to be offences. The percentage of offences amongst the other samples is 5·6 per cent., a slightly lower figure than last year.

“There are two quite distinct reasons for the proportion of the offences amongst the samples of this Inspector being high, and it is important to note the two reasons separately.

“The first is, that the Inspector by devoting himself entirely to butter, has become, to a certain extent, an expert in that one article, and is able very frequently to distinguish impure or doubtful from genuine butter by simple inspection, and only samples which he thinks suspicious are purchased by him.

“It would not be correct to infer that many other articles of food can be so successfully dealt with thus, but a few could be thus treated by Inspectors of Nuisances, as in Cities, if they had power to enter a shop, examine the contents, and compulsorily purchase samples.

“The second reason is, that this Inspector travels from place to place and purchases where he is not personally known. If he were to become known his success would be greatly lessened; for he has at present no power to demand a sale, and it would be of great public advantage, if there are no serious objections, to give him the power which an Inspector appointed by the County Council would have of demanding a sample on offering to pay for it, and prosecuting for refusing to sell.

“It is probable that the majority of species of food samples are best purchased by the police; only a few such as butter, lard, and the like can be treated with advantage by special experts. But it may be well to recall a recommendation made

several years ago, that if the difficulties of administration and discipline could be overcome, it would be a very great advantage if one or two members of the police staff could be selected, or if specially trained men could be added to the staff as Sub-Inspectors of Food, to go through the whole County from place to place where they are not known, and purchase under the direction of the Superintendent of the place where they happen to be purchasing on any given day.

"There is no doubt that the police at present do not always succeed in purchasing without their object being suspected by the vendor. And, while the proportion of samples found to be offences in the purchases of the Agricultural Society's Inspector is much above the true average proportion in sales to the public, there is no doubt that the proportion in the purchases made by the police is slightly less than the proportion in sales to the public.

"A tabular statement of the proceedings in each division is appended.

"The number of prosecutions reported is 185, namely, 63 by the police, and 122 by the Agricultural Inspector. Of these 185 cases, 154 were convicted and about 20 or thereby have not yet been decided.

"The penalties inflicted varied from 1s. to £10. The average penalty is under £1 0s. 6d., a totally inadequate penalty, which is very disheartening to all officers who labour to bring fraud to light in spite of the numerous avenues for escape which have been left open or have been specially provided by the law.

"The capacity of the laboratory has been somewhat increased during the year, but some small further conveniences will have to be supplied to enable us to deal with the large number of difficult butter samples which have now to undergo a somewhat elaborate series of processes.

"There are many difficulties to be overcome in dealing with many of these samples. A large number of samples are suspected of being mixed with small quantities of foreign fats; on the other hand, it is asserted that the suspected admixture is made by the foreign cow. It is difficult to absolutely settle the question when the figures are small.

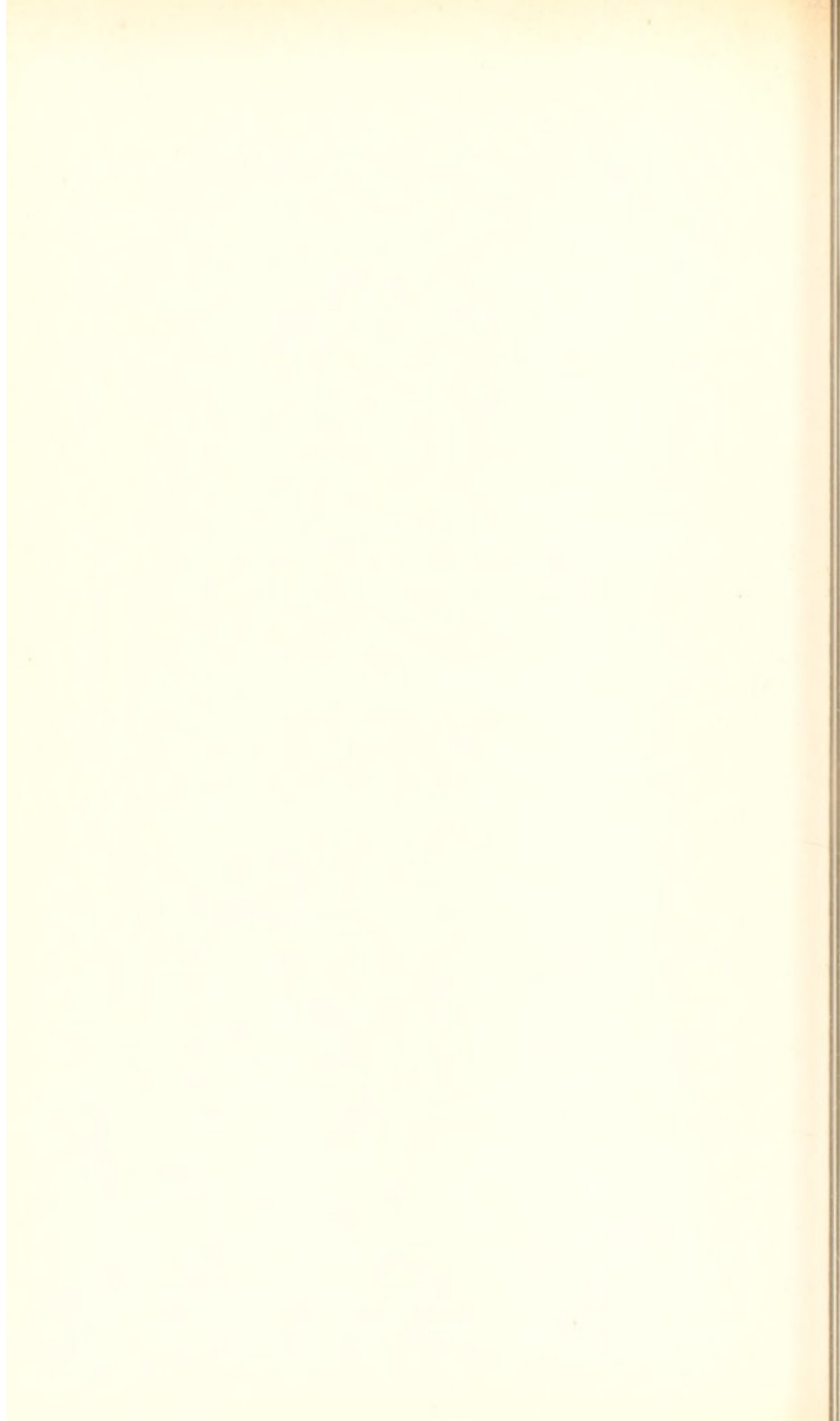
"Again we find that the composition of butter differs in winter and summer; and we have now to analyse a large number of samples of butter extracted by ourselves throughout the year from the milk brought to the laboratory. This work is not contemplated nor paid for under the Sale of Food and Drugs Act, but yet it is necessary to the more perfect administration of the Act by the public Analysts."

TABLE SHEWING THE PROCEEDINGS IN EACH POLICE DIVISION AND BY OTHERS.—1896.

Divisions.	Total Samples.	No. of Prosecutions.	Convictions.	RESULT OF PROSECUTIONS.	Penalties.	Costs.	Remarks.
N.L.D.	58	3	3	One fined 20s., two fined 10s. and costs	£ s. d. 2 0 0	£ s. d. 4 17 1	
S.L.D.	55	0	0				
G.D.	40	3	3	One fined 20s., one 10s., one 5s. and costs	1 15 0	2 2 0	
Km. D.	82	5	5	One fined 40s., one 20s., one 5s. and costs, two fined costs only	3 5 0	2 14 8	
L.B.D.	36	2	2	One fined 10s., one 1s. and costs	0 11 0	1 6 4	
H.B.D.	40	0	0				
Rs. D.	98	2	2	One fined £5, one £1 and costs	6 0 0	6 1 11	
Ac. D.	30	1	0	Dismissed			
L.D.	130	6	6	Two fined 40s., one 20s., two 10s. 6d. and costs, one fined costs only	6 1 0	2 12 9	
Bn. D.	56	0	0				
By. D.	75	3	2	One fined 10s. and costs, one costs only, one case pending ...	0 10 0	1 9 4	
R.D.	59	5	5	Two fined 21s., one 10s., one 5s. and costs	3 2 0	2 0 0	
A.D.	72	5	5	One fined 5s. 6d. and costs, four fined costs only	0 5 6	3 13 7	
M.D.	154	9	9	Two fined £10, one 10s., three 5s., one 1s. and costs, two costs only	21 6 0	10 18 9	
Bo. D.	58	7	6	Three fined 10s., two 5s. and costs, one fined certificate fee, and one dismissed	2 0 0	3 6 0	
O.D.	24	1	1	Fined costs only ... ..	.....	0 15 10	
P.D.	62	3	1	One fined £5 and costs, two dismissed... ..	5 0 0	0 8 0	
Ws. D.	59	2	2	Two fined 20s. and costs... ..	2 0 0	2 3 6	
W.D.	69	1	1	Fined 40s. and costs	2 0 0	0 10 2	
Wgn. D.	51	5	5	One fined £20, two 20s., two 10s. and costs	23 0 0	4 16 10	
Insp. Agri. Socy...	1308 345	63 122	58 96	Fined sums varying from 1s. to £5, and in some cases costs, 12 were dismissed, 14 remained to be decided in January, 1897	78 15 6 78 18 0	49 16 9 30 8 0	
Insp. of District Councils & private purchasers	1653 102	185 0	154 0				
Total for year ...	1755	185	154		157 13 6	80 4 9	



SUMMARY OF THE REPORTS
RECEIVED FROM
MEDICAL OFFICERS OF HEALTH
OF
URBAN AND RURAL SANITARY AUTHORITIES
FOR THE YEAR 1896.



URBAN SANITARY DISTRICTS.

Abram.—(Area in acres, 1,982; Estimated Population, 4,805).—*Medical Officer of Health*, NATHAN HANNAH, L.R.C.P.E.; *Salary*, £25.—Birth-rate 45·7, death-rate 20·3, zymotic rate 4·37, death-rate from phthisis 1·45, and from respiratory diseases 5·20 per 1,000 of population; rate of deaths under one year to 1,000 births 177.

The birth-rate was above the average, while the death-rate showed a slight diminution as compared with the previous year, and corresponded exactly with the mean for the decade 1886-95. The zymotic rate continues high, due to the excessive mortality (10) from measles. In consequence of this disease Bickershaw and St. John's Schools, in Warrington Road, were closed, and subsequently disinfected. Dr. Hannah suggests the desirability of adopting the voluntary notification of measles. This could be adopted "for a limited period at no great cost" by way of experiment. Scarlet fever caused 42 attacks and 1 death. Typhoid fever, whooping cough, and diarrhoea were each credited with 3 deaths. The notification of typhoid fever allows the officials to supply special pails for the reception of the infected dejecta and take other precautionary measures in the early stages of the disease. Unfortunately, there is neither hospital provision nor means of disinfection available. Efforts have been made to supply these wants, but without success. In preference to accommodation of a temporary character a joint hospital should be aimed at.

Sewerage and Scavenging.—The sewage scheme has received "continued attention," and it is hoped that at an early date the sanction of the Local Government Board will be obtained. Scavenging is described as "fair," and carried

out by contract. Attention is drawn to the dangers of a wet and sloppy state of house surroundings, passages, and back streets. It is suggested that these surfaces should be drained and rendered impervious. The Council has very properly decided to insist upon all connections with the main sewer being made by its own men.

Sanitary Inspection.—The Medical Officer of Health reports that close attention has been paid to sanitary matters, “a very large amount of improvement having been effected in various parts of the area; in fact, perhaps *a record year of good work*. Some half-dozen or more owners gave us continued trouble, but persistent ‘pegging away’ proved of valuable service in attaining ends—for instance, Dootsen Street, Talbot Road, Abram Brow, Warrington Road, and Bickershaw. Unfortunately, the nuisances (2) of back-to-back houses are left, but in the near future they must be again approached.” Dairies and cowsheds have been inspected, and of some 30 in the district 50 per cent. required considerable alteration and improvement. In many of the cowsheds the water supply is defective. The bakehouses, factories, and workshops are likely to receive increased attention. The Sanitary Inspector has frequently visited the canal boats, and made his report to the Government official. Ninety-six nuisances were remedied without the necessity of taking legal proceedings. About 50 houses were stoved and 44 lime-washed.

Accrington Borough.—(Area in acres, 3,425; Estimated Population, 42,000). — *Medical Officer of Health*, T. J. MONAGHAN, M.D., D.P.H.; *Salary*, £80.—Birth-rate 27·0, death-rate 15·5, zymotic rate 1·78, death-rate from phthisis 1·02, and from respiratory diseases 3·50 per 1,000 of population; rate of deaths under one year to 1,000 births 171.

Dr. Monaghan submits a very favourable report on the health of the Borough during 1896. While the birth-rate

remains the same as in the previous year the death-rate shows a diminution of 2·3, and 1·9 as compared with the decade 1886-95. The zymotic rate was satisfactorily reduced, as well as the infantile mortality. Zymotic diseases were more or less prevalent throughout the year, and the greatest fatalities resulted from whooping cough (21), membranous croup (10), typhoid fever (10), and diarrhœa (28). Scarlet fever was very prevalent, but comparatively mild in character. Altogether 177 cases were notified, 8 of which proved fatal. The difficulties encountered in restraining the spread of this disease must have been greatly increased owing to the want of an Isolation Hospital. Enteric fever accounted for 54 cases of illness, but "no common source of infection was found in the majority of cases. Every infected dwelling was visited, and sanitary defects remedied." Measles caused 6 deaths—2 in January, 2 in March, 1 in July, and 1 in October—and influenza was credited with 7 deaths.

Water Supply ran short in the middle of August, and a temporary supply was obtained from the Warmden Lodge, belonging to the Broad Oak Printworks. This, however, was discontinued, as the water was found to be "dangerous, and unfit for domestic consumption." The joint Authorities have not yet provided filters, and grave complaints have again been heard as to "the offensive smell and disagreeable taste of the water."

Sewerage, Scavenging, &c.—The alterations to the outfall works at Coppy Clough are now nearing completion. Mr. Naylor reported to the Ribble Watershed Committee—October, 1896—that "all the roughing filters have been filled with coke, and the main filters are being filled with finer filtering material. The arrangements for sludge pressing are also being proceeded with. Three rams are in position, and the air compressor, four precipitant mixers, two lime mixers for sludge, and three filter presses partly erected." The scavenging of the borough has been carefully looked after;

the pails and privy middens receive regular attention. During the year 140 pail closets have been converted to the waste-water system.

Sanitary Inspection.—A list is given of 195 factories and workshops inspected as to “ventilation, heating, lighting, water supply, closet accommodation, and drainage;” the Inspector also served notices fixing the number of persons to be employed in each room. Bakehouses (39) were examined, and due attention paid to the water supply, lighting, ventilation, and drainage. “Several sanitary defects were discovered, and immediate steps taken for the same to be remedied.” It is satisfactory to note that the whole of the dairies and cowsheds are regularly lime-washed, and kept in a cleanly state. Attention is also paid to the cleanliness of the dairy utensils. The abattoir was used for the slaughter of 2,225 beasts, 236 calves, 7,935 sheep and lambs, and 2,646 pigs. A large quantity of unwholesome food was seized and condemned, including 4 carcasses of pigs, 3 cows, 3 sheep, 4 boxes of herrings, 5 barrels of ray, 38 cod fish, 600 eggs, &c. The sanitary work shows great energy on the part of the officials; 3,714 houses were inspected, and 1,223 nuisances given in detail received notice. The following visits were made:—

Public abattoirs	...	...	...	104
Private slaughter houses	...	...	...	100
Lodging houses	...	...	...	115
Bakehouses	...	...	...	80
Noxious and offensive trades	...	...	...	312

The Inspector made 20 smoke observations, stoved 33 rooms, and disinfected 461 articles, &c.

The Medical Officer of Health repeats his recommendations made in 1895, viz.:—

- 1.—Systematic flushing of the sewers with large quantities of water, especially in the dry warm months of the year.
- 2.—The prevention of the passing of steam and hot water from factory boilers into the sewers.

3.—Provision of an Isolation Hospital for diseases other than small-pox.

4.—Provision by the Corporation of suitable common lodging-houses.

Adlington.—(Area in acres, 1,012; Estimated Population, 4,700). *Medical Officer of Health*, ALFRED E. MOLE, M.B.; *Salary*, £20.—Birth-rate 28·5, death-rate 13·6, zymotic rate 0·85, death-rate from phthisis 0·42, and from respiratory diseases 3·19 per 1,000 of population; rate of deaths under one year to 1,000 births 134.

Again the vital statistics show that the health of the district has continued very satisfactory. The death-rate was below the average, while the zymotic and phthisis rates compare favourably with previous years. Diphtheria (1), typhoid fever (2), and continued fever (1) represented the zymotic fatalities. Measles of a mild character prevailed from May to July, and postponed “the re-opening of the schools in the district for about a fortnight.” Slow progress is being made in respect of joint hospital provision.

Water supply is generally good, “but in some parts inadequate.”

Sewerage, Scavenging, &c.—Complaints have been heard during the year concerning the imperfect treatment of the sewage. The privy-middens continue to be “a great source of danger to the health of the neighbourhood.”

Sanitary Inspection.—The dairies and cowsheds are still without supervision, and the attention of the Council might with advantage be directed to this matter. The Inspector served 5 official notices, wrote 18 letters to owners respecting nuisances, and made many verbal complaints. No difficulty seems to have been encountered in getting sanitary work carried out.

Allerton.—(Area in acres, 1,585; Estimated Population, 930). — *Medical Officer of Health*, JOHN A. FISHER, L.R.C.P.E.; *Salary*, £20.—Birth-rate 26·8, death-rate 12·9, zymotic rate nil, death-rate from phthisis 1·07, and from respiratory diseases 2·16 per 1,000 of population; rate of deaths under one year to 1,000 births 120.

As compared with 1895 the birth-rate showed an increase of 4·3, while no change was observable in the death-rate. There was no fatality from the principal zymotic diseases, and only 5 cases—due to typhoid fever—were notified. Of these cases, 3 were removed to one of the Liverpool hospitals, and 2 remained at home.

Sanitary Inspection.—Systematic inspections are carried out, but owing to the character of the district few nuisances are required to be dealt with. The dairies, cowsheds, and milk-shops, and also the bakehouses, have been kept satisfactorily. The public sewers are systematically flushed, and six flushing tanks, of 1,000 gallons capacity, have been provided, “effluvium from the manholes and ventilators having been reduced to a minimum.” The officials of the Council now perform the emptying of ashpits, and readily dispose of the refuse to the farmers in the neighbourhood.

Ashton-in-Makerfield.—(Area in acres, 6,249; Estimated Population, 15,204).—*Medical Officer of Health*, NATHAN HANNAH, L.R.C.P.E.; *Salary*, £60.—Birth-rate 40·2, death-rate 19·6, zymotic rate 4·27, death-rate from phthisis 1·18, and from respiratory diseases 3·35 per 1,000 of population; rate of deaths under one year to 1,000 births 147.

As compared with 1895 the birth and death rates were reduced 6·8 and 2·2 respectively. There was a satisfactory diminution in the respiratory rate and in deaths of infants under the age of twelve months. The zymotic rate was very high, and exceeded last year by 1·18, and the previous decade

by 1·77. Measles was the chief contributor to the zymotic mortality, with 41 deaths under and 2 over five years of age. From June to the end of the year it prevailed epidemically. School closure was resorted to; printed instructions, drawn up by the Medical Officer of Health, were placarded throughout the township, and distributed from house to house. Information of the existence of measles was obtained from (a) death returns, (b) attendance officer and teachers, and (c) from enquiries by the sanitary officials, but no assistance seems to have been obtained, notwithstanding the alarming extension of the outbreak. Dr. Hannah recommends the propriety of instituting a modified system of notification of measles, but it ought not to be in substitution of membranous croup, as suggested by him. Scarlet fever spread extensively, giving rise to 89 cases and 6 deaths. Bryn Street seems to have been first affected; and from August to December, 20 out of a total of 22 patients suffering from scarlet fever were removed, and treated in the Isolation Hospital. No explanation is given why removal was not adopted more extensively throughout the year. Of the other principal zymotic diseases whooping cough and diarrhoea were each responsible for 8 deaths. The necessity of a suitable disinfecting apparatus is obvious if infectious disease has to be kept within reasonable bounds, and the Council should not delay in making this provision.

Water Supply.—The district is generally well supplied with water, but no attention is paid to Copper House Row and Stanley Mill, while at Highbrooks the inhabitants are practically without a supply.

Sewerage, Scavenging, &c.—Bryngate sewage is treated on the International system, but the major portion of sewage receives farm treatment. The refuse is taken to depôts, the contents of ashpits being mixed with “pail” contents, and sold as manure. The scavenging, in the hands of the Authority, is described as “very fair.” No attention is paid

to the unpaved yards, passages, courts, and back streets, notwithstanding repeated complaints.

Sanitary Inspection. — Insanitary property has been improved at Bryngate, North Street, and Edge Green Lane. Slaughter-houses, dairies, and cowsheds are inspected, and "generally found in good order." The factories and workshops also received attention. No smoke observations have been made. The Inspector reports that 410 nuisances were dealt with, including defective drains and gullies, 78; filthy houses, 48; defective roofage and spouting, 55; overcrowding, 11; 104 rooms were disinfected; rooms lime-washed, 25. It is very properly suggested that an exact record should be kept of the inspections undertaken in consequence of infectious disease notification. In most districts sanitarily cared for this information is available.

Ashton-under-Lyne Borough. — (Area in acres, 1,391; Estimated Population, 41,476).—*Medical Officer of Health*, W. H. HUGHES, M.R.C.S.; *Salary*, £130.—Birth-rate 29·2, death-rate 21·4, zymotic rate 2·0, death-rate from phthisis 2·16, and from respiratory diseases 4·99 per 1,000 of population; rate of deaths under one year to 1,000 births 167.

The vital statistics compare favourably with the preceding year. There was a satisfactory reduction in the death-rate, zymotic rate, and infant mortality. The most fatal of the infectious diseases was scarlet fever, which caused 270 cases of illness and 20 deaths. The insufficiency of Hospital Isolation accounted for the small number of patients (7) removed. No schools were closed. Whooping cough prevailed extensively, and gave rise to 18 deaths, while from typhoid fever 71 cases were notified, and 14 deaths; measles 4 deaths and diarrhœa 24 deaths, against 66 recorded in 1895. Although small-pox has not appeared

since 1888, the "neglect and indifference" shown by parents to vaccination must be viewed with alarm.

Water Supply is reported as "good."

Sewerage and Scavenging.—The question of sewage disposal is still under the consideration of the Authority. The scavenging as carried out by the officials is satisfactory. Several old ashpits have been replaced by water closets, notably in Oldham Road and North Street, and the closets of four of the public schools have been converted into trough closets. Altogether 129 conversions to the waste water system have taken place.

Sanitary Inspection.—Much attention has been paid to insanitary houses; 22 back-to-back houses in Hibbert's Court and Glebe Street have been made into through houses. Unfortunately there are many houses of this kind in different parts of the borough, and they are said to be "worn out and dilapidated, and altogether prejudicial to health." Bake-houses (18) have been kept in good sanitary condition, and slaughter-houses (30) are described as fairly satisfactory. Dr. Hughes hopes "that these will some day be done away with, and a public abattoir provided." The dairies, cowsheds, &c., have been inspected, but there is still a want of proper Regulations. Recent factory legislation has caused a great addition to the work of the department. The Factory Inspectors point out defects and insanitary conditions, which receive prompt attention. Of 20 samples analysed, under the Sale of Food and Drugs Act, one sample of milk was found to be adulterated, and a prosecution resulted in a fine of 16s. and costs. The average black smoke shows "an increase of 1·3, compared with the previous year." The total observations amounted to 720, but legal proceedings did not result. The present condition of the cemetery is considered insanitary; several complaints were made, and it is stated that when "a grave is opened for pauper burial the

corpse is placed in and only a few handfuls of clay are scattered over the coffin—just sufficient to hide it; the grave is then covered with a few planks, and so left to await a second burial, when the few handfuls of clay are repeated; and this goes on until the grave is filled up to within three feet of the surface.” The following summary is given of the nuisances taken in hand by the sanitary officials:—

	Defective drains.	Dilapidated ashpits and closets.	Drainage of ashpits.	Cleansing, &c., houses.	Disinfection.	Removal of pigs.	Smoke nuisance.	Overcrowding.	Insufficient closet accommodation.	Miscellaneous.	Total.
No. of nuisances reported in various Wards	200	217	84	68	309	5	2	2	9	274	1170
Market Ward.....	103	110	43	55	139	3	...	1	7	126	595
St. Michael's do.	38	35	14	6	30	2	1	1	1	55	183
Portland Place do.	27	23	19	4	56	...	...	...	...	33	162
St. Peter's do.	32	49	8	3	84	...	1	...	1	52	230
Notices served	200	217	84	68	309	5	2	2	9	274	1170
Nuisances abated...	200	209	80	68	309	5	2	2	9	274	...

Aspull.—(Area in acres, 1,905; Population (Census 1891), 8,952).—*Medical Officer of Health*, L. COOKE, L.R.C.P.; *Salary*, £25.—Birth-rate 36·7, death rate 18·7, zymotic rate 3·35, death-rate from phthisis 0·78, and from respiratory diseases 5·36 per 1,000 of population; rate of deaths under one year to 1,000 births 164.

As compared with the previous year, 31 more births were registered, equal to an increase in the rate of 3·5 per 1,000; and the death-rate was 3·0 higher as a result of the great accession to the deaths from zymotic and respiratory diseases. Measles and whooping-cough—credited with 11 deaths each—were more than usually fatal. The former broke out at New

Springs early in March, and school closure was adopted. The disease spread rapidly over Higher Gullet, Scot Lane, and Ratcliffe Road. Scarlet fever was the cause of 125 cases and 5 deaths. The localities invaded were those already attacked by measles. Although Aspull is said to be provided with satisfactory hospital accommodation, removal of not a single patient suffering from scarlet fever was effected. This is difficult to understand, for the majority of the Aspull houses are altogether unsuited for the treatment of an infectious disease like scarlet fever. Typhoid and continued fever gave rise to 18 cases and 2 deaths. In October, 8 of the typhoid cases occurred at Higher Gullet; three patients were removed to the Sanatorium and desirable improvements carried out in the vicinity of the infected dwellings.

Water Supply is described as good in quality, and the pressure in the mains has been improved.

Sewerage, Scavenging, &c.—Good progress has been made with the sewerage of this district, and the sewers were reported in December as having been connected with the Wigan Corporation Sewage Farm. Dr. Cooke suggests that the Inspector should examine all pipes and couplings with the sewers before being covered up. Unsatisfactory house drainage has been found out, “with the result that the pipes have been taken up and relaid.” Attention is drawn to the filthy condition of Ash Lane and the portion of Withington Lane between Spring Bridge and Top Lock. “These roads are in a perpetual puddle, and must be the means of retaining a large amount of matter injurious to health.” Conversion of the objectionable privy midden system to “water carriage” might be taken into consideration.

Sanitary Inspection.—It is satisfactory to learn that the cowsheds and dairies are likely to receive increased attention. The majority of farmers, although cleanly as to their dairies and utensils, have badly-built premises, which cannot readily

be put right. Frequent inspections have resulted in many minor nuisances being remedied without formal proceedings. "One hundred and thirty seven nuisances have been reported, and 136 abated; 52 houses have been fumigated, and the same number lime-washed and cleaned down; 29 ashpits have been built on the new principle. . . . The pollution of the brook behind Wigan Road has ceased, the sewage from the offending houses now being diverted into the main sewer."

Astley Bridge.—(Area in acres, 1,768; Estimated Population, 6,700).—*Medical Officer of Health*, ROBERT SETTLE, M.D.; *Salary*, £20.—Birth-rate 27·0, death-rate 15·6, zymotic rate 1·49, death-rate from phthisis 0·74, and from respiratory diseases 2·83 per 1,000 of population; rate of deaths under one year to 1,000 births 160.

The vital statistics are on the whole favourable, the death-rate being 2 per 1,000 less than in the previous year, the zymotic and respiratory rates also showing a satisfactory diminution. Whooping cough, with 5 deaths, had an extensive prevalence, and there was evidence of an excess of typhoid fever. Three deaths from the latter disease were recorded, and 20 cases came under notice, but as compulsory notification is not enforced in this district the difficulties encountered in staying the spread of epidemic disease are greatly increased. Typhoid fever occurred in Eden's Hollow, owing to "bad sanitary conditions and defects of personal cleanliness." Five cases broke out in one house in George Street, which Dr. Settle ascribes to milk supplied from an infected farm. Prompt action was taken to prevent the sale of the suspected milk, and the spread of the disease was curtailed.

Sewerage, Scavenging, &c.—Possibly owing to some accidental cause at the sewage works the samples taken of the effluents in September were not found to be satisfactory.

Scavenging is carefully carried out by the Authority. Refuse from slaughter-houses, fish shops, &c., is removed regularly and utilised as manure.

Sanitary Inspection.—Much attention has been paid to sanitary matters. Cowsheds and slaughter-houses have received visits, and complied with the Regulations. Four beasts were condemned and destroyed as unfit for food, but no legal proceedings followed. Drainage work and building operations required the Inspector's supervision.

Atherton.—(Area in acres, 2,269; Estimated Population, 15,000).—*Medical Officer of Health*, JAMES T. NEECH, L.R.C.P.E., D.S.Sc.; *Salary*, £50.—Birth-rate 39·8, death-rate 19·2, zymotic rate 3·86, death-rate from phthisis 0·86, and from respiratory diseases 4·0 per 1,000 of population; rate of deaths under one year to 1,000 births 135.

The death-rate shows a fractional increase as compared with the previous year, and the zymotic rate was above the average of the past five years. The phthisis and respiratory deaths were fewer than in 1895, and the infant rate was more favourable. Of the zymotic diseases, measles with 34 proved the most fatal. In the early part of the year it seriously attacked Chowbent, about the middle of February Hindsford became infected, while Howbridge was visited in July. The officials discovered the disease in 340 houses, and precautions were taken by excluding children from school in all cases, school closure, &c. Scarlet fever gave rise to 47 attacks and 3 deaths. Only 2 cases were removed to the hospital, and reliance had to be placed on home isolation and other precautionary measures. During March, diphtheria attacked 8 persons in Mealhouse Lane, while four cases appeared in various parts of the district, and had no connection with each other. Diarrhœa, the cause of 13 deaths, was not so prevalent as in the previous year. Dr. Neech believes that "improper feeding, inattention to the want of cleanliness, especially in the

case of hand-fed children, are undoubtedly important factors in the causation of this disease," and notwithstanding the spread of knowledge, mothers among the working class continue in ignorance regarding the bringing up of children. Typhoid fever contributed 33 cases and 5 deaths. Each infected house was visited, and sanitary defects remedied. "In one case the closet was found to be about four feet from the house." Whooping cough occasioned 3 deaths, in comparison with 17 attributed to the disease in the previous year. The Joint Hospital accommodation at Astley Hall is only temporary in character, and progress is being made to increase efficiency by the addition of new pavilions and alterations to the existing buildings.

Sewerage, Scavenging, &c.—The sewage is still treated at the Hindsford and Glass House works, and 12 months will elapse before the completion of the joint sewage scheme. The sewers are regularly flushed, and the nuisance which at one time arose from some of the manholes is said to have been remedied. The scavenging is carried out by the Authority, and gives satisfaction. During the emptying of, say 228 ashpits, the contents have to be deposited in the front streets, previous to being carted away. Pollution of the soil and air takes place, and the public health is endangered.

Sanitary Inspection.—Several houses, viz., Nos. 1 and 2, the Valley, and Nos. 1, 3, 12, 14, 23, and 29, Harrison Street, were closed as unfit for human habitation. Factories have been visited, and in four cases new and satisfactory closets have been provided. In all 59 nuisances were reported, of which 52 were abated after notice, and 7 remained unabated at the end of the year. The nuisances consisted of "defective closets, ashpits, sink pipes, drains, and untrapped gullies." Fourteen smoke observations were taken, and the responsible persons cautioned. Bakehouses and slaughter-houses received frequent visits, and on the whole were clean and well conducted. The only lodging-house in the district was on one

occasion the cause of complaint for overcrowding, but as a rule it is well conducted. Dairies and cowsheds have received attention, and several improvements in regard to lime-washing, cleansing, &c., have been effected.

Audenshaw.—(Area in acres, 1,165; Estimated Population, 6,890).—*Medical Officer of Health*, WILLIAM J. ALLKIN, L.R.C.P.E.; *Salary*, £20 (no claim).—Birth-rate 29·6, death-rate 18·8, zymotic rate 3·62, death-rate from phthisis 1·01, and from respiratory diseases 3·48 per 1,000 of population; rate of deaths under one year to 1,000 births 200.

The vital statistics do not compare favourably with previous years. The death-rate was fractionally higher than in 1895, and there was a marked increase in the zymotic mortality. The cause of the latter may be ascribed to the extensive prevalence of measles, which gave rise to 18 deaths. As usual, the cases attacked were, with two exceptions, under five years of age, and accounted in some degree for the exceptionally high infant mortality. School closure was generally adopted, in order to stay the progress of the epidemic. Scarlet fever occasioned 32 cases but no death, while diphtheria and membranous croup caused 4 deaths, typhoid fever 1, whooping cough 4, and diarrhœa 1. The Hospital at Hyde is said to be available for the purpose of isolation, yet not a single case was removed. No disinfecting apparatus has been provided.

Sewerage, Scavenging, &c.—In October the pollution of the Chorlton Brook by Audenshaw sewage was complained of, and the Chief Inspector of the Mersey and Irwell Watershed Joint Committee reported that, "although arrangements have been made whereby the sewage of the district will be dealt with by the Manchester Corporation and the Stalybridge and Dukinfield Outfall Sewerage Board, yet the Audenshaw

Council themselves have as yet taken no steps towards the carrying out of works for diverting the sewage from the brook, and it is of the utmost importance that this work should be carried out at once." An Order of Court was obtained against the Council, which expired on the 8th February, 1895, and the Committee now decided that an application be made for penalties. The scavenging is carried out by the Council's officers, and the refuse is conveyed to a "tip."

Sanitary Inspection.—It is stated that 74 nuisances were remedied, but no details are given. The appointment of a sanitary inspector seems to be "a matter which is very urgent." A Sub-Committee has been formed to consider the question, and it is hoped there will be no delay in making provision for the efficient inspection of the District.

Bacup Borough.—(Area in acres, 6,400 ; Estimated Population, 23,500).—*Medical Officer of Health*, J. BROWN, M.D., D.S.Sc. ; *Salary*, £80 (no claim).—Birth-rate 25·3, death-rate 19·1, zymotic rate 1·19, death-rate from phthisis 0·93, and from respiratory diseases 4·72 per 1,000 of population ; rate of deaths under one year to 1,000 births 211.

As compared with 1895 the birth-rate shows an increase of 2·2, while the death-rate continues exactly the same. The zymotic rate showed an increase of 0·51, due chiefly to those infectious diseases which attack early childhood, viz., whooping cough (12), diarrhœa (5), diphtheria (7). Scarlet fever caused 2 deaths, enteric fever 1, and measles 1. In reference to scarlet fever Dr. Brown states that "it is most desirable that provision should be made for Isolation Hospitals for other diseases than small-pox . . . either alone or conjointly with one or more adjoining Sanitary Authorities." Whooping cough, during October and November, showed great malignancy. No schools were closed, yet "children in the acute stages of the

disease have gone to the day schools, and others have taken the disease; and in at least one instance death followed." In March typhoid fever appeared. Suspicion rested upon a certain milk supply, which was at once stopped, and no fresh cases were reported. The infantile mortality, equal to 211 per 1,000 births, was exceptionally high. The Medical Officer of Health again takes the opportunity of recommending the adoption of the Infectious Disease (Notification) Act, and he reminds his Authority that "there is only one other borough in the County that has not adopted the Act."

Water Supply.—The filter beds are nearly completed; limestone is used in the filtering media, in order to increase the hardness of the water, and so reduce its action on lead pipes. "Many of the private water supplies are liable to surface pollutions in wet weather, and thus rendered unsafe for dietetic purposes; also in times of drought some run dry."

Sewerage, Scavenging, &c.—The main sewer has been completed, and in due course the house connections will be made. Scavenging by the Corporation officials is much more satisfactory. To encourage the adoption of waste-water closets, labour is provided free of charge, and the property owner has only to pay for the cost of material and appliances.

Sanitary Inspection.—The Chief Constable reports on the inadequacy of the lodging-house accommodation for tramps; he also reports that 170 farms are registered under the Dairies, Cowsheds, and Milk-shops Order, and on these premises are kept 1,400 head of cattle. The Inspector reports that "the smoke emitted from the various works within the borough has been an improvement on previous years." The time limit for smoke emission is ten minutes. He visited 137 houses and found them in fair condition, and all defective traps were attended to. Further details of the nuisances which came under his notice are not given. No inspection is made of factories or workshops.

Barrowford.—(Area in acres, 1,368; Estimated Population, 5,700).—*Medical Officer of Health*, F. E. DE BEEHO PIM, L.R.C.P.I.; *Salary*, £20 (no claim).—Birth-rate 22·4, death-rate 13·3, zymotic rate 1·40, death-rate from phthisis 0·54, and from respiratory diseases 2·45 per 1,000 of population; rate of deaths under one year to 1,000 births 156.

As compared with 1895 the birth-rate was reduced from 35·5 to 22·4, and the death-rate from 21·3 to 13·3. There was a slightly increased zymotic rate, while the deaths from respiratory diseases show a diminution of 2·88 per 1,000. Whooping cough, with 4 deaths, proved the most fatal of the infectious diseases. Membranous croup, enteric fever, and diarrhoea were each credited with 2 deaths. The Medical Officer of Health reports that on several occasions he found children in school from infected houses, and he very properly suggests that "if the teachers would insist upon having a note from either the medical attendant or from the Medical Officer of Health granting children from infected houses permission to return to school, the spread of infection would be thereby lessened considerably." The importance of this advice is so great that its observance should be insisted on by the Educational Authorities.

Sewerage, Scavenging, &c.—The main sewer is said to be complete, and the "contributory sewers and house drainage in hand." The scavenging is carried out by the officials of the Council. The excreta is deposited on farms, and the ashes taken to tip.

Sanitary Inspection.—The factories and workshops are reported as "sadly short of ventilation, and disinfectants are not used with any regularity." It is probable that with the assistance of the Factory Inspector sanitary improvements might be facilitated. Very little information is given with regard to the sanitary work carried out by the Inspector, and in future reports this defect might be remedied.

Billinge.—(Area in acres, 4,591; Estimated Population, 4,250).—*Medical Officer of Health*, RICHARD O. MATHER, L.R.C.P.E.; *Salary*, £30.—Birth-rate 31·0, death-rate 11·0, zymotic rate 1·17, death-rate from phthisis 2·35, and from respiratory diseases 0·94 per 1,000 of population; rate of deaths under one year to 1,000 births 98.

With the exception of the phthisis rate the vital statistics were of a satisfactory character. The death-rate was 11·0, and the deaths of infants under 1 year to 1,000 births was 98, as compared with 20·7 and 181 respectively in the previous year. The zymotic rate showed an increase, owing to 4 deaths recorded from diarrhœa. Relapsing fever gave rise to 1 death, and puerperal fever 1 death. Scarlet fever gave rise to 6 cases of illness, and enteric fever 3 cases, but all recovered. The Medical Officer of Health reports that "Billinge is without suitable hospital accommodation for infectious disease, and should an epidemic manifest itself, great difficulty to prevent its spread would be entertained," as neighbouring Authorities refuse to accept outside cases into their Infectious Hospitals. "A suitable disinfecting apparatus would greatly facilitate and ensure perfect disinfection." This deficiency, he trusts, will soon receive attention.

Water Supply.—Old quarry workings are used for storage purposes. "During the wet season there is a plentiful supply, which necessitates no mechanical labour; but in summer time the water has to be pumped into higher tunnels for the purpose of gravitation."

Sewerage, Scavenging, &c.—The sewers are well ventilated, and receive periodical flushing. The sewage is disposed of by broad irrigation, and nearly the whole of it becomes absorbed by the land. The emptying of ashpits is not satisfactory, as the work carried out in the daytime is "extremely disagreeable, and liable to propagate disease."

Sanitary Inspection.—Two of the dairy farms inspected were found to be without a sufficient water supply. The slaughter-houses and bakehouses are free from complaint. Most of the lodging-houses have been abandoned; only one now remains on the register, and it complies with the Regulations. The workshops have been looked after, and given satisfaction. The Inspector served 39 notices, and secured the abatement of nuisances without legal proceedings. “Much work has been done in the way of cleaning drains, repairing broken traps, lime-washing houses and shippens, without the serving of notices.”

Birkdale.—(Area in acres, 2,214; Estimated Population, 14,000). — *Medical Officer of Health*, A. V. WHEELER, L.R.C.P.E.; *Salary*, £60 (no claim). — Birth-rate 23·7, death-rate 12·0, zymotic rate 0·42, death-rate from phthisis 0·42, and from respiratory diseases 1·71 per 1,000 of population; rate of deaths under one year to 1,000 births 102.

The vital statistics are exceptionally favourable, and, to some extent, indicative of the continued attention paid to the maintenance of a high state of sanitation in this district. A low birth-rate was accompanied by a low death-rate (12·0). Zymotic diseases caused comparatively few deaths; infant deaths were less numerous than in the previous year; and the same may be said of phthisis and the ordinary pulmonary diseases. Scarlet fever was rather prevalent, and gave rise to 51 cases with 2 deaths. Diphtheria and membranous croup caused 6 cases and 2 deaths, measles 2 deaths, and diarrhoea 2 deaths. Small-pox was imported into the district at the beginning of the year, and attacked altogether three members of one family. Prompt removal to the Ducker Hospital had the effect of curtailing the spread of the disease. The Isolation Hospital was with advantage used for the treatment of 27 cases of scarlet fever and 2 cases of diphtheria. Dr. Wheeler

expresses a high opinion respecting the advantages of hospital isolation, and would like the home treatment of infectious diseases to entirely cease. He doubts the suitability of the present hospital site and the sufficiency of the accommodation to carry out isolation in all its details, and recommends the provision of a "new and larger Hospital in the near future, in order to provide efficiently for the growing need of the district."

Water Supply is stated to be plentiful, and supplied throughout the district by the Southport Waterworks Company.

Sewerage, Scavenging, &c.—The International system of sewage treatment is adopted, and the results are said to be satisfactory. The sewers are kept free from deposit, and regularly flushed. "The surface drainage is carried out to sea by a separate drain, and the arrangement is such that, if necessary, the main sewers can be flushed by the surface water." The street gullies are frequently inspected, and the scavenging is "efficiently carried out."

Sanitary Inspection.—There are no recognised lodging-houses. Slaughter-houses are regularly inspected, "a plentiful supply of flushing water is insisted upon, the houses lime-washed, and regular removal of all offal carried out." The Veterinary Surgeon and Inspector look carefully after the dairies, cowsheds, and milk-shops, and insist on the due carrying out of sanitary regulations with regard to cubical capacity, &c. The Inspector gives details of 102 nuisances, which were abated owing to his action; 36 notices were served, but no legal proceedings taken. Factories and workshops have been inspected and found satisfactory. Disinfection was conducted in a hot-air apparatus, and a quantity of bedding, clothing, and carpets was destroyed at the request of the Medical Officer of Health, and compensation paid.

Blackpool Borough.—(Area in acres, 3,495; Estimated Population, 36,638).—*Medical Officer of Health*, A. J. ANDERSON, M.B., D.P.H.; *Salary*, £350.—Birth-rate 25·6, death-rate 13·8, zymotic rate 1·52, death-rate from phthisis 0·76, and from respiratory diseases 2·64 per 1,000 of population; rate of deaths under one year to 1,000 births 145.

The gross death-rate was 17·19, and the rate amongst residents was 13·48, these rates being the lowest recorded since 1888. The highest rate (17·58) was attained in Talbot Ward, and the lowest (10·91) in Bank Hey Ward. As compared with the previous year there was a great improvement in the zymotic and infant death-rates. Of the zymotic diseases typhoid fever had a great fatality, giving rise to 66 notified cases and 13 deaths. During October the spread of the disease was most marked. Dr. Anderson calls attention to the danger of eating raw mussels, which may be infected with the typhoid bacillus obtained from sewage. He states that on the jetties of the central and north piers there is an extensive growth of mussels, and an incoming tide—especially with a wind from the south-west—is bound to carry the sewage of Blackpool over these molluscs. Action has been taken to prevent the visitors incurring the risk of infection from this source; and it is hoped the Corporation will consider the propriety of removing the sewer outfall from its present objectionable position. There was a great prevalence of scarlet fever, especially from August to the end of October, and altogether 208 cases were notified and 9 deaths. Measles caused much trouble, but of 148 cases which came to the knowledge of the sanitary officials, only 4 deaths took place. The disease was imported on several occasions, and spread among the scholars attending St. Cuthbert and other schools. Diarrhœa showed great severity in the production of 33 deaths, the other zymotic deaths being due—1 to diphtheria, 5 to membranous croup, and 8 to whooping cough. It is pleasing to note that the Isolation Hospital was more used by the public. “At one period of the year it was impossible to

take in all the cases that were willing to be removed, so that a selection had to be made; yet in spite of that, 77 per cent. of the scarlet fever cases were removed, as compared with 73 per cent. in 1895." Including in the cost of the Hospital the interest and sinking fund, the cost per week per patient was £1 4s. 9d.

Water Supply.—Obtained from the Fylde Company. Occasional turbidity is complained of, and the invariable presence of suspended vegetable matter—due to want of filtration. "The farms at Warbreck are still without a proper water supply, and in dry weather there is a very great scarcity of water in that neighbourhood."

Sewerage, Scavenging, &c.—The danger of discharging raw sewage in front of the town has already been mentioned in connection with typhoid fever. The rapid growth of the town in unsewered districts has necessitated the construction of cesspools, and the sewage has been with difficulty disposed of.

Sanitary Inspection.—The slaughter-houses—public and private—are systematically inspected. A large quantity of food, unfit for human consumption, has been destroyed, and certain carcasses slightly affected with tuberculosis have been "dressed" under supervision for the market. The Inspector—Mr. Macdonald—gives a detailed report of a large amount of work carried out in the Borough, including—

The application of 2,813 smoke tests to drains.

The inspection of factories and workshops 93

do. dairies and cowsheds ... 408

do. bakehouses ... 298

do. slaughter-houses ... 775

do. common lodging-houses 239

The Council issued 264 notices for the abatement of nuisances, and, in addition, the Inspector wrote 91 letters and served 737 preliminary notices. Legal proceedings were taken in 16 cases relating to unsound food or nuisances, and, as a result of 45 analyses under the Sale of Food and Drugs Act, 9 samples—8 spirits and 1 milk—were certified as adulterated, and legal action followed.

Blackrod.—(Area in acres, 2,388; Estimated Population, 3,700).—*Medical Officer of Health*, H. SMITH, M.R.C.S.; *Salary*, £20.—Birth-rate 33·2, death-rate 11·3, zymotic rate nil, death-rate from phthisis 0·54, and from respiratory diseases 4·86 per 1,000 of population; rate of deaths under one year to 1,000 births 89.

As compared with 1895 there was an increase in the birth-rate equal to 6·1, and a decrease in the death-rate of 3·1 per 1,000. The infant mortality was much below the average of previous years, and although scarlet fever gave rise to 12 cases of illness, diphtheria 2, and continued fever 8 cases, not a single death took place from these diseases. When a case is notified, the Medical Officer of Health and Inspector pay a visit to the infected premises for the purpose of investigation, and putting into operation precautionary measures. Disinfectants are used freely, but there is neither hospital nor disinfecting apparatus available.

Water Supply.—This continues abundant, and highly satisfactory in quality.

Sewerage, Scavenging, &c.—The sewage is dealt with by filtration and irrigation. The large area of land, 80 acres in extent, as a rule, absorbs the whole of the sewage. The scavenging is stated to be better carried out than in former years. The refuse is tipped, little being used for agricultural purposes.

Sanitary Inspection.—Bakehouses and slaughter-houses are reported as satisfactory; the dairies and cowsheds were found to be in a fairly good condition, but lime-washing was required in a few instances. The usual Regulations under the Local Government Board Order have not yet been adopted. The food supply has continued to be high-class in quality. The Inspector served 82 notices, and secured the abatement of 65 nuisances. No legal proceedings were instituted.

Brierfield.—(Area in acres, 1,051 ; Population (Census, 1891), 5,888).—*Medical Officer of Health*, THOMAS DEAN, M.D. ; *Salary*, £7 10s. (no claim).

This is the only District Council in the Administrative County which has not supplied a Health Report ; a sufficient reason being that no such document exists. Since July, 1886 (eleven years ago), the Medical Officer of Health has not been paid his salary, and in 1891 he compiled his last Annual Report ! It would be interesting to know whether such an unsatisfactory condition of things meets with the approval of the Local Government Board.

Carnforth.—(Area in acres, 1,459 ; Estimated Population, 2,700).—*Medical Officer of Health*, EDWARD S. JACKSON, M.B. ; *Salary*, £20.—Birth-rate 29·6, death-rate 9·6, zymotic rate 0·74, death-rate from phthisis 1·85, and from respiratory diseases 0·74 per 1,000 of population ; rate of deaths under one year to 1,000 births 62.

The death-rate was very favourable, being only 9·6, or 5·2 below the rate recorded in 1895. From the zymotic class of disease two deaths occurred, due to whooping cough. Notifications, however, were received concerning 2 cases of diphtheria and 3 cases of enteric fever. The former was supposed to arise from the retention of sewage in an imperfect tank, and the latter to impure well water.

Sanitary Inspection.—The sewage flows into a tidal stream after passing through settling tanks. Slaughter-houses and bakehouses are reported as satisfactory. No inspection is made of the dairies and cowsheds, and Regulations under the Local Government Board Order have not yet been framed. Again I have to call attention to the want of information concerning the work carried out by the Inspector.

Castleton.—(Area in acres, 2,665; Estimated Population, 6,700).—*Medical Officer of Health*, W. H. SHARPLES, M.R.C.S., D.P.H.; *Salary*, £30.—Birth-rate 19·4, death-rate 13·5, zymotic rate 1·94, death-rate from phthisis 0·44, and from respiratory diseases 4·47 per 1,000 of population; rate of deaths under one year to 1,000 births 146.

The birth and death rates continue low, and differ only slightly from the rates recorded in 1895. There was an increase in the zymotic rate, due to measles, which gave rise to 7 deaths. The respiratory rate was also higher, but there were fewer deaths from phthisis. Scarlet fever caused 25 cases and 2 deaths. The disease prevailed from the beginning of the year to the end of September. For 7 scarlet fever cases hospital isolation was secured at the Marland Hospital; and also for 1 case of modified small-pox. Diphtheria and membranous croup contributed 2 deaths, diarrhoea 2, and whooping cough 1 death. In the Marland Hospital, belonging to the Rochdale Corporation, 17 deaths, not belonging to Castleton, took place, viz., 12 from scarlet fever, 2 typhoid, 1 small-pox, 1 diphtheria, and 1 from measles.

Water Supply from the Rochdale reservoirs; said to be "very good."

Sewerage, Scavenging, &c.—All drains are being connected with the main sewers. The new sewage works provide for precipitation, filtration, and land treatment. Scavenging reported as satisfactory.

Sanitary Inspection.—Inspections were made of all the houses in which infectious disease occurred. The slaughter-houses, three in number, have also been regularly visited; and the dairies and cowsheds in the district have all been inspected, and a special report issued by the Sanitary Inspector and Medical Officer of Health as to their sanitary condition and cubic capacity. Twenty-eight notices were served for the abatement of nuisances, and further legal action was not found to be necessary.

Chadderton.—(Area in acres, 3,080; Estimated Population, 24,500).—*Medical Officer of Health*, HAROLD ASHTON, L.R.C.P.; *Salary*, £65 (no claim).—Birth-rate 29·4, death-rate 18·7, zymotic rate 2·12, death-rate from phthisis 1·18, and from respiratory diseases 4·12 per 1,000 of population; rate of deaths under one year to 1,000 births 165.

As compared with 1895 the birth-rate was increased 1·4, and the death-rate showed a fractional decrease. The zymotic and respiratory rates were higher, while there was a satisfactory diminution in the deaths of infants under the age of 12 months. Scarlet fever prevailed throughout the year, but mostly from May to December. The outbreak was first observed in South Ward, and spread through Central to North Ward. The disease gave rise to 172 cases of illness and 11 deaths. Measles spread widely, and occasioned 11 fatalities. No particulars are given as to the action taken to curtail the epidemic; advantage was not taken of school closure in the case of measles or scarlet fever, although the latter disease "is carried from child to child, oftenest being caught in school." Diarrhœa caused 9 deaths, and whooping cough 19 deaths! Two cases of small-pox occurred, but, owing to the prompt removal and other precautions taken, the further spread of infection was prevented. Unfortunately an Isolation Hospital has not yet been provided for infectious diseases other than small-pox; nor has the apparatus already purchased been made available for disinfecting purposes. In 1894 a Joint Hospital Committee was formed, under the Isolation Hospitals Act, and it is hoped that action will be taken to complete the accommodation required for the isolation of all infectious diseases.

Sewerage, Scavenging, &c.—Fair progress has been made with regard to the construction of main sewers and outfall works, and it is expected that in the course of a few months the sewage will be dealt with. Scavenging is carried out by

the Authority, the night-soil being used on land, and the ashes tipped.

Sanitary Inspection.—Very little information is given with respect to the sanitation of the district. Dairy farms, slaughter-houses, bakehouses, &c., seem to be visited, but details are wanting as to their condition. No proper inspection of workshops takes place, attention being confined to “mill lodges only.” In a district like Chadderton the supervision of places in which people work ought not to be neglected. By Section III. (2) Factory and Workshops Act, 1891, in respect to workshops: “A sanitary authority and their officers shall, without prejudice to their other powers, have all such entry, inspection, taking legal proceedings, or otherwise, as an Inspector under the principal Act.” The Inspector served 109 notices, but no details are given. Smoke observations are now seldom, if ever, taken.

Childwall.—(Area in acres, 786; Estimated Population, 208).—*Medical Officer of Health*, HENRY HARVEY, M.B.; *Salary*, £20.—Birth-rate 24·0, death-rate 4·8, zymotic rate 4·8, death-rate from phthisis nil, and from respiratory diseases nil per 1,000 of population; rate of deaths under one year to 1,000 births 200.

Five births were registered, and only 1 death, being that of a child 6 weeks old, who died of whooping cough in January. With the exception of a few cases of whooping cough in the early part of the year, there has been a singular freedom from infectious disease.

Sanitary Inspection.—The scavenging is fairly well looked after, and the refuse is placed on the land. Only one dairy farm requires supervision. Dr. Harvey observes that notwithstanding frequent reports nothing has been done to improve the sanitary condition and surroundings of six cottages situate at the rear of Childwall Hall. It has also been my duty, on more

than one occasion, to call attention to the condition of these picturesque but insanitary cottages, and I have reason to believe that the agent of the noble owner has been repeatedly communicated with on the subject; so far no action of a satisfactory character has been taken, and I therefore ask the Childwall Council to obtain the closure of these dwellings under Section 32 of the Housing of the Working Classes Act, 1890. The Medical Officer of Health would like the Council to undertake "the erection of suitable working men's cottages under the powers conferred by recent Acts of Parliament." The drainage into cesspools is reported as not objectionable, owing mainly to the nature of the water supply, and the sparse population.

Chorley Borough.—(Area in acres, 3,614; Estimated Population, 25,700).—*Medical Officer of Health*, JAS. A. HARRIS, M.D., Lond.; *Salary*, £40 (no claim).—Birth-rate 32·2, death-rate 22·6, zymotic rate 2·37, death-rate from phthisis 1·08, and from respiratory diseases 4·51 per 1,000 of population; rate of deaths under one year to 1,000 births 217.

The vital statistics, although somewhat more favourable than in 1895, yet "leave room for much improvement." The birth-rate, which continues to decrease, was 2·7 below the average of the preceding five years. The death-rate was higher than usually recorded among urban populations. It was, however, 1·2 less than in 1895, but exceeded the average for the preceding quinquennium by 0·61. The zymotic rate was 2·37, as compared with 3·09 in the previous year; and the phthisis and respiratory rates showed a slight diminution. The infant rate was, however, excessive, and, as Dr. Harris observes, 57 infants have died in Chorley during the year who would have been still living if the infantile mortality in the borough had not been above the average of that throughout the country. Among the zymotic diseases measles proved unusually prevalent; of the 19 fatalities 18 were of children under five

years of age. Whooping cough and typhoid fever contributed 12 deaths each. With respect to the latter it is stated that no common cause, such as contaminated water or milk supply, could be ascertained; and in East Ward the largest number of cases (21) occurred. Scarlet fever commenced in January, and continued throughout the year; 60 cases and 6 deaths were recorded. Membranous croup had also an undue prevalence to cause so many deaths (13). The diarrhoea deaths (10) were below the average. Some delay has taken place with respect to the provision of a Joint Isolation Hospital, but there is now evidence of substantial progress being made.

Water Supply is obtained from the Liverpool Corporation.

Sewerage, Scavenging, &c.—The sewage treatment seems to have given satisfaction, and, owing to the representation of the Ribble Joint Committee, a tank has been constructed to deal with the "sand washings." The tanks at Heapy Road are almost completed, and a small plot of land is now being used for filtering the effluent. Sewering of new streets, &c., has made much progress. The Corporation has decided to adopt water carriage in preference to the pail system, and the Local Government Board has been asked to give power by Provisional Order for carrying such decision into effect. During the year 76 pail closets were converted into water closets. The Medical Officer of Health hopes that the conversion will take place speedily, so that "the objectionable practice of emptying large quantities of excreta at once into the sewers, in a populous neighbourhood," will be abolished, and the heavy expenditure of the pail collection done away with.

Sanitary Inspection.—Frequent visits have been made to the slaughter-houses, and carcasses of the following animals have been condemned as unfit for human food, viz., cattle 12, sheep 3, pigs 15, the weight destroyed being 6,059 lbs. The Inspector fumigated 112 infected houses, and 1,572 articles of clothing passed through the disinfectant. Legal proceedings

were taken in 30 cases, viz., 28 for chimney firing, 1 for breach of Lodging-house Act, and 1 for exposing for sale carcase of pig unfit for food. No information is given with respect to the inspection of workshops, and no action seems to be taken against the producers of black smoke. The following nuisances were taken in hand and remedied: defective house drainage 106; filthy or defective yards, passages, closets, &c., 100; stables, shippens, and dairies, defective as to drainage, ventilation, &c., 22; pigs and poultry kept under insanitary conditions 36; other nuisances 63. In addition, 32 cesspools were altered to earth or water closets, 24 slopstone pipes were disconnected from the sewers, &c.

Church.—(Area in acres, 528; Estimated Population, 6,400).

—*Medical Officer of Health*, HY. WORSLEY, M.B.; *Salary*, £20.—Birth-rate 25·4, death-rate 12·8, zymotic rate 0·93, death-rate from phthisis 0·93, and from respiratory diseases 2·80 per 1,000 of the population; rate of deaths under one year to 1,000 births 128.

Dr. Worsley reports a diminution in the birth-rate equal to 4·4 per 1,000 as compared with 1895, and also an extremely low death-rate (12·8). The zymotic rate was 0·93 and the infant rate 128, against 4·28 and 265, the respective rates of the previous year. The zymotic fatalities were due 6 to typhoid fever and 4 to diarrhœa, while scarlet fever was responsible for 41 cases but not a single death; this disease appeared at various times throughout the year, but principally during September, October, and November. Hospital isolation could not be carried out, but the mixing of infected children with the healthy was prevented as far as possible.

Water Supply.—Filtering beds are being provided, and the water, said to be fairly good, is still obtained from a gathering area more or less cultivated.

Sewerage, Scavenging, &c.—The joint sewage works at Coppy Clough have been improved as regards filtering beds, and it is expected that when completed an improvement in the character of the effluent may be expected. "Scavenging is now very effectually undertaken by the Authority. The conversion of closets continues, the number converted this year being 144." Many streets have been paved and sewered; the following streets are mentioned as wanting attention in this direction, viz.:—Water Street, Kershaw Street, Canal Street, Bradley Street (front and back), Pickles Street, and Blackburn Road.

Sanitary Inspection.—Slaughter-houses have been found as a rule in a satisfactory condition. Cowsheds are "fairly well kept," and in one case a nuisance was promptly remedied. It is satisfactory to note that the inspection of factories and workshops has resulted in the improvement of several defective closets. The Inspector made 6 smoke observations, but served only 1 notice. Altogether 140 notices were issued for the abatement of 136 nuisances; in two instances legal proceedings had to be taken.

Clayton-le-Moors.—(Area in acres, 1,058; Estimated Population, 8,200).—*Medical Officer of Health*, L. TATTERSALL, M.R.C.S.; *Salary*, £25.—Birth-rate 27·0, death-rate 15·2, zymotic rate 1·21, death-rate from phthisis 0·73, and from respiratory diseases 3·29 per 1,000 of population; rate of deaths under one year to 1,000 births 157.

The vital statistics presented by Dr. Tattersall are generally satisfactory and favourably compare with the previous year, owing chiefly to the absence of fatalities from whooping cough and diarrhœa, which in 1895 caused 10 and 8 deaths respectively. The zymotic rate was 2·29 less per 1,000. Scarlet fever had considerable prevalence in March, June, and November; altogether 68 cases were notified and 3 deaths; to curtail

this disease unfortunately there is neither hospital nor disinfecting apparatus available. Typhoid fever and continued fever caused 5 deaths, diphtheria and membranous croup 4, and measles 1 death. With respect to typhoid fever, the Medical Officer of Health reports that enquiries into drainage and surroundings of houses produced negative results, and "endeavours to trace the original source also proved futile." The usual sanitary precautions were taken, viz., isolation, disinfection, destruction of bedding, and the careful disposal of excrementitious matters.

Water Supply is described as adequate and of fair quality generally. The presence of vegetable matter, &c., mentioned in previous reports depreciates its character, and Dr. Tattersall recommends that "all persons during summer should avoid drinking water, except boiled or filtered."

Sewage, Scavenging, &c.—The sewage works are approaching completion; at present the sewage is allowed to flow into the river. The drainage of the district is considered ample for its present requirements. The scavenging is undertaken by the Authority with satisfactory results.

Sanitary Inspection.—Notices have been served for the improvement of sanitary conditions and closet accommodation of workshops. Certain paperworks on the borders of the district are complained of as causing a serious nuisance "from the incomplete combustion of noxious vapours." The Inspector served 43 notices for nuisances, which were remedied without taking legal action. Smoke observations are taken, and supervision exercised over dairies and cowsheds, although the Regulations under the Order of the Local Government Board have not been adopted by the Urban Council. Slaughterhouses are inspected and kept in fair condition, but a public abattoir is suggested as more suitable for the slaughter of animals and the carrying out of sanitary regulations.

Clitheroe Borough.—(Area in acres, 2,375; Estimated Population, 11,750).—*Medical Officer of Health*, JOHN J. FRASER, M.R.C.S.; *Salary*, £40.—Birth-rate 26·0, death-rate 17·9, zymotic rate 2·12, death-rate from phthisis 0·85, and from respiratory diseases 2·38 per 1,000 of population; rate of deaths under one year to 1,000 births 150.

The birth-rate was 26·0 per 1,000, as compared with 29·5 in 1895, and an average of 31·5 for the previous 21 years. The death-rate was 6·9 less than last year, and there was also a reduction of 4·31 in the zymotic rate, and 1·88 in the respiratory rate. The infant rate corresponded very closely with the average of the previous 21 years, and showed a diminution of 47 as compared with 1895. Measles and whooping cough continued their ravages from the previous year, and occasioned 8 and 11 deaths respectively. Typhoid fever caused 2 deaths; five cases occurred in one family at Low Moor, and in this instance the disease was apparently contracted at Morecambe, and “probably obtained an entrance into the body of the first victim during the act of eating raw mussels picked up on the shore.” Of the other principal zymotic diseases diarrhœa alone proved fatal with 4 deaths. An Isolation Hospital is wanting as well as disinfecting apparatus.

Water Supply is described as adequate and of excellent quality.

Sewerage, Scavenging, &c.—“The work involved in the new sewage scheme continues to progress with reasonable rapidity, and about a third of the inhabited houses are now connected with the main sewer.” Water carriage is gradually supplanting the “pails,” which in course of collection occasion much nuisance.

Sanitary Inspection.—Complaint is made of the large amount of unpaved or imperfectly paved streets. The house accommodation is satisfactory, with the exception of 300 back-to-back dwellings. The Inspector, who had no occasion to

issue legal notices, secured the abatement of 110 nuisances, including 17 disconnections of slop pipes, the opening and repair of 34 choked drains, &c. Thirty-three houses emptying slop water into an open ditch were connected with the sewers, &c. There has been supervision exercised over bakehouses, slaughter-houses, dairies, and cowsheds.

Coine Borough.—(Area in acres, 5,330; Estimated Population, 23,000).—*Medical Officer of Health*, W. LYONS LOVETT, L.R.C.P.E.; *Salary*, £40.—Birth-rate 29·1, death-rate 18·3, zymotic rate 3·65, death-rate from phthisis 1·56, and from respiratory diseases 4·30 per 1,000 of population; rate of deaths under one year to 1,000 births 160.

As compared with 1895 there was a decrease of 2·9 in the birth-rate, and 1·8 in the death-rate. The zymotic rate was raised from 2·4 to 3·65, while the phthisis and respiratory rates showed a satisfactory reduction. Measles proved unusually fatal, and occasioned 52 deaths, against 1 in the previous year. In February there was only 1 death; October, 2; November, 6; and December, 43. Towards the end of the year the disease assumed alarming proportions, and the Medical Officer of Health advised the closure of all the Sunday and day schools in the borough for a period of six weeks—from November 28th, 1896, to January 11th, 1897. This action had a good effect, and assisted with the other precautionary measures to curtail the epidemic. Whooping cough in the early part of the year prevailed extensively, and gave rise to 12 deaths. Scarlet fever was more or less distributed throughout the year, and contributed 116 cases, with 9 deaths. Enteric fever caused 16 cases and 4 deaths, and diarrhœa 7 deaths. It is satisfactory to observe that although membranous croup was notified in 10 instances not a single fatality resulted. Action is being taken for the provision of an isolation hospital for small-pox, and the Medical Officer of Health hopes the Council will see the advisability of soon erecting an ordinary infectious disease hospital, and that proper disinfecting apparatus will soon be procured.

Water Supply is stated to be "good."

Sewerage, Scavenging, &c.—Improvements have been effected at the sewage works. The precipitation and sludge pressing arrangements are now satisfactory, and the irrigation area has been remodelled. Further work is in contemplation. The scavenging is satisfactorily carried out by the Corporation. In order to get rid of the refuse it is proposed to erect a two-cell destructor.

Sanitary Inspection.—Great energy has been shown in this department. Slaughter-houses have formed the subject of a special report, and Mr. Sugden, the Inspector, after calling attention to several deviations from the bye-laws, states that the majority of the slaughter-houses are situate in a thickly-populated district, and "only separated from adjoining property by a street 8 to 4 feet wide, and are therefore difficult of access." Bakehouses, lodging-houses, dairies, and cowsheds are periodically visited, and free from complaint. A carefully drawn-up report on the condition of the factories and workshops has been submitted to the Health Committee, and the sanitary defects observed no doubt will receive prompt attention. Altogether 262 notices were served for the following nuisances:—

Defective waste water-closets	58
Slopstone drains blocked and defective .	49
Filthy premises	17
Defective privies and ashpits	56
River pollution	17
Defective cesspools	7
Filthy slaughter-houses... ..	5

&c., &c.

Privy middens converted into w.c.'s numbered 40. A fish dealer was summoned before the magistrates for exposing for sale unsound fish, and fined 40s. and costs.

Crompton.—(Area in acres, 2,864; Estimated Population, 13,500).—*Medical Officer of Health*, WILLIAM BROOKE, M.A., M.D.; *Salary*, £60.—Birth-rate 26·7, death-rate 17·9, zymotic rate 2·44, death-rate from phthisis 1·25, and from respiratory diseases 3·18 per 1,000 of population; rate of deaths under one year to 1,000 births 232.

Although the death-rate was 1·9 less than in 1895, the deaths of infants under the age of 12 months were excessive, and equal to 232 per 1,000 births. The zymotic rate was above the average, and due chiefly to the large numbers of fatalities from measles (20). The spread of the disease must have been extensive, but information on this point, attainable by house-to-house visits, &c., does not seem to have been obtained. The Medical Officer of Health reports that “the sanitary authority would willingly have adopted any reasonable precautions to limit the spread of the epidemic, but no practicable one could be suggested.” In the majority of districts the aggregation of children at school is mentioned as the cause of measles being distributed, and the effect of closure has proved beneficial. Until some better remedy can be suggested perhaps it is well to follow the beaten track marked out by experienced sanitarians. Scarlet fever gave rise to 33 cases, with only 1 fatality. The disease was mild in character, and not confined to one locality. Typhoid fever occasioned 8 cases and 1 death; eating contaminated food and sanitary defects were supposed to have been the cause of 3 attacks. The other principal zymotic deaths were attributed to whooping cough 7, and diarrhœa 4. Small-pox attacked 4 persons (2 unvaccinated)—February, 1, March, 1, and July, 2. The indifference to vaccination in this district causes much anxiety to the officials when small-pox demonstrates its presence. The whole of these cases were promptly removed to the joint isolation hospital at Cinder Hill. Further hospital accommodation is much wanted for the isolation of “ordinary” infectious diseases.

Water Supply is obtained from the Oldham Corporation.

Sewerage, Scavenging, &c.—The works recently completed for the treatment of sewage have not produced satisfactory effluents, according to Sir Henry Roscoe's analyses in July. The officials of the Council carry out the scavenging, and the refuse is "tipped in various places."

Sanitary Inspection.—The Medical Officer of Health draws attention to the existence of many insanitary houses—for instance, Vale Houses reported as "unfavourably situated," and "hardly fit for human habitation." As these houses have been affected with diphtheria, it would be better to close them until made perfectly safe for habitable purposes. Dairies and cowsheds are inspected, but bye-laws under the Local Government Board Order have not been framed by the Authority. Slaughter-houses receive satisfactory mention, except in 2 instances. There is no report of the action taken with respect to workshops under the Factory and Workshops Act, 1891, &c. It is hoped that this important duty will receive attention. The Inspector served 38 notices for the abatement of various nuisances, the outcome of 165 visits. The sewerage and paving of new streets go on, and each year adds "some small improvement."

Croston.—(Area in acres, 2,162; Estimated Population, 2,145).—*Medical Officer of Health*, ALFRED DUCKWORTH, L.R.C.P.E.; *Salary*, £20.—Birth-rate 27·0, death-rate 14·9, zymotic rate 0·46, death-rate from phthisis 0·93, and from respiratory diseases 2·33 per 1,000 of population; rate of deaths under one year to 1,000 births 137.

Dr. Duckworth presents a satisfactory report on the health of the district during the past year. With a diminution in the number of births there was a slight reduction in the death-rate. Of the principal zymotic diseases scarlet fever alone gave rise to 1 fatality. This disease was responsible for 10 cases of illness, and these, with 1 case of membranous croup, represented the total notifications received. No arrangement

has yet been made for the hospital isolation of infectious disease, or for securing efficient disinfection.

Water Supply is described as "fairly satisfactory."

Sewerage, Scavenging, &c.—Unfortunately the sewage difficulty is still unsolved; on the 8th of October, the Council was proceeded against in the County Court, Chorley, for non-compliance with the Order of Court made on the 22nd February, 1893, and his Honour Judge Coventry inflicted a penalty of £114 and costs.

Sanitary Inspection.—The dairies and cowsheds continue to be without any supervision, and it is unfortunate that the Council should ignore the carrying out of a duty so important. The bakehouses and slaughter-houses are considered satisfactory. The Inspector secured the abatement of nuisances which came under his observation on verbal notice.

Dalton-in-Furness.—(Area in acres, 7,223; Population (Census, 1891), 13,300).—*Medical Officer of Health*, G. H. PATTERSON, M.R.C.S.; *Salary*, £50.—Birth-rate 26·6, death-rate 14·7, zymotic rate 1·20, death-rate from phthisis 0·90, and from respiratory diseases 2·70 per 1,000 of population; rate of deaths under one year to 1,000 births 127.

The death-rate, although low, was 1·4 higher than in the previous year, and there was a diminution in the birth-rate equal to 5·0 per 1,000. The zymotic and respiratory rates were satisfactory, and the same may be said of the infantile rate. Of infectious diseases whooping cough, with 11 deaths, proved most fatal. Typhoid fever gave rise to 10 cases and 1 death; in many instances the disease originated in defective drainage, or some form of filth nuisance. Scarlet fever occasioned 26 cases and 1 death, diphtheria 1 death, and diarrhœa 3 deaths. Small-pox appeared in May, and before the outbreak was suppressed 11 persons were attacked. Fortunately High Carley Hospital was placed at the disposal of the Council by

the Ulverston Guardians, for the isolation of the patients, and no doubt largely contributed to the curtailment of a disease which at one time threatened to assume alarming proportions.

Water Supply has been generally "of sufficient quantity and good quality." At Paradise, in the Ireleth district, the water to 10 cottages is "subject to serious pollution."

Sewerage, Scavenging, &c.—The sewers have been on the whole satisfactory, but on two occasions, in the early autumn, when the downfall of rain was unprecedented, the low lying parts of Dalton were flooded. Newton is still undrained, although 10 years ago the Board had before them plans and estimates "with a view to carrying out a thorough system of drainage in this village." No complaint is made as to the character of the scavenging or refuse removal.

Sanitary Inspection.—The dairies and cowsheds are under supervision, but unfortunately there is no regulation in force as to the amount of cubic space required for each animal. Bakehouses, slaughter-houses, and lodging-houses have complied with the bye-laws in a satisfactory manner. The workshops have also passed a careful inspection. The abatement of nuisances on 78 premises necessitated the service of 66 notices by the Inspector, who supplies details of the work carried out.

Darwen Borough.—(Area in acres, 5,919; Estimated Population, 36,652).—*Medical Officer of Health*, F. G. HAWORTH, M.B., D.P.H.; *Salary*, £120.—Birth-rate 28·1, death-rate 17·1, zymotic rate 2·04, death-rate from phthisis 0·79, and from respiratory diseases 3·71 per 1,000 of population; rate of deaths under one year to 1,000 births 181.

The birth-rate was 28·1 as compared with 31·3 in 1895, and an average of 30·2 for the preceding 15 years. The death-rate was 0·6 lower than last year and 1·2 below the average of

the 10 years (1886-95). Zymotic deaths, although somewhat fewer than in 1895, gave a rate corresponding exactly with the average of the past decade. Whooping cough proved the most fatal of the principal zymotic diseases and occasioned 28 deaths against 3 in the preceding year. Diarrhœa caused 18 deaths, and measles indicated its presence by 14 fatalities, being 27 less than in the previous year. Of 139 notified cases of scarlet fever 5 terminated in death, and it is interesting to note that 54 per cent. of the attacks occurred in South East Ward. The disease is said to have been carried from house to school and thence to other houses in various parts of the town. As in former years, the Sanitary Committee continue loth to take advantage of hospital isolation in dealing with infectious disease, and it is a pity that in the early stage of the scarlet fever outbreak "it was considered too premature to burden the hospital with patients and the town with expense." As Dr. Haworth points out, it is only by isolation in hospitals of the *first cases* and thorough disinfection that epidemics are prevented, and thus frequently may be saved "a lot of suffering, expense, &c., and probably many lives." Attempts to secure rigid home isolation of cases of typhoid or scarlet fever in the ordinary-class houses, or in such houses as mentioned in pages 40 to 43 of the Report, are well nigh hopeless. As measures of precaution Sandhills and Belgrave Schools were closed 3 weeks during March for measles. In April the infant department of Culvert School was closed for whooping cough, and again in September the whole of the school was closed for a period of six weeks, owing to the prevalence among the scholars of scarlet fever and measles.

Sewerage, Scavenging, &c.—The precipitation tanks and 8 filters—3 polarite and 5 coke—have been completed and put into operation. The scavenging as carried out by the Corporation gives satisfaction; 6,929 loads of excrement have been removed to various farms, and 13,236 loads of ashes, &c., "tipped."

Sanitary Inspection.—Factories and workshops have received 230 visits, and full details are given as to their condition. It was necessary to serve the following notices:—4 to limewash and cleanse, 3 insufficient ventilation, and 1 insufficient closet accommodation. The temporary lodging-house (old workhouse) has been found in a fairly clean condition. A new model lodging-house, recently erected according to the designs of Mr. Wm. Stubbs, has also been opened. Bakehouses and slaughter-houses—one private and the public abattoir—are without complaint. The following unwholesome food was seized:—500 pounds of beef, 40 pounds of black currants, and 7 pounds of haddock, and one prosecution was instituted “for hawking unsound haddock which had been taken from dustbins,” the result being a fine of 10s. and costs. Forty smoke observations were taken, 13 of which exceeded the limit of 15 minutes. The Inspector hopes for little mitigation of the smoke nuisance with so high a limit. A large amount of sanitary work has been carried out, including the inspection of 3,421 houses, with the discovery of 1,508 nuisances. Altogether 1,291 legal notices were served, and 2,503 re-inspections made. Resulting from the inspection of the dairies and cowsheds 36 notices were served—14 want of light and ventilation, 3 tank under floors, defective drainage 3, and miscellaneous nuisances 16.

Denton.—(Area in acres, 2,593; Estimated Population, 14,648).—*Medical Officer of Health*, W. J. ALLKIN, L.R.C.P.E.; *Salary*, £40 (no claim).—Birth-rate 25·1, death-rate 18·0, zymotic rate 2·11, death-rate from phthisis 1·29, and from respiratory diseases 3·0 per 1,000 of population; rate of deaths under one year to 1,000 births 178.

The birth-rate was 3·1 higher than in 1895, and there was a fractional reduction in the death-rate. The zymotic rate remains practically the same as in the previous year, while the infant deaths, although high, show a slight diminution. Measles and scarlet fever had an extensive spread, and gave

rise to 9 and 16 deaths respectively. The former disease continued from the latter part of 1895, and attacked the district epidemically during January and February; it was found necessary to close all the public schools. Scarlet fever attacked 179 persons scattered throughout the district. Since the hospital accommodation is reported as "good," it is difficult to conceive why only 2 patients were removed for purposes of isolation. The following deaths were registered:—typhoid fever 3, membranous croup 4, whooping cough 2, and diarrhœa 1.

Sewerage, Scavenging, &c.—The sewage at present flows into the River Tame; joint sewage works are in course of construction. The Authority satisfactorily carries out the scavenging. The refuse, where possible, is given to farmers, while the remainder is "deposited on low-lying land and covered with soil."

Sanitary Inspection.—It is satisfactory to note that all the dairies and cowsheds have been inspected by the Sanitary Committee, and after alterations, &c., have received attention, licences will be granted. The Inspector secured the abatement of 75 nuisances without having recourse to legal proceedings. Bakehouses, slaughter-houses, and lodging-houses have, after inspection, received a satisfactory report. The factories and workshops have, when visited, been found satisfactory; no details are, however, given of the inspections made.

Droylsden.—(Area in acres, 1,144; Estimated Population, 10,000.)—*Medical Officer of Health*, ANDREW GELLATLY, M.B.; *Salary*, £25 (no claim).—Birth-rate 29·0, death-rate 17·4, zymotic rate 2·20, death-rate from phthisis 1·10, and from respiratory diseases 4·70 per 1,000 of population; rate of deaths under one year to 1,000 births 148.

The birth-rate was below the average, while the death-rate, although 1 less than the preceding decade, was 0·7 higher

than in 1895. There was an increase in the zymotic deaths, and also in the deaths of infants under the age of 12 months. Thirty cases of scarlet fever were notified, of which 3 terminated fatally in the district, and 2 after removal to the Hyde Hospital. Whooping cough was the cause of 7 deaths, and must have had a pretty wide distribution. Diphtheria and membranous croup contributed 4 deaths, enteric fever 2, measles 2, and diarrhœa 3.

Sewerage, &c.—The sewage works have been completed during the year, and the tanks and filters are now in operation, but the whole of the drainage system is not yet coupled up. The sewer in Fairfield Road is described by the Medical Officer of Health “as nothing but a settling tank, and a standing danger to the inhabitants.”

Sanitary Inspection.—All the houses in which infectious diseases occurred have been visited by the Inspector, and most of them were found to be “in a good sanitary condition.” Defective drainage or want of cleanliness received attention when discovered. Ashpits, badly constructed or abutting upon dwelling-houses, are still a source of danger. Mention is also made respecting the muddy and objectionable condition of many private streets which require flagging, paving, and properly draining. The Inspector of Nuisances secured the abatement of the following nuisances, viz. :—

Defective and badly constructed privies and					
ashpits	...	...	...	...	47
Defective and choked drains	...	...	...	...	30
Privies abutting upon dwelling-houses	...	...	...	...	12
Yards out of repair	...	...	...	...	15
Overcrowding	...	...	...	...	3
Houses requiring limewashing	...	...	...	...	8
Dirty premises	...	...	...	...	113
					228

Eccles Borough.—(Area in acres, 2,008; Estimated Population, 33,800)—*Medical Officer of Health*, J. H. CROCKER, M.D., D.S.Sc.; *Salary*, £100 (no claim).—Birth-rate 28·3, death-rate 15·7, zymotic rate 3·07, death-rate from phthisis 1·47, and from respiratory diseases 2·24 per 1,000 of population; rate of deaths under one year to 1,000 births 147.

The birth-rate was fractionally lower than in the previous year, and the death-rate was 15·7 as compared with an average of 17·6 for the five years 1891-95. The zymotic rate still continues high, due to the large number of deaths from measles and diarrhœa. From the former disease 43 deaths were registered. The commencement of the epidemic dated from November, 1895, and starting at Winton End it gradually extended throughout the Borough. Scarlet fever gave rise to 186 cases and 11 deaths; 43 per cent. of the notified cases were removed to the Ladywell Sanatorium, against 34 per cent. in 1895 and 20 per cent. in 1894. Typhoid fever was the cause of 66 cases and 9 deaths. Hospital treatment was provided for 19 cases. Special precautions were taken by daily removal of infected excreta, &c. The Medical Officer of Health made an investigation as to the undue typhoid fever prevalence in Ellesmere Street, and came to the conclusion that the contaminated soil (*a*) from privy percolation, (*b*) bad drainage, and (*c*) surface pollution was the chief factor in the causation of the disease. Influenza occasioned 5 deaths, whooping cough 12, and puerperal fever 1 death.

Sewerage, Scavenging, &c.—The sewage is being efficiently dealt with on Barton Grange Farm. The application to the land is equal to five gallons per superficial yard daily. Previous to being placed on the land it is allowed to deposit its suspended matter, without chemical treatment, in detritus tanks. The whole of the sludge is at present used on the farm. "About 1,500 tons were deposited last year, costing about 1s. per ton in clearing off the filters and carting on to the land."

The Corporation undertake the work of scavenging in a satisfactory manner, but the difficulties are increased, owing to the large number of privy middens. The Peel Green "tip" is still used for the deposit of refuse.

Sanitary Inspection.—House property, situated in Almond Court, King Street, Regent Street, Cross Street, Mitchell's Buildings (Winton), &c., has been inspected, and a list prepared of the dwellings considered to be unfit for human habitation, or in an insanitary condition. Folly Brook was again offensive during the hot weather, and "many complaints were received from the inhabitants of Monton in its vicinity." It is hoped that the Swinton Council will take action for preventing the pollution of the brook by sewage from their district. Cowsheds (22) and dairies (45) have received regular inspection. Bakehouses (40), confectioners' shops, slaughter-houses, and common lodging-houses have been frequently visited and found satisfactory. One hundred and seven smoke observations have been made, and resulted in 6 notices being served, and in 1 case legal proceedings were taken, and an Order to abate the nuisance obtained. Four hundred and twenty examinations of drains by the smoke test were made, and 38 drains opened up and examined. The Inspector served 267 formal notices and wrote 974 letters for the abatement of 1,923 nuisances of a miscellaneous character.

Failsworth.—(Area in acres, 1,073; Estimated Population, 11,420).—*Medical Officer of Health*, G. W. BEATTIE, M.D.; *Salary*, £30 (no claim).—Birth-rate 35·7, death-rate 16·6, zymotic rate 1·57, death-rate from phthisis 1·22, and from respiratory diseases 3·41 per 1,000 of population; rate of deaths under one year to 1,000 births 159.

The birth-rate was 3·6 higher than in 1895, and there was a decrease equal to 6·3 in the death-rate. The zymotic rate was below the average, and the deaths of infants under 1 year to 1,000 births corresponded to 159, as compared with 206 in

the preceding year. Whooping cough proved the most fatal of the zymotic diseases with 7 deaths, diphtheria and diarrhœa coming next with 3 deaths each. Of 54 cases of scarlet fever notified, only 1 died; 19 patients suffering from this disease were removed to the Monsall Fever Hospital, and also 1 case of typhoid fever.

Water Supply has been satisfactory throughout the year. The bulk of the water is obtained from Oldham, and the Manchester Corporation supply only a few houses.

Sewerage, Scavenging, &c.—The sewage works are now complete, and the drains are being connected with the mains. The International system of treatment is adopted, and satisfactory results have been obtained. The north side of the main road has been paved and sewered, as well as a great number of the side streets. The refuse is tipped, or used by the farmers as manure.

Sanitary Inspection.—An Order was obtained for the closure of certain dilapidated houses, and other property has been reported as unfit for human habitation. Bakehouses (4) and slaughter-houses (6) are satisfactorily conducted. The cowsheds, 26 in number, continue to be kept in a fairly clean state, "but 19 are overcrowded, and do not allow the 600 cubic feet of air space required for each cow, and the water supply in many cases is not satisfactory." There are about 80 factories and workshops in the district, and the Medical Officer of Health would like to see "the sanitary conveniences at these places converted to the water closet system, and the mill owners prohibited from turning steam into the sewers." The Inspector served 111 notices to abate nuisances; 99 have been complied with, and the remaining 12 are receiving attention. He took 77 smoke observations, and in 5 instances legal proceedings followed. Four abatement Orders were secured; in 3 cases penalties had to be paid, and costs in one case.

Farnworth.—(Area in acres, 1,502; Estimated Population, 24,000).—*Medical Officer of Health*, A. KERSHAW, M.D.; *Salary*, £40 (no claim).—Birth-rate 34·3, death-rate 19·6, zymotic rate 2·50, death-rate from phthisis 1·08, and from respiratory diseases 3·70 per 1,000 of population; rate of deaths under one year to 1,000 births 216.

As compared with 1895 there was an increase in the birth-rate of 1·8, and a decrease in the death-rate of 2·5 per 1,000. The zymotic rate was slightly reduced, and the infant rate, although more favourable than in the previous year, continues "lamentably high." Scarlet fever was somewhat prevalent, and the cause of 64 cases of illness and 8 deaths. Typhoid fever gave rise to 31 cases and 10 deaths. The source of the disease in many cases could not be discovered, but in some of the houses affected with the disease the backyards were in an insanitary condition. Measles prevailed from February to April, and diarrhœa—the cause of 25 deaths—was most fatal in the months of July and August. Dr. Kershaw reports that the hospital has done good work, and the fact that during the year 72 cases were removed shows that its advantages have been recognised.

Sewerage, Scavenging, &c.—The sewage is treated by chemical precipitation in tanks. Up to the present time no filters have been provided, and the resulting effluent has been the subject of complaint. The scavenging is in the hands of the Council, and receives proper attention.

Sanitary Inspection.—Lodging-houses, bakehouses, and slaughter-houses are reported as satisfactorily conducted. No action is taken with respect to dairies and cowsheds or factories and workshops, and it is hoped that the Council will direct an inspection to be made of these places. The Inspector served 45 notices, and secured the abatement of 63 nuisances. The smoke observations numbered 25, but no legal action followed. The time limit allowed for the emission of black smoke is 10 minutes.

Fleetwood.—(Area in acres, 2,848; Estimated Population, 12,221).—*Medical Officer of Health*, JOHN D. FAUSSET, B.A., M.D.; *Salary*, £80 (including £20 for the Port).—Birth-rate 31·6, death-rate 13·1, zymotic rate 1·30, death-rate from phthisis 2·53, and from respiratory diseases 1·06 per 1,000 of population; rate of deaths under one year to 1,000 births 105.

There was a diminution in the birth-rate of 1·3, and in the death-rate of 1·7, as compared with the previous year. The zymotic deaths were slightly increased owing to the high mortality from scarlet fever. This disease had an extensive prevalence, and gave rise to 164 cases of illness, of which 9 had a fatal termination. Typhoid fever was the cause of 6 cases of illness, while diphtheria occasioned 10 cases and 3 deaths. Whooping cough and diarrhœa were each credited with 2 deaths. Notification has proved useful, and Dr. Fausset would like to see measles added to the list of notifiable diseases. The want of hospital accommodation no doubt was much felt, and it is hoped that as a Joint Committee is now formed there will be no delay in making this provision. Disinfection is efficiently carried out.

Water Supply is the subject of the usual complaint; specimens examined contained "vegetable matter in solution, while some contained animal matter."

Sewerage, Scavenging, &c.—The difficulty with respect to the sewage disposal has not yet been overcome, and the nuisance from sewage in the harbour remains unabated. The Council undertake the scavenging, and give satisfaction. Privy middens are gradually giving way to water closets.

Sanitary Inspection.—The Medical Officer of Health reports favourably on the sanitary condition of factories, bake-houses, dairies, cowsheds, and milkshops. The Inspector caused to be remedied 398 nuisances, details of which are tabulated. No smoke observations were taken; a limit of 10 minutes' emission of black smoke is said to be allowed.

For the Port Sanitary Authority.—Dr. Fausset reports a continuance of “freedom from infectious disease on board any vessel.” A list of the vessels entering the Port is given. Twenty-eight vessels, all from foreign ports, were inspected, and “no sanitary defects of a serious nature” came under observation.

The Port Hospital, containing four beds, continues ready for the reception of patients, and there is “sufficient and proper mortuary accommodation.” Complaint is made of the Customs Boarding Station as unsatisfactory in case of vessels having sickness on board.

Fulwood.—(Area in acres, 2,117; Estimated Population (excluding Public Institutions), 2,538).—*Medical Officer of Health*, JOHN GARTH, L.R.C.P.I.; *Salary*, £20.—Birth-rate 23·2, death-rate 13·7, zymotic rate 0·39, death-rate from phthisis 0·78, and from respiratory diseases 1·57 per 1,000 of population; rate of deaths under one year to 1,000 births 101.

For the purpose of calculating the death-rates, the inhabitants of the following public institutions are excluded from the estimated population of the district:—

	No. of Inhabitants.	Births.	Deaths.
Preston Union Workhouse...	897	26	155
Barracks	1300	25	7
Convent of Little Sisters ...	95	...	7
Harris Orphanage	134	...	...
Poor Law Schools	18	...	...
Blind Institute	20	...	...
Total...	2464	51	168

With a low birth-rate (23·2) usually found in suburban districts, the death-rate (13·7) was also low, although fractionally higher than in the previous year. The births and deaths which took place in the public institutions, with the

exception of the Barracks, belong almost entirely to the adjoining County Borough. There were few infant deaths, and the zymotic rate (0·39) was due to a single death from diarrhœa. Four deaths from this cause took place in the Workhouse. The notification of disease which was adopted in the early part of the year revealed the existence of the following cases:—Scarlet fever 7, enteric fever 3, and erysipelas 8. The Medical Officer of Health draws attention to the desirability of pushing forward the provision of accommodation for isolating infectious diseases.

Sewerage, Scavenging, &c.—The sewage still pollutes the stream, but suitable works for its treatment will soon be proceeded with. The scavenging by the Authority has given satisfaction; the roads, except those along the tram route, are kept clean and in good repair.

Sanitary Inspection.—There are no bakehouses nor lodging-houses. The slaughter-houses are kept “clean and in good condition.” There are no bye-laws adopted for the regulation of dairies and cowsheds, but notwithstanding they are regularly inspected. The pollution of the Eaves Brook has been stopped, owing to the action of the Ribble Joint Committee. The Inspector visited 20 houses and accomplished certain improvements. Four notices were served for the remedy of 12 nuisances.

Garston.—(Area in acres, 1,625; Estimated Population, 16,000). — *Medical Officer of Health*, J. A. FISHER, L.R.C.P.E.; *Salary*, £70.—Birth-rate 31·5, death-rate 14·1, zymotic rate 2·31, death-rate from phthisis 0·56, and from respiratory diseases 3·37 per 1,000 of population; rate of deaths under one year to 1,000 births 160.

As compared with the previous year the birth and death rates were in each instance reduced 1·5 per 1,000. There was a slight increase in the zymotic rate, and a diminution in the death-rate of infants under the age of one year. Scarlet

fever prevailed throughout the year, except during the month of August. Of 132 cases notified 8 proved fatal. Typhoid fever caused 35 cases of illness and 8 deaths, while measles contributed 2 deaths, whooping cough 1 death, and diarrhœa 18 deaths. Small-pox broke out in June, and the cases—5 in number—were promptly isolated. The origin of the outbreak was inquired into, but without success. The Infectious Hospital was used for the isolation of 24 cases of scarlet fever and 1 case of diphtheria, while 2 cases of typhoid fever and 1 case of diphtheria were removed to the Royal Southern Hospital, Liverpool. It is quite evident that the accommodation at Garston is too limited, and additional beds should be provided without delay.

Sewerage, Scavenging, &c.*—The river Mersey receives the untreated sewage. Scavenging, as carried out by the Authority, is reported as satisfactory.

Sanitary Inspection.—Dairies (27), cowsheds, and milk-shops have been found clean and well conducted. Scarlet fever and diphtheria appeared in two dairies, but prompt removal proved successful in staying the spread of disease. Bakehouses (16) and slaughter-houses have been regularly inspected, and complied with sanitary requirements. Several small laundries have received attention in respect of defective drains, bad pavement, and want of limewashing. The small workshops were found clean and well ventilated. There are no common lodging-houses, but the sub-let lodging-houses (86) were, with four exceptions, without complaint. The Inspector issued 279 notices, and verbally complained of 224 nuisances, which, except in 64 instances, were promptly remedied. Altogether 1,674 houses and premises were inspected, and 1,208 nuisances abated. Smoke testing was applied to the drains of 57 houses, and remedies applied to the defects discovered. Thirty-eight smoke observations were made, but only one notice was issued for the abatement of the nuisance. "In several cases a caution was given, which had the desired effect."

Golborne.—(Area in acres, 1,679; Estimated Population, 6,500).—*Medical Officer of Health*, JAMES DOBB, L.R.C.P.; *Salary*, £30.—Birth-rate 35·3, death-rate 17·3, zymotic rate 1·69, death-rate from phthisis 1·23, and from respiratory diseases 1·07 per 1,000 of population; rate of deaths under one year to 1,000 births 173.

The birth and death rates were reduced 6·3 and 6·2 respectively, as compared with 1895. The zymotic rate was 1·47 less than in the previous year, and there was a satisfactory diminution in the respiratory deaths, and in the infant rate of mortality. Of the zymotic diseases measles with 5 deaths and whooping cough with 4 deaths proved the most fatal. Scarlet fever was the cause of 39 cases and 2 deaths. Six patients suffering from this disease were removed to the Sanatorium at Astley. Enteric fever gave rise to 2 notified cases but no death took place.

Water Supply is obtained from the reservoirs of the Ince Urban District Council, which are situated in this district; the water is good and ample.

Sewerage, Scavenging, &c.—The sewage is dealt with in precipitation tanks, ferro-sulphate and lime being used; the effluent is reported as "very satisfactory" and improved. The Council carry out the scavenging without complaint.

Sanitary Inspection.—Bakehouses have been visited, and, except in one or two instances, their condition was cleanly. Slaughter-houses were well conducted, and also the cowsheds, although the Medical Officer of Health had occasionally to complain of insufficient cubic space. The factories and workshops receive a favourable report as to their sanitation and effect on the health of the operatives. The Inspector of Nuisances took in hand 56 nuisances, and 7 notices were issued by the Sanitary Authority. Most of the nuisances referred to defective privies and ashpits, and these have been remedied.

Gorton.—(Area in acres, 1,133; Estimated Population, 22,000).—*Medical Officer of Health*, A. W. MARTIN, L.R.C.P., D.P.H.; *Salary*, £60.—Birth-rate 33·5, death-rate 19·9, zymotic rate 3·90, death-rate from phthisis 1·27, and from respiratory diseases 4·86 per 1,000 of population; rate of deaths under one year to 1,000 births 199.

The vital statistics, although improved as compared with the previous year, cannot be considered satisfactory. There was a reduction in the birth-rate, and the death-rate was 19·9 against 20·0, the average of the past decade. The zymotic rate continues high (3·9) and above the average of urban districts in the County. The rate of deaths under 1 year to 1,000 births corresponded to 199; in 1895 it was 212, and averaged 175 in the preceding six years. Measles with 30 deaths, whooping cough 18, and diarrhœa 20, proved exceptionally fatal. Measles prevailed extensively from April to June, whooping cough from July to August, and diarrhœa from July to October. Scarlet fever gave rise to 78 cases of illness, and 9 per cent. unfortunately proved fatal. Hospital isolation was provided in 11 cases. From diphtheria and membranous croup there were 10 deaths, and from typhoid fever 2 deaths. In addition to the removal to Monsall Hospital of the scarlet fever patients already mentioned, 3 cases of diphtheria and 10 cases of enteric fever were removed at a total cost of £232 5s., or £9 13s. 6½d. per patient. More frequent use should be made of hospital isolation, and accommodation provided jointly with one or more of the neighbouring Authorities might be found more desirable than the present arrangement.

Sewerage, Scavenging, &c.—The district has been recently sewered and precipitation tanks with filtering beds (polarite) provided. The scavenging is well conducted by the officers of the Council. The midden system, with all its objections, is general throughout the district. In six years there have been erected about 1,200 new dwelling-houses, and nearly the whole of them are on the privy system.

Sanitary Inspection.—Milkshops (84) and cowsheds (12) have received 150 visits and the Regulations have been observed. Slaughter-houses (3) are without complaint. A summons was taken out to remove a nuisance in connection with a bakehouse. An Order for school closure was adopted by the Council in March for measles, and continued in operation some weeks. The Inspector reports that examinations were made of 1,225 houses, and 277 notices issued against the owners or tenants for various sanitary defects. Three property owners were proceeded against for non-compliance with the Council's notices, and Magistrates' Orders were obtained against them. Six smoke observations were taken without further action being required, the black smoke limit is stated to be eight minutes per hour.

Grange-over-Sands.—(Area in acres, 1,160; Estimated Population, 1,733).—*Medical Officer of Health*, A. THOMPSON, M.D.; *Salary*, £20.—Birth-rate 14·4, death-rate 9·2, zymotic rate nil, death-rate from phthisis nil, and from respiratory diseases 0·57 per 1,000 of population; rate of deaths under one year to 1,000 births 80.

Dr. Thompson presents an extremely satisfactory health report; the death-rate ruled unusually low, and not a single death was recorded from the principal zymotic diseases or phthisis. One case of scarlet fever was introduced into the district from Bradford, and a case of typhoid fever also appeared. Both these cases were revealed by notification, and allowed the prompt precautionary measures to be taken with effect.

Water Supply is of good quality, and ample under ordinary circumstances.

Sewerage, Scavenging, &c.—The Medical Officer of Health recommends the construction of a sewer "to intercept the

drainage from the Haselwood district, with an outlet into the bay for the present." From the 1st of April the Council has undertaken the scavenging and removal of ashpit refuse, &c., at the cost of the General District Rate.

Sanitary Inspection.—The slaughter-houses are not registered as they ought to be; their inspection need not entail much difficulty. The sanitary conditions of the district are well looked after, and few nuisances require attention.

Great Crosby.—(Area in acres, 1,768; Estimated Population, 7,164). — *Medical Officer of Health*, W. S. LIMRICK, L.R.C.P.E.; *Salary*, £25 (no claim).—Birth-rate 23·1; death-rate 11·7, zymotic rate 0·83, death-rate from phthisis 0·83, and from respiratory diseases 1·81 per 1,000 of population; rate of deaths under one year to 1,000 births 126.

Very favourable vital statistics again distinguish this district. The death-rate and zymotic rate were satisfactory, although 3·2 and 0·69 respectively higher than in the previous year. The principal zymotic diseases gave rise to 6 deaths, viz., diphtheria 1, enteric fever 2, whooping cough 2, and diarrhoea 1. Scarlet fever was responsible for 22 notified cases, but no death. The Bootle Hospital was used for the isolation of 1 case of scarlet fever and 2 cases of typhoid fever, at a cost of £163 1s. 4d., of which £15 9s. 6d. was recovered from the patients treated. By careful home isolation and strict precautionary measures the single case of small-pox which broke out did not give rise to further infection.

Sewerage, Scavenging &c.—As usual, much attention has been paid to the cleansing and flushing of all the sewers, in addition to the flushing of the house drains. "The flushing of the house drains disclosed some 110 stoppages, which were duly cleared. The periodical removal of such defects and the systematic thorough washing out of the whole of the drains

connected with the houses must have a very beneficial result on the sewerage system of the district generally, and assist in maintaining the healthiness of the locality." Mr. W. Hall, the Surveyor, estimates the weight of deposit removed from the sewers, &c., by all processes during the 15 months ending March 31st, 1897, to have amounted to $750\frac{1}{2}$ tons. Scavenging is well carried out, and the Council have increased the periodical inspection and emptying of all ashpits, cesspools, &c.

Sanitary Inspection.—Bakehouses, slaughter-houses, and cowsheds were under supervision and well conducted. Smoke tests are applied to the drains of houses where infectious disease has occurred, and "in other places when considered advisable or on the request of any ratepayer, at a nominal charge of 5s. Forty-eight such tests have been made with the same result as hitherto, viz., that in almost every case defects were disclosed—some trivial but others serious—and these defects were often of a nature that could only be discovered by some system of pressure testing, being quite beyond detection by the ordinary visual inspection." The following notices were served:—118 for abatement of nuisances, 1 ruinous and dangerous building, and 18 for cleansing after infectious diseases.

Great Harwood.—(Area in acres, 2,863; Estimated Population, 10,500).—*Medical Officer of Health*, JOHN PATCHETT, L.R.C.P.E.; *Salary*, £25.—Birth-rate 27·6, death-rate 16·2, zymotic rate 2·28, death-rate from phthisis 0·95, and from respiratory diseases 3·42 per 1,000 of population; rate of deaths under one year to 1,000 births 162.

The report prepared by Dr. Patchett is not so favourable as last year; there was an increase in the death-rate equal to 1·5, and the zymotic rate rose from 1·8 to 2·28. The deaths under one year corresponded to 162 per 1,000 births, against a rate of 116 in 1895. The most fatal of the zymotic diseases

was measles with 12 deaths. In November the outbreak was so serious as to necessitate the closure, for 2 weeks, of St. Hubert's school. Scarlet fever prevailed extensively, giving rise to 193 cases and 3 deaths; the greatest spread took place during June and July, and again during September and October. Unfortunately there is no hospital accommodation available for dealing with these cases, and when scarlet fever once appears in the district it is difficult to curtail its spread. Enteric fever was responsible for 9 cases and 2 deaths; the origin of an outbreak in one house was "traceable to foul air arising from a stone drain which was found under the kitchen," in other cases filth nuisances, due to percolation from closets, bad drainage, &c., were found. The typhoid discharges are collected daily in closed buckets, disinfected, and buried.

Water Supply is obtained from Dean Clough Reservoir.

Sewerage, Scavenging, &c.—The sewage at present flows into the Hyndburn Brook, but new joint sewage works are approaching completion. The Medical Officer of Health reports that "the removal of the night-soil, &c., has been under the supervision of your Council, and has been done in a very satisfactory manner."

Sanitary Inspection.—Attention is drawn to the insanitary condition of Nos. 15, 17, 111, and 121, Queen Street. It appears that many front and back streets have been drained and paved, and many old closets converted to the water-carriage system. Slaughter-houses have received attention and been much improved. There are no particulars given respecting the inspection of dairies and cowsheds, and Regulations do not seem to have been adopted under the Order of the Local Government Board. The Inspector served 117 notices for the abatement of a variety of nuisances, and effected improvements in the ventilation and closet accommodation of some of the factories and workshops in the district.

Haslingden Borough.—(Area in acres, 8,022; Estimated Population, 18,855).—*Medical Officer of Health*, J. A. HARRISON, M.D.; *Salary*, £50.—Birth-rate 24·7, death-rate 16·6, zymotic rate 1·69, death-rate from phthisis 1·32, and from respiratory diseases 2·86 per 1,000 of population; rate of deaths under one year to 1,000 births 148.

Dr. Harrison's report is more favourable than in the previous year; there was a reduction in the general death-rate of 1·1 per 1,000, and in the zymotic rate equal to 1·09. Deaths from the respiratory organs were reduced, and there were fewer infant deaths. In Town Ward the highest death-rate was registered (20 per 1,000), and in Grave Ward the lowest (11), while Acre Ward was marked by a high zymotic mortality equal to 3·8 per 1,000. Scarlet fever of a mild type caused 102 cases and 1 death; the disease spread pretty evenly throughout the borough. Every care was taken to curtail the outbreak by the distribution of disinfectants, and by preventing the attendance at school of children from infected houses, but "in the absence of any hospital for infectious diseases it is an almost impossible matter to isolate the great majority of cases occurring, as they do, in cottage houses." Diphtheria and membranous croup were more than usually prevalent; these diseases, which differ very little in character, gave rise to 32 cases and 15 deaths. Many cases of diphtheria were notified about the same time as scarlet fever, particularly in Acre Ward, and in some cases both diseases occurred in the same house. Typhoid fever caused 32 cases and 10 deaths; the origin of 2 cases was traced to polluted drinking water, while in most of the other cases sanitary defects were found in or near the houses attacked with the disease. The other zymotic deaths were attributed to whooping cough 9, and diarrhœa 7.

Water Supply is obtained from Clough Bottom reservoir, belonging to the Bury Corporation. Dr. Harrison complains of the manuring of the gathering ground for agricultural

purposes, and he is of opinion that the pollution is an important matter as affecting the health of the consumers. He adds:—"The Holden Wood water is obviously unfit for drinking purposes, and I must again enter my protest against it being supplied to any house in the Borough."

Sewerage, Scavenging, &c.—The bulk of the sewage still flows into the brook. "The sewers have been laid in most of the principal streets, but very few houses have as yet been coupled up to them." The removal of old stone drains from the cellars is recommended. The joint sewage scheme is making progress, and in order to encourage "water carriage" the Health Committee contemplate offering £2 for every closet converted from the pail to the waste-water system. The efficiency of scavenging has been improved in four of the wards. Since the Corporation has carried out the work there is now no complaint whatever. A refuse destructor is still "in abeyance, pending the selection of a suitable site upon which to erect it." Much of the ashpit refuse is therefore tipped, and becomes a source of danger to the public health.

Sanitary Inspection.—The dairies and cowsheds are kept under observation, "but nothing has been done, as the bye-laws have not been put in force." The Inspector (Mr. Hoyle) reports that "the lodging-houses and slaughter-houses have been regularly visited, and have been kept in a very cleanly state, though when we get our bye-laws in force considerable alterations will have to be made in most of the lodging-houses respecting the number of lodgers to be received into such houses, and also as to the effectually screening of beds." Very little information is given as to the condition of factories and workshops; they are spoken of as "mostly satisfactory." One hundred and fifty-seven notices were issued for miscellaneous nuisances, which received prompt attention. Fifty-eight houses were fumigated, but no special disinfecting apparatus has been provided. No smoke observations are apparently taken.

Haydock.—(Area in acres, 2,409; Estimated Population, 7,900).—*Medical Officer of Health*, T. E. HAYWARD, M.B. (Lond.); *Salary*, £40.—Birth-rate 39·8, death-rate 16·8, zymotic rate 1·77, death-rate from phthisis 1·13, and from respiratory diseases 2·91 per 1,000 of population; rate of deaths under one year to 1,000 births 177.

The health of this district, as judged by the statistics, compares favourably with the previous year. The birth-rate was, as usual, very high, and, although fractionally lower than that in 1895, it corresponded exactly with the preceding 10 years. The death-rate was 2·8 less than in the previous year, and somewhat lower (0·4) than the average from 1886-95. There was also a satisfactory improvement in the zymotic and respiratory rates, and the proportion of infant deaths to births. Measles and whooping cough were each responsible for 5 deaths, and proved to be the most fatal of the zymotic diseases. The Medical Officer of Health states that it would be of "service if the notification of the *first* case of measles in a house was rendered obligatory." Diphtheria and membranous croup contributed 21 cases and 3 deaths. Several of them were of a very mild character. Typhoid fever was notified in 13 instances, but no death resulted; privy middens and polluted soil played an important part in their production. Scarlet fever caused 18 cases and 1 death, against 23 cases and 1 death in the preceding year. Only 4 cases—2 suffering from scarlet fever and 2 from typhoid fever—were removed to the Corporation Hospital (St. Helens). During August and September accommodation could only be provided for scarlet fever cases. The cost of treating patients has been modified, although it is still high. After the fixed annual payment has been arrived at on the scale of charges at the rate of seven shillings a day per patient the further charges are reduced to five shillings per day.

Water Supply, with the exception of about twenty outlying dwellings, is obtained from the Rivington Reservoirs of

the Liverpool Corporation, and it has been shown by chemical and bacteriological examination to be of "great purity and softness."

Sewerage, Scavenging, &c.—Dr. Hayward reports that, although year by year improvements are being made in respect of sewerage "on a systematic plan and providing arrangements for preventing the pollution of water courses," much remains to be done to place the district in a satisfactory condition. The fouling by sewage of the brook which runs along the side of Haydock Lane is specially mentioned, and the Medical Officer of Health suggests that the Council should take steps to purify the brook. The privy system is condemned, and some form of "water carriage" is hoped for. The scavenging is fairly well carried out by the Authority.

Sanitary Inspection.—There are 15 cowkeepers and three purveyors of milk resident in the district, beside three other purveyors who reside outside its boundaries. Dairry, &c., Regulations under the Order of the Local Government Board have been made, and the cowsheds and milkshops are reported "to be kept clean and well ventilated and to have good drainage, and as a whole the utensils are found to be kept clean." Slaughter-houses (5) as well as bakehouses were found as a rule cleanly and well conducted. The Inspector secured the abatement of 57 nuisances, of which 19 referred to defective ashpits, 7 to defective drains, 10 to blocked gullies, and 21 to miscellaneous insanitary conditions. In many other cases verbal notices were given, which had the desired effect. No legal proceedings were instituted. The scope of my summary does not allow me to do more than to mention that Dr. Hayward also submits to his Authority—in addition to his annual report—a most elaborate and interesting appendix, which practically gives the sanitary history of Haydock during the past 60 years. This labour has been undertaken to commemorate the 60th year of Her Majesty's accession to the Throne.

Heaton Norris.—(Area in acres, 1,638 ; Estimated Population, 8,235).—*Medical Officer of Health*, F. W. JORDAN, L.R.C.P., D.S.Sc. ; *Salary*, £40 (no claim).—Birth-rate 15·1, death-rate 13·6, zymotic rate 0·72, death-rate from phthisis 1·09, and from respiratory diseases 3·76 per 1,000 of population ; rate of deaths under one year to 1,000 births 168.

The birth-rate averaged 2·6 less than in 1895, and was accompanied by a death-rate satisfactorily low, although 2·55 above the mean for the past ten years. Comparatively few deaths (6) were attributable to the principal zymotic diseases, but the 46 notifications of disease consisted largely of scarlet fever. The latter disease was curtailed by the hospital isolation of 9 patients, and the enforcement of strict precautionary measures. Typhoid fever gave rise to 3 cases and 2 deaths, and whooping cough to 1 death. The hospital belonging to the Hyde Corporation is used for purposes of isolation.

Water Supply.—"Owing to the frequent repairs that were necessary, the water was often turbid." Since September 28th, on the completion of repairs, the complaints have ceased.

Sewerage, Scavenging, &c.—The sewage is dealt with by chemical precipitation. It is proposed to extend gradually the sewerage system, "so that the time is not far distant when it will be available for every house in the district." The scavenging by the Council is reported as satisfactory.

Sanitary Inspection.—The examination of drains receives valuable assistance from the smoke apparatus in use. Mersey Road has been much improved, but Tatton Road is "a disgrace and must be injurious to health." Bakehouses and slaughterhouses are reported on favourably. Dairies and cowsheds have had special attention, and Dr. Jordan states that "most of the farmers keep more cows than the size of the shippens will permit, the animals are placed too close together—to keep each other warm. Most of the shippens are well constructed, are

fairly well lighted and ventilated, and are kept clean." The drainage into a liquid manure tank "allows the egress of foul gases from the tank." The Inspector served 10 notices, but a copy of his report has not been supplied. A prosecution for the concealment of infectious disease proved successful.

Heywood Borough.—(Area in acres, 3,496; Estimated Population, 25,000).—*Medical Officer of Health*, H. WISKEN, L.R.C.P.E.; *Salary*, £100.—Birth-rate 23·2, death-rate 18·6, zymotic rate 1·96, death-rate from phthisis 2·36, and from respiratory diseases 5·16 per 1,000 of population; rate of deaths under one year to 1,000 births 177.

The birth and death rates were reduced 2·4 and 4·3 respectively, as compared with 1895. There was also a satisfactory diminution in the zymotic death-rate and in the proportion of infant deaths to births. Scarlet fever spread widely and occasioned 150 cases of illness and 7 deaths. "In every month of the year fresh cases were notified, but the disease was most prevalent in January, March, and February." Diphtheria and membranous croup caused 6 deaths, enteric fever 1, diarrhoea 12, measles 11, and whooping cough 13. The latter disease had an extensive prevalence and was productive of 9 more deaths than in the previous year. Small-pox gave rise to much trouble, and from January 15th to June 5th there were 13 attacks and 4 deaths. In March two cases were attributed to the "handling of infected cotton" in a factory. An undertaker was attacked in April, and gave the infection to his wife and probably to a person residing next door. On the 23rd of May, "a man in the employ of the health department, who carried food and disinfectants to the infected houses, was attacked." Persons acting as undertakers, or liable to run risk of infection, such as sanitary officials, should always be protected by re-vaccination. The Hospital was used for the isolation of the last three cases, and no doubt assisted to curtail the spread of the disease.

Water Supply.—The water is supplied by the Corporation. In June a number of cases of lead poisoning appeared, and in one instance, although the lead pipes had been replaced by pipes lined with block tin, analysis of the water showed the presence of lead, justifying the suspicion that a general contamination of the water exists and calls for immediate attention. "The Waterworks Committee propose to put a certain quantity of lime into the water so as to modify its action on the lead pipes."

Sewerage, Scavenging, &c.—The sewage works are nearly completed. "Ninety-five waste-water closets have been substituted for old privies during the year, in addition to 71 in new property; altogether there are now in use 1,016 within the district." The Medical Officer of Health suggests that the householders should burn all refuse, vegetable and animal matters, such as fish, &c.

Sanitary Inspection.—The lodging-houses and slaughter-houses have been regularly inspected, and infected houses have also been visited. The schools have received special attention, and recommendations made as to their improvement. The Medical Officer of Health comments on the high infant mortality of North Ward, and expresses his opinion that the greater mortality from respiratory diseases in the Ward points to bad housing and insanitary conditions; reference is also made to defective drainage, and to the building of property on "made ground" formed by tipping refuse into hollow spaces. Milk is supplied by 61 farmers, 50 of these are resident within the Borough and 11 without. The work of supervision is not easy. The Inspector states that some of the cowsheds are not well kept, and the animals are not cleaned regularly. Four hundred and eighteen notices were served for miscellaneous nuisances, and 379 received attention. Twenty-seven smoke observations were made, but no legal proceedings followed. The time limit is 10 minutes' emission of black smoke in the hour.

Hindley.—(Area in acres, 2,611; Estimated Population, 21,235).—*Medical Officer of Health*, W. F. W. WILDING, M.R.C.S.; *Salary*, £50.—Birth-rate 41·2, death-rate 19·2, zymotic rate 3·15, death-rate from phthisis 0·61, and from respiratory diseases 5·08 per 1,000 of population; rate of deaths under one year to 1,000 births 161.

Dr. Wilding presents on the whole favourable statistics. A high birth-rate is accompanied with a death-rate 4·4 less than in 1895, and 3·09 below the average for the preceding five years. The zymotic and respiratory rates, although high, show a distinct improvement as compared with the previous year, and there was also a marked reduction in the infant mortality. The numerous fatalities (30) from measles indicate a very extensive spread of the disease, and this was especially marked in Hindley Ward and South Ward. No information is given concerning the action taken by the Authority to curtail the disease, especially with regard to school closure, &c. Small-pox broke out in January, and before it subsided in February, 5 attacks took place, with 1 death; the hospital was used for isolation purposes. There was only 1 death from whooping cough, and 18 from diarrhœa. The deaths from scarlet fever (8) and from enteric and continued fever (9) point out the desirability of obtaining the information procurable by the Infectious Disease (Notification) Act, and it is hoped that the Council will no longer neglect the adoption of an Act which has proved so beneficial in the majority of districts throughout the country. The hospital accommodation, as before mentioned in previous reports, is not sufficient for the needs of the district.

Water Supply is obtained from Rivington, and of good quality.

Sewerage, Scavenging, &c.—In consequence of complaints made by the Mersey and Irwell Joint Committee respecting the unsatisfactory nature of sewage from Hindley Green, a

scheme of treatment by precipitation and artificial filtration has been prepared, and now waits the sanction of the Local Government Board. The Medical Officer of Health describes the scavenging as "satisfactory."

Sanitary Inspection.—Lodging-houses are not registered. Bakehouses and slaughter-houses, apparently inspected, are not the subject of report. A large amount of food was seized as unfit for human consumption—beef, 1,430lbs.; mutton, 90lbs.; pork, 290lbs.; and fish, 70lb. Dr. Wilding made a personal visit to the cowsheds, and reports that the milk would be better and the cows healthier "if the ventilation were freer and the cubic space available for air space very much increased. Taking the average of those examined 311 cubic feet was the amount of air space per head of cattle when the stalls were full." The adoption of the Local Government Board's Regulations would necessitate structural alterations in most of the cowsheds in the district. The Inspector served 128 notices, and all the nuisances have received attention. No legal proceedings were considered to be necessary.

Horwich.—(Area in acres, 3,254; Estimated Population, 14,850).—*Medical Officer of Health*, G. H. WHITAKER, L.R.C.P.E.; *Salary*, £40.—Birth-rate 35·9, death-rate 16·9, zymotic rate 2·76, death-rate from phthisis 0·67, and from respiratory diseases 4·24 per 1,000 of population; rate of deaths under one year to 1,000 births 149.

As compared with 1895 the birth and death rates were reduced 4·1 and 1·8 respectively. There was also a diminution in the zymotic rate, and in the proportion of deaths under one year to births. Scarlet fever was the most prevalent of the zymotic diseases, and gave rise to 197 cases of illness and 13 deaths. The whole district was much affected throughout the year, with the exception of August, October, and November; owing to the inadequacy of hospital accommodation none of the scarlet fever patients could be removed, hence the rapid

extension of the outbreak. Diphtheria and membranous croup accounted for a large number of cases (38) and 9 deaths. Typhoid and continued fever caused 31 cases and 8 deaths. No insanitary conditions could be observed in 12 of the houses affected with typhoid fever, and "in only one instance was the disease traceable to a previously existing case." Measles contributed 2 deaths, whooping cough 10, and diarrhœa 3. A Lyon's steam disinfecting apparatus has been provided.

Water Supply.—A scarcity of water was experienced during the summer months, but additional supplies were obtained from other sources. It is satisfactory to observe that a scheme to obtain a large supply from Horwich Moors is under consideration.

Sewerage, Scavenging, &c.—New polarite filters have been provided for the more efficient treatment of the sewage. The scavenging is not quite satisfactory, many complaints being made respecting the emptying of ashpits and privies during the day; part of the year this work is done in the night-time.

Sanitary Inspection.—The lodging-houses (4) have received 62 day visits and 2 night visits, and the sanitary conditions gave satisfaction. Bakehouses (6) and slaughter-houses were frequently inspected; no food was seized. The emission of black smoke causes a nuisance, but only 1 observation was taken. Dairies and cowsheds receive attention, and in one instance the sale of milk and butter was prohibited owing to the presence of scarlet fever. Dr. Whitaker makes the following recommendations, which deserve consideration:—

- (1) Provision for isolation of infectious disease.
- (2) Conversion of old privies into waste-water closets; all new dwellings are to be provided with these conveniences.
- (3) Regular and systematic smoke observations; time limit fixed; and steps taken to remedy this dangerous pollution of the atmosphere.

- (4) A public abattoir in place of the existing slaughter-houses.
- (5) Establishment of public baths and washhouses.
- (6) More general use of the steam disinfecter. The Inspector to carry out thorough disinfection after the existence of infectious disease in a household.

Hurst.—(Area in acres, 754; Estimated Population, 6,920).—*Medical Officer of Health*, T. COOKE, M.R.C.S.; *Salary*, £20. —Birth-rate 28·0, death-rate 17·1, zymotic rate 2·02, death-rate from phthisis 2·02, and from respiratory diseases 4·04 per 1,000 of population; rate of deaths under one year to 1,000 births 128.

The Hurst Health Report, so often asked for by the County Council, has this year been submitted for the first time. The Medical Officer of Health states that "the death-rate shows a somewhat more favourable condition than last year, and will compare favourably with the previous five years." The zymotic rate was—owing to the eight fatalities from diarrhoea—rather high, and there were numerous deaths from phthisis and respiratory diseases. Scarlet fever and enteric fever prevailed during the latter part of the year, and it was considered advisable to take advantage of the holidays at Christmas "to have all the schools thoroughly cleansed and disinfected; also to prolong the holidays." The action taken had a beneficial effect. There was a freedom from measles, but whooping cough and membranous croup were credited with one death each. The Borough Hospital at Ashton-under-Lyne is relied on for isolation purposes, but not a single case was removed.

Water Supply is obtained from the Corporation of Ashton-under-Lyne.

Sewerage, Scavenging, &c.—The sewage is taken into the Ashton-under-Lyne sewers. Hurst Nook, with a detached

population of 460 in 194 houses, is insanitary; gradual improvements are, however, taking place, and the sewage which now flows into the Smallshaw Brook will soon be removed by the carrying out of a drainage scheme. The open sewers in Whiteacre Road, Old Carrs, &c., will also be dealt with. The scavenging is said to be conducted satisfactorily by the Council; the refuse is taken to a "tip."

Sanitary Inspection.—The waste-water closets are believed to be superior to either the old form of closet or the pail, being "much cleaner, less offensive, and only require ordinary care on the part of the occupiers to prove a success." In the cotton and mining industries "the conditions of working are the best, and every attention is paid to the comfort and convenience of the working classes." A nuisance from a pickle manufactory has been remedied, but in summer objectionable smells arise from a tallow and tripe works. Dairies and cowsheds and the one slaughter-house in the district have given satisfaction. Altogether 50 notices were served for the abatement of nuisances; but no action has been taken to reduce the nuisance from black smoke.

Huyton-with-Roby.—(Area in acres, 2,878; Population (Census 1891), 4,625).—*Medical Officer of Health*, EGERTON F. HALL, M.D.; *Salary*, £30.—Birth-rate 28·3, death-rate 16·0, zymotic rate 3·67, death-rate from phthisis 1·08, and from respiratory diseases 3·45 per 1,000 of population; rate of deaths under one year to 1,000 births 145.

Dr. Hall's report is not so favourable as in previous years. The death-rate was 1·8 higher than in 1895, and the zymotic rate rose to 3·67. Measles, which gave rise to 10 deaths and numerous cases of illness throughout the district, was very troublesome, and necessitated the closure of the whole of the schools. Enteric fever caused 6 cases and 2 deaths. One patient was supposed to have contracted the disease by "the middens being emptied just under the kitchen window," and

in another case the house had "a direct communication with the main sewer." The case of diphtheria which occurred at the Quarry was attributed to the improper emptying of an ashpit. The other zymotic deaths were due to whooping cough (1) and diarrhœa (4). The hospital at Whiston was used for the isolation of 1 case of scarlet fever and 5 cases of measles.

Sewerage, Scavenging, &c.—The sewage is treated by land irrigation. The officials of the Council undertake the scavenging, and convey the refuse to farm land.

Sanitary Inspection.—The water of the Quarry was specially reported on, and as a result a direct supply is now obtained from the main. The dairies and cowsheds have been inspected, and are without complaint. Bakehouses were satisfactory. There are neither slaughter-houses nor lodging-houses in the district. Several improvements have been carried out in Church Row (Roby), Derby Road (Huyton), Liverpool Road, &c. The Inspector served 24 notices, and much sanitary work was accomplished on his verbal recommendation.

Ince-in-Makerfield. — (Area in acres, 2,320; Estimated Population, 21,001).—*Medical Officer of Health*, JOSEPH E. PARKER, M.R.C.S.; *Salary*, £40.—Birth-rate 41·0, death-rate 21·3, zymotic rate 2·61, death-rate from phthisis 0·47, and from respiratory diseases 4·61 per 1,000 of population; rate of deaths under one year to 1,000 births 187.

The vital statistics bear favourable comparison with previous years; the birth-rate continues high, while the death-rate was 5·0 below 1895 and 3·46 below the average of the last five years. There was also a great diminution in the zymotic and respiratory rates, and in the proportion of infant deaths to births. Dr. Parker is of opinion that the improvements recently effected, both in the streets and dwellings of the people,

have much to do with the fall in the death-rates. Measles, with 27 deaths, proved the most fatal of the zymotic diseases, enteric fever coming next with 32 cases and 8 deaths. In all the cases of typhoid the probable cause was found to be dependent generally on some form of filth nuisance, but personal infection was not observed. Scarlet fever gave rise to 130 cases and 4 deaths. "The disease manifested its presence all over the district, but only in isolated cases in Higher Ince. Lower Ince, 'Spring View especially,' being the part of the district to suffer most." Diphtheria and membranous croup contributed 5 deaths, whooping cough 5, and diarrhoea 10. Small-pox, from January 31st to June 20th, attacked 9 persons; unfortunately one case was contracted owing to the assistance given during the removal of a patient to the Hospital. The Hospital increases in favour, and was used for the isolation of all the cases of small-pox, 11 scarlet fever cases, and 2 enteric fever cases.

Water Supply described as "constant, plentiful, and uniformly good." The water obtained from the Golborne pumping station was supplemented by a supply from the Liverpool Corporation reservoir at Rivington.

Sewerage, Scavenging, &c.—The sewage is treated by precipitation (lime and iron being added) "with satisfactory results." The Council's workmen undertake the scavenging, and get rid of the refuse by tipping. The streets have been well scavenged.

Sanitary Inspection.—It is satisfactory to note that large areas of stagnant pools have been drained and filled up with dry ashes from neighbouring collieries, and the unpaved surroundings of houses have been kept in a more cleanly condition. Insanitary dwellings have been made habitable, and from the Inspector's Report it is evident that more attention has been paid to ashpit nuisances. Bakehouses, slaughter-houses, dairies, and cowsheds are periodically examined and

found free from complaint. Canal boats received 100 visits, and "no case of infectious disease was discovered on any of the boats inspected." The factories and workshops are looked after and reported as well lighted and ventilated and free from overcrowding. The Inspector served 362 legal and preliminary notices, and, with few exceptions, all were complied with. In four instances legal proceedings were taken; these were against persons improperly keeping swine. In each case it is satisfactory to observe that a fine of 20s. was imposed, with costs, and an Order made to abate the nuisance. The smoke nuisance receives little attention.

Irlam.—(Area in acres, 4,634; Estimated Population, 5,000).
—*Medical Officer of Health*, EDWIN O. JAGO, M.R.C.S.;
Salary, £20.—Birth-rate 23·4, death-rate 9·6, zymotic rate 1·0, death-rate from phthisis 0·20, and from respiratory diseases 1·80 per 1,000 of population; rate of deaths under one year to 1,000 births 111.

The health report for this district is very satisfactory, the death-rate being only 9·6, or 5·0 per 1,000 less than in 1895. There was also a considerable reduction in the zymotic, respiratory, and infant death-rates. The zymotic deaths were represented by enteric fever (2), measles (1), and whooping cough (2). In the latter half of the year scarlet fever occurred, and gave rise to 19 cases but no death. All the patients were treated at home, but with precautions against spreading the disease.

Water Supply.—The whole district, except some parts of the Moss in Irlam and Cadishead, is well supplied with Manchester water.

Sewerage, Scavenging, &c.—The main sewer and outfall works have had £12,000 expended on them. House drains, &c., are being coupled up with the sewer. In a letter to the Mersey and Irwell Joint Committee the Clerk writes that the Council

has drained, levelled, and planted about $3\frac{1}{2}$ acres of land with osiers, and proposes to treat another two acres in the same manner. The Council contracts for the removal of refuse, and arrangements are made for the emptying of ashpits "upon application by the occupiers and payment of the cost."

Sanitary Inspection.—Bakehouses and slaughter-houses have given satisfaction. There are no Regulations under the Dairies, Cowsheds, and Milk-shops Order, although inspections are made. The Medical Officer of Health advises the adoption of water-closets to new property, and it is hoped the Council will act on his recommendation. Mr. Kay (Surveyor and Inspector) reports the service of 6 notices for the abatement of nuisances, and 55 notices—affecting 162 houses—to connect the drains with the main sewer; altogether 107 houses were thus connected, and 12 houses disinfected after infectious disease.

Kearsley.—(Area in acres, 996; Estimated Population, 8,500).—*Medical Officer of Health*, J. C. EAMES, M.D.; *Salary*, £20 (no claim).—Birth-rate 29·8, death-rate 21·1, zymotic rate 2·82, death-rate from phthisis 0·82, and from respiratory diseases 4·35 per 1,000 of population; rate of deaths under one year to 1,000 births 216.

The health of this district, as judged by the statistics, cannot be regarded as satisfactory; there was a fall in the birth-rate, and a considerable rise in the general death-rate, and in the zymotic and respiratory death rates. The proportion of deaths under one year to 1,000 births (216) was excessive. Measles, with 10 deaths, had the most extensive distribution of the zymotic diseases; the precautionary measures taken to restrain the outbreak are not described, but school closure, so valuable in some districts, was not adopted. Typhoid fever caused a large number of deaths (5), but owing to notification not being adopted the full extent of its distribution could not be ascertained. The question of hospital provision is now occupying the attention of the Council.

Sewerage, Scavenging, &c.—The precipitation tanks were found insufficient for efficiently dealing with the sewage, and towards the latter part of the year the Council decided to provide filter beds. The scavenging, as contracted for, is not looked upon as satisfactory.

Sanitary Inspection.—Bakehouses and slaughter-houses were conducted without complaint. The dairies and cowsheds receive attention, but Regulations under the Local Government Board Order have not been adopted. The Inspector served 20 notices for the reconstruction of privies and ashpits, but no action is taken regarding the smoke nuisance. More details might be given of the sanitary work carried out in this district.

Kirkham.—(Area in acres, 857 ; Estimated Population, 4,076).—*Medical Officer of Health*, W. W. SHAW, M.R.C.S. ; *Salary*, £30.—Birth-rate 29·4, death-rate 19·3, zymotic rate 1·47, death-rate from phthisis 1·22, and from respiratory diseases 3·18 per 1,000 of population ; rate of deaths under one year to 1,000 births 183.

As compared with 1895 there was a decrease in the birth-rate equal to 1·5 per 1,000, and, including the workhouse deaths belonging to the district, an increase in the death-rate of 0·4. There was a slight increase in the zymotic rate, while the infant deaths, although somewhat high, compare favourably with previous years. Dr. Shaw draws attention to the falling off in the number of deaths from phthisis, and attributes this improvement as largely due to the closing of the flax mill, "where the dusty nature of the work found many victims." The zymotic deaths were represented by scarlet fever (3) and whooping cough (3). The former disease occurred sporadically in January, and, with the exception of February and December, was present more or less throughout the year. Whooping cough prevailed in the last quarter of the year, and the deaths took place in the colder months, when the severe weather brought on chest complications.

Water Supply, of the Fylde Water Company, is ample, and “maintains its high standard of purity.”

Sewerage, Scavenging, &c.—Many of the old ashpits are deep, and allow percolation into the surrounding subsoil. Water carriage would on the whole be more preferable. Scavenging by the Authority has been satisfactorily conducted.

Sanitary Inspection.—The notices served by the Inspector number 150, and include 49 for the opening, cleansing, or repair of drains, 32 repair or improvement of ashpits, 31 cleansing of filthy backyards, &c. Bakehouses and slaughter-houses gave rise to no complaint. The common lodging-houses were examined, and 1 licence was withdrawn, owing to non-compliance with the Inspector's orders. Dairies and cowsheds registered (18) came under supervision, but no details are given.

Lancaster Borough.—(Area in acres, 1,680; Estimated Population, 37,029).—*Medical Officer of Health*, G. R. PARKER, L.R.C.P. (Lond.); *Salary*, £110 for the Borough, and £20 for the Port.—Birth-rate 27·4, death-rate 14·0, zymotic rate 1·19, death-rate from phthisis 0·93, and from respiratory diseases 2·89 per 1,000 of population; rate of deaths under one year to 1,000 births 162.

The death-rate was more favourable than in the previous year, and corresponded to a gross annual rate of 20·93, or a corrected rate of 14·0 after excluding the deaths not belonging to the Borough, which took place in the following Institutions:—

County Asylum...	...	...	...	180
Royal Infirmary	...	...	...	39
Union Workhouse	...	...	...	25
Bowerham Barracks	...	...	...	4
Castle	...	...	...	2
				250

There was a reduction in the zymotic and phthisis rates, and an increase in the proportion of deaths under one year to births. The notified cases of infectious disease amounted to 183, against 1,535 in 1895, the great difference in the two numbers being due to measles, which gave rise to 58 notifications, against 1,405 in the previous year. Whooping cough with 19 deaths proved the most fatal of the zymotic diseases, enteric fever and diarrhoea coming next with 11 deaths each. Scarlet fever caused 32 cases but no death, diphtheria 3 deaths, measles 2, and small-pox 1 death. Small-pox broke out in February and May; in the first instance introduced by a tramp from Liverpool, and in the second instance by a man from Gloucester, who distributed the disease to several of his friends before he could be restrained. On recovering, the Corporation summoned him before the magistrates, when a fine of £5 was imposed. The following cases were admitted into the Isolation Hospital:—enteric fever (16), scarlet fever (22), small-pox (6), and it is satisfactory to note that all recovered.

Water Supply keeps up its high standard of excellence. “The only drawback that can be found is that in a dry summer water is sometimes scarce, and consequently the supply has occasionally been intermittent.”

Sewerage, Scavenging, &c.—It is stated that bad smells, arising from the street ventilators, are complained of in some parts of the town. The Corporation undertake the scavenging, and it is described as “well and thoroughly carried out.”

Sanitary Inspection.—Improvements have been effected in the flagging, &c., of many yards and courts. The demolition of China Lane has been completed, and new buildings are in course of erection on the vacant site. There is still much old property which the owners fail to keep in a sanitary condition; the Inspector mentions Ann Street and Back Queen Street as wanting attention. Common lodging-houses have been

inspected, and the Corporation has supplied further accommodation in Bridge Lane. Private slaughter-houses are not allowed in the Borough; the public slaughter-house has been conducted with due regard to cleanliness. Cowsheds, &c., bakehouses, and canal boats (36) passed a satisfactory examination. The Inspector reported on the following matters:—

Accumulation and deposit of offensive matter	41
Ashpits not in accordance with requirements	123
Privies not satisfactory	9
Drains defective	243
Drains tested	21
Filthy premises	15
Factories and workshops <i>re</i> overcrowding	42
Houses unfit for habitation	11
Overcrowded dwellings	27
Smoke nuisance	50
Water closets defective	182
Spouts defective, &c., &c.	163

Port of Lancaster.—Dr. Parker states that 174 home trade vessels entered the port, with a total tonnage of 17,334 tons, and having about 800 hands. The foreign trade vessels numbered 34—British 18 and foreign 16; total tonnage, 13,675, and having about 453 hands. These vessels have been visited and inspected on 59 occasions. “A case of enteric fever was met with on board one of the vessels and removed to the Sanatorium at Lancaster. After a stay of between eight and nine weeks the patient was discharged cured. . . . The sanitary condition of the vessels was satisfactory; they were found clean and in good order.” Again the Medical Officer of Health reports that the water supply is derived from the canal basin, and that it is “an utterly unsafe source and full of danger to persons using it.” A great responsibility rests on the Authority in not providing a proper supply of water, and I recommend that the attention of the Local Government Board be called to their persistent neglect.

Lathom and Burscough.—(Area in acres, 13,654; Estimated Population, 7,325).—*Medical Officer of Health*, J. G. LAING, L.R.C.P.I.; *Salary*, £40.—Birth-rate 32·9, death-rate 14·8, zymotic rate 4·23, death-rate from phthisis 1·63, and from respiratory diseases 2·04 per 1,000 of population; rate of deaths under one year to 1,000 births 116.

Although the zymotic rate for this district was abnormally high the death-rate showed a reduction as compared with 1895 equal to 1·4 per 1,000. The infant rate was also low, and corresponded to 116 per 1,000 births. From the numerous fatalities caused by measles (18) it may be safely assumed that the disease had a very extensive spread. Scarlet fever was also prevalent, and gave rise to 171 cases and 4 deaths. Precautionary measures were taken, including school closure, but, unfortunately, the officials were hampered in their endeavours by not having an isolation hospital available to receive the infected. Dr. Laing reports that the want of hospital accommodation will not be long felt, as an arrangement has been made with Ormskirk (R) for the treatment of their cases in the hospital now approaching completion. The other zymotic deaths were attributable 4 to typhoid fever, 1 to diphtheria, 1 to whooping cough, and 4 to diarrhœa.

Water Supply continues ample and excellent in quality.

Sewerage, Scavenging, &c.—Sewage from the western portion of the district is treated by precipitation and filtration, while the cesspool system is in vogue for the rest of the township. The method of scavenging requires overhauling. Full ashpits, often overflowing, and heaps of ashes, refuse, &c., are met with in the vicinity of dwellings. Great difficulty is experienced by the tenants in getting their ashpits emptied, and the owners of property are reluctant to do this work. The Council should introduce a system of scavenging which would be convenient, economical, and conducive to public health.

Sanitary Inspection.—Canal boats (54) are inspected, and, with one exception, have been found in a good sanitary condition. The bakehouses, slaughter-houses, dairies, and cow-sheds have met with the approval of the officials. Sewage finds its way into the Ellerbeck and Langleys Brooks, but this will cease when the proposed sewage works are completed. The Inspector served 10 notices, chiefly referring to defective or improperly situated closets and ashpits, or to the proximity of pigstyes to dwelling houses, and 30 nuisances have been remedied without having recourse to legal proceedings.

Lees.—(Area in acres, 202; Estimated Population, 4,057).—*Medical Officer of Health*, WM. STANFIELD, M.D.; *Salary*, £20.—Birth-rate 27·3, death-rate 20·2, zymotic rate 2·95, death-rate from phthisis 0·73, and from respiratory diseases 3·69 per 1,000 of population; rate of deaths under one year to 1,000 births 171.

The death-rate was 2·3 higher than in the previous year, and there was also a marked increase in the zymotic and infant death-rates. Measles had an extensive prevalence, and gave rise to 6 deaths, whooping cough coming next with 3 deaths, scarlet fever contributed 39 cases and 1 death, while diphtheria caused 2 deaths. To check the progress of infectious disease the public elementary schools were closed, one for a period of three weeks and the other two weeks; disinfectants were supplied gratuitously, and printed instructions issued to the inhabitants. There is no provision for hospital isolation and no disinfecting apparatus.

Sewerage, Scavenging, &c.—Dr. Stanfield reports that “considerable progress has been made with the main intercepting works for the district, and it is expected that in a short time the works will have been satisfactorily completed.” The scavenging and refuse removal receive due attention.

Sanitary Inspection.—The district has been periodically inspected, and “the insanitary conditions met with had reference for the most part to defective privies and ashpits and other ordinary nuisances, many of which were remedied without the necessity of serving a notice of abatement.” Slaughter-houses were found generally in a satisfactory condition. No information is given respecting dairies and cowsheds. The Inspector served 15 notices for the abatement of nuisances, 11 of which were complied with. Particulars respecting sanitary work carried out in the district might be amplified in future reports.

Leigh.—(Area in acres, 6,347; Estimated Population, 35,250).—*Medical Officer of Health*, J. KING, M.B.; *Salary*, £100.—Birth-rate 36·8, death-rate 21·1, zymotic rate 3·54, death-rate from phthisis 1·13, and from respiratory diseases 5·10 per 1,000 of population; rate of deaths under one year to 1,000 births 180.

The vital statistics compare favourably with 1895, as shown by a reduction of 6·2 in the general death-rate, and 3·86 in the zymotic rate. The proportion of infant deaths to births, although high, has greatly diminished. Scarlet fever was widely prevalent, and gave rise to 396 cases of illness and 18 deaths. Of 106 cases removed to the Sanatorium 3 deaths took place. Unfortunately, certain cases, imperfectly isolated, refused to be removed, and were the means of spreading the disease. With knowledge of the advantages of hospital treatment it is hoped that the public will be less difficult to deal with, and save the necessity of having recourse to forcible removal under Section 124 of the Public Health Act, 1875. All the other infectious diseases prevailed extensively in this district; for instance, typhoid fever caused 65 cases and 11 deaths, and diphtheria and membranous croup 33 cases and 11 deaths, while measles contributed 18 deaths, whooping

cough 13, and diarrhœa 54 deaths. A disinfecting apparatus is required, as the one at Astley, on account of distance, cannot be conveniently used.

Water Supply, obtained from the Liverpool Corporation, is of good quality.

Sewerage, Scavenging, &c.—The sewage is dealt with on farm land, and the effluents have not always proved satisfactory. The scavenging is contracted for, and does not comply with the sanitary requirements of the district. Unpaved streets and passages have in many instances received attention, and further work in this direction is contemplated. There is reason to hope that the sewage nuisance at Common Lane (Plank Lane) will be effectually removed by the laying of 18-inch cast-iron pipes, with penstocks at intervals of 100 yards, "so that any sediment lodging in the sewer through mining operations can be readily cleaned out."

Sanitary Inspection.—The canal boats, to the number of 64, were inspected, and 4 were proceeded against for infringing the Act. Bakehouses, lodging-houses, dairies, and cowsheds have been regularly visited, and found generally satisfactory. Dr. King recommends a public abattoir in preference to private slaughter-houses. During the year 15 houses have been closed as unfit for human habitation, and 9 of them were demolished. The Inspector reported 364 nuisances, and secured the abatement of 347. Disinfection was carried out in 345 houses. The nuisances included:—

Defective house drains	...	...	168
Foul ashpits	...	...	66
Privies and ashpits out of repair	...	...	80
Defective sink pipes and gullies	...	...	25
Filthy houses	...	...	30
Insanitary yards	...	...	68

The rest were of a miscellaneous character. "Numerous" smoke observations were taken, but no legal action resulted.

Levenshulme.—(Area in acres, 605; Estimated Population, 8,500).—*Medical Officer of Health*, H. E. EDLIN, M.R.C.S.; *Salary*, £20 (no claim).—Birth-rate 28·7, death-rate 11·2, zymotic rate 0·70, death-rate from phthisis 2·11, and from respiratory diseases 2·35 per 1,000 of population; rate of deaths under one year to 1,000 births 81.

Dr. Edlin submits a very favourable report on the health of this district during the past year; the general death-rate was remarkably low, and 3·84 less than the average for the preceding 10 years. There was also a decided decrease in the zymotic rate and in the rate of infant deaths. Phthisis gave rise to a high mortality. The Medical Officer of Health recommends disinfection after each case and the removal of all predisposing causes, "especially badly-ventilated, dark, and damp rooms." Measles, with 4 deaths, proved the most fatal of the zymotic diseases; the other 2 deaths belonging to this class were attributed to scarlet fever and diarrhœa. It is satisfactory to note that the Infectious Disease (Notification) Act came into force on the 27th of July. Owing to the Stockport Hospital being full, only one case was removed; on two occasions isolation could not be secured.

Sewerage, Scavenging, &c.—The sewers are frequently flushed and generally satisfactory. The sewage is dealt with by the Withington Urban District Council. Scavenging is said to be carried out efficiently by the officials of the Council.

Sanitary Inspection.—The old-fashioned privy and ashpit system gives rise to "the largest number of nuisances." They are in many instances deep, defectively drained, and uncovered. Dr. Edlin considers their presence "a source of danger to the health of the district," and recommends water closets and dry ashpits. Factories and workshops (15) were found satisfactory. Slaughter-houses (4) and bakehouses (4)—of which 1 is underground—were without complaint. Nine houses have been partially demolished and re-constructed, and two houses have

been closed for sanitary defects. Dairies, cowsheds, and milkshops (30) have received due attention. The Inspector gives an abstract of sanitary work carried out, requiring the service of 157 notices. Of 125 nuisances reported 112 were abated; these included overcrowding, repair of house drains, conversions of closets, cleansing of dirty yards, passages, &c.

Leyland.—(Area in acres, 3,651; Estimated Population, 6,000).—*Medical Officer of Health*, E. BERRY, L.F.P.S.G.; *Salary*, £20.—Birth-rate 34·0, death-rate 23·6, zymotic rate 2·50, death-rate from phthisis 2·33, and from respiratory diseases 5·16 per 1,000 of population; rate of deaths under one year to 1,000 births 181.

The vital statistics received from Dr. Berry cannot be regarded with satisfaction; as compared with similar districts within the County, the death-rates generally were excessive. The high zymotic mortality (2·5) was due to the fatalities from measles 5, whooping cough 3, diphtheria 4, and enteric fever 2. During the last quarter of the year measles had the greatest prevalence, and the Wesleyan Day School had to be closed for a week—a period much too short for any beneficial effect. When notification comes in force, and hospital accommodation is provided, it is hoped that more restraint will be exercised over the spread of infectious diseases.

Water Supply is obtained from a pumping station at Clayton-le-Woods, near Chorley; the hardness given by Dr. Campbell Brown as 24° shows the water to be much harder than the supply to other Lancashire districts.

Sewerage, Scavenging, &c.—The treatment of the sewage at the farm is far from satisfactory. Mr. Naylor reported on June 8th, 1896, that “the farm consists of nine acres, but, on the date of my visit, the sewage (a strong one) was only allowed to pass over 1,875 yards, or about two-fifths of an acre.” Sanction is being obtained from the Local Government

Board for borrowing powers in connection with the construction of precipitation tanks and filters. Refuse removal from ash-pits, &c., is more carefully carried out.

Sanitary Inspection.—Bakehouses and slaughter-houses are said to be clean and “periodically whitewashed.” The factories and workshops have been visited, but no particulars are given as to their sanitary condition. Dairies and cow-sheds are still without regulation, and I would recommend the Council to pay attention to this matter. The Inspector served 19 notices, but, as usual, little information is given concerning his sanitary work.

Litherland.—(Area in acres, 855; Estimated Population, 6,740).—*Medical Officer of Health*, BENJ. SUMNER, M.D.; *Salary*, £21 (no claim).—Birth-rate 33·5, death-rate 14·3, zymotic rate 1·63, death-rate from phthisis 0·59, and from respiratory diseases 4·15 per 1,000 of population; rate of deaths under one year to 1,000 births 150.

The birth and death rates were increased 6·0 and 1·4 respectively as compared with 1895, and there was a diminution in the zymotic and phthisis rates as well as the proportion of infant deaths to births. Scarlet fever prevailed more or less throughout the year, and gave rise to 50 cases of illness and 1 death. Special precautions were taken to stay the progress of this disease, and the Bootle Hospital was used for the isolation of 11 cases. Typhoid fever contributed 10 cases and 1 death, diphtheria 2 deaths, measles 2, diarrhoea 4, and measles 1 death. Two cases of typhoid fever received treatment at the Bootle Hospital, and it is satisfactory to note that the Council are well satisfied with the accommodation provided for the infected patients.

Sewerage, Scavenging, &c.—The sewage is allowed to flow into the Mersey. Scavenging is contracted for and gives satisfaction.

Sanitary Inspection.—Systematic visits have been paid to the dairies and cowsheds, slaughter-houses, bakehouses, &c. The conversion of 10 privies into w.c.'s has been effected, and it is hoped that greater progress will be made in this direction. The Council licensed three shippens provided with 450 cubic feet of air space for each beast; an attempt is being made to increase the air space to 600 cubic feet. The Medical Officer of Health recommends the provision of a steam disinfecter in order to ensure thorough disinfection. A list is supplied of nuisances taken in hand by the Inspector, which necessitated the service of 40 notices.

Littleborough.—(Area in acres, 7,736; Estimated Population, 11,314).—*Medical Officer of Health*, G. H. PITCAIRN, M.B.; *Salary*, £40.—Birth-rate 24·3, death-rate 14·3, zymotic rate 1·32, death-rate from phthisis 1·32, and from respiratory diseases 2·56 per 1,000 of population; rate of deaths under one year to 1,000 births 115.

The health of the district, as shown by the vital statistics, was, on the whole, satisfactory. As compared with 1895 there was an increase in the birth-rate of 1·6, and a decrease in the death-rate equal to 1·9 per 1,000. There was a slight accession to the zymotic deaths, but the proportion of infant deaths to births was substantially reduced. Scarlet fever spread extensively, and occasioned 80 cases and 7 deaths; the outbreak practically ceased towards the latter part of June. Home isolation had to be relied on, as unfortunately the district is without hospital provision. The other zymotic diseases which proved fatal were enteric fever 2 deaths, whooping cough 3, and diphtheria and diarrhoea 1 death each.

Water Supply is said to be good, and obtained from the Rochdale Corporation.

Sewerage, Scavenging, &c.—The sewage is treated by precipitation and filtration, and satisfactory effluents have

been obtained. The officials of the Council carry out efficiently the scavenging, and dispose of the refuse to the farmers of the neighbourhood.

Sanitary Inspection.—The cowsheds, slaughter-houses, bakehouses, and lodging-houses have complied with the bye-laws. The Inspector has found 44 canal boats in a satisfactory condition. For the abatement of nuisances 204 letters or notices were served, relating—

18 to the connection of house drains with the sewers.

13 slop drains requiring disconnection.

31 trapping and repair of drains.

38 defective closet accommodation.

13 removal of stable manure.

41 emission of black smoke in excess of time (8 minutes) allowed by the Council.

5 removal of urinals.

9 insufficient or polluted water supplies.

7 offensive trade nuisances.

19 miscellaneous nuisances, &c.

No legal proceedings were required in any case.

Little Crosby.—(Area in acres, 1,811; Population (Census 1891), 641).—*Medical Officer of Health*, W. ROWLANDS, M.R.C.S.; *Salary*, £6 (no claim).—Birth-rate 24·9, death-rate 6·2, zymotic rate nil, death-rate from phthisis 1·56, and from respiratory diseases 1·56 per 1,000 of population; rate of deaths under one year to 1,000 births nil.

In this small district there were registered 16 births and 6 deaths. From the latter are deducted two deaths by drowning of two non-residents. The death-rate was remarkably low, and not a single case of infectious disease occurred.

Water Supply is obtained from the Liverpool Corporation, except in one or two instances.

Sewerage, Scavenging, &c.—The sewer discharges into a large catchpit, and the overflow is conducted by drain pipes into a ditch running parallel to Dibbs Lane. The Inspector supervises the emptying of middens and cesspools, and when the tenant fails to do the work he is authorised to arrange for the removal of the refuse.

Sanitary Inspection.—The district has been inspected by the Medical Officer of Health and Inspector, and certain nuisances relating to the privy middens and cesspools have been abated without the necessity of serving legal notices.

Little Hulton.—(Area in acres, 1,706; Estimated Population, 7,178).—*Medical Officer of Health*, J. C. CLARKE, M.B.; *Salary*, £20.—Birth-rate 32·7, death-rate 15·7, zymotic rate 3·06, death-rate from phthisis 0·55, and from respiratory diseases 4·04 per 1,000 of population; rate of deaths under one year to 1,000 births 136.

As compared with the previous year the birth and death rates were reduced 5·0 and 4·5 respectively. The zymotic rate was high, owing to the numerous deaths (13) from diarrhœa, but there was a satisfactory diminution in the proportion of deaths under one year to births. Typhoid fever caused 3 deaths, whooping cough 3, measles 2, and diphtheria and membranous croup 2. No death was due to scarlet fever; only 1 case received isolation at the joint hospital.

Sewerage, Scavenging, &c.—Dr. Clarke states that “the bulk of the sewage is treated by filtration on the Barton Old Hall Sewage Farm; about one-fifth by precipitation in the district.” The scavenging is contracted for, and said to be satisfactory.

Sanitary Inspection.—At the “annual inspection” of the Medical Officer of Health a continued improvement in sanitary matters was found. “House drains are better attended

to, and the number of defective ashpits is decreasing." The factories and workshops are not inspected, four notices only being issued for the abatement of nuisances.

Little Lever.—(Area in acres, 806; Estimated Population, 5,651).—*Medical Officer of Health*, ALFRED TAYLOR, L.R.C.P.I., D.P.H.; *Salary*, £20.—Birth-rate 28·8, death-rate 17·5, zymotic rate 2·65, death-rate from phthisis 1·06, and from respiratory diseases 3·0 per 1,000 of population; rate of deaths under one year to 1,000 births 184.

The death-rate was fractionally higher than in 1895, although 4·09 below the average for five preceding years. The zymotic and respiratory rates show some improvement, but the proportion of infant deaths to births was much in excess of the previous year. Scarlet fever caused 5 deaths, and from August 12th, when notification came in force, to the end of the year 46 cases were notified. Three patients suffering from this disease were removed to the Isolation Hospital, and it is hoped that when the public have become accustomed to hospital treatment more removals will take place. Membranous croup contributed 2 deaths, whooping cough 3, and diarrhoea 6. Typhoid fever, although responsible for only 1 death, assumed a threatening aspect in the autumn.

Water Supply.—During the first half of the year the water was much complained of, and chemically it was found to be unwholesome and undesirable for drinking purposes. The attention of the Bury Corporation has been drawn to the poor character of the water supplied from their reservoirs.

Sewerage, Scavenging, &c.—It is satisfactory to note the completion of the sewage outfall works. With a better system of sewerage, it may be hoped that some form of water carriage will be adopted, and so do away with the pollution of the air and soil due to the "abominable privy middens." The scavenging as carried out by the Council has given satisfaction.

Sanitary Inspection.—Dairies and cowsheds have been inspected; "some were found clean and well cared for, whilst others are filthy and quite unfit for the purpose for which they are used." Slaughter-houses are fairly well kept. In February the carcase of a cow was seized and condemned as unfit for human food; the owner was proceeded against and fined £10 and costs. Factories and workshops are described as in a satisfactory condition. The Inspector served 56 notices for the abatement of miscellaneous nuisances, and all were complied with without having recourse to legal proceedings.

Little Woolton.—(Area in acres, 1,387; Estimated Population, 1,191).—*Medical Officer of Health*, C. STUART PETHICK, M.B.; *Salary*, £20.—Birth-rate 14·2, death-rate 5·8, zymotic rate nil, death-rate from phthisis 0·83, and from respiratory diseases nil per 1,000 of population; rate of deaths under one year to 1,000 births 58.

The health of the district, as shown by the statistics prepared by Dr. Pethick, was remarkably good. The death-rate reached only 5·8 per 1,000, and there was not a single death from zymotic or respiratory diseases, while the infant deaths were extremely low. The whole of the infectious diseases coming to the knowledge of the sanitary officials were represented by 2 cases of measles.

Water Supply continues to be satisfactory; in 3 instances good water was substituted for the supply obtained from polluted wells.

Sewerage, Scavenging, &c.—The sewage is dealt with on farm land, and in the outlying portions of the district cess-pools are in vogue. Scavenging is reported as satisfactorily carried out by the officials of the Council.

Sanitary Inspection.—Two slaughter-houses have been well-conducted, and the drainage, &c., improved; dairies and

cowsheds also receive attention. The Inspector reports the service of 18 notices, the conversion of 36 privies into water closets, and the connection of 55 house drains with the new sewers, which are periodically flushed.

Longridge.—(Area in acres, 3,123; Estimated Population, 4,354).—*Medical Officer of Health*, E. ECCLES, M.R.C.S.; *Salary*, £10 (no claim).—Birth-rate 32·1, death-rate 24·8, zymotic rate 3·67, death-rate from phthisis 2·52, and from respiratory diseases 3·44 per 1,000 of population; rate of deaths under one year to 1,000 births 178.

The death-rate was high, and 6·5 in excess of the previous year. The zymotic and phthisis rates were also above the average, as well as the proportion of infant deaths to births. The most fatal zymotic disease was measles, which appeared in January, and prevailed throughout the year; 180 cases came to the knowledge of the sanitary officials and 14 deaths. No schools were closed. The other zymotic deaths, 3 in number, were due to membranous croup, enteric fever, and diarrhœa. Scarlet fever appeared in August, but did not cause a single death. In August the Infectious Disease (Notification) Act came into force. A Joint Committee has also been appointed to provide an isolation hospital.

Water Supply is obtained from the Preston Corporation.

Sewerage, Scavenging, &c.—The sewage works are still in course of construction. Scavenging is in the hands of the Council's officials, and carried out satisfactorily.

Sanitary Inspection.—The district is periodically inspected by the Medical Officer of Health, and careful supervision is exercised over the slaughter-houses (4) and dairies and cowsheds (12). The lodging-houses are kept clean and fairly satisfactory, but do not altogether comply with sanitary requirements. Factories and workshops receive a favourable report. During the year 3 notices were served—1 *re* nuisance

in Mersey Street, 1 Pitt Street, and 1 Langton Row—and immediate action was taken by the owners to rectify the matters brought to their knowledge.

Lytham.—(Area in acres, 2,238; Estimated Population, 5,285).—*Medical Officer of Health*, J. H. JENKINS, M.R.C.S., D.P.H.; *Salary*, £75.—Birth-rate 21·3, death-rate 10·7, zymotic rate nil, death-rate from phthisis 1·32, and from respiratory diseases 2·08 per 1,000 of population; rate of deaths under one year to 1,000 births 123.

The health report received from Dr. Jenkins is extremely satisfactory, and the details given of work in progress show that increased attention has been paid to the sanitary requirements of the town. The corrected death-rate (10·7) was remarkably low, and compared favourably with the average rate of the preceding five years (15·26). The entire absence of zymotic fatality during the year must be gratifying to the Council. The principal zymotic diseases were represented by 7 mild cases of scarlet fever and 1 case of enteric fever. A Committee has been formed in the Fylde district to provide joint isolation hospitals, and it is hoped that no undue delay will take place.

Water Supply is obtained from the Fylde Waterworks Company. By a new Act the whole of the water distributed has to be effectually filtered. For sanitary purposes the water is supplied at a rate not exceeding sixpence per 1,000 gallons.

Sewerage, Scavenging, &c.—Much consideration has been paid to a scheme “for removing the outfall from its present position in the Liggard Brook, making certain necessary structural alterations in the main sewer and raising the sewage by means of pumps to a retaining tank, whence it could be discharged on the ebb tide.” Unfortunately no provision is made for the treatment of the sewage previous to its discharge into the estuary, and I look with considerable apprehension to the effect of crude sewage on the shore in front of the town.

No doubt the Liggard Brook now acts as a settling tank, and if the proposed scheme be adopted, there is reason to believe, as suggested by the Medical Officer of Health, that "before very long there would be a belt of polluted water lying off the coast and daily being carried backward and forward in front of our shores." The deposition of refuse on the marsh causes a nuisance, and it is satisfactory to note that a destructor will soon be available for the combustion of this material.

Sanitary Inspection.—Cowsheds and dairies have been improved in cleanliness and ventilation, and greater willingness is shown by cowkeepers to carry out suggestions made to them. More cubic space and a better water supply is wanted in many of the shippens. The position and over-crowding of some of the slaughter-houses indicate the necessity of a public abattoir being provided. The bakehouses have been kept clean and complied with the Regulations. The Inspector has dealt with 384 nuisances, details of which are contained in the Report. It may be noted that pig keeping in contravention to the bye-laws is slowly decreasing. Disinfection has received careful attention as well as defects relating to closets, drains, surfaces of yards, back passages, &c.

Middleton Borough.—(Area in acres, 4,741; Estimated Population, 24,000).—*Medical Officer of Health*, WILLIAM GRAHAM, M.D., D.P.H.; *Salary*, £60.—Birth-rate 25·8, death-rate 21·0, zymotic rate 1·50, death-rate from phthisis 1·50, and from respiratory diseases 4·58 per 1,000 of population; rate of deaths under one year to 1,000 births 198.

The birth-rate was 25·8, as compared with an average of 30 for the preceding 10 years. After including the 32 municipal pauper deaths which occurred at the Workhouse, the rate of mortality was higher than in 1895; there was a slight diminution in the zymotic and respiratory rates, but the infant rate rose from 174 to 198 per 1,000 births. Measles with 10 deaths, membranous croup 10, and diarrhoea 13,

proved the most fatal of the zymotic diseases. Scarlet fever was very prevalent, causing 82 cases of illness and 3 deaths. The other zymotic deaths were attributed—1 to enteric fever, 3 to diphtheria, and 4 to whooping cough. Two cases of small-pox broke out, 1 on the 8th of February, and the other (fatal) on the 18th of June. The Marland Hospital, belonging to the Rochdale Corporation, was used for the isolation of the small-pox patients, and with 1 patient suffering from scarlet fever and 1 from enteric fever, represented the whole of the removals. Home isolation was too much relied on, and better results would be obtained by extending the use of hospital accommodation for the treatment of infected patients.

Sewerage, Scavenging, &c.—The sewerage scheme and outfall works are approaching completion. Scavenging is reported as satisfactorily carried out by the Corporation. The refuse is “carted on farms, and tipped where special provision is made.” Nuisance arises from the removal of nightsoil in the daytime.

Sanitary Inspection.—Dr. Graham calls attention to “the number of interments taking place in the cemetery and other graveyards in the midst of the population.” Factories were specially inspected, and an interesting tabular statement is given of their sanitary condition. The Inspector paid 326 visits to the slaughter-houses and 133 visits to lodging-houses. The desirability of a public abattoir is pointed out as conducive to efficiency of inspection. The Medical Officer of Health does not speak hopefully of the present system of controlling dairies and cowsheds; he advocates the granting of annual licences. Particulars are given of the abatement of over 300 nuisances, requiring the service of 231 formal notices; 77 smoke observations were made, and in one instance, as a result of legal proceedings, a small penalty was inflicted; this nuisance is being abated somewhat; the average time allowance for the emission of black smoke is 12 minutes in the hour. Of 55 canal boats

inspected 2 failed to produce certificates, and 1 was found to be insanitary as regards the sleeping accommodation.

Milnrow.—(Area in acres, 5,183; Estimated Population, 9,240).—*Medical Officer of Health*, CHAS. OGDEN, M.R.C.S.; *Salary*, £40.—Birth-rate 20·4, death-rate 16·0, zymotic rate 1·62, death-rate from phthisis 1·40, and from respiratory diseases 3·24 per 1,000 of population; rate of deaths under one year to 1,000 births 164.

The vital statistics were more satisfactory than in the previous year, the general death-rate being reduced 2·5 per 1,000, the zymotic and infant death-rates also showing an appreciable diminution. Measles, with 8 deaths, was the most fatal of the zymotic diseases, the other deaths belonging to this class of disease being attributable—2 to scarlet fever, 3 to diphtheria and membranous croup, 1 to whooping cough, and 2 to diarrhœa. An Isolation Hospital has not yet been provided.

Water Supply is obtained from the Rochdale and Oldham Corporations, and in rural portions of the district from wells.

Sewerage, Scavenging, &c.—A sewerage scheme and outfall works are being carried out, and, it is hoped, will soon be completed. Scavenging is satisfactorily conducted by the officials of the Council; the farmers in the neighbourhood take the refuse matter.

Sanitary Inspection.—Slaughter-houses have been found satisfactory, as well as the dairies and cowsheds. There are no public bakehouses or lodging-houses. The pail system is still in vogue, and 12 new closets have been erected. The Inspector has caused many defective drains to be put right, and in securing the abatement of ordinary nuisances 33 notices had to be served. Smoke observations, numbering 33, were taken, and 2 Orders made for abatement; the time allowance for the emission of black smoke is 8 minutes.

Morecambe.—(Area in acres, 1,753; Estimated Population, 9,538).—*Medical Officer of Health*, J. W. WATTERSON, M.B.; *Salary*, £20 (no claim).—Birth-rate 20·5, death-rate 11·3, zymotic rate 1·04, death-rate from phthisis 0·94, and from respiratory diseases 1·78 per 1,000 of population; rate of deaths under one year to 1,000 births 132.

Anyone reading Dr. Watterson's carefully prepared report must admit that he gives ample evidence of the regard paid to the carrying out of sanitary matters in this district. There is reason to be pleased with the very low death-rate (11·3 per 1,000), and with the satisfactory decline in the zymotic and respiratory rates as compared with the previous year. The deaths of visitors seem to have been somewhat high, and in future reports I would suggest that an account be given of the causes which gave rise to death and the length of their residence. Of 14 deaths due to zymotic causes diarrhœa contributed 12, the other two being ascribed to scarlet fever and whooping cough. There were altogether 18 cases of scarlet fever notified, and the early cases apparently arose from one imported in an infective state. A steam disinfecter has been procured, and the provision of an isolation hospital is recommended.

Water Supply is said to be excellent in quality and quantity.

Sewerage, Scavenging, &c.—The sewage at present passes through seven outlets into the sea. The Medical Officer of Health very properly advises the Council to proceed with a scheme which, although costly, would place the town above suspicion. Scavenging might be improved; accumulations of refuse take place in certain streets, awaiting disposal in tips outside the town.

Sanitary Inspection.—Bakehouses and slaughter-houses are systematically examined, and no complaint is made against

them. Dairies and cowsheds are not subject to inspection, but there is reason to believe that some action before long will be taken. Sanitary work received attention, and although only 8 notices were issued many conditions likely to prove injurious to health were put right.

Mossley Borough.—(Area in acres, 3,929; Estimated Population, 14,508).—*Medical Officer of Health*, J. HEALEY, M.B.; *Salary*, £40 (no claim).—Birth-rate 24·2, death-rate 15·0, zymotic rate 0·96, death-rate from phthisis 1·44, and from respiratory diseases 2·82 per 1,000 of population; rate of deaths under one year to 1,000 births 153.

As compared with 1895, the birth-rate increased 4·5 and the death-rate decreased 3·7; while the zymotic, respiratory, and infant death-rates show an equally satisfactory diminution. The deaths from diphtheria and membranous croup, 7 in number, exceed the average of previous years; whooping cough with 7 deaths indicated an extensive distribution; enteric fever gave rise to 1 death and diarrhœa 2 deaths, and, although 52 cases of scarlet fever were “voluntarily” notified, not a single death took place. There is no hospital accommodation for the isolation of ordinary infectious cases, and the disinfecting arrangements are not satisfactory.

Water Supply is said to be good; since the end of 1894 the water at Swineshaw Works has been treated with lime to counteract the acidity.

Sewerage, Scavenging, &c.—The new sewage works on the “International” principle are now in operation, and good results are expected. The scavenging as carried out by the Authority gives satisfaction.

Sanitary Inspection.—Bakehouses, lodging-houses, and slaughter-houses are inspected and receive a favourable report.

The dairies and cowsheds are subject to Regulation and kept in good order. Several streets have been paved, &c., as George Street, Sandbed Brow, Mountain Street, Lorne Street, Curzon Street, Bury Street, &c. Smoke observations are not taken, and only 6 notices were issued for the abatement of nuisances.

Moss Side.—(Area in acres, 420; Estimated Population, 26,000).—*Medical Officer of Health*, S. HOLGATE OWEN, M.D.; *Salary*, £60 (no claim).—Birth-rate 16·0, death-rate 11·8, zymotic rate 1·30, death-rate from phthisis 1·26, and from respiratory diseases 2·53 per 1,000 of population; rate of deaths under one year to 1,000 births 151.

The birth-rate ruled low and practically the same as in the previous year, the death-rate also continues extremely satisfactory. The zymotic and respiratory rates compare favourably with 1895, but the infant mortality shows a slight increase. The death-rate varied from 14·7 in North Ward with a density of population per acre of 100, to 8·2 in Whalley Range Ward with just half the density of population. The most fatal of the zymotic diseases were whooping cough with 10 deaths, diarrhoea 11, and enteric fever with 5 deaths out of 20 cases notified. In a large proportion of the houses in which the latter disease occurred sanitary defects were discovered, but for the most part the infection appeared to have been contracted outside the district, either at the place of work or whilst travelling. Scarlet fever was present throughout the year, especially during July; altogether 94 cases appeared, with only 1 death. In many of the cases the isolation attainable was imperfect, and instances were discovered of infective children being allowed to play in the streets or visit the Park. Monsall Hospital was used for the isolation of the following cases:—scarlet fever 31, diphtheria 1, and enteric fever 6. In view of the transference of Monsall Fever Hospital to the Manchester Corporation, Dr. Owen

recommends some new arrangement for the isolation of infectious cases of disease occurring in the district.

Sewerage, Scavenging, &c.—Complaints have been made during the year by the Mersey and Irwell Joint Committee respecting the unsatisfactory character of the effluent allowed to pass from the sewage works. The scavenging as carried out by the Council is reported as satisfactory.

Sanitary Inspection.—The bakehouses, except those underground, are for the most part well conducted. There are no common lodging-houses. The public abattoir, with the only private slaughter-house which exists in the district, have received attention; no food unfit for human consumption was seized. Dairies and cowsheds have complied with the requirements as to cleanliness, ventilation, and drainage. Only 1 factory was inspected, by request, and found to be unsatisfactory. Arrangements are being made for attending to the sanitary surroundings of "outworkers," as required by the Act of 1895. The Inspector served 380 notices for nuisance abatement and took 8 smoke observations, but no legal proceedings were required.

Much Woolton.—(Area in acres, 970; Population (Census 1891), 4,545).—*Medical Officer of Health*, CHARLES V. VEREKER, L.R.C.P.I.; *Salary*, £30.—Birth-rate 27·9, death-rate 15·8, zymotic rate 1·76, death-rate from phthisis 1·54, and from respiratory diseases 2·20 per 1,000 of population; rate of deaths under one year to 1,000 births 173.

The death-rate compares favourably with previous years, and exactly corresponds with the rate recorded in 1895. There was a reduction in the phthisis rate, but the infant deaths were somewhat above the average. Scarlet fever, although the cause of 9 cases of illness, was not fatal in a single instance. Diphtheria and membranous croup caused

3 deaths, and 1 death was ascribed to enteric fever and 1 to whooping cough. The cases of infectious disease were carefully inquired into, and disinfection attended to where considered necessary. The Isolation Hospital at Whiston was used for the treatment of 4 cases of scarlet fever, and when home isolation was resorted to daily visits were paid by the Inspector to see that precautionary measures were being carried out.

Water Supply is obtained from the Liverpool Corporation.

Sewerage, Scavenging, &c.—The sewage from the western part of the district flows into the Mersey through the Garston sewers. The eastern portion of the sewage is treated on a sewage farm. Dr. Vereker reports that “careful and constant attention has been paid to the scavenging and cleansing of the streets. Most of the houses have been visited from time to time, and many notices, both verbal and written, given with unquestionable benefit.” The sewers are kept clean and in good order.

Sanitary Inspection.—It is satisfactory to note that privies are being gradually abolished in favour of w.c.’s, and ashpits are being made smaller and the floors raised to the ground level. Piggeries are causing a nuisance, and difficulty has been experienced in their removal. If likely to endanger health an attempt to remove them should be made, under Section 91 of the Public Health Act, 1875. The Inspector submits a tabular statement, showing that the following matters received attention, viz. :—

Total complaints received	...	...	38
Houses, premises, &c., inspected	...	...	500
Houses cleansed, repaired, &c.	...	...	10
Houses disinfected	...	...	21
Drains repaired, trapped, &c...	...	...	23
Notices issued by the Authority for the removal of nuisances, &c.	...	...	16

In addition, bakehouses, slaughter-houses, dairies, and cow-sheds were duly visited.

Nelson Borough.—(Area in acres, 3,185; Estimated Population, 30,000).—*Medical Officer of Health*, A. P. MILLAR, M.D.; *Salary*, £60.—Birth-rate 30·4, death-rate 13·7, zymotic rate 0·90, death-rate from phthisis 0·63, and from respiratory diseases 3·23 per 1,000 of population; rate of deaths under one year to 1,000 births 140.

Dr. Millar submits vital statistics of an exceptionally favourable character for a manufacturing town. The death-rate (13·7) was fractionally less than the low rate recorded in 1895, and there was a satisfactory reduction in the zymotic rate and deaths from infantile diseases. Scarlet fever had a considerable prevalence, giving rise to 224 cases and 3 deaths. Towards the latter part of the year measles spread widely, but only 1 death was caused. Diphtheria gave rise to 12 cases, 3 deaths; membranous croup 8 deaths, although not one case was notified; enteric fever 18 cases, 5 deaths; whooping cough 8 deaths, and diarrhoea 7 deaths. Plans have been prepared for a new Infectious Hospital, to include an isolation pavilion with 6 beds, two pavilions with 28 beds, also administrative block, disinfecting rooms, &c. The provision of a disinfecting station for the Borough is considered by the Medical Officer of Health to be an urgent necessity.

Water Supply said to be good and plentiful.

Sewerage, Scavenging, &c.—The sewage works have undergone much remodelling, and it is hoped will soon be again ready for the treatment of sewage. The scavenging as carried out by the Corporation is reported as satisfactory; the ashpit refuse is taken to the tips, and the vegetable and animal matters are burnt in a destructor.

Sanitary Inspection.—Bakehouses have been well conducted. Dairies and cowsheds have complied with the Corporation requirements and necessitated, in some cases, certain structural alterations. The slaughter-houses are kept in a fairly good condition, "but until a public abattoir is

erected, effectual supervision is almost impossible." Several chimneys have been under observation with regard to the smoke nuisance, but no special action has been taken. The Inspector reports that 307 complaints of nuisances have been received and, as a rule, abatement has been secured without the service of statutory notices. Eighty-six privies have been converted to w.c.'s; legal proceedings were taken in a bad meat case, and a fine of £10 and costs resulted. Factories and workshops have been found with defective closet accommodation.

Newton-in-Makerfield.—(Area in acres, 3,103; Estimated Population, 14,249).—*Medical Officer of Health*, J. W. WATKINS, M.D.; *Salary*, £50.—Birth-rate 35·1, death-rate 14·9, zymotic rate 1·96, death-rate from phthisis 0·70, and from respiratory diseases 3·22 per 1,000 of population; rate of deaths under one year to 1,000 births 113.

As compared with the previous year there was an increase in the birth-rate equal to 1·4 per 1,000, and also a slight advance in the general death-rate. The zymotic rate showed a satisfactory reduction, as well as the rate of mortality of children under the age of 12 months. Scarlet fever of a mild character had a wide distribution; the notifications amounted to 173 and the deaths 4. Hospital isolation was provided at Warrington for 82 patients, and 6 cases of typhoid fever out of 30 cases notified were also removed. The other zymotic deaths were attributed to enteric fever 6, measles 2, and diarrhoea 7. In reference to the causation of typhoid fever, Dr. Watkins reports that the land on which some of the infected houses are built was until quite recently in a high state of cultivation. The only provision made is to convey slop-water through the small back streets or alleys to a branch sewer at the end of them, parts of the district being "neither more nor less than a swamp." A suitable disinfecting apparatus is much needed.

Water Supply.—The quality is excellent, but the supply is not always sufficient. Although the matter receives the attention of the Council, so far practical steps have not been taken.

Sewerage, Scavenging, &c.—The Newton Lake is still polluted by sewage, which gains access to it by the Millington Brook. Scavenging is done partly by the Council and partly by contract, and no complaints are made respecting the character of the work.

Sanitary Inspection.—Bakehouses, lodging-houses, and slaughter-houses are said to be satisfactorily conducted. Dairies and cowsheds are subject to regulation, and apparently well looked after. The Inspector states that 546 nuisances received attention, including the following :—

Want of or defective sanitary pails ...	287
Want of ashpit door, or insanitary closets	147
Choked drains	51
Defective pavement of back yards ...	11
Miscellaneous nuisances	50
Total ...	546

Norden.—(Area in acres, 6,033; Estimated Population, 4,000).—*Medical Officer of Health*, JOHN A. GRINDROD, M.R.C.S.; *Salary*, £20.—Birth-rate 19·0, death-rate 12·7, zymotic rate 1·25, death-rate from phthisis 0·50, and from respiratory diseases 2·25 per 1,000 of population; rate of deaths under one year to 1,000 births 144.

The vital statistics are on the whole very favourable, an increase in the birth-rate being accompanied by a substantial reduction in the death-rate. The zymotic rate was higher than in the previous year, but the phthisis and respiratory death-rates were lower, and no change took place in the

infantile mortality. Scarlet fever was somewhat prevalent, and notified as the cause of 47 attacks and 2 deaths. The other zymotic fatalities were due—2 to diphtheria and membranous croup, 1 to whooping cough, and 1 to diarrhœa. One school was closed at Lanehead owing to the extension of scarlet fever. There is still wanting hospital accommodation and apparatus for securing efficient disinfection.

Water Supply is described as "very good."

Sewerage, Scavenging, &c.—Extension of sewerage is taking place. The sewage is subjected to tank treatment, and no complaints have been made concerning the effluent during the year. The scavenging as carried out by the Authority gives satisfaction.

Sanitary Inspection.—Bakehouses and slaughter-houses have been found in a cleanly condition, and dairies and cow-sheds have apparently complied with the Regulations. The inspection of factories and workshops has not proved quite satisfactory, but details are not supplied. The Inspector secured the abatement of 8 nuisances, and made 2 smoke observations. No legal proceedings were required.

Ormskirk.—(Area in acres, 573; Population (Census 1891), 6,298).—*Medical Officer of Health*, WILLIAM ANDERTON, F.R.C.S.E.; *Salary*, £50.—Birth-rate 35·4, death-rate 23·6, zymotic rate 2·70, death-rate from phthisis 1·58, and from respiratory diseases 7·30 per 1,000 of population; rate of deaths under one year to 1,000 births 179.

The gross death-rate was 31·5 per 1,000, and, after deducting 50 workhouse deaths not belonging to the district, the corrected rate corresponds to 23·6 per 1,000, or practically the same as in 1895. There was an increase in the zymotic rate and proportion of deaths under one year to births. The phthisis rate shows a decrease, but respiratory deaths continue

abnormally high. Measles and diarrhœa with 7 deaths each proved the most fatal of the zymotic diseases, and scarlet fever caused 85 cases but only 2 deaths. No schools were closed, but they received regular visits. The Isolation Hospital was used for the treatment of 51 cases of scarlet fever, and in August Dr. Anderton reported that the "town is entirely free from scarlet fever, and the infectious hospital empty."

Water Supply obtained from the red sandstone is very good and abundant.

Sewerage, Scavenging, &c.—Further works are in contemplation for purposes of sewerage, sewage disposal, and storm water drainage. The Council has agreed to treat the sewage of the northern part of Aughton. Scavenging is reported to be carried out by contract and apparently gives satisfaction.

Sanitary Inspection.—More attention is being paid to sanitation, and inspections of the district have resulted in the condemnation of 27 houses, and it is satisfactory to note that the Inspector (Mr. Ivy) has commenced a sanitary survey of the district. A recommendation, which it is hoped will bear fruit, has been made to the Council that a man be permanently appointed "to make a daily inspection of the courts and alleys, to undertake the cleansing, flushing, and disinfection of the drains, and to scavenge and keep the same in a cleanly condition;" to attend to gullies, manholes, and flushing of public and private drains; to inspect ashpits and see that they are regularly emptied, &c. Bakehouses, lodging-houses, dairies, cowsheds, and also (4) private slaughter-houses have been inspected and found satisfactory, but the Council has not adopted the Dairy, &c., Regulations under the Order of the Local Government Board. The Council has provided a public abattoir with all the necessary appliances. For the abatement of 50 or 60 nuisances the Inspector was required to serve only 9 legal notices.

Orrell.—(Area in acres, 1,618; Estimated Population, 5,090).
Medical Officer of Health, GEORGE W. JOHNSTONE,
 L.R.C.P.E.; *Salary*, £30.—Birth-rate 37·9, death-rate 21·6,
 zymotic rate 3·33, death-rate from phthisis 1·37, and from
 respiratory diseases 3·92 per 1,000 of population; rate of
 deaths under one year to 1,000 births 145.

The death-rate was 6·1 higher than in 1895, and 3·7 above the average of the preceding three years; there was also a considerable increase in the zymotic rate and infantile mortality. Dr. Johnstone reports that of the zymotic diseases scarlet fever and measles were the most pronounced. "The former began very early in the year and became somewhat prominent in March in the neighbourhood of Bell Lane, terminating in July with a total fatality of 3. The latter appeared in June, scattered cases occurring at various places in the district until September, when a smart epidemic developed and extended to the end of November, spreading easterly from the Lamberhead Green portion of the district in the direction of Pemberton. It was fatal in 10 instances, the greatest number since 1893." The other zymotic deaths were due to whooping cough 2, and diarrhoea 2. Unfortunately the Infectious Disease (Notification) Act has not yet been adopted, and there is still neither isolation hospital nor disinfecting apparatus provided.

Sewerage, Scavenging, &c.—Sewage is allowed to pass into the Wigan main sewer at Gathurst. The scavenging is reported as carried out satisfactorily by the Authority.

Sanitary Inspection.—Dairies and Cowshed Regulations have not yet been made under the Order of the Local Government Board, but these places have been duly inspected; the average cubic space per cow being 560·4 cubic feet. Insufficient attention is paid to limewashing and ventilation. Bakehouses and slaughter-houses have been found satisfactory. The Inspector served 12 written notices, and gave verbal instructions for the abatement of the following nuisances:—

Defective ashpits and closets ...	...	13
Defective or insufficient drainage ...	...	32
Overcrowding ...	...	3
Unclean dwellings, &c. ...	...	3
Accumulations of manure ...	...	2
Pig keeping, &c....	...	3
Total ...		56

No smoke observations were taken.

Oswaldtwistle.—(Area in acres, 4,883; Estimated Population, 14,200).—*Medical Officer of Health*, WM. LOYND, M.R.C.S.; *Salary*, £60.—Birth-rate 31·5, death-rate 15·2, zymotic rate 0·91, death-rate from phthisis 0·91, and from respiratory diseases 3·30 per 1,000 of population; rate of deaths under one year to 1,000 births 136.

Dr. Loynd reports that the death-rate was 2·0 per 1,000 less than in 1895. "For the last seven years the average death-rate has been 17·24, and for the previous seven years 21·49." The zymotic rate was low and compared favourably with 1895, and there was a satisfactory reduction in the proportion of infant deaths to births. There were no deaths due to scarlet fever, measles, or whooping cough. A few cases of the first-mentioned disease broke out in the Spread Eagle district, supposed to be due to children attending schools in Church. Typhoid fever caused 12 cases and 1 death; the latter occurred at Aspen Cottages, and was due to drinking polluted well-water. Membranous croup contributed 1 death and diarrhoea 12 deaths. Reference is made to the danger inherent to feeding bottles provided with long rubber tubing and to the want of cleanliness in the home surroundings.

Water Supply has continued good and plentiful. The mains seem to require more frequent flushing, "as the water is often unfit for drinking purposes, especially in the vicinity of the terminal pipes." Aspen cottages and those at the

Twinch have been supplied with water, but Belthorn continues badly provided in this respect.

Sewerage, Scavenging, &c.—The sewers have been extended from Union Road near Tinker Bridge to Town Bent, and in the White Ash Valley a sewer has also been laid behind the houses in Blackburn Road, and “47 objectionable privy pits and open ashpits to the cottages have been altered to water closets and small covered dry ash places built.” Additions have been made to the sewage works, which it is hoped will have an effect in improving the effluent. The scavenging as carried out by the Authority is described as satisfactory.

Sanitary Inspection.—Factories and workshops have been examined, the cesspools and privies have been removed from several mills and w.c.’s substituted. Cowsheds and dairies have in many instances been improved, and at certain farms mentioned alterations are in progress. Bakehouses and slaughter-houses have been found cleanly and well conducted. A nuisance caused by a bone works has been mitigated, but when the case was brought before the Magistrates, after an adjournment of three months, it was decided that “reasonable efforts had been made to reduce the nuisance to a minimum.” Details of the work carried out in the Inspector’s department are not supplied, and I have again to point out the desirability of the Council authorising the publication of the Medical Officer’s Report.

Padiham.—(Area in acres, 926; Estimated Population, 13,600).—*Medical Officer of Health*, JOHN WEIR, L.R.C.P.I.; *Salary*, £25 (no claim).—Birth-rate 26·1, death-rate 17·9, zymotic rate 2·79, death-rate from phthisis 0·73, and from respiratory diseases 3·67 per 1,000 of population; rate of deaths under one year to 1,000 births 168.

The death-rate was 2·1 higher than in the previous year, and the zymotic and infantile rates exceeded the average.

Infectious diseases prevailed extensively, and the following deaths took place:—9 from diphtheria, 14 from measles, and 8 from whooping cough. School closure was not enforced, but infected children were kept at home, and not allowed to mix with the healthy. Scarlet fever caused 21 cases and 2 deaths, and enteric fever 6 cases and 3 deaths. Hospital accommodation has not yet been provided for the isolation of the infected.

Water Supply good and plentiful.

Sewerage and Scavenging.—The precipitating tanks were completed in the latter part of the year, and the irrigation area has also been laid out. Conversions from the pails to the waste-water system are taking place rapidly, during the year 142 pail closets being converted. The scavenging gives satisfaction.

Sanitary Inspection.—A house-to-house inspection was made of several parts of the district such as North Street, Altham Street, Hambledon Street, &c., and many insanitary conditions were discovered and remedied. Bakehouses, slaughter-houses, dairies, and cowsheds receive attention and are described as satisfactory. The Inspector served 64 notices for the abatement of nuisances. No smoke observations were taken.

Pemberton.—(Area in acres, 2,894 ; Estimated Population, 20,831).—*Medical Officer of Health*, ROBERT HARTLEY, M.R.C.S. ; *Salary*, £50.—Birth-rate 40·2, death-rate 19·2, zymotic rate 3·60, death-rate from phthisis 0·91, and from respiratory diseases 3·74 per 1,000 of population ; rate of deaths under one year to 1,000 births 168.

As compared with the previous year there was a reduction in the birth-rate equal to 3·6, and a slight increase (0·5) in the death-rate. Zymotic diseases had a wide prevalence, and an

exceptionally high rate of mortality. Measles, with 33 deaths, occasioned much trouble; West Ward was early in the year affected, and for three weeks the schools in that ward were closed and thoroughly cleansed and disinfected; subsequently schools were closed at Goose Green, &c. Whooping cough, the cause of 11 deaths, broke out at Newtown in June, increased in July, and then disappeared towards the end of the year. Scarlet fever prevailed extensively, giving rise to 178 notified cases and 10 deaths; Kitt Green and Lamberhead Green were attacked in January. Enteric fever was responsible for 22 cases and 4 deaths, and diphtheria and membranous croup for 9 cases and 8 deaths. Diarrhœa contributed 13 deaths, chiefly in the low lying parts of the district. Small-pox appeared at Worsley Mesnes on the 26th of January; father, mother, and child were attacked, the latter died. The hospital was used for the isolation of these cases of small-pox, 3 cases of scarlet fever, and 1 case of enteric fever.

Sewerage, Scavenging, &c.—The character of the sewage effluent was the subject of complaint by the Chief Inspector of the Ribble in August and December. The Authority scavenges three-fourths of the district, and the rest is carried out by contract.

Sanitary Inspection.—Quarterly reports are given respecting the sanitary matters which received attention, including defective house drains at Newtown, Lamberhead Green, Spring Bank, Park Lane, &c., wet and dilapidated ashpits in various parts of the district, overcrowding of dwelling houses at Thwaites Delf, Marsh Green, &c. Bake-houses and slaughter-houses are reported as satisfactory. The dairies and cowsheds receive visits, but no specific report as to their condition is presented. A variety of nuisances, numbering 117, were remedied, and the smoke nuisance came under observation, but no legal proceedings were taken.

Prescot.—(Area in acres, 297; Estimated Population, 7,000).

—*Medical Officer of Health*, EGERTON F. HALL, M.D.;
Salary, £25.—Birth-rate 39·1, death-rate 19·7, zymotic rate 3·57, death-rate from phthisis 1·0, and from respiratory diseases 4·14 per 1,000 of population; rate of deaths under one year to 1,000 births 116.

The death-rate, although somewhat less than in the previous year, is still high, and the zymotic rate may be regarded as much above the average of urban districts. Scarlet fever caused 47 attacks and 3 deaths; only 2 were isolated in the Hospital. The spread of an infectious disease is certain to take place when isolation is so ignored that children in the peeling stage of scarlet fever may frequently be seen "out of doors playing with other children." In the summer there was an extensive outbreak of measles, 13 deaths were recorded, but school closure was not adopted. Whooping cough also had a great prevalence and gave rise to 6 deaths. Enteric fever and diphtheria caused 8 and 9 cases of illness respectively, but no death.

Water Supply obtained from the Liverpool Corporation is of excellent quality.

Sewerage, Scavenging, &c.—The tanks at the sewage farm have been repaired, but complaints have been made by persons outside the district concerning the nuisance caused. It is hoped that the cause of complaint will be removed. The scavenging is carried out partly by the Authority and partly by contract; the ashpit system with all its imperfections still remains.

Sanitary Inspection.—The dairies and cowsheds are visited, but the bye-laws require revision. Bakehouses and slaughter-houses are reported as satisfactory. Drains, &c., have been cleaned out and repaired when necessary in 74 instances, and 27 dilapidated privy middens have been converted into water closets. The Inspector gives detailed

information of the nuisances attended to, and in addition he carried out the disinfection of houses in which infectious disease broke out, superintended the scavenging, nightsoil removal, &c.

Prestwich.—(Area in acres, 3,174; Estimated Population, 8,685).—*Medical Officer of Health*, FRED. STEPHENSON, L.R.C.P.E.; *Salary*, £30 (no claim).—Birth-rate 26·7, death-rate 14·6, zymotic rate 0·80, death-rate from phthisis 0·80, and from respiratory diseases 2·99 per 1,000 of population; rate of deaths under one year to 1,000 births 81.

The vital statistics are indicative of a very favourable state of the public health during the past year. The death-rate was less than in 1895, and there was a great improvement in the zymotic rate and in the proportion of infant deaths to births. In July scarlet fever of a mild type produced a few cases, and throughout the year 27 were attributed to this cause and 2 deaths. Measles gave rise to 1 death, and whooping cough 4 deaths. Prestwich has no permanent hospital accommodation, but, for the present, cases of infectious disease can be sent to Monsall, and under this arrangement 5 cases were removed.

Water Supply is obtained from the Corporations of Manchester and Bury, and recently Simister Lane has been supplied by the Corporation of Heywood.

Sewerage, Scavenging, &c.—The Mersey and Irwell Joint Committee have not been satisfied with the character of the sewage effluent, and in October the Clerk was instructed to take proceedings against the Council. The house drainage is being gradually improved, and the main sewers are flushed three times a year. The scavenging is carried out by the Authority apparently in a satisfactory manner, but exception is taken to the mode of removing the ashpit refuse.

Sanitary Inspection.—Slaughter-houses (5), bakehouses (7), dairies (11), and cowsheds (23) have been periodically visited without complaint. Meat is inspected, but no seizure has taken place. From the Inspector's Report, it appears that 1,144 visits of inspection have been made, resulting in 152 nuisances being discovered, and 58 notices were served for their abatement; 14 smoke observations have been made, 34 houses disinfected, &c. Legal proceedings were not required in a single case.

Radcliffe.—(Area in acres, 3,110; Estimated Population, 26,000).—*Medical Officer of Health*, WM. SELLERS, M.D. (Lond.), D.P.H.; *Salary*, £45 (no claim).—Birth-rate 27·9, death-rate 18·6, zymotic rate 2·88, death-rate from phthisis 0·84, and from respiratory diseases 4·07 per 1,000 of population; rate of deaths under one year to 1,000 births 196.

The birth and death rates are somewhat lower than in 1895; the zymotic rate is also slightly reduced, and the infant mortality, although high, bears favourable comparison with the rate recorded in the previous year. Scarlet fever for the past four years has continued prevalent, and assumed a more virulent character. During the past year the disease gave rise to 346 attacks and 18 deaths. Unfortunately hospital accommodation is wanting, and home control of infectious disease was found to be ineffective. Diphtheria did not cause a single death, but no fewer than 7 deaths were due to membranous croup. Typhoid fever contributed 49 cases and 9 deaths; about half the cases occurred in Back Lane Ward, and in Milton Street a blocked drain seemed to be associated with the origin of this disease. One case of small-pox was notified, and removal to a hospital prevented the spread of the disease. The other zymotic deaths were attributed—9 to measles, 9 to whooping cough, and 29 to diarrhœa.

Water Supply, obtained from the Bury Corporation, has often been very dirty from vegetable deposit, and "often unfit

for use without previous filtration." Some of the farms and the village of Starling are very badly supplied with water.

Sewerage, Scavenging, &c.—The new outfall works are in operation, but an extension will be required owing to the quantity of sewage received being larger than estimated. The Authority carries out the scavenging and the removal of ashpit refuse. When the drainage system is complete it is hoped that some form of water carriage will be adopted.

Sanitary Inspection.—Dairy farms (32) and milkshops have been found "clean and in good order, and duly lime-washed." The cubic space per head of cattle averages 500 feet. Slaughter-houses, bakehouses, and lodging-houses have passed a satisfactory inspection. Only 2 canal boats were found faulty. Blowing off steam into the sewers caused a nuisance, and ought not to be allowed. The Inspector gives a summary of valuable sanitary work which received attention; the nuisances abated amounted to 1,658, requiring the issue of 305 notices; 203 smoke observations were taken, but no legal proceedings resulted. The time limit for the emission of black smoke is 10 minutes per hour.

Rainford.—(Area in acres, 5,872; Estimated Population, 3,687).—*Medical Officer of Health*, FRANK PROSSER, M.B.; *Salary*, £20.—Birth-rate 32·0, death-rate 16·5, zymotic rate 2·71, death-rate from phthisis 1·62, and from respiratory diseases 1·62 per 1,000 of population; rate of deaths under one year to 1,000 births 144.

The death-rate compares favourably with 1895, but the zymotic and infant rates show a decided increase. Scarlet fever was the most pronounced of the zymotic diseases, and gave rise to 137 cases in 73 houses and 6 fatalities. Two outbreaks occurred affecting Rainford in the early part of the year, and Crank in the summer. Only 4 cases received hospital isolation, and the disease spread

owing to the difficulty of securing isolation at home. Schools were closed with satisfactory results. The other zymotic deaths were due 2 to diphtheria, 1 to measles, and 1 to diarrhœa.

Water Supply is obtained from surface and deep wells. Rain water is also used. Consideration is being paid to this subject.

Sewerage, Scavenging, &c.—The cesspool system is in use, and part of the sewage passes into a watercourse. The responsibility of emptying ashpits is placed on the householders.

Sanitary Inspection.—House-to-house inspection has been made, and the nuisances revealed have been remedied. Slaughter-houses and bakehouses are reported as satisfactory. Dairies and cowsheds receive attention. Scarlet fever appeared on the premises of two milk dealers, but precautions were promptly taken. "Written notices have been issued respecting one filthy wet ashpit in School Brow, and leaky ashpits connected with eight houses in Barton's Row."

Ramsbottom.—(Area in acres, 6,295; Estimated Population, 17,245).—*Medical Officer of Health*, WILLIAM DEANS, M.B.; *Salary*, £60.—Birth-rate 22·9, death-rate 14·4, zymotic rate 1·33, death-rate from phthisis 0·81, and from respiratory diseases 2·89 per 1,000 of population; rate of deaths under one year to 1,000 births 134.

The statistics of mortality submitted by Dr. Deans compare favourably with the previous year, the general death-rate and zymotic rate showing a reduction of 1·5 and 1·32 respectively, while the infant mortality remains exactly the same. Of the zymotic diseases diphtheria proved the most fatal, and was credited with 12 deaths, membranous croup contributing 7 deaths. Attention is drawn to the fact that 9 of the deaths

from diphtheria occurred in East and North Wards, where it is hoped "the early completion of the sewers in hand, and the house connections thereto, will effect a much needed sanitary improvement." Scarlet fever was notified in 44 instances, but no death occurred, and typhoid fever was the cause of 5 cases and 1 death. Whooping cough spread widely, as indicated by 7 deaths. There was only 1 death due to measles and 1 to diarrhœa.

Water Supply.—Four farms were found to be supplied with polluted water. The general supply from the Bury Corporation has not been the source of so many complaints as in 1895, but filtration is strongly recommended.

Sewerage, Scavenging, &c.—Much progress has been made with the sewerage system, and the joint outfall works are approaching completion. The Inspector recommends that Regulations should be made in regard to connections of private drains with the main sewers. The scavenging—carried out by contract—is not altogether satisfactory, complaints having been made respecting "nuisances from stagnant water in streets, damp houses, houses being flooded during heavy rains caused to a large extent by the gullies in private streets being choked with cinders, silt, &c., from the unpaved streets not under the control of the Council."

Sanitary Inspection.—Some of the slaughter-houses are unsatisfactory, and the Council has decided "to enforce the licensing of the same." Would it not be better to establish a public abattoir? Dairies and cowsheds are reported as without complaint. Lodging-houses and bakehouses—except in one instance—have complied with the bye-laws. Much annoyance has been caused by hawkers of fish and greengrocers throwing refuse in the streets. The Inspector served 78 notices and secured the abatement of 465 nuisances. Legal proceedings were taken against 12 persons for non-compliance with notices under the Public Health Act, 1875, and in each case the

Magistrates granted Orders for the abatement of the nuisances. Twenty-eight smoke observations were taken, and in 6 instances the limit of 12 minutes' black smoke was exceeded. No legal action was taken.

Rawtenstall Borough.—(Area in acres, 9,528; Estimated Population, 30,000).—*Medical Officer of Health*, JAMES McNAUGHT, M.D.; *Salary*, £110.—Birth-rate 26·6, death-rate 18·2, zymotic rate 1·63, death-rate from phthisis 1·33, and from respiratory diseases 4·10 per 1,000 of population; rate of deaths under one year to 1,000 births 173.

As compared with 1895 the birth and death rates were reduced 2·6 and 2·4 respectively. There was also a reduction of the zymotic and respiratory rates, but the infant rate gave a high average. The effect of feeding and nursing in infant life Dr. McNaught discusses at some length. The year was marked by a widely spread epidemic of measles, which resulted in 24 deaths—with one exception—of infants under the age of 5 years. Certain schools were closed, but unfortunately information concerning the occurrence of disease in schools came too late for effective action. Whooping cough prevailed extensively, causing 9 deaths, and scarlet fever contributed 97 cases and 5 deaths. Typhoid fever gave rise to 28 cases and 4 deaths; the Medical Officer of Health traced 5 cases to infected milk, 2 in Union Street to bad drainage and defective sanitary arrangements, and other cases to polluted water, &c. Of the remaining zymotic deaths 7 were due to diphtheria and membranous croup and 17 to diarrhœa. Disinfection of rooms and clothing of persons dying of phthisis is recommended, and also the provision of a joint hospital for Rawtenstall and the two neighbouring Boroughs.

Water Supply.—In certain outlying parts of the district there was a great scarcity of water. The general water supply obtained from the Bury Corporation has shown some improvement, but filtration at the reservoirs is considered desirable.

Sewerage, Scavenging, &c.—The joint sewage works, as before stated, have made progress. The Corporation carry out the scavenging, and on the whole it is reported as satisfactory. Many old-fashioned closets and cesspools exist; some have been converted into pail closets as a makeshift until water-carriage can be adopted.

Sanitary Inspection.—Some of the bakehouses are so structurally bad that "it is high time they were replaced by newer and better buildings." Supervision of dairies and cowsheds cannot be carried out owing to the insufficiency of the present staff! The slaughter-houses—with one exception—are said to be in good order. Factories and workshops do not seem to have been inspected. The Inspector served 185 notices for the abatement of 167 nuisances, representing 483 houses and premises. Legal proceedings were taken in 6 cases. The Magistrates granted an adjournment so as to give the defendants an opportunity of carrying out the required work; the cases were then withdrawn on payment of costs. No smoke observations were taken.

Reddish.—(Area in acres, 1,541; Estimated Population, 7,600).—*Medical Officer of Health*, T. HANSON SMITH, L.R.C.P.E.; *Salary*, £30.—Birth-rate 30·1, death-rate 15·1, zymotic rate 2·63, death-rate from phthisis 1·57, and from respiratory diseases 2·10 per 1,000 of population; rate of deaths under one year to 1,000 births 131.

There was a satisfactory decline in the general death-rate and infant mortality as compared with 1895; while the zymotic rate remains unaltered. Scarlet fever prevailed extensively, giving rise to 103 cases and 5 deaths; the disease broke out in March and disappeared in September; the maximum severity was reached in May and June. Unfortunately no hospital accommodation is available for isolation purposes. Disinfection was carried out and precautionary measures taken to prevent children from infected houses

attending schools, but closure was not adopted. Diarrhœa caused 9 deaths, and few fatalities were recorded from the other zymotic diseases.

Water Supply is obtained from the Manchester and Stockport Corporations.

Sewerage, Scavenging, &c.—Good progress has been made with the construction of the sewage works. Two circular precipitation tanks and six filtering beds—polarite—have been provided, and also land for the further treatment of the effluent. The scavenging as performed by the Authority does not give entire satisfaction. New houses are required to be provided with water-closets, but the conversion of the old closets is not enforced.

Sanitary Inspection.—The bakehouses and slaughter-houses have complied with the bye-laws. Special attention has been paid to the dairies and cowsheds, and a report drawn up in November contains valuable information as to their condition. It is evident that extensive alterations will be needed to make them comply with sanitary requirements. Six back-to-back houses, condemned as unfit for human habitation, have been converted into three useful four-roomed houses. Factories and workshops came under observation, and improvements have been effected in the closet accommodation in 3 instances. The Inspector served 112 notices for the abatement of miscellaneous nuisances. Although complaints have been made respecting the smoke nuisance no observations were taken. The Medical Officer of Health gives the following valuable suggestions as indicating the lines on which beneficial action may be taken:—

- (a) The provision of means of isolating cases of dangerous infectious disease ;
- (b) Greater attention to the paving, draining, and cleansing of the surfaces of passages and yards at the backs of houses ;

- (c) The establishment of scavenging operations on a more systematic basis; and
- (d) The improvement of the sanitary accommodation in factories, &c., where it is at present antiquated and insanitary.

Rishton.—(Area in acres, 2,981; Estimated Population, 7,300).—*Medical Officer of Health*, JOHN BARR, M.B.; *Salary*, £20.—Birth-rate 27·3, death-rate 13·8, zymotic rate 1·64, death-rate from phthisis 1·36, and from respiratory diseases 3·56 per 1,000 of population; rate of deaths under one year to 1,000 births 140.

Dr. Barr submits very favourable statistics; the death-rate was 2·1 less than in 1895, and there was an equally satisfactory diminution in the zymotic and infantile mortality. Whooping cough and diarrhœa were each responsible for 4 deaths, and 1 death was contributed by each of the following diseases, viz.:—scarlet fever, diphtheria, membranous croup, typhoid fever, and measles. There is neither hospital accommodation nor special disinfecting apparatus.

Water Supply is somewhat improved, but complaints have been made respecting the presence of vegetable matter. A proper system of filtration is recommended.

Sewerage, Scavenging, &c.—Samples of the effluents taken from the sewage farm have proved far from satisfactory. The preliminary tank treatment is poor in character. The scavenging is contracted for and gives satisfaction.

Sanitary Inspection.—Slaughter-houses, dairies, and cow-sheds are said to comply with sanitary requirements. The Medical Officer of Health states that the workshops have been found in a "satisfactory condition, with good ventilation and no overcrowding." The Inspector served 58 notices, but no details are given as to the nature of the nuisances. No smoke observations were taken.

Royton.—(Area in acres, 2,112; Estimated Population, 14,200).—*Medical Officer of Health*, RALPH YOUNG, M.D.; *Salary*, £50.—Birth-rate 27·5, death-rate 22·5, zymotic rate 3·23, death-rate from phthisis 1·68, and from respiratory diseases 5·0 per 1,000 of population; rate of deaths under one year to 1,000 births 227.

The statistics of mortality cannot be considered as satisfactory; the general death-rate was fractionally higher than in 1895, and 2·7 in excess of the average for the previous five years. The zymotic and infant death-rates were excessive, and the respiratory rate was above the average. The chief feature of the year was a severe outbreak of measles, which resulted in the deaths of 21 children under the age of five years. The Medical Officer of Health does not give particulars of the action taken to allay the epidemic, but the closure of schools, which is resorted to in many districts, was not adopted. Scarlet fever caused 59 cases and 2 deaths. As there is no proper means of isolation, great difficulties were experienced in restraining the disease. The deaths from the following diseases were somewhat high, viz.:—diphtheria 5, whooping cough 8, and diarrhoea 10. No death took place from enteric fever. Unfortunately, vaccination is not enforced as it ought to be, and as a result 13 cases of small-pox occurred. Since 1892 the disease has been more or less present, constituting a menace not only to this district, but to the whole county.

Sewerage, Scavenging, &c.—The effluent from the sewage works not giving satisfaction, an extension of the system of filtration has been forced into consideration. Scavenging by the Authority is said to be fairly well performed.

Sanitary Inspection.—Inspections of the slaughter-houses have been made periodically, repairs being required in five instances, but the Inspector reports one as altogether unsatisfactory. Bakehouses have been kept clean and in good order.

Little information is given respecting the dairies and cow-sheds. The triperies have been visited, and occasionally portions of the uncooked tripe have been found unsatisfactory. The Inspector issued 26 notices, besides personal communications, &c., for the abatement of 108 nuisances. No smoke observations were taken. Factories and workshops have come under supervision.

St. Annes-on-the-Sea.—(Area in acres, 3,212; Estimated Population, 4,224).—*Medical Officer of Health*, FRED. BOOTH, M.B.; *Salary*, £40.—Birth-rate 20·5, death-rate 7·3, zymotic rate nil, death-rate from phthisis nil, and from respiratory diseases 0·94 per 1,000 of population; rate of deaths under one year to 1,000 births 34.

Dr. Booth presents an unusually favourable health report; the general death-rate at 7·3, zymotic and phthisis rates nil, and the proportion of infant deaths corresponding to 34 per 1,000 births must be regarded with great satisfaction. Cases of measles and whooping cough appeared, but as these diseases are not notified the exact number could not be ascertained. Only 4 cases of scarlet fever occurred, and 1 case of diphtheria and 1 case of typhoid fever. Joint hospital accommodation is being provided.

Sewerage, Scavenging, &c.—Progress has been made with the sewerage of the district, and the sewers have, during the year, worked efficiently. Scavenging is under contract and not satisfactory; “complaints, both written and verbal, have poured in from all sides, the contents of ash-pits being allowed to accumulate often for four or five months, and then only removed after repeated applications.”

Sanitary Inspection.—The privy-middens are referred to as a decided nuisance and possible source of ill-health, “causing, as they often do, in hot weather, diarrhœa, sickness, and sore throat, and in the event of typhoid breaking out

greatly increasing the danger of spreading it." The slaughter-houses are not considered satisfactory owing to their situation or structure. The dairies, cowsheds, and milk-shops are now under Regulation, and it is hoped that the sanitary defects, which are not uncommon, will soon be removed. It is satisfactory to note that the Inspector carried out sanitary work without the necessity of serving notices, "as the owners and inhabitants are anxious to avoid complaints of this nature."

Skelmersdale.—(Area in acres, 1,941; Estimated Population, 7,200).—*Medical Officer of Health*, GEORGE MORRIS, M.R.C.S.; *Salary*, £30.—Birth-rate 33·0, death-rate 18·1, zymotic rate 0·69, death-rate from phthisis 0·69, and from respiratory diseases 5·55 per 1,000 of population; rate of deaths under one year to 1,000 births 193.

As compared with 1895 there was a reduction in the birth and death rates equal to 4·7 and 2·5 respectively. The zymotic rate showed a slight increase, and the proportion of infant deaths to births rose to 193. Scarlet fever occasioned 8 cases of illness but no death; the deaths from the principal zymotic diseases were represented by typhoid and continued fever (2), whooping cough (1), and diarrhœa (2). Many of the cases of typhoid fever occurred in houses, sanitarily defective as to drainage and ashpit accommodation, situated in the neighbourhood of Sherratt Street, Nook Brow, White Moss Road, and Ormskirk Road. Hospital accommodation is reported as now available, but no mention is made of the provision of disinfecting apparatus. It is hoped that the Council will no longer defer the adoption of the Infectious Disease (Notification) Act.

Water Supply said to be "sufficient and ample," but liable to cause lead poisoning. The Council has been recommended to do away with lead piping.

Sewerage, Scavenging, &c.—An improvement has been effected in the treatment of the sewage at the farm, and a scheme has been under consideration for the sewerage of Pottery Fields, Penny Land, and part of High Street. The scavenging is in the hands of the Authority, and carried out in a “fairly satisfactory manner.”

Sanitary Inspection.—In the periodical inspection of the district the following nuisances have come under notice:—Twenty-four blocked drains, 34 houses in which privies and ashpits were either defective or absent, 100 passages and yards unpaved, 8 pigstyes too near dwellings, 3 insanitary cellars, several streets in want of paving, &c. Bakehouses and slaughter-houses are without complaint. Dairies, milk-shops, and cowsheds receive attention, but no report is submitted giving specific information as to their condition.

Southport Borough.—(Area in acres, 7,526; Estimated Population, 47,243).—*Medical Officer of Health*, HENRY H. VERNON, M.D.; *Salary*, £525.—Birth-rate 21·9, death-rate 13·1, zymotic rate 0·99, death-rate from phthisis 1·01, and from respiratory diseases 1·86 per 1,000 of population; rate of deaths under one year to 1,000 births 121.

The birth-rate was somewhat lower than in 1895, and the gross death-rate from all causes (14·46 per 1,000) was the lowest ever recorded in the Borough. Dr. Vernon reports that the moribund visitors were more markedly moribund than in either 1895 or 1894. In the latter year they survived their arrival on an average 70 days; in 1895, 62 days; and in 1896 only 52 days. The zymotic rate was slightly higher than in the previous year, and the enormous preponderance of zymotic diseases in the rural as compared with the urban Wards, is regarded as most unsatisfactory. In the rural districts the working class mostly reside, and the spread of infection is “to be found to a considerable extent in the habits of the people

who indulge" in unrestrained and reckless intercommuni-
cation. The existence of privy-middens and the aggregation
of children in the public elementary schools also prejudicially
influenced the spread of certain zymotic diseases. Of the 18
deaths from scarlet fever, 5 occurred outside the district
among persons belonging thereto; two schools were closed in
consequence of this disease, and the presence of measles
necessitated the closure of six schools. Whooping cough
caused 8 deaths, and diarrhœa 9. An extension of the Isolation
Hospital has taken place, and "there are now four pavilions
for patients, divided into eight wards, one central block for
administrative purposes, seven sleeping apartments for nurses,
one disinfecting house, with a Washington Lyon's steam dis-
infecter; a wash-house, with drying chamber; an ambulance
shed, store shed, and mortuary on the Hospital premises."

Sewerage, Scavenging, &c.—Since the sewerage system
was inaugurated Dr. Vernon is able to record a marked
diminution of mortality. The sewage flows by gravitation
into the estuary of the Ribble at the mouth of Crossens
Channel, and the backing up of the sewage inland has been
frequently a source of complaint. The scavenging is described
as "fairly" satisfactory.

Sanitary Inspection.—In the Inspector's department a
large amount of sanitary work has been carried out requiring
the issue of 579 notices. Altogether 9,314 nuisance inspections
were made, and 1,469 nuisances received the attention of the
Health Committee. The following visits were paid to—

Common lodging-houses	...	...	222
Workshops	...	...	282
Cowsheds and milk-shops	...	...	217
Butchers' shops	...	...	1804
Market hall	...	...	272
Public slaughter-houses	...	...	262
Private slaughter-houses	...	...	118
Shrimp-potting houses	...	...	46

Standish-with-Langtree.—(Area in acres, 3,264; Estimated Population, 5,900).—*Medical Officer of Health*, J. H. WILSON, M.D.; *Salary*, £35.—Birth-rate 35·4, death-rate 17·1, zymotic rate 1·69, death-rate from phthisis 0·84, and from respiratory diseases 4·57 per 1,000 of population; rate of deaths under one year to 1,000 births 172.

Dr. Wilson reports that there has been “a steady decrease in all the rates which make up the vital statistics, with the single exception of the rate pertaining to deaths in infants under one year of age; this is larger than for the year 1895, though less than for the year 1894.” There was a diminution in the prevalence of zymotic disease, the deaths being attributed—7 to enteric fever, 1 to measles, and 2 diarrhœa. Scarlet fever and diphtheria gave rise to 15 and 4 cases respectively, but no death. The rural portion of the district is said to be responsible “for more zymotic disease than one might reasonably expect.” An isolation hospital is provided for small-pox only, and it is “clean, well-aired, and ready, if necessary, for immediate occupation.”

Water Supply, obtained from the Rivington reservoir belonging to the Liverpool Corporation, is of excellent quality.

Sewerage, Scavenging, &c.—The sewage is disposed of on 42 acres of land by irrigation, and two new coke breeze filters have been constructed for further treatment. The scheme for the sewerage of Lower Ground, in connection with the Wigan and Parbold Conduit, has been completed, and the houses of the district have, with three exceptions, been connected with the main sewer. The scavenging, as carried out by contract, has been efficiently performed.

Sanitary Inspection.—The bakehouses, slaughter-houses, dairies, and cowsheds have been inspected, and are “clean and well kept.” Nocturnal visits have also been paid to lodging-houses, and in all cases the number of inmates was less than

allowed. Factories and workshops are said to be satisfactory. The nuisances complained of numbered 102; of these 73 have been abated, 16 are in course of abatement, and 13 remain unabated. Disinfectants are supplied when required, and fumigation by sulphur is carried out by the officers of the Council; no special apparatus is yet available for the disinfection of clothing. The nuisance from black smoke receives little attention.

Stretford.—(Area in acres, 3,254; Estimated Population, 24,500).—*Medical Officer of Health*, W. J. HESLOP, F.R.C.S.E.; *Salary*, £130.—Birth-rate 22·0, death-rate 13·7, zymotic rate 1·22, death-rate from phthisis 1·10, and from respiratory diseases 2·77 per 1,000 of population; rate of deaths under one year to 1,000 births 142.

The addition to the population during 1896 is estimated at 2,000, and far outstrips the increase of any previous year. The death-rate was low, and compares favourably with 1895, and it is gratifying to observe a diminution in the zymotic, respiratory, and infantile rates. The death-rate in Longford Ward, with a density of population equal to 27·7 per acre, was 18·4, while in Talbot Ward—density 11·3 per acre—it was only 9·9. The total infectious diseases notified numbered 185, against 227 in 1895, and 263 in 1894. Although scarlet fever occasioned 103 cases only 2 deaths resulted; from diphtheria there were 27 cases and 4 deaths, from typhoid fever 24 cases and 4 deaths, and from measles and diarrhoea 6 and 14 deaths respectively. Altogether 63 patients—45 suffering from scarlet fever, 9 diphtheria, 8 typhoid fever, and 1 measles—were removed to Monsall. As the agreement with the Manchester Corporation for the treatment of infected cases terminates at the end of June, 1897, the Medical Officer of Health recommends his Council to provide a hospital for the district, and particulars are given of the necessary provision.

Water Supply obtained from Manchester.

Sewerage, Scavenging, &c.—The sewage continues to be treated satisfactorily. Two hundred and seventy-six drains of old property have been tested, and it was found that 55 per cent. did not stand the test; 33 ventilating shafts and 77 intercepting traps have been supplied to drains. The Authority carry out the scavenging in a satisfactory manner, but the difficulty of finding suitable tips for dry refuse shows the necessity of a destructor—so long recommended.

Sanitary Inspection.—There are 17 cowsheds and 40 purveyors of milk under supervision. Slaughter-houses (7) are kept clean and well looked after. Some of the bakehouses are not quite satisfactory, and will require attention. Overcrowding has been discovered in 2 workshops and been remedied. The Inspectors have accomplished a large amount of work, and caused 1,126 nuisances to be remedied without having recourse to legal proceedings. The scavenging of the district, carried out by 17 men and 6 horses, has necessitated much supervision. The Manchester Corporation lairages also come under the Inspector's notice, and it is expected that these duties will greatly increase. Only 5 smoke observations were taken, and no legal action followed; a time limit of 3 minutes is allowed for the emission of dense smoke.

Swinton and Pendlebury.—(Area in acres, 2,222; Estimated Population, 25,600).—*Medical Officer of Health*, SAMUEL HOSEGOOD, M.R.C.S.; *Salary*, £90.—Birth-rate 31·3, death-rate 18·6, zymotic rate 3·12, death-rate from phthisis 0·78, and from respiratory diseases 3·55 per 1,000 of population; rate of deaths under one year to 1,000 births 186.

Excluding the deaths which took place in the public institutions, the death-rate was 16·96; while the gross rate corresponded to 18·6 per 1,000, or 2 below the rate recorded in the previous year. The zymotic rate continues extremely

high, and there was a marked increase in the infant deaths. Dr. Hosegood expresses in an interesting manner his opinion concerning the loss of infant life generally, but he gives no specific reason for the "appalling fact that out of every 1,000 children born, in West Pendlebury 214 and in East Pendlebury 232 die before they reach the age of one year"! Scarlet fever, although the cause of fewer deaths than in 1895, contributed 21 deaths out of 100 cases notified, being a case mortality much above the average in the other County districts. Measles and whooping cough had an extensive prevalence as shown by the deaths, which amounted to 12 and 14 respectively. Typhoid fever seriously attacked the district and gave rise to 80 cases and 11 deaths. No special cause was discovered to account for this preventible disease. In connection with typhoid fever it may be pointed out that diarrhœa—another disease often associated with filth—contributed 20 deaths. Hospital isolation was carried out at Monsall in only 8 cases of scarlet fever, and it is hoped that no delay will take place in providing more permanent provision for this district.

Sewerage, Scavenging, &c.—The character of the sewage effluent has been complained of by the Mersey and Irwell Joint Committee, and the Council has been informed that no further delay can be allowed to take place in the re-construction or alteration of the works. Scavenging is carried out by contract, and the Medical Officer of Health calls attention to "the desirability of having the ash-pits—particularly in the more crowded localities—emptied in the later part of the day instead of under the scorching influences of a blazing noon-day sun."

Sanitary Inspection.—Inspections of East and West Wards have shown that the closets are insufficient for sanitary requirements and "inconveniently crowded up close to the dwellings." The conditions are believed to be productive of disease especially of an infective character. Dairies and

cowsheds are under supervision and continue to be well kept and satisfactory. The bakehouses and slaughter-houses are also without complaint. Only 1 common lodging-house is registered in this large district. With the exception of minor complaints as to closet accommodation the factories and workshops have given satisfaction. The Inspector (Mr. Bleakley) reports that 203 miscellaneous nuisances were dealt with, and these required 211 notices given verbally, 102 notices by letter, and 27 legal notices. None of the cases required to be brought before the Magistrates; but in a few cases proceedings were stayed on the work being done. Smoke testing, disinfection, and 433 observations as to black smoke receive special reference.

Trawden.—(Area in acres, 6,807; Estimated Population, 2,449).—*Medical Officer of Health*, J. J. IDESON, L.S.A. (Lond.); *Salary*, £20.—Birth-rate 31·0, death-rate 19·1, zymotic rate 1·63, death-rate from phthisis 1·63, and from respiratory diseases 4·08 per 1,000 of population; rate of deaths under one year to 1,000 births 184.

As compared with the previous year, the vital statistics show an improvement; the general death-rate, zymotic and respiratory rates, were lower, and there was also a diminution in the infant mortality. Of the zymotic class of disease, whooping cough alone proved fatal, and scarlet fever contributed 25 cases of illness.

Water Supply was deficient in quantity during the summer but good in quality.

Sewerage, Scavenging, &c.—The sewage precipitation tanks, but not the filters, have been put into operation. The Chief Inspector reported to the Mersey and Irwell Committee, in December, that "all the houses have not yet been coupled up to the sewers, and no work in connection with this is going on at the present time. Ashes are pitched into the stream

from the cottages." The scavenging by the Authority is reported as satisfactory.

Sanitary Inspection.—Bakehouses and slaughter-houses are well conducted. No details are given as to the condition of dairies and cowsheds. The Inspector does not supply a report respecting the sanitary work he has initiated. Last year, also, I had occasion to complain of the meagre information afforded.

Turton.—(Area in acres, 4,943 ; Estimated Population 7,150).

Medical Officer of Health, JAMES ROBINSON, M.D., L.S.Sc. ; *Salary*, £20 (no claim).—Birth-rate 21·2, death-rate 12·8, zymotic rate 0·83, death-rate from phthisis 1·11, and from respiratory diseases 2·37 per 1,000 of population ; rate of deaths under one year to 1,000 births 144.

The general death-rate was remarkably low, namely 12·8, as compared with 15·0 in the previous year. The zymotic and respiratory rates were below the average, and the infant rate was exactly the same as in 1895. Measles, with 3 deaths, proved the most fatal of the zymotic diseases, and showed the greatest prevalence in Bradshaw, Bromley Cross, and Toppings during the last month of the year. Enteric fever, whooping cough, and diarrhœa contributed 1 death each, and diphtheria 2 deaths. Hospital accommodation is wanted "to effectually limit the spread of infectious disease."

Water Supply to Dimple and the higher portion of Egerton has not been satisfactory, but arrangements for a better supply are in progress.

Sewerage, Scavenging, &c.—Little information is given respecting the treatment of sewage. The scavenging, as carried out by the Authority, is said to be satisfactory. Dr. Robinson considers the privy-middens to be highly objectionable, inconvenient, and insanitary, and would like to see a better system adopted.

Sanitary Inspection.—The report of the Inspector shows that the following matters were attended to :—

Ashpits emptied...	...	...	...	793
Houses disinfected	*	...	...	4
Nuisances abated after written notice..				16
Nuisances unabated, and reported to the Council ...	...	...	...	1
Old closets removed and new provided				3

The slaughter-houses were found to be clean and well conducted; the use of one at Dunscar—most defective in arrangement—has been discontinued. The cowsheds receive attention, and no complaint is made.

Tyldesley-with-Shakerley.—(Area in acres, 2,489; Estimated Population, 14,000).—*Medical Officer of Health*, B. BLAKEMORE, M.R.C.S.; *Salary*, £40.—Birth-rate 36·5, death-rate 18·9, zymotic rate 3·64, death-rate from phthisis 1·42, and from respiratory diseases 3·71 per 1,000 of population; rate of deaths under one year to 1,000 births 144.

The general death-rate and infant rate compare favourably with the previous year; but, owing to the excessive mortality from measles, the zymotic rate was very high. In March measles broke out and continued well into July. From the 8th of April the schools were closed for three weeks. Scarlet fever caused 48 cases of illness, of which 2 ended fatally. The disease had the greatest prevalence in March and December; only 9 cases were removed to the Joint Isolation Hospital. Typhoid fever was the cause of 45 notified cases and 9 deaths; 5 patients suffering from this disease received hospital treatment. Diphtheria and membranous croup gave rise to 10 deaths and diarrhoea 6.

Water Supply has been good in quality and plentiful.

Sewerage, Scavenging, &c.—The sewage is treated in precipitation tanks, previous to land irrigation. The main

drainage scheme is now complete "with the exception of a few isolated houses and the district known as New Manchester, comprising 90 houses." The scavenging is carried out by the Council, and some improvement has been effected in the system.

Sanitary Inspection.—House-to-house inspection is making progress; 750 houses have been visited, and the sanitary defects discovered have received attention. In a few instances defective drains have been found in cowsheds, 7 farms are without water supply, and 1 cowshed the Council closed. The bakehouses, slaughter-houses, and triperies comply with the Regulations. The Inspector reported to the Committee 126 nuisances, and of these 114 have been abated. Many insanitary conditions received attention on a verbal notice. The nuisances tabulated include wet and foul ashpits 40, defective drains and gullies 38, defective ashpits 18, insufficient closet accommodation 4, damp houses 2, general and unclassified 24. No smoke observations are taken, and no time limit for the emission of black smoke has been fixed.

Ulverston.—(Area in acres, 3,120; Estimated Population, 10,015).—*Medical Officer of Health*, A. THOMPSON, M.D.; *Salary*, £52 10s.—Birth-rate 24·8, death-rate 16·8, zymotic rate 1·39, death-rate from phthisis 0·59, and from respiratory diseases 2·19 per 1,000 of population; rate of deaths under one year to 1,000 births 128.

The gross death-rate was somewhat higher than in the previous year, but it ought to be remembered that 35 deaths occurred in the Workhouse, 9 persons being admitted "with the fatal disease upon them." Scarlet fever continued from 1895, causing 36 cases and 2 deaths. Enteric fever was credited with 32 cases and 2 deaths. The causes of certain cases were apparently due to offensive privy ashpits, bad drainage, want, &c. The other zymotic deaths were attributed

2 to diphtheria and membranous croup, 2 to whooping cough, and 7 to diarrhœa. The formation of a hospital jointly with Ulverston (R.), Dalton-in-Furness, &c., for the isolation of infectious diseases is under contemplation, and it is hoped that an agreement will soon be arrived at.

Water Supply.—The filter beds continue to act in the most efficient manner, and the district is supplied with “a constant, abundant, and excellent supply of water.”

Sewerage, Scavenging, &c.—The drainage system gives satisfaction, the sewage being discharged into the Bay. The scavenging is efficiently performed by the officials of the Council.

Sanitary Inspection.—Slaughter-houses, dairies, and cow-sheds are well conducted, and common lodging-houses comply with the bye-laws. In future reports, information might with advantage be given of the sanitary work carried out by the Inspector.

Upholland.—(Area in acres, 4,685 ; Population (Census 1891), 4,443).—*Medical Officer of Health*, G. W. JOHNSTONE, L.R.C.P.E. ; *Salary*, £40.—Birth-rate 37·3, death-rate 18·9, zymotic rate 1·57, death-rate from phthisis 0·90, and from respiratory diseases 5·85 per 1,000 of population ; rate of deaths under one year to 1,000 births 150.

As compared with 1895 the birth-rate was reduced by 2·5, the death-rate gave an increase of 3·0, and the zymotic, respiratory, and infant rates exceeded the average of the previous three years. Scarlet fever was the most troublesome of the zymotic diseases ; since the commencement of the outbreak in February, 68 cases of illness were notified and 3 deaths. Owing to the spread of this disease and measles the schools were closed on the 15th of December with satisfactory results. One death took place from membranous croup, and

1 from continued fever. There is no hospital accommodation and no disinfecting apparatus provided.

Water Supply is obtained from shallow wells, pumps, and field drains. The unsatisfactory nature of the supply was pointed out last year, but little improvement has taken place.

Sewerage, Scavenging, &c.—The sewage treatment continues the same as in 1895, and is not considered to be satisfactory by the Ribble Joint Committee. The scavenging is fairly well performed by the officers of the Authority.

Sanitary Inspection.—The Medical Officer of Health states that “insanitary property, especially at Alma Hill, still exists, and is really hardly fit for habitation, and renders the control of epidemic disease difficult.” The lodging-houses were found wanting in cleanliness, and there was also some overcrowding. The slaughter-houses, dairies, and cowsheds complied with the sanitary requirements of the district. The Inspector served 37 notices in connection with drains, dangerous buildings, condemned houses, and dilapidated ashpits and privies. No legal proceedings were required. Only one smoke observation was reported.

Urmston.—(Area in acres, 992; Estimated Population, 5,700).—*Medical Officer of Health*, FRED. P. MOLES, L.S.A.; *Salary*, £25 (no claim).—Birth-rate 21·9, death-rate 8·7, zymotic rate 0·70, death-rate from phthisis 0·17, and from respiratory diseases 1·75 per 1,000 of population; rate of deaths under one year to 1,000 births 104.

The vital statistics represent a satisfactory state of the public health; the general, zymotic, and respiratory death-rates were remarkably low, and bear favourable comparison with the previous year. Among the zymotic diseases scarlet fever alone proved fatal; of 62 cases notified 4 died. Early in February the disease appeared in the area north of Flixton

Road, and towards the middle of the year the area south of the railway from Station Road to Moss Road became affected. The Ladywell Sanatorium was used for the isolation of 19 cases, and the steam disinfecter employed for the disinfection of 49 loads of bedding, &c.

Water Supply, excellent in character, is obtained from the Manchester Waterworks.

Sewerage, Scavenging, &c.—The sewage is treated at the Flixton Joint Farm by intermittent downward filtration. The Surveyor, Mr. Hooley, states that the flushing of the sewers by manual labour has been continued with the best results, and owing to their constant attention no complaints have been received concerning offensive manholes. Scavenging is contracted for, and the weekly collection of the contents of portable dust boxes "works satisfactorily, and is a great improvement on the old system."

Sanitary Inspection.—The slaughter-houses, dairies, and cowsheds are periodically examined and comply with Regulations. The Inspector (Mr. Bland) reports the following number of—

Houses inspected	...	...	...	...	99
Notices served for nuisance abatement	...				51
Notices by letter in lieu of formal notice	...				30
Verbal notices	...	...	...	...	12
Drains cleansed	...	...	...	...	4
Drains repaired, trapped, &c.	...			...	21
Slopstone and other waste pipes repaired	...				4
Ashpits remedied	...	...	...	...	20
Privies converted into w.c.'s	...		...	...	14
Defective w.c.'s repaired	...		...	...	2
Other nuisances dealt with	...		...	...	16

Altogether 81 nuisances were abated without having recourse to legal proceedings.

Walton-le-Dale.—(Area in acres, 4,682; Estimated Population, 10,930).—*Medical Officer of Health*, R. TRIMBLE, M.D., D.P.H.; *Salary*, £50.—Birth-rate 30·1, death-rate 14·3, zymotic rate 1·09, death-rate from phthisis 1·18, and from respiratory diseases 2·65 per 1,000 of population; rate of deaths under one year to 1,000 births 129.

The birth-rate varies slightly from year to year, but the death-rate was 6·18 lower than the average for the previous 5 years, and the lowest rate recorded since 1877. The reduction in the zymotic deaths—chiefly diarrhœa, which caused 1 death as compared with 19 in the previous year—assisted appreciably in lowering the infant rate. Scarlet fever and measles continued their prevalence from the previous year, but only 1 and 2 deaths respectively took place. Typhoid fever was responsible for 19 cases and 3 deaths. In Bamber Bridge 7 cases occurred, and 4 in Walton-le-Dale. The latter portion of the district was also attacked with whooping cough, which throughout the township caused 4 deaths. The Bradkirk Hospital was used for the treatment of 1 case of scarlet fever and 1 case of typhoid fever. The promised isolation hospital is under consideration.

Sewerage, Scavenging, &c.—The new works for the treatment of the sewage by precipitation and filtration came into operation on the 21st of October. The completion of the sewerage scheme, it is hoped, will be marked by an improvement in the health of the district. The scavenging is carried out by contract in a fairly satisfactory manner. Dr. Trimble draws attention to the nuisance produced by “clouds of dust.”

Sanitary Inspection.—The slaughter-houses and bake-houses have been periodically inspected, and it is satisfactory to find that “the owners appear anxious to conform to all the rules relating to whitewashing and general cleanliness.” The dairies and cowsheds do not seem to have formed the subject of a specific report. Factories and workshops have been

placed under suitable sanitary conditions. The Inspector (Mr. Moxham) states that 1,457 houses have been connected with the main sewer, and 29 houses and 3 schools at Browndedge have adopted the water-closet system. Smoke testing of drains is carried out and attention paid to the disinfection of clothing and infected houses. The black smoke nuisance has so far not been assailed.

Wardle.—(Area in acres, 3,106; Estimated Population, 4,000).
—*Medical Officer of Health*, G. MACGILL, L.R.C.P.E.;
Salary, £40.—Birth-rate 17·2, death-rate 14·7, zymotic rate 1·25, death-rate from phthisis 1·0, and from respiratory diseases 3·25 per 1,000 of population; rate of deaths under one year to 1,000 births 144.

The birth and death rates were very low, although there was a slight increase in the zymotic and infant death rates as compared with the previous year. The zymotic deaths were due 1 to diphtheria, 1 to typhoid fever, 1 to whooping cough, and 2 to diarrhœa. The cases of infectious illness did not come to the knowledge of the officials owing to notification not being in force. It is hoped that the Council will before long adopt an Act which has proved so useful in many districts.

Sewerage, Scavenging, &c.—The sewerage of this district is now complete, with two sets of tanks for the treatment of the sewage of the upper and lower portions of the district. The whole of the tanks are not yet in operation. The scavenging as carried out by the Authority is said to be satisfactory.

Sanitary Inspection.—House-to-house visitation is still continued, and few complaints arise. Cowsheds are improved, but ventilation receives too little attention. Slaughter-houses are well conducted, and in one instance the butcher caused the carcase of a diseased cow to be destroyed. The Inspector sent out 60 notices for the abatement of nuisances, and all

received attention. The closet accommodation of two mills was put right on the owners being informed of the nuisance. No smoke observations were taken.

Warrington Borough.—(Area in acres, 2,004; Estimated Population, 58,092).—*Medical Officer of Health, Public Analyst, &c.*, JOHN H. GORNALL, M.R.C.S.; *Salary*, £400 (no claim).—Birth-rate 36·8, death-rate 19·0, zymotic rate 3·06, death-rate from phthisis 1·25, and from respiratory diseases 3·63 per 1,000 of population; rate of deaths under one year to 1,000 births 163.

As compared with 1895 the birth-rate remains the same, and the rates of mortality show a decided improvement. Among the zymotic diseases measles had the greatest prevalence, and gave rise to 63 deaths against 111 in the previous year. The outbreak ceased during the second and third quarters of the year, but again made its appearance during the last quarter. The deaths from whooping cough numbered 48 and from diarrhoea 53, against 10 and 148 respectively in the previous year. Scarlet fever of a mild type caused 114 cases of illness and 8 deaths, while diphtheria contributed only 1 death and typhoid fever 4. The Isolation Hospital was used for the treatment of the following cases:—Scarlet fever 105, typhoid fever 18, and erysipelas 1. The average cost of each patient in hospital was £8 1s. 5d., food per case £2 11s. 9d., and the average weekly cost of food per person was 5s. 1½d. Dr. Gornall points out that the hospital is totally inadequate for the requirements of the town. At present only two classes of infectious disease can be treated, viz., scarlet fever and enteric fever, and not more than four patients suffering from the latter disease can be treated at one time.

Sanitary Inspection.—Two houses in Buckley Street, Winwick Road, were demolished as unfit for human habitation, and the following property—2, 4, and 6, Mottram's Yard and 1 and 6 (inclusive), Glasshouse Square, Scotland Road

reported on in 1895, were dealt with under the Public Health Act. In the Inspector's department a vast amount of sanitary work was carried out, including periodical visits to 91 milk-shops and 21 cowsheds, 118 canal boats, 93 bakehouses, 29 common lodging-houses, 28 slaughter-houses, &c. In speaking of the latter, Mr. Norman remarks that inspection is made difficult owing to their being scattered over the borough; the only way of simplifying and improving the method of inspection would be to erect a public abattoir and abolish all the existing private slaughter-houses. Tabulated information is given with respect to 2,599 miscellaneous nuisances which received the attention of the department. Inspections were made of 536 infected houses.

Nuisances reported by Inspector numbered	2547
„ „ inhabitants	... 52
Nuisances removed or abated	... 2454
Nuisances still unabated	... 145
Notices served to abate nuisances	... 934
Letters served (referring to nuisances only)	45
Summonses issued for non-compliance with	
notices	... 5

Several bad meat cases and nuisances due to the emission of black smoke were dealt with by the Health Committee, and penalties in several cases inflicted.

Waterloo-with-Seaforth.—(Area in acres, 1,524; Estimated Population, 21,119).—*Medical Officer of Health*, W. S. LIMRICK, L.R.C.P.E.; *Salary*, £75 (no claim).—Birth-rate 25·9, death-rate 14·3, zymotic rate 1·98, death-rate from phthisis 0·94, and from respiratory diseases 2·46 per 1,000 of population; rate of deaths under one year to 1,000 births 140.

The rates of mortality are on the whole of a satisfactory character, and differ only to a slight extent from those submitted in 1895. Altogether 200 infectious cases were notified as

occurring in 163 houses, and 51 cases—9 from Waterloo and 42 from Seaforth—were removed to the Bootle Hospital. It is difficult to understand why there should be such a disparity between the patients removed from the two portions of the district. The annual contribution to the Hospital was unusually high, viz., £383, towards its maintenance, and £390 14s. 2d., the cost of treating patients, or a total of £774 14s. 2d. Scarlet fever was very prevalent, 98 patients were attacked—in Waterloo 33 and 65 in Seaforth;—of the total cases 5 ended fatally. Typhoid fever appeared in Waterloo with 10 cases, deaths nil, and in Seaforth with 53 cases and 5 deaths. Diphtheria contributed 1 death, diarrhoea 15, and measles and whooping cough spread widely, causing 6 and 9 deaths respectively.

Water Supply is obtained from the Liverpool Corporation.

Sanitary Inspection.—House-to-house visits are made and enquiries instituted concerning every case of infectious disease notified. It is satisfactory to note that very little trouble is experienced in obtaining the remedy of sanitary defects. In only 3 cases had legal proceedings to be taken. Many of the bakehouses are below the ground level and subject to disadvantages; every effort is made by Mr. Spears, the Inspector, to keep them limewashed and in a cleanly condition. The smoke test was applied to an increased number of house drains in consequence of “the Health Committee empowering the testing of drainage at houses where cases of diphtheria and enteric fever had occurred, at the cost of the Council.” Conversions of privies into water closets have been carried out successfully, and attention has been paid to dairies and cowsheds, workshops, &c. There are no lodging-houses or slaughter-houses in the district. The Surveyor (Mr. Yates), reports that the main sewers have been regularly flushed and disinfected “by means of two valves from Rimrose Brook and the pond in College Road, and from 22 flushing chambers, each capable of discharging from 800 to 1,000 gallons of water into the

sewers. There are also a large number of smaller chambers fixed in passages, from which flushing is regularly carried on. The drains of houses where cases of infectious disease have been reported have also been flushed. The cost of flushing has been £32 7s. 2d. for wages, &c., and £93 10s. for water; total £125 17s. 2d." There are now 69 ventilating shafts to the sewers, and it is expected that the present year will see this number greatly increased. The Inspector of Nuisances submits a special report on—(a) the relative rates of mortality and incidence of infectious disease in various parts of the district; (b) statistics relating to patients removed to Bootle Infectious Diseases Hospital from the district. It is carefully prepared and interesting, but surely the production of such a report comes specially within the purview of duties assigned to the Medical Officer of Health.

Westhoughton.—Area in acres, 4,341; Estimated Population, 12,215).—*Medical Officer of Health*, F. TYNDALL, L.R.C.P. (Lond.); *Salary*, £30.—Birth-rate 39·7, death-rate 15·5, zymotic rate 1·47, death-rate from phthisis 0·65, and from respiratory diseases 3·76 per 1,000 of population; rate of deaths under one year to 1,000 births 129.

Dr. Tyndall presents favourable vital statistics, showing in comparison with last year an increase of 4 in the birth-rate and a decrease of 4 in the general death-rate. The zymotic, respiratory, and infant rates were also below the average. Scarlet fever was the cause of 2 deaths, out of 29 notified cases; enteric and continued fever gave rise to 34 cases and 7 deaths, indicating a rather extensive spread of these filth diseases. The other zymotic diseases were due 2 to membranous croup, 1 to whooping cough, 1 to measles, and 7 to diarrhoea. No Isolation Hospital is available, the question of joint provision remains still "under consideration."

Sewerage, Scavenging, &c.—The effluent from Rogers Sewage Farm does not give satisfaction to the Mersey and

Irwell Joint Committee, and steps will have to be taken to ensure more efficient treatment. Scavenging as carried out by contract is apparently well conducted.

Sanitary Inspection.—The dairies and cowsheds have not been specially inspected, and the usual Regulations for their management have not been adopted by the Council. Bake-houses and slaughter-houses occasion no complaint, and the factories and workshops are said to be satisfactory. The Inspector reports that the following matters received his attention:—

Defective drains (remedied)	...	...	39
Dilapidated and damp houses	...	...	27
Dilapidated privies (repaired)	...	...	29
House drains coupled up to the sewer	...	...	60
Rebuilding old privies	...	...	34
Miscellaneous nuisances	...	...	7
Letters written <i>re</i> nuisances	...	...	47
Notices served	...	...	32

No smoke observations were taken.

Whitefield.—(Area in acres, 1,398; Estimated Population, 6,200).—*Medical Officer of Health*, A. T. DOCHARD, M.B.; *Salary*, £15 (no claim).—Birth-rate 28·8, death-rate 20·0, zymotic rate 2·74, death-rate from phthisis 1·12, and from respiratory diseases 4·19 per 1,000 of population; rate of deaths under one year to 1,000 births 189.

The mortality statistics do not compare favourably with 1895; the general death-rate has increased by 2 per 1,000; the zymotic, respiratory, and infant death-rates were also very high. Diarrhœa proved unusually fatal and added largely to the roll of infant deaths. Scarlet fever was distributed throughout the year, causing 36 cases and 2 deaths, while typhoid fever and whooping cough were credited with 2 deaths each. At present there is no hospital accommodation, but a scheme is now in hand for joint provision.

Water Supply is obtained from the Bury Corporation.

Sewerage, Scavenging, &c.—The Local Government Board has sanctioned a loan for the improvement of the sewage works. Scavenging is said to be satisfactorily carried out by the Authority.

Sanitary Inspection.—Little information is given respecting the sanitary matters attended to during the year, and in future I should be pleased to receive a copy of the Inspector's report.

Whitworth.—(Area in acres, 6,200; Estimated Population, 10,100).—*Medical Officer of Health*, ALEXANDER WELSH, M.D.; *Salary*, £40.—Birth-rate 21·5, death-rate 18·0, zymotic rate 2·27, death-rate from phthisis 0·69, and from respiratory diseases 3·66 per 1,000 of population; rate of deaths under one year to 1,000 births 178.

The general death-rate was fractionally less than in the previous year, while the infant rate continues exactly the same. The zymotic deaths were numerous, and compare unfavourably with previous years. There was a pronounced outbreak of scarlet fever, resulting in the causation of 90 cases and 8 deaths. Hospital accommodation not being available, home isolation with all its defects had to be relied on. Diphtheria and membranous croup were credited with 12 cases and 10 deaths; the case mortality was unduly high, especially in the Shawforth district. Of 7 typhoid cases, 4 ended fatally, and "careful enquiry and inspection failed to throw any light as to the source of infection." The other zymotic deaths were ascribed 1 to measles, 6 to whooping cough, and 2 to diarrhœa.

Sewerage, Scavenging, &c.—Progress is being made with the sewage works, the precipitation tanks being nearly finished. Little information is given as to the manner the scavenging is carried out.

Sanitary Inspection.—Bakehouses, slaughter-houses, dairies, and cowsheds are apparently under supervision and fairly well conducted, but specific details should be given concerning their condition at the time of inspection. Some of the new houses have been fitted up with Duckett's waste-water closets, and these so far have acted well. Pail closets have increased in number, some of the mills and workshops having adopted them in place of the old tank system. No information is given in respect of the nuisances attended to, notices served, &c.

Widnes Borough.—(Area in acres, 3,039; Estimated Population, 32,000).—*Medical Officer of Health*, D. U. MACLENNAN, M.D.; *Salary*, £170.—Birth-rate 30·6, death-rate 14·8, zymotic rate 1·93, death-rate from phthisis 0·90, and from respiratory diseases 3·21 per 1,000 of population; rate of deaths under one year to 1,000 births 152.

The report submitted by Dr. MacLennan is, on the whole, favourable, and compared with 1895 the statistics of mortality show an improvement, as will be seen by the following table:—

		1896.	1895.		
General death-rate	...	14·8	22·8		
Zymotic	„ ...	1·93	5·64		
Phthisis	„ ...	0·90	1·49		
Respiratory	„ ...	3·21	5·39		
Infant deaths under one year to births	...	152	207		
		Deaths.	Cases.	Deaths.	Cases.
Scarlet fever		3	154	26	601
Diphtheria and mem- branous croup		5	18	1	10
Enteric fever		34	214	11	54
Measles		1	Not notified.	56	No notified.
Whooping cough		10		39	
Diarrhœa		11		48	

Not notified.

No notified.

It may be observed that typhoid fever assumed alarming proportions, especially during August and September, when 131 cases and 24 deaths came under the notice of the sanitary officials. The districts most seriously affected were Victoria (34 cases), Waterloo (70 cases), and West Bank (69 cases). The Medical Officer of Health specially reported on this outbreak, but a copy of his report has apparently not been forwarded. One case of small-pox was notified and immediately removed to the Isolation Hospital; disinfection and other precautionary measures being taken with satisfactory results. In addition to the case mentioned, the Hospital was used for the isolation of 33 cases of scarlet fever and 76 cases of typhoid fever. The Medical Officer of Health does not consider the hospital accommodation sufficient for the wants of the borough, and recommends an increase in the number of beds and provision for purposes of administration.

Water Supply is obtained from deep wells by pumping. The excellent quality of the water is shown by Dr. Campbell Brown's analyses. The total hardness of the Stockwell is given as 12.58°, and that of Wetherley 8.58°.

Sewerage, Scavenging, &c.—The sewage is discharged into the estuary of the Mersey. The scavenging as carried out by the Corporation continues to give satisfaction. The sewers are flushed systematically and more frequently during the hot weather.

Sanitary Inspection.—Conversion of privies to the water-carriage system still occupies much attention. The Inspector (Mr. Lowe) reports that the common lodging-houses have been regularly inspected, and generally comply with sanitary requirements. Bakeries, slaughter-houses, dairies, and cowsheds are generally clean and well conducted. For the abatement of 1,296 nuisances 451 notices were served, but no legal proceedings had to be taken. No smoke observations are made. Two prosecutions were instituted for contravention of

the Sale of Food and Drugs Act, and the fines inflicted, including costs, amounted to £4 3s. 6d.

Withington.—(Area in acres, 5,728; Estimated Population, 27,500).—*Medical Officer of Health*, T. C. RAILTON, M.D. (Lond.); *Salary*, £220.—Birth-rate 21·8, death-rate 11·5, zymotic rate 0·83, death-rate from phthisis 0·90, and from respiratory diseases 2·50 per 1,000 of population; rate of deaths under one year to 1,000 births 111.

Very satisfactory vital statistics again mark this district; the general death-rate was 1 per 1,000 less than in 1895, and in only one year during the past decade has a lower rate been recorded. The zymotic and infant rates compare favourably with the average of previous years. Scarlet fever has had a wide prevalence, but the type was not severe; of 120 persons attacked 3 died. There was a comparative freedom from measles, and in only one instance has its spread been traceable to a school. Diphtheria was not responsible for a single death, but membranous croup caused 4. Enteric fever gave rise to 2 deaths, and 1 death occurred in Monsall of a patient removed from Didsbury. The other zymotic deaths were ascribed—10 to whooping cough and 6 to diarrhœa. The Monsall Fever Hospital has been used for the isolation of the following cases:—Scarlet fever 60, diphtheria 1, and enteric fever 2.

Water Supply.—"Pumps still exist in various outlying parts of the district, which are too far distant for Manchester water to be supplied to the houses. In one instance, the water of the pump having been condemned and the pump itself labelled to prevent persons using the water for drinking purposes, the tenants of three cottages are compelled to carry water from a neighbouring farm, which is situated more than a quarter of a mile away. In all the closely-populated parts there is a good supply of Manchester water."

Sewerage, Scavenging, &c.—The effluent from the sewage farm has not been considered satisfactory by the Mersey and Irwell Joint Committee. Certain parts of the district are still unprovided with sewers, the drainage from these houses runs into cesspools, and in some cases directly into the streams. The scavenging is efficiently carried out by the Authority.

Sanitary Inspection.—A large number of houses have been inspected with a view to putting right any sanitary defect. It is satisfactory to note that an additional Inspector has been appointed "whose duty it is to supervise all work carried out under notice from the Health Committee, and to test the drains relayed under these notices before they are covered up." Conversions of privies to the water-carriage system have been effected, and w.c.'s with movable ash receptacles are recommended for all new houses. Dairies and cowsheds (61) have been visited, and notices issued for the provision of 800 cubic feet for each cow, as specified in the bye-laws, in all cases where the air space has been found to be deficient. Bakehouses and slaughter-houses have also been visited, and found to be, as a rule, satisfactory. The Inspector served 201 notices for the abatement of nuisances, such as foul and ill-constructed drains, closets, cesspools, waste pipes connected with the drains, &c. Prosecutions were instituted (2) for pig keeping (fines and costs, £4 15s. 6d.) and slaughtering in unlicensed premises (fines and costs, £1 5s. 6d.).

Withnell.—(Area in acres, 3,620; Estimated Population, 3,500).—*Medical Officer of Health*, JOHN SINCLAIR, M.B.; *Salary*, £20.—Birth-rate 27·1, death-rate 11·1, zymotic rate 0·85, death-rate from phthisis 0·28, and from respiratory diseases 3·71 per 1,000 of population; rate of deaths under one year to 1,000 births 127.

The general death-rate was low and 4·6 less than the rate recorded in 1895; the zymotic and infant rates also show some improvement. The zymotic deaths were due 2 to

typhoid fever and 1 to diarrhœa, the cases notified from scarlet fever (1) and diphtheria (2) recovered. An efficient disinfecting apparatus will have to be provided in order to place the district in a secure sanitary condition.

Water Supply.—The waterworks have just been completed, and a plentiful supply of water is available; filtering beds are required, however, for its purification.

Sewerage, Scavenging, &c.—The sewage from the Withnell Abbey Village is passed through precipitation tanks after the addition of a precipitant. Another portion of the sewage is treated by irrigation on the Brinscall Farm. The scavenging is carried out by contract.

Sanitary Inspection.—Some of the dairies and cowsheds have been found far from satisfactory, and it is hoped that the Local Government Board Regulations will be enforced. The one slaughter-house in the district (Brinscall) has been kept clean and well conducted. The Inspector served 33 notices for nuisance abatement, and made 4 smoke observations.

Worsley.—(Area in acres, 5,584; Estimated Population, 12,424).—*Medical Officer of Health*, R. SAYERS, M.D.; *Salary*, £30 (no claim).—Birth-rate 24·3, death-rate 13·2, zymotic rate 1·93, death-rate from phthisis 0·80, and from respiratory diseases 2·41 per 1,000 of population; rate of deaths under one year to 1,000 births 135.

The statistics of mortality show a general improvement as compared with 1895; the death-rate was reduced by 3·4 per 1,000, and the zymotic and infant rates were also sensibly diminished. Scarlet fever had a somewhat extensive spread in Boothstown and Walkden; altogether 62 cases were notified and 5 deaths. The typhoid deaths, 7 in number, indicate the existence of insanitary conditions which ought to be remedied, and the 9 deaths from diarrhœa cannot be regarded

as satisfactory. Measles, so prevalent in 1895, was not the cause of a single death. The provision of joint hospital accommodation is still under consideration.

Sewerage, Scavenging, &c.—The attention of the Council was drawn in October by the Mersey and Irwell Joint Committee to the “unsatisfactory nature of a sample of the sewage effluent from the Barton Old Hall Sewage Works.” Very careful attention is paid to the scavenging and removal of offal and refuse. Printed instructions to occupiers were posted during the year, informing them as to the proper use of ashpits and the flushing of drains, &c.

Sanitary Inspection.—The school closets have been placed on the water-carriage system, and a range of six mill closets have also been converted. Slaughter-houses, bakehouses, dairies, and cowsheds have been regularly inspected and found satisfactory. Canal boats (59) have received attention, and only two infringements of the Regulations have been discovered. On the outbreak of infectious disease each case is investigated; the school attendance being enquired into, and isolation insisted upon. The sanitary arrangements of the infected houses are examined and any defects remedied; 52 houses were fumigated. The Inspector gives the following statement of work carried out:—

Houses visited and reported upon...	...	114
Notices served for the abatement of nuisances	...	18
Notices by letter	...	77
Drains cleansed and refuse removed	...	38
Slopstone waste pipes repaired or remedied		10
Ashpits built up or repaired	...	28
Conversions of privies to w.c.'s, &c.	...	38
Other nuisances dealt with	...	46
Total nuisances abated	...	160

RURAL SANITARY DISTRICTS.

Barton-upon-Irwell.—(Area in acres, 6,865; Estimated Population, 8,140).—*Medical Officer of Health*, HENRY KNOWLES, L.R.C.P.E.; *Salary*, £60.—Birth-rate 24·8, death-rate 13·6, zymotic rate 1·22, death-rate from phthisis 0·61, and from respiratory diseases 3·43 per 1,000 of population; rate of deaths under one year to 1,000 births 123.

As compared with the previous year the general and infant death-rates were somewhat increased, and the zymotic rate showed a fractional decrease. Among the mining and manufacturing portion of the population resident in Clifton the death-rate was 18·4 per 1,000, and the zymotic rate 2·0, being much higher than in the rest of the district. Scarlet fever of a mild character gave rise to 65 attacks and 2 deaths. Measles caused 5 deaths, diphtheria 1, and enteric fever 2. An arrangement has been made for the treatment of cases in the Ladywell Sanatorium, but its practical value was not great, as only 2 patients suffering from scarlet fever were removed.

Water Supply is reported as practically complete. The mains have been extended throughout Rake Lane, Clifton, after many difficulties owing to coal workings.

Sewerage, Scavenging, &c.—Joint sewage works are in progress, and drainage operations have been carried out in Urmston and Flixton. “The flushing of the sewers by manual labour has been continued with the best results, and, owing to the constant attention, no complaints have been received of offensive manholes.” The scavenging is performed in Clifton by contract, and in the other districts by the tenants. Some of the ditches are offensive owing to sewage deposits.

Sanitary Inspection.—The bakehouses, slaughter-houses, dairies, and cowsheds are described as satisfactory. There are no lodging-houses in the district, nor noxious trades conducted in it. No houses have required condemnation during the year. The Inspector (Mr. Bland) states that he visited 87 houses and reported on their sanitary condition; he had occasion to issue 30 notices and write 54 letters for the abatement of 94 nuisances of a miscellaneous character.

Blackburn.—(Area in acres, 20,823; Population (Census 1891), 9,243).—*Medical Officer of Health*, W. R. POLLARD, L.R.C.P.E.; *Salary*, £40.—Birth-rate 28·0, death-rate 14·8, zymotic rate 1·29, death-rate from phthisis 0·86, and from respiratory diseases 2·27 per 1,000 of population; rate of deaths under one year to 1,000 births 104.

The general death-rate was 2·4 less than in 1895, and 3·14 below the mean of the five preceding years. The zymotic and respiratory rates were also somewhat more favourable, and there was a marked reduction in the infant rate of mortality. It is satisfactory to note that on the 29th of September the Infectious Disease (Notification) Act came into force, and valuable information concerning the spread of disease soon came to the notice of the officials. One death from scarlet fever took place at Livesey; 2 deaths—1 at Pleasington and 1 at Clayton-le-Dale—were ascribed to diphtheria; in Osbaldeston a typhoid death occurred, and a death from whooping cough in Billington. Diarrhœa was the most fatal of the zymotic diseases with 7 deaths.

Water Supply in some of the districts is obtained from the Blackburn Corporation mains, in others from dipping wells and local reservoirs.

Sewerage, Scavenging, &c.—Contracts have been entered into for the execution of the sewage works in Livesey, Wilpshire, Eccleshill, and Mellor Brook. Mr. Naylor (Ribble

Joint Committee) reported in September that the work of laying sewers is going on satisfactorily, and up to the present 600 yards of 18-in. earthenware pipes have been laid. In Pleasington a nuisance is caused by slop-water running into an open ditch in front of houses. No reference is made to scavenging.

Sanitary Inspection.—Cowsheds have received much attention, and details are given of inspections made in various parts of the district. The Medical Officer of Health states that “the sanitary condition of the farms themselves still leaves very much room for improvement.” The Inspector served 81 notices for the abatement of a variety of nuisances, and it appears that much trouble arises from the imperfect system of nightsoil removal and defective drainage.

Bolton.—(Area in acres, 25,026; Estimated Population, 35,775). — *Medical Officer of Health*, JAMES BARR, L.R.C.P.E., D.P.H; *Salary*, £175.—Birth-rate 28·8, death-rate 14·4, zymotic rate 1·03, death-rate from phthisis 0·58, and from respiratory diseases 3·24 per 1,000 of population; rate of deaths under one year to 1,000 births 141.

The general, zymotic, and infant death-rates compare favourably with 1895; the respiratory deaths were somewhat increased, but the phthisis rate was below the average. Scarlet fever prevailed extensively, and was the cause of 264 cases of illness and 9 deaths; only two townships, Longworth and Quarlton, escaped; Tonge suffered most severely, where 81 cases appeared; half the cases being among scholars attending the infant school, which is described as “a very unsuitable building for the congregation of young children.” In March the public elementary school at Edgworth was closed in consequence of the disease. Diphtheria was the cause of 5 cases and 2 deaths, and membranous croup 1 death. Enteric fever contributed 40 cases and 2 deaths. The infected premises

were invariably inspected, and attention is drawn to the dangerous practice of throwing into ashpits excreta from fever stricken patients "which after becoming dried is blown about broadcast." Bradshaw was affected with measles in December, and the public schools had to be closed; and whooping cough with 9 deaths showed much malignancy. Small-pox attacked an unvaccinated person at Smithills, but removal and the precautionary measures taken prevented the spread of the disease. The Isolation Hospital was used for the treatment of 122 cases, viz., small-pox 1, scarlet fever 113, enteric fever 3, and diphtheria 5. The average stay of patients in hospital was for scarlet fever 49 days, enteric fever 52 days, diphtheria 33 days, and the small-pox case was discharged on the 42nd day. The disinfection of houses and clothing received careful attention.

Water Supply is largely obtained from the Bolton Corporation, and this water was laid on to 14 houses in Great Lever in lieu of that supplied from Lord Bradford's reservoir.

Sewerage, Scavenging, &c.—An arrangement has been made for the sewage of Edgworth and Bradshaw to be taken into the Turton sewers. Dr. Barr reports that "the usual system of contract has been followed during the year for the emptying of ashpits in Great Lever, Darcy Lever, Tonge, Brightmet, Middle Hulton, Over Hulton, Deane, Heaton, Lostock, and Smithills, and gives satisfaction."

Sanitary Inspection.—The dairy farms and surroundings have been inspected, and it is satisfactory to find that "in the southern part of the district several farms have had new shippons built instead of the low over-head buildings which existed before the whole of the farms and dairies were under inspection, and as a whole are kept very well." One prosecution was instituted against a butcher who had slaughtered and dressed a diseased cow, and he was fined £20 and costs, or two months' imprisonment with hard labour.

In the southern portion of the district 195 nuisances were abated, and in the northern they numbered 140. Much attention has been paid to house drainage, closet accommodation, accumulation of refuse, &c. The slaughter-houses were also periodically inspected, and certain food had to be destroyed as unfit for human consumption.

Burnley.—(Area in acres, 41,164; Estimated Population, 16,600).—*Medical Officer of Health*, THOMAS DEAN, M.D.; *Salary*, £80.—Birth-rate 23·6, death-rate 13·9, zymotic rate 0·78, death-rate from phthisis 0·96, and from respiratory diseases 3·13 per 1,000 of population; rate of deaths under one year to 1,000 births 122.

The vital statistics compare very favourably with the previous year. The general death-rate was reduced by 3·1, and there was a sensible diminution in the zymotic and phthisis rates. Scarlet fever cropped up in the various sub-districts, and occasioned 74 attacks and 1 death. Diphtheria and membranous croup caused 3 deaths, and typhoid fever 4 deaths—2 at Briercliffe, 1 at Huncoat, and the other at Simonstone. Only 1 death was due to measles, while whooping cough and diarrhoea gave rise to 2 and 4 deaths respectively. In some districts schools were closed on account of measles, "but no school was closed except under strong necessity." There is still a want of hospital accommodation, although a joint committee has had the matter in hand for some years.

Water Supply has been improved in Hapton and Huncoat, and a scheme is being pushed forward for supplying Foulridge with water from White Moor. Cliviger is mentioned as being insufficiently and unsatisfactorily supplied with water.

Sewerage, Scavenging, &c.—The Surveyor (Mr. Edmondson) reports that works of sewerage are being provided in various parts of the district. "Reedley Hallows, Briercliffe,

and Sabden are already sewered, the latter having an extensive outfall works of its own, whilst the two former are connected with the Burnley Corporation system of sewers.

. . . . In rural districts with scattered townships the difficulties in dealing with water and sewage are great. Every village must have its own separate water and sewage scheme." The following districts are scavenged by contract:—Blacko, Hapton, Huncoat, Foulridge, Read, and Worsthorpe. The work is systematically carried out, and is said to give satisfaction.

Sanitary Inspection.—To dairies and cowsheds 205 visits have been made, 78 notices relating to registration, sanitary conditions, &c., have been issued, and 62 received attention, as well as 17 cases of defective ventilation, lighting, &c. Slaughtering is supervised as conducted on 55 premises, 36 being in connection with farms. Over 2,000lbs. of meat had to be destroyed as unfit for human food. There are very few bakehouses, and these comply with sanitary requirements. House-to-house inspection entails a considerable amount of work, and in all houses in which infectious disease occurs precautionary measures are adopted. The residents of the district made 36 complaints, which were investigated. The total nuisances taken in hand referred to:—

Insanitary ashpits	...	...	...	...	440
Accumulation of ashes, nightsoil, and other refuse	...	...	...	...	162
Defective drainage	...	...	...	...	124
Dirty premises	...	...	...	...	29
Insufficient and polluted water supplies	...	...	...	...	22
Animals kept so as to be a nuisance	...	...	...	...	20
&c., &c.					

With few exceptions the nuisances were promptly abated, and no legal proceedings had to be taken. Smoke observations were made in 25 instances, but the time limit fixed at 20 minutes per hour ought to be considerably reduced.

Bury. — (Area in acres, 14,643; Estimated Population, 14,551). — *Medical Officer of Health*, W. H. BARR, L.R.C.P.E.; *Salary*, £120.—Birth-rate 21·6, death-rate 15·1, zymotic rate 1·23, death-rate from phthisis 0·75, and from respiratory diseases 3·91 per 1,000 of population; rate of deaths under one year to 1,000 births 85.

The general death-rate was fractionally lower than in the previous year, but there was a more striking reduction in the infant mortality. The zymotic deaths were attributed to scarlet fever (4), diphtheria and membranous croup (8), enteric fever (3), measles (2), whooping cough (3), and diarrhœa (4). The exact distribution of preventible sickness could not be ascertained, as notification is not in force, and precautions could not be taken successfully to restrain the progress of infection. Dr. Barr again urges the Council to adopt the Infectious Disease (Notification) Act, and it is hoped that there will be no further delay in taking a step which has proved of so much value throughout the country. Efforts, which are expected to prove successful, have been made for the provision of a joint isolation hospital in the Bury Rural District and adjoining districts.

Water Supply is described as “good, but contaminated with mud and vegetable matter.”

Sewerage, Scavenging, &c.—It has been suggested that the sewage of Ainsworth and Brightmet be treated jointly with the sewage of the adjoining Bolton Rural District. With respect to Unsworth, negotiations are taking place with a view to acquiring land near Hollins Vale for the formation of sewage works. The scavenging requires more attention before it can be said to be satisfactory.

Sanitary Inspection.—With few exceptions, the cow-houses are reported as “dirty, stuffy, and dark,” and there is no hope of permanent improvement “so long as landlords pay

so little attention to structural defects and the needs of the tenants." Dr. Barr expresses a valuable opinion with respect to the working of the Cotton Cloth Act, 1889, which will be referred to in the body of my Report. The Inspector (Mr. Porritt) reports visits to canal boats (25) and he describes them as clean and in fair state of repair. Number of general nuisances abated 70, defective or offensive privies 42, bad drainage 17, smoke observations 22, &c.

Chorley.—(Area in acres, 40,043; Estimated Population, 17,650).—*Medical Officer of Health*, J. A. HARRIS, M.D. (Lond.); *Salary*, £150.—Birth-rate 29·5, death-rate 14·3, zymotic rate 0·84, death-rate from phthisis 0·67, and from respiratory diseases 2·66 per 1,000 of population; rate of deaths under one year to 1,000 births 137.

Dr. Harris submits very favourable vital statistics; the birth-rate showed a slight decline, and the death-rate was the lowest since the passing of the Public Health Act in 1875. The most marked decrease in the death-rate occurred in the Rivington Sub-District, a decrease being noticed in Brindle and Croston and a little increase in Leyland. The infant mortality exceeded the record of the previous year, and cannot be regarded as satisfactory. Zymotic diseases have appeared in all the townships, and it is pleasing to note a decrease in scarlet fever and diphtheria. These diseases were credited with 1 death each, while membranous croup caused 5 deaths. Typhoid fever contributed 31 cases and 5 deaths. Measles prevailed in Rivington and Heath Charnock, and in the former township school closure took place. Whooping cough caused 2 deaths in Whittle-le-Woods, and from diarrhœa 3 deaths resulted. The provision of a Joint Infectious Hospital at Heath Charnock has unfortunately been delayed owing to the difficulty of dealing with the sewage, but this has been overcome by an advantageous transfer of land which is available for the treatment of sewage.

Water Supply to Coppull has been completed by the addition of mains laid towards Grey Horse district, Bogburn Lane, and Clincutts Lane. The other districts are badly supplied, as Whittle, Mawdesley, &c., rely on springs, wells, and rain water.

Sewerage, Scavenging, &c.—New sewage works have been provided for Whittle, Heapey, Wheelton, Anderton, Heath Charnock, Eccleston, and Euxton; in other townships no sewerage system has been adopted. The sewage tanks and irrigation land will require more careful supervision. There is no public system of scavenging, occupiers being responsible for the removal of house refuse.

Sanitary Inspection.—Bakehouses are apparently satisfactory; slaughter-houses described as “moderately good.” The cowsheds receive visits from the Inspector, but insufficient information is given as to their condition. The Authority have not yet adopted Regulations under the Order of the Local Government Board. Notices to the number of 131 were served in order to carry out sanitary work, including drains laid, repaired, &c., 63, privies erected or repaired 3, dirty or infected houses limewashed or disinfected 53, water supply improved 3, common nuisances abated 9. Smoke observations were taken in “several” instances, but no legal action followed.

Clitheroe (Lancashire portion.)—(Area in acres, 30,889; Population (Census 1891), 7,101).—*Medical Officer of Health*, W. P. COUNSELLOR, M.D.; *Salary*, £50.—Birth-rate 22·3, death-rate 15·6, zymotic rate 0·70, death-rate from phthisis 0·98, and from respiratory diseases 3·66 per 1,000 of population; rate of deaths under one year to 1,000 births 106.

The general, zymotic, and phthisis deaths compare favourably with 1895, but there was a slight increase in

the respiratory and infant rates. Scarlet fever, with 32 cases and 1 death, had a somewhat extensive spread; and whooping cough attacked Whalley and Sabden, where the infant school was closed for a short time. "In September a sharp outbreak of measles in Wiswell rendered it necessary to close the school for a fortnight, and caused 1 death. In the course of these epidemics, disinfectants were supplied and liberally used in Chatburn, Hurst Green, and Whalley." No death took place from diphtheria or typhoid fever.

Water Supply for Chipping is not satisfactory; all the inhabitants are dependent on Brabin's well; in the summer, when the village is crowded with soldiers and visitors to the camp, much inconvenience is experienced. A polluted water supply is reported as affecting 1 inn, 2 cottages, and 5 farms, and there is an inadequate supply to 4 farms and 5 cottages in Bailey. Water has been laid on to Woodfields, Lower Clerk Hill, &c.

Sewerage, Scavenging, &c.—The Medical Officer of Health reports that "the sewage works for Barrow, Chatburn, Sabden, and Whalley have been completed, and those property owners who have not as yet connected their drains with the sewers are under notice to do so before the end of March." The waste-water closet has been extensively adopted in Sabden and Whalley, there being 80 on this principle in the former village and 54 in Whalley. Scavenging is contracted for in Chatburn; in the other townships the occupiers are required to attend to this matter.

Sanitary Inspection.—Back-to-back houses known as Pump Row, in Sabden, were condemned in March, and a keeper's cottage in Bailey was reported in December for dilapidations and dampness. Faulty house drains have, in several instances, been remedied in Chatburn, and the dilapidated closets behind Wood Terrace repaired. Many new closets have been constructed in various parts of the district. The nuisance from fish refuse has been remedied. Slaughter

houses, dairies, and cowsheds give satisfaction, and improvements have been effected in the latter. The Inspector served 78 notices for the abatement of an equal number of nuisances.

Fylde.—(Area in acres, 47,349; Estimated Population, 13,426).—*Medical Officer of Health*, E. G. B. STARKIE, M.B.; *Salary*, £60.—Birth-rate 30·5, death rate 16·0, zymotic rate 1·04, death-rate from phthisis 1·04, and from respiratory diseases 2·60 per 1,000 of population; rate of deaths under one year to 1,000 births 109.

The vital statistics submitted by Dr. Starkie compare favourably with 1895; all the rates of mortality are reduced, especially the general and infant rates. Scarlet fever was prevalent in all the sub-districts except Lytham; 56 cases were notified and 4 deaths; in consequence of the disease, a school at Thornton was closed for a period of six weeks. Diphtheria and typhoid fever caused 1 death each; bad drainage and water contaminated with sewage were among the causes discovered in connection with the latter disease. Measles contributed 1 death, whooping cough 2 deaths, and diarrhœa 5 deaths. A Committee has been formed jointly with neighbouring districts for the provision of hospital accommodation.

Water Supply.—The Fylde mains have been extended in Martin and Hawes Side to School Lane end. The extension to Thornton through Mill Lane will supply the houses of the Trunnah. This line of pipes will also soon be taken to Hardhorn Village, and will then be within reach of 13 houses whose supply is now insufficient. At Breck Street, Poulton, Fylde water has been substituted for an unwholesome supply to 4 houses. Of 8 samples of water examined 7 were condemned as unfit for drinking purposes.

Sewerage, Scavenging, &c.—The Poulton sewage is discharged into the Wyre Estuary. In many of the villages the

drainage is bad and requires attention. The cesspool system in vogue is very objectionable. The emptying of ashpits is in the hands of the Parish Councils at Poulton-le-Fylde and Wesham. The work in future will be done three times a year instead of twice as heretofore!

Sanitary Inspection.—One house has been condemned at Elswick, and five in Cock Robin Row, Elswick. There is one common lodging-house under supervision, and this has not been kept in the most satisfactory manner. The slaughter-houses have been generally well kept, and in only a few instances has it been necessary to caution the occupants as to limewashing and removal of offal, &c. In November a carcase of beef was seized as unfit for food, but the Magistrates refused “to condemn the whole. The portion condemned was cut away and buried”! Action of this character is somewhat anomalous and likely to encourage the traffic in “slink” meat. The Inspector (Mr. Jolly) reports that he served 183 preliminary and 34 legal notices for the abatement of 186 nuisances. In the following cases legal proceedings were taken, viz.:—for non-abatement of nuisance after notice 4; refusing to close houses after being condemned 1; killing in an unregistered slaughter-house 1. The dairies and cowsheds have been improved, and in one case it was necessary to serve a notice for the removal of pigs kept in the cowshed.

Garstang.—(Area in acres, 60,199; Population (Census, 1891), 12,151).—*Medical Officer of Health*, THOMAS FISHER, M.R.C.S.; *Salary*, £50.—Birth-rate 21·3, death-rate 13·7, zymotic rate 0·74, death-rate from phthisis 0·65, and from respiratory diseases 3·12 per 1,000 of population; rate of deaths under one year to 1,000 births 108.

The death-rate was 1 per 1,000 less than in the previous year, but there was a slight increase in the zymotic and respiratory rates. The proportion of deaths under 1 year

rose from 67, in 1895, to 108 in the past year. The death-rate in Stalmine-with-Staynall was high (31·87), old people and infants being particularly affected; in many of the other townships the general rate was remarkably low. Few deaths took place from zymotic causes; typhoid fever with 17 cases and 4 deaths was the most troublesome. At South View, Catterall, this disease proved serious, and active sanitary reforms are recommended. Scarlet fever appeared at Scorton, but owing to the means of isolation that were placed at the disposal of the Council, the spread of the disease was limited. Throughout the district 16 cases were notified, but no death. Whooping cough caused 4 deaths, and diarrhoea 1 death. There is reason to believe that hospitals will be provided for the isolation of infectious diseases. Dr. Fisher remarks that accommodation of this character is "of pressing importance, and is one of those advances of preventive medicine which is sound financially and good for the health and well-being of the inhabitants of any district."

Water Supply is largely obtained from the Fylde Waterworks Company and from wells. It is proposed to extend the supply of the Fylde water to several villages, including Great Eccleston.

Sewerage, Scavenging, &c.—Out of the 23 Townships in this district, "there is not one possessing a fairly complete drainage scheme." The works carried out at Bowgrave, Ferton, Calder Vale, Catterall, Great Eccleston, Pilling, and Hambleton, still remain in an unsatisfactory condition. Scavenging is imperfectly carried out; in Garstang alone has any attempt been made to scavenge.

Sanitary Inspection.—More attention has been paid to this work, and it is pleasing to note, that bakehouses, slaughterhouses, and lodging-houses are under regular inspection. Unfortunately the Authority has decided not to adopt Regulations under the Dairies, Cowsheds, and Milk-shops Order,

and in this wide Rural District little action is taken to regulate the sale of milk and secure its freedom from contamination. The Inspector (Mr. Cook) submits a summary of work which has received his attention, including:—

Inspections of premises	...	...	...	684
Complaints received	...	...	...	12
Plans of new houses approved	...	...	...	29
Houses erected	...	...	...	10
Houses in course of erection	...	...	...	17
Houses unfit for habitation	...	...	...	14
Total nuisances abated	...	...	..	157
„ nuisances unabated at the end of				
year	...	...	...	21
Canal boats inspected	...	...	...	17

Lancaster.—(Area in acres, 55,174; Estimated Population, 12,410).—*Medical Officer of Health*, G. R. PARKER, L.R.C.P. (Lond.); *Salary*, £50.—Birth-rate 27·4, death-rate 13·8, zymotic rate 1·36, death-rate from phthisis 1·45, and from respiratory diseases 2·25 per 1,000 of population; rate of deaths under one year to 1,000 births 105.

The gross death-rate was equal to 15·52 per 1,000, but, excluding the deaths which took place in the Royal Albert Asylum, the rate is reduced to 13·8. The various rates of mortality closely corresponded with the previous year. The zymotic deaths were ascribed—3 to typhoid fever, 7 to whooping cough, and 7 to measles. Scarlet fever spread somewhat in Heaton, Warton, and Ellet, and occasioned 16 cases of illness, but no deaths. Measles spread most widely in the Lancaster sub-district, and gave rise to 128 cases out of a total of 135 for the whole district; no death took place. Small-pox was introduced by a young man from Gloucester, and 12 days after his arrival his sister became affected. The small hospital belonging to the Rural Authority had become too dilapidated

for use, so the Lancaster Corporation, to protect the borough, allowed these cases to be admitted into their Isolation Hospital.

Water Supply.—The Medical Officer of Health remarks that “it is at least seven years since I first drew the Authority’s attention to the fact that the water supply of Cockerham, Thurnham, and Glasson Dock was most unsatisfactory. It is still in the same state, or if possible, worse, owing to the effluxion of time. No remedy has been found for this sad state of affairs. No notice has been taken of the matter, and it seems almost useless for me to refer to it, but I may remind the Authority that if a farm has a bad water supply, one looks with suspicion upon the milk. Every farm supplying milk for consumption by man requires a pure supply of water.”

Sewerage, Scavenging, &c.—The sewerage system of Slyne and Hest Bank has been completed during the year, and a new scheme of sewerage for Heysham will probably be commenced in the spring. The scavenging is carried out by contract, and gives satisfaction; the refuse is conveyed to the land.

Sanitary Inspection.—The inspection of this district has received attention, and special visits have been paid to Yealand Conyers and Heysham. There is only 1 common lodging-house, and this has been well conducted. Canal boats (41) have been found to comply with sanitary requirements, except in one instance. Ridge Lane is described as in a very “objectionable condition,” owing to the deposit of refuse, such as cinders, ashes, cabbage, potato, and other vegetable refuse. No inspection is made of the dairies and cowsheds, and Regulations have not been adopted under the Order of the Local Government Board. Owing to the extension of the districts, and the greater demands for sanitation, I quite agree with the suggestion as to the appointment of an Assistant Inspector; the district is too large for one man to look after, especially if he has other duties to perform.

Leigh.—(Area in acres, 11,568; Estimated Population, 8,120).—*Medical Officer of Health*, C. CHALLINOR, L.R.C.P. (Lond.), D.S.Sc.; *Salary*, £80.—Birth-rate 29·6, death-rate 17·3, zymotic rate 1·47, death-rate from phthisis 1·18, and from respiratory diseases 3·81 per 1,000 of population; rate of deaths under one year to 1,000 births 132.

As compared with 1895 the death-rate was somewhat reduced; the zymotic and infant rates were lower, and the respiratory rate rose from 2·86 to 3·81. Lowton had the highest death-rate and Kenyon the lowest. Scarlet fever prevailed in the Astley portion of the district, where all the deaths, 3 in number, took place; of the total cases (65) which came to the knowledge of the officials, 44 were removed to the Sanatorium. Measles caused 6 deaths, and its spread in Lowton necessitated the closure of the Endowed Schools for a month. One death was attributable to each of the following zymotic diseases, viz., membranous croup, enteric fever, whooping cough, and diarrhoea. I again point out the desirability of adopting the Infectious Disease (Notification) Act; without full knowledge of infectious cases it is difficult to safeguard the health of a district.

Water Supply.—Arrangements have been completed for a water supply to Lowton. In Astley and Glazebury a satisfactory supply has already been provided.

Sewerage, Scavenging, &c.—The Medical Officer of Health states that improvements have been made in the sewerage of a portion of Astley. The drainage of the district about the Pack Horse has also been improved. Very little is said with respect to scavenging.

Sanitary Inspection.—Attention has been paid to the dairies and cowsheds, and 5 notices were served for defects in lighting and drainage. The Inspector reports that 192 nuisances were taken in hand and 170 abated. The notices

served numbered 294, and 8 had reference to canal boats. The sanitary work included the cleansing of 100 drains, houses repaired or cleansed 61, houses disinfected 47, lodging-houses under inspection 7, overcrowding 6, sink pipes disconnected 5, animals so kept as to be a nuisance 14, ashpits in a foul state 22, &c.

Limehurst.—(Area in acres, 5,426; Estimated Population; 9,420). *Medical Officer of Health*, T. COOKE, M.R.C.S.; *Salary*, £40.—Birth-rate 34·3, death-rate 17·7, zymotic rate 0·95, death-rate from phthisis 1·16, and from respiratory diseases 3·29 per 1,000 of population; rate of deaths under one year to 1,000 births 123.

The death-rate, although 1·8 lower than in the previous year, is still too high for a rural district; the zymotic and infant rates show a satisfactory reduction. Scarlet fever caused 34 cases and 1 death, and out of 8 enteric cases 3 proved fatal. The other zymotic deaths were due 2 to measles and 3 to diarrhœa. Only 1 patient, suffering from typhoid fever, received hospital isolation.

Water Supply is obtained from the Borough of Ashton-under-Lyne. A few cottages in the outlying parts of the district obtain their water from wells liable to pollution.

Sewerage, Scavenging, &c.—More attention should be paid to the drainage, which at present passes away into brook courses. Little information is given with respect to scavenging.

Sanitary Inspection.—The nuisance caused by the spontaneous combustion of a heap of refuse material at the new Limehurst Colliery has been with difficulty removed. The mills are said to be in a good sanitary condition, lofty, well ventilated, and built upon the most modern ideas, and under proper supervision. Notices were served for 24

nuisances, particulars of which are given by the Inspector, and with one exception all were complied with. A large number of new closets have been built and new drains have been laid, besides many other improvements connected with property.

Lunesdale.—(Area in acres, 75,734; Population (Census 1891), 7,347).—*Medical Officer of Health*, DOUGLAS J. M. BONE, M.B.; *Salary*, £20.—Birth-rate 22·7, death-rate 15·3, zymotic rate 0·95, death-rate from phthisis 1·22, and from respiratory diseases 1·77 per 1,000 of population; rate of deaths under one year to 1,000 births 125.

While the birth-rate continues practically the same as in 1895, the general and infant rates show a decided increase. The principal zymotic diseases accounted for 7 deaths and 31 notified cases. Scarlet fever was the cause of 24 cases and 1 death, the sub-district of Arkholme being most affected. Measles gave rise to a few scattered cases but no deaths. Whooping cough prevailed in Melling and Wennington, and in the former place a school was closed, and in the whole district 4 deaths were caused. Diphtheria and typhoid fever contributed 1 death each; the Medical Officer of Health made careful inquiries as to their origin. Attention is drawn to the absence of an Isolation Hospital and apparatus for carrying out efficient disinfection.

Water Supply is on the whole satisfactory. "Since Halton obtained a supply from the Manchester Waterworks, all the large villages in the district have now good water supplies." Some of the smaller villages, however, are dependent on water from surface wells.

Sewerage, Scavenging, &c.—The sewerage system of Hornby, Wray, Caton, and Halton has received regular attention, and it seems to work well. A place for tipping refuse is

wanted at Halton, Hornby, and Wray, for at the present time most of the refuse finds its way into the rivers! The pollution of Artle Beck at Caton is said to require attention "in the interest of the health of the village."

Sanitary Inspection.—It is unsatisfactory to find that the dairies and cowsheds receive no attention in this extensive district, and no Regulations have been framed. The Inspector's report is not submitted, and information as to the sanitary work carried out is somewhat limited. It appears that 38 notices were served for the abatement of minor nuisances, and the Medical Officer of Health remarks that during the past three years good work has been done.

Ormskirk.—(Area in acres, 68,614; Estimated Population, 27,520).—*Medical Officer of Health*, HERBERT PECK, M.B., D.P.H.; *Salary*, £350.—Birth-rate 25·8, death-rate 11·8, zymotic rate 0·65, death-rate from phthisis 0·76, and from respiratory diseases 2·43 per 1,000 of population; rate of deaths under one year to 1,000 births 98.

Dr. Peck reports that for the past year the general death-rate was the lowest and the zymotic rate one of the lowest ever recorded for the district; the rate of infant deaths also shows a satisfactory reduction and compares favourably with 1895, and the average of the last decade (115·2). The birth-rate continues to decline, especially in Aughton and Formby. Scarlet fever spread widely, causing 174 cases and 4 deaths. School closure was not resorted to in consequence of this disease. Diphtheria and membranous croup occasioned 16 attacks and 2 deaths. The supply of antitoxin serum has been little used, and the Council is advised to withdraw the facilities offered. Enteric fever was the cause of 21 cases and 4 deaths. The infected houses were examined, and it was found that 11 of the cases occurred on insanitary premises and 6 on premises apparently in good order. The districts of

Altcar, Aughton, Lydiate, and Maghull were affected with 113 out of the total 148 cases of measles, and to check the disease it was considered desirable to close four of the public elementary schools. Whooping cough seriously attacked Bickerstaffe and Melling, and in these townships two schools were closed, in one case from May 21st to June 22nd, and in the other from August 19th to September 21st. Towards the end of the year Holly House, Aughton, was made ready for the reception of 8 cases of scarlet fever and 2 of typhoid fever, and it is hoped that this will prove a nucleus for hospital accommodation suitable and sufficient for the whole district.

Water Supply.—The scheme for the supply of water to Hesketh and Tarleton has made satisfactory progress. It is very likely that supplies will be also provided for the Bickerstaffe and Melling townships, which at present are in want of good water.

Sewerage, Scavenging, &c.—The Local Government Board has sanctioned the borrowing of £5,542 for drainage purposes in Aughton, and tenders for the work have been invited. The cesspool system is undesirable, and as the population increases sewerage should be carried out. The Medical Officer of Health remarks that "Ainsdale village, several wards in Formby, the village of Banks, and perhaps other places, might be made into 'sewerage areas' with great advantage to the inhabitants." The responsibility of ashpit emptying, &c., ought not to rest with the householders, and it is satisfactory to note that the Parochial Committees of Aughton and Formby contemplate performing this work. The other populous parts of the district also require attention.

Sanitary Inspection.—An elaborate account is given by the Inspector (Mr. Peach) of the sanitary work which engaged his attention in each of the townships. The cowsheds and dairies are under supervision and generally comply

with the Regulations. Slaughter-houses and lodging-houses have been well conducted, and the canal boats (51) inspected have been found, with few exceptions, clean and well conducted. The total notices served numbered 405, and nuisances remedied 866. Legal proceedings were commenced in 3 cases, but abandoned on an undertaking being given to do the work ordered by the Council. It is stated that the river is less polluted than in previous years, but there is a considerable amount of pollution from the Wigan Sewage Farm and from a "blue billy" tip near Parbold.

Preston.—(Area in acres, 49,063 ; Population (Census 1891), 15,200).—*Medical Officer of Health*, CHARLES J. TRIMBLE, L.R.C.P.E., D.P.H. ; *Salary*, £75.—Birth-rate 24·6, death-rate 15·9, zymotic rate 0·85, death-rate from phthisis 1·11, and from respiratory diseases 2·82 per 1,000 of population ; rate of deaths under one year to 1,000 births 131.

The general and zymotic rates differ only slightly from the previous year, while there was an increase of the respiratory and infant deaths. A few cases of scarlet fever occurred in Penwortham and elsewhere, and 2 deaths resulted. Whooping cough prevailed extensively, and gave rise to 3 deaths. The spread of the disease necessitated the closure of schools in the following districts :—Catforth, January 29th to February 26th ; Woodplumpton, March 20th to April 20th ; and Broughton, June 15th to July 27th. Eight cases and 1 death were attributed to typhoid fever. The cases occurred in Farington (4), Much Hoole (1), Whittingham (1), Woodplumpton (1), and Cottam (1). Diarrhœa caused 6 deaths, diphtheria 1, and measles nil. Joint Committees have been formed for providing Isolation Hospitals, and it is hoped they will not delay to perform their duties, as the Medical Officer of Health is of opinion that with the means of isolation at his command "the zymotic death-rate can still be further reduced."

Water Supply.—The Penwortham and Longton supply has made good progress, and more than half the inhabited houses (635) in six townships south of the Ribble have taken advantage of the water provided. The Fulwood Urban District Council water has been furnished to 31 additional houses in the townships on the north of the Ribble.

Sewerage, Scavenging, &c.—Improvements have been effected in the schemes for the treatment of the sewage of Grimsargh and Ribchester, and a scheme is being prepared for the sewerage of Farington. The sewerage of Middleforth Green and neighbourhood will also soon have to engage the attention of the Authority. Some arrangement should be made for more satisfactorily carrying out the scavenging in the populous parts of the district.

Sanitary Inspection.—In many cases the Inspector has had little difficulty in getting nuisances abated, but some owners of property have given much trouble. Altogether, 97 notices were served for the following nuisances:—

Defective closets and ashpits	..	..	25
„ drainage ...	...	...	38
Foul ditches ...	...	...	9
Defective or foul cesspools ...	...	...	14
Dilapidated houses ...	...	...	4
Polluted water supplies	...	..	35
General nuisances ...	...	...	15

In addition, 49 houses were disinfected, and 52 visits paid to the canal for the inspection of boats. It is pleasing to observe that Regulations under the Dairies, Cowsheds, and Milk-shops Order have been at last adopted, and bye-laws have met with the approval of the Local Government Board for the regulation of slaughter-houses, common lodging-houses, &c. In several localities building operations are proceeding rapidly, and Dr. Trimble is of opinion that cottage property is built more on sanitary lines when the builder is compelled to adhere to special rules than when allowed to follow his own caprice.

Sefton.—(Area in acres, 16,924 ; Population (Census 1891), 7,744).—*Medical Officer of Health*, ROBERT M. ANDERSON, L.R.C.P.E. ; *Salary*, £70.—Birth-rate 22·3, death-rate 13·3, zymotic rate 1·29, death-rate from phthisis 0·90, and from respiratory diseases 1·80 per 1,000 of population ; rate of deaths under one year to 1,000 births 104.

As compared with 1895, the birth-rate was increased by 2·4, and the death-rate decreased 3·0, per 1,000 of the population. The zymotic and infant rates were somewhat above the average. Scarlet fever gave rise to 10 cases but no death ; 4 cases appeared among the inmates of the Fazakerley Cottage Homes. Diphtheria and membranous croup occasioned 9 cases and 6 deaths. One case of diphtheria in West Derby Road, which unhappily proved fatal, had its origin “in the close proximity and dirty and neglected condition of privies and water-closets.” The other zymotic deaths were due—2 to measles and 2 to diarrhœa. The former disease attacked about two-thirds of the scholars in attendance at the public elementary school, and, as result, closure for one month was resorted to. The character of the Isolation Hospital is described as good, yet it was not used for the treatment of a single case.

Water Supply.—The Medical Officer of Health reports that throughout the greater part of the district the water is supplied by the Liverpool Corporation, and where that supply is absent well water, which is good and plentiful, is used. Extensions of the mains have taken place in Aintree, and a deep well and pump has been provided at Netherton.

Sewerage, Scavenging, &c.—Exclusive of West Derby (Rural) the sewage is disposed of on the land, as is also the contents of the privies. A sewage scheme is wanted for Orrell Village, as a number of new houses are being erected, and plans have been deposited for an additional 64 houses in the vicinity. In West Derby (Rural) the scavenging is

carried out by contract; in the other townships the occupiers have to perform this work.

Sanitary Inspection.—The slaughter-houses, lodging-houses, dairies, and cowsheds are under supervision and well conducted. There are no bakehouses to inspect, and no nuisance has arisen from black smoke. The Inspector served 10 official notices for the abatement of 80 nuisances, consisting chiefly of foul privy middens, defective house drains, untrapped gullies and cesspools overflowing or having an overflow into a ditch, and all were remedied without legal proceedings.

Ulverston.—(Area in acres, 128,462; Population (Census 1891), 18,773).—*Medical Officer of Health*, A. THOMPSON, M.D.; *Salary*, £140.—Birth-rate 22·7, death-rate 12·1, zymotic rate 0·63, death-rate from phthisis 1·11, and from respiratory diseases 1·86 per 1,000 of population; rate of deaths under one year to 1,000 births 72.

The vital statistics are again satisfactory, and differ only slightly from those submitted in 1895. The fractional increase in the zymotic rate was due to the 4 fatalities from whooping cough. Measles caused 2 deaths, and its spread necessitated the closure of schools at Coniston and Staveley (January 14th to February 10th) and at Cartmel (May 7th to May 18th). Scarlet fever had a wide prevalence but small mortality; of a total of 55 cases there was one death. Schools were closed in consequence of the disease at Broughton (January), Urswick (July 10th to 27th), Gleaston and Scales (November 5th to 16th). Diphtheria caused 15 cases and 3 deaths; the distribution being largely confined to Beckside, Soutergate, Chappels (Kirkby) and Baycliff. One death was due to typhoid fever and 1 to diarrhœa. There is no hospital accommodation in the district except for paupers, but efforts are being made to supply this long-felt want

Water Supply is described as "variable." In some of the districts good water is much needed.

Sanitary Inspection.—The Medical Officer of Health reports that he certified a row of cottages at Flookburgh as unfit for human habitation, and notices were served on the owner. Regulations are in force respecting dairies and cow-sheds, but few persons engaged in the business as purveyors of milk have been registered. The slaughter-houses, bake-houses, and lodging-houses are described as satisfactory. The Inspectors give tabular information concerning the sanitary work which engaged their attention, including total complaints (34), houses and premises inspected (3,328), orders issued for sanitary improvements (103), drains trapped, ventilated, or repaired (35), inspection of public and private water supplies (45), public pumps kept in repair (26), &c.

Warrington (Lancashire portion).—(Area in acres, 15,549; Estimated Population, 12,659).—*Medical Officer of Health*, R. SEPHTON, L.R.C.P.E.; *Salary*, £100.—Birth-rate 27·9, death-rate 13·4, zymotic rate 1·18, death-rate from phthisis 0·78, and from respiratory diseases 1·97 per 1,000 of population; rate of deaths under one year to 1,000 births 141.

There was a slight decline in the general, zymotic, and respiratory rates, as compared with 1895, and an increase in the proportion of infant deaths under 1 year to births. Scarlet fever was the most prevalent of the infectious diseases, but only 1 death took place out of 46 notified cases. Sankey and Rixton were specially attacked, and mostly during January, April, October, and November. Rather a large mortality (5), resulted from typhoid fever, the disease commenced in February among the poor of Sankey Bridges. Measles was not prevalent, although the cause of 3 deaths (2 in Little Sankey and 1 in Sankey). Whooping cough and diarrhoea

each contributed 3 deaths. The Warrington Isolation Hospital is available for cases occurring in the district, and advantage was taken of this privilege in 5 cases of scarlet fever; 5 cases being treated at the Hospital in connection with the Padgate Industrial School.

Water Supply.—Dr. Sephton states that “the entire district is now well supplied with pure water, plentiful in quantity, and of good quality. Penketh, and a part of Sankey, have got a supply from the Warrington Corporation. Cuerdley has been supplied with stand-pipes, where, at very slight inconvenience, a plentiful supply can be obtained. In this township the houses are scattered over a large area, and to take water pipes to every house would entail a very great expense.”

Sewerage, Scavenging, &c.—Alterations in the management of the Burtonwood Sewage Works, it is hoped, will remove the source of complaint. The sewage of Padgate and Fearnhead will soon be made to pass into the Warrington sewers. Scavenging is carried out by contract in a fairly satisfactory manner, yet at times, in Sankey Bridges and Burtonwood, the ashpit refuse might have been removed more frequently.

Sanitary Inspection.—The district is periodically inspected, and on becoming aware of the existence of infectious disease special investigations are made. There are no slaughter-houses, but the bakehouses and lodging-houses receive attention. From the Inspector's tabular statement of sanitary work, it appears that 151 cowsheds and dairies were inspected, and also 27 canal boats. Four summonses were issued for infringement of the Canal Boats Acts, and a conviction obtained in each case. To abate a large number of nuisances, 185 notices were issued, three summonses taken against owners were abandoned on works being carried out, and a lodging-house keeper was fined £2 10s. for not being licensed.

Whiston.—(Area in acres, 31,925; Estimated Population, 18,652).—*Medical Officer of Health*, EGERTON F. HALL, M.D.; *Salary*, £150.—Birth-rate 28·4, death-rate 13·4, zymotic rate 2·62, death-rate from phthisis 0·75, and from respiratory diseases 2·46 per 1,000 of population; rate of deaths under one year to 1,000 births 116.

As compared with the previous year there was a fractional decrease in the death-rate, and an increase in the zymotic rate equal to 1·05. The respiratory and infant death-rates were also satisfactorily reduced. There was an extensive prevalence of measles and whooping cough, and the fatalities, 21 and 11 respectively, were exceptionally high; 15 of the deaths from measles took place in the township of Whiston, while Ditton was responsible for 7 deaths from whooping cough; little information is given as to the action taken to stay the serious spread of these diseases. Scarlet fever cases were numerous, 128 being notified and 3 deaths; at Ditton and Cronton the epidemic nature of the disease necessitated school closure. Diphtheria caused 14 cases and 3 deaths. Enteric fever had the same number of cases and deaths, and diarrhœa 8 deaths. The Isolation Hospital was well employed, being used for the treatment of the following cases:—Scarlet fever 33, diphtheria 1, enteric fever 11, erysipelas 1, measles 10, and whooping cough 1.

Water Supply said to be, as a rule, good; at Whiston a twenty-five years' contract is now terminating, and a new supply will be obtained. Minor complaints have been received in a very few instances respecting the character of the water.

Sewerage, Scavenging, &c.—A great improvement has been made at the Sewage Farm. Mr. Fraser reports that "the land has been thoroughly drained four feet deep and an intercepting drain made at the bottom of the field to take off all the storm water. New drains have also been constructed which take the effluent water direct into the

main watercourse at the township boundary. New beds have been constructed on the ridge and furrow system, and willows planted on the ridges, and more beds are in course of construction. The subsidence tanks are regularly cleaned out and lime-washed." As a result of inspection of drains, much work was carried out to put them right, as at Eccleston and Halewood. The Council is asked to consider a drainage scheme for the township of Cronton. The scavenging is mostly in the hands of the officials, and receives attention in Eccleston, Rainhill, and Whiston, these being the populous parts of the district. Much nuisance was caused by the deposit of nightsoil near the highway and railway station at Bold, but eventually the Inspector got it removed without having recourse to law.

Sanitary Inspection.—An exhaustive report is given by the Inspector (Mr. Fraser) of the sanitary work carried out in the district, and it appears that 53 notices had to be served for the abatement of a variety of nuisances. Attention was paid to drainage, ashpit accommodation, and the proper disposal of sewage, &c. Bakehouses and slaughter-houses are described as satisfactory. Unfortunately the inspection of dairies and cowsheds is far from being sufficient, but an early improvement may be expected, as the Authority have under consideration the desirability of putting the Local Government Board Order in force.

Wigan (Division 1).—(Area in acres, 8,907; Estimated Population, 4,250).—*Medical Officer of Health*, REGINALD S. PEARSON, M.R.C.S.; *Salary*, £60.—Birth-rate 38·8, death-rate 17·2, zymotic rate 3·76, death-rate from phthisis 0·94, and from respiratory diseases 2·82 per 1,000 of population; rate of deaths under one year to 1,000 births 127.

This division of the Wigan Rural District comprises the four townships of Wrightington, Shevington, Parbold, and Dalton. The general, respiratory, and infant death-rates were

lower than in 1895, but the zymotic rate was more than doubled. Scarlet fever prevailed in Wrightington and Shevington, and altogether 35 cases were notified and 1 death. All the diphtheria cases, 14 in number, recovered; but from membranous croup there was 1 death. Enteric and continued fever, with 25 cases and 6 deaths, showed undue prevalence, especially in Mossy Lea and Appley Bridge. Improvements are being carried out in the latter place in respect of water-closet accommodation, &c. Measles caused 1 death, and the Medical Officer of Health would like this disease to be made notifiable. Whooping cough contributed 3 deaths, and diarrhœa 4 deaths. An isolated cottage is kept in readiness for cases of small-pox only, but there is no disinfecting apparatus available.

Water Supply is reported as good in Shevington and Parbold. Dalton also is well supplied with pure spring water. The extensive township of Wrightington, however, is not so fortunate; the High Moor, Mossy Lea, and Appley Bridge "all need a pure and abundant supply," and the failure of negotiations to supply Appley Bridge with water is regrettable.

Sewerage, Scavenging, &c.—There are no works in the district for dealing with sewage; the cesspool system with all its objections being in vogue. In certain townships where building operations are active, sewerage schemes will shortly have to be considered. The Medical Officer of Health states that there is no proper system of scavenging; the nightsoil at present being removed by private arrangement with the householder.

Sanitary Inspection.—It is far from satisfactory to note that cowsheds and slaughter-houses are not officially inspected by the Authority. The canal boats are inspected, and no infringement of the bye-laws has been observed. The Inspector served 37 notices, and secured the abatement of 25

nuisances. Pollutions of the River Douglas take place at Parbold and Appley Bridge, and a sewage nuisance has been complained of at Shevington.

Wigan (Division 2).—(Area in acres, 2,794; Population (Census 1891), 1,462).—*Medical Officer of Health*, HENRY SMITH, M.R.C.S.; *Salary*, £20.—Birth-rate 33·4, death-rate 15·7, zymotic rate 1·36, death-rate from phthisis 1·36, and from respiratory diseases 4·10 per 1,000 of population; rate of deaths under one year to 1,000 births 122.

The townships of Haigh and Worthington are comprised in this Division of the Wigan Rural District. All the death-rates were reduced, except the rate from diseases of the respiratory organs. Only 2 fatalities—1 from whooping cough and 1 from diarrhœa—took place from zymotic diseases, and of the cases notified, 2 were due to scarlet fever and 3 to typhoid; also on the 2nd of January a case of small-pox was notified and removed the same day to the Wigan Sanatorium.

Sanitary Inspection.—Systematic inspections have shown the district to be satisfactory; 56 nuisances referring to defective ashpits and closets, defective drains, &c., have been remedied. Canal boats (66) have been inspected and found satisfactory. Many cowsheds have come under notice, and said to be in good condition. The sewerage of Haigh—the most populous part of this Division—will, it is expected, soon be accomplished. There are no bakehouses, slaughter-houses, or trades likely to cause offence within the jurisdiction of the Council.

EXTRACT FROM THE METEOROLOGICAL REPORT

BY THE

REV. W. SIDGREAVES, S.J., F.R.A.S.,

Of Stonyhurst College Observatory.

SUMMARY OF OBSERVATIONS

For 1896.

Results of Observations taken during the Year.				Mean for the last 49 years.
Mean Reading of the Barometer	...	29.584in.		29.491
Highest	on Jan. 9th	30.597in.		30.284
Lowest	on Mar. 3rd	28.180in.		28.264
Range of Barometer Readings...	...	2.417in.		2.020
Highest Reading of a Max. Therm. on June 14th and 15th	... ..	82.7		81.6
Lowest Reading of a Min. Therm. on November 5th	... ..	21.0		15.3
Range of Thermometer Readings	...	61.7		66.3
Mean of all the Highest Readings	...	55.9		54.8
Mean of all the Lowest Readings	...	40.6		40.6
Mean Daily Range	... ..	15.3		14.2
Deduced Yearly Mean (from Mean of Max. and Min.)	... ..	47.3		46.8
Mean Temperature from dry bulb	...	47.8		46.7
Adopted Mean Temperature	... ..	47.5		46.8
Mean Temperature of Evaporation	...	44.9		44.5
Mean Temperature of Dew Point	...	42.1		42.1
Mean elastic force of Vapour	... ..	0.275in.		0.273in.
Mean weight of Vapour in a cubic foot of air	... ..	3.2gr.		3.3gr.
Mean additional weight required for saturation	... ..	0.8gr.		0.7gr.
Mean degree of Humidity (saturation 1.00)	... ..	0.82		0.84
Mean weight of a cubic foot of air	...	540.7gr.		539.2gr.
Total fall of rain in the year	...	44.693in.		47.171in.
Number of days per month on which rain fell	... ..	16.8		18.0

The Maximum monthly mean height of the Barometer
was in February, 1891, and was 29.997in.
The Minimum " " in Dec., 1868, and was 28.984

The Maximum yearly mean height of the Barometer was in 1896, and was	... ..	29.584
The Minimum " " in 1866, and was	... ..	29.389
The greatest monthly range of the Barometer was in January, 1884, and was	... ..	2.409in.
The least " " in July, 1852, and was	... ..	0.505in.
The highest reading of the Barometer during 49 years was on January 9th, 1896, and was	... ..	30.597in.
The lowest " " on Dec. 8th, 1886, and was	... ..	27.350
Extreme range	... ..	3.247in.
The highest temperature was on June 18th, 1893, and was	... ..	88.7
The lowest " " January 15th, 1881	... ..	4.6
The highest adopted mean temperature of a month, July, 1868	... ..	62.4
The lowest " " February, 1855	... ..	28.6
The highest adopted mean temperature of a year, 1868	... ..	49.1
The lowest " " 1879	... ..	44.1
The greatest monthly mean weight of } vapour in a cubic foot of air	... } July, 1852	5.1gr.
The least " " February, 1855 and 1895	... ..	1.4gr.
The greatest fall of rain in a month, was in October, 1870, and was	... ..	13.437in.
The least " " March, 1852	... ..	0.047
The greatest number of days on } which rain fell in one month	July, 1861, Dec., 1868	31
The least " " March, 1852	... ..	3

SUMMARY OF WIND.

No. of days in the year on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	43	44	29	7	22	42	161	18
Mean Velocity in miles per hour	6.8	5.8	8.0	7.3	11.8	9.5	10.4	7.4
Total No. of miles for each direction...	7021	6175	5534	1228	6220	9544	40295	3194

The total No. of miles registered during the year was 79,211.

The Max. Velocity of the wind was 51 miles per hour, S. by W., at 8 and 9 a.m., on October 8th.

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

Month.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January ...	0	0	0	0	0	0	0	1.6	0	1.0	0	0	0.3	2.8	0.7	0	0
February ...	0	0	0	0	0.2	0.1	1.8	0	6.2	0	1.2	0	0.5	1.3	0	0	0
March ...	4.5	0.1	3.7	4.2	3.7	0	0	0	1.8	0.5	2.8	7.3	0	4.8	2.1	2.8	1.9
April ...	6.7	9.6	1.2	0	2.2	4.4	3.5	1.1	5.8	9.6	5.8	8.4	10.2	0	11.2	0.8	8.8
May ...	7.3	0.1	5.2	7.0	10.2	14.0	9.4	13.8	13.4	14.3	13.9	13.3	10.7	10.2	3.0	0	7.5
June ...	10.8	4.9	1.3	2.3	8.6	4.2	1.4	3.8	3.8	4.5	8.8	3.1	9.2	12.4	12.3	8.2	2.4
July ...	5.3	7.4	2.6	2.0	13.6	10.8	5.2	1.5	0	8.0	7.9	11.1	12.7	5.5	2.2	14.2	8.4
August...	9.2	1.2	3.5	0.6	3.0	10.2	3.7	4.5	2.2	6.0	4.4	0.7	1.4	3.4	6.7	10.2	3.6
September ...	5.4	0.4	0.8	0.1	0	0	2.4	2.7	0	3.6	0.6	0	2.2	0.3	0.8	2.0	2.4
October ...	0	0	0.4	0.5	4.3	0	0	4.8	7.2	0.6	0.3	9.3	8.0	6.2	0.7	3.3	3.3
November ...	1.3	3.0	6.3	5.4	3.2	4.8	0	6.2	7.0	0	0	1.0	0	0	1.9	0.5	4.2
December ...	0	0	0.4	0	0	0	0	0	0	0	1.2	0	1.0	0	0	0	2.4

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.
(Continued.)

MONTH.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total.	Per centage each month
January	2.8	4.5	0	0	3.2	0	0	0	0	0	5.5	2.2	0	0	24.6	9.5
February	0	0.8	0	2.8	2.2	8.8	4.0	0	3.5	0	0.4	0	0	0	33.8	11.7
March	1.2	0	4.0	3.9	0.8	7.4	2.7	0.5	3.0	8.7	4.9	9.7	8.6	0.4	96.0	26.2
April	10.9	5.0	0.9	6.4	4.2	5.6	9.2	6.9	6.1	1.5	6.6	9.2	4.8	0	166.6	40.1
May	2.3	9.0	5.8	9.5	0	3.9	6.6	6.8	7.0	9.0	9.4	4.2	4.8	7.4	239.0	49.6
June	11.4	12.3	7.4	10.6	12.2	5.0	9.4	3.8	11.7	0.3	11.0	7.3	6.2	0	210.6	42.6
July	0.4	11.8	11.7	6.7	7.0	7.4	0.2	0.3	3.7	3.3	10.7	1.6	1.5	6.4	191.1	38.5
August... ..	8.2	3.9	1.5	5.8	1.5	0.3	5.4	5.6	2.7	0.5	0.2	1.8	2.8	0	114.7	25.6
September	1.3	7.7	8.2	3.1	0.2	0.2	2.1	0.6	0	0.5	8.2	1.8	5.3	0	62.9	16.7
October	0.9	0	7.6	7.5	0.4	3.8	0.7	0	0.8	0	1.4	2.0	5.8	2.0	81.8	24.8
November	0.7	3.8	3.7	0	0	0	0	0	2.0	0.1	0	2.1	2.8	0	60.0	22.8
December	1.1	4.9	1.0	1.5	0	0	0	0.2	0	3.8	0.3	0	0	0	17.8	7.4

VITAL STATISTICS.

TABLE I.—DEATHS registered during the year 1896, in the **URBAN SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Ages and Localities, and showing also the Area and Population of such Localities, and the Birth-Rate and Death-Rate during the year.

NOTE.—The Infectious Disease (Notification) Act is not in force in those Districts printed in italics.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.		At all Ages.	Under 1 year.	1 and 2 under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and upwards.
ABRAM	1982	4309	4805	220	45.7	20.3	4.37	1.45	5.20	177	98	39	23	5	6	15	10
ACCINGTON (Borough) ..	3425	38603	42000	1138	27.0	15.5	1.78	1.02	3.50	171	653	195	84	26	36	218	94
ADLINGTON	1012	4190	4700	134	28.5	13.6	0.85	0.42	3.19	134	64	18	4	4	3	16	19
ALLERTON	1585	914	930	25	26.8	12.9	Nil	1.07	2.16	120	12	3	..	1	..	3	5
ASHTON-IN-MAKERFIELD ..	6249	13379	15204	612	40.2	*19.6	4.27	1.18	3.35	147	303	90	82	13	18	68	32
ASHTON-UNDER-LYNE (Borough)	1391	40462	41476	1214	29.2	†21.4	2.00	2.16	4.99	167	1039	208	118	41	50	422	200
ASPULL	1905	8952	8952	329	36.7	18.7	3.35	0.78	5.36	164	168	54	41	6	7	45	15
<i>Astley Bridge</i>	1768	6239	6700	181	27.0	15.6	1.49	0.74	2.83	160	105	29	13	2	6	34	21
ATHERTON	2269	15833	15000	598	39.8	†19.2	§3.86	§0.86	§4.00	§135	342	83	63	11	16	97	72
AUDENSHAW	1165	6547	6890	204	29.6	18.8	3.62	1.01	3.48	200	130	41	25	3	8	36	17

* In calculating the death-rate 8 deaths of persons not belonging to the District are excluded, and 3 deaths occurring outside the District among persons belonging thereto are included.

† Excluding 1.49 Workhouse and Infirmary deaths of persons not belonging to the Borough.

‡ Excluding 53 Workhouse deaths of persons not belonging to the District. § Excluding Workhouse deaths.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.				Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25.	25 and under 65.	65 and upwards.
Bacup (Borough)	6400	23498	23500	596	25·3	19·1	1·19	0·93	4·72	126	60	19	19	150	77
BARROWFORD	1368	4500	5700	128	22·4	13·3	1·40	0·54	2·45	20	12	3	4	22	15
BILLINGE	4591	3996	4250	132	31·0	11·0	1·17	2·35	0·94	13	3	1	5	9	16
BIRDALE	2214	12387	14000	333	23·7	12·0	0·42	0·42	1·71	34	13	6	3	59	53
BLACKPOOL (Borough) ..	3495	23846	36638	940	25·6	*13·8	†1·52	†0·76	†2·64	149	58	27	19	242	134
BLACKROD	2388	4021	3700	123	33·2	11·3	Nil	0·54	4·86	11	5	4	3	9	10
BRIERFIELD	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
CARNFORTH	1459	2680	2700	80	29·6	9·6	0·74	1·85	0·74	5	4	1	2	7	7
CASTLETON	2665	5500	6700	130	19·4	†13·5	†1·94	0·44	4·47	19	31	12	5	22	19
CHAPPERTON	3080	22087	24500	721	29·4	§18·7	2·12	1·18	4·12	119	77	26	17	141	62
Childwall	786	200	208	5	24·0	4·8	4·80	Nil	Nil	1	..	..	..	..	..
CHORLEY (Borough)	3614	23082	25700	829	32·2	22·6	2·37	1·08	4·51	180	93	28	29	150	102
CHURCH	528	5870	6400	163	25·4	12·8	0·93	0·93	2·80	21	10	5	7	21	18
CLAYTON-LE-MOORS	1058	7155	8200	222	27·0	15·2	1·21	0·73	3·29	35	21	4	12	39	19

* Excluding deaths of 123 Visitors not belonging to the Borough, and including 10 deaths occurring outside the Borough among persons belonging thereto.

† Excluding deaths of Visitors.

§ Excluding 1 death of a person not belonging to the District, and including 18 deaths occurring outside the District among persons belonging thereto.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimate in middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.		1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		
CLITHEROE (Borough) ..	2375	10815	11750	306	26.0	17.9	2.12	0.85	2.38	150	211	46	28	5	8	76	48
COLNE (Borough)	5330	16774	23000	671	29.1	18.3	3.65	1.56	4.30	160	421	108	107	21	25	104	56
CROMPTON	2864	12901	13500	361	26.7	17.9	2.44	1.25	3.18	232	242	84	40	10	11	49	48
CROSTON	2162	2034	2145	58	27.0	14.9	0.46	0.93	2.33	137	32	8	5	1	2	9	7
DALTON-IN-FURNESS	7223	13300	13300	354	26.6	*14.7	1.20	0.90	2.70	127	194	45	27	15	11	54	42
DARWEN (Borough)	5919	34192	36652	1032	28.1	17.1	2.04	0.79	3.71	181	627	187	102	17	26	163	132
DENTON	2593	13993	14648	369	25.1	18.0	2.11	1.29	3.00	178	264	66	49	8	15	93	33
DROYLSDEN	1144	9481	10000	290	29.0	17.4	4.20	1.10	4.70	148	174	43	28	6	7	59	31
ECCLES (Borough)	2008	29606	33800	958	28.3	†15.7	§3.07	1.47	2.24	147	541	141	79	23	17	164	117
FAIRSWORTH	1073	10425	11420	408	35.7	16.6	1.57	1.22	3.41	159	190	65	31	11	9	57	17
FARNWORTH	1502	23758	24000	825	34.3	19.6	2.50	1.08	3.70	216	472	179	55	20	22	129	67
FLEETWOOD	2848	9274	12221	387	31.6	||13.1	1.30	2.53	1.06	105	166	41	28	10	5	55	27
FULWOOD	2117	*2250	*2538	110	a23.2	b13.7	c0.39	c0.78	c1.57	c101	204	12	3	3	8	67	111

* Excluding 1 death of a person not belonging to the District, and including 3 deaths occurring outside the District among persons belonging thereto.

† Including 2 deaths in Hyde Hospital of persons belonging to the District.

‡ Excluding 17 deaths occurring within the Borough of persons not belonging thereto, and including 10 deaths occurring outside the Borough among persons belonging thereto.

§ Including 9 deaths occurring outside the Borough among persons belonging thereto.

|| Excluding 5 deaths of persons not belonging to the District.

* Excluding population of Public Institutions.

a Excluding 51 in Public Institutions.

b Excluding 155 Workhouse deaths, 7 deaths in Barracks, and 7 deaths in Convent.

c Excluding Public Institutions.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.		Under 1 yr.	1 and under 2.	2 and under 3.	3 and under 4.	5 and under 6.	6 and upwards.	
GARSTON	1625	13444	16000	504	31.5	14.1	2.31	0.56	3.37	160	227	81	37	13	5	63	28
GOLBORNE	1679	5301	6500	230	35.3	*17.3	1.69	1.23	1.07	173	112	40	21	4	1	18	28
GORTON	1133	15215	22000	739	33.5	†19.9	†3.90	†1.27	†4.86	†199	411	146	94	17	15	102	37
GRANGE.....	1160	1733	1733	25	14.4	9.2	Nil	Nil	0.57	80	16	2	..	..	..	6	8
GREAT CROSBY.....	1768	6400	7164	166	23.1	11.7	0.83	0.83	1.81	126	84	21	8	3	3	36	13
GREAT HARWOOD.....	2863	9073	10500	290	27.6	16.2	2.28	0.95	3.42	162	171	47	29	10	7	49	29
HASLINGDEN (Borough) ..	8022	18225	18855	466	24.7	16.6	1.69	1.32	2.86	148	314	69	40	14	19	105	67
HAYDOCK	2409	6535	7900	315	39.8	§16.8	||1.77	1.13	2.91	177	147	56	19	2	6	45	19
HEATON NORRIS	1638	7164	8235	125	15.1	¶13.6	¶0.72	61.09	63.76	168	116	21	5	4	7	40	39
HEYWOOD (Borough)	3496	23286	25000	581	23.2	18.6	1.96	2.36	5.16	177	466	103	73	25	28	153	84
Hindley	2611	18973	21235	877	41.2	19.2	3.15	0.61	5.08	161	408	142	85	18	14	90	59
HORWICH	3254	12850	14850	534	35.9	16.9	2.76	0.67	4.24	149	252	80	64	11	11	64	22
HURST	754	6772	6920	194	28.0	17.1	2.02	2.02	4.04	128	119	25	16	5	9	41	23

* Including death of a person occurring outside District belonging thereto. † Including 27 deaths occurring outside the District among persons belonging thereto. ‡ Including deaths occurring outside District of persons belonging thereto. § Including 4 deaths occurring outside the District among persons belonging thereto, and excluding 18 deaths occurring within the District of persons not belonging thereto. ¶ Including 1 death occurring outside the District of a person belonging thereto. ¶ Including 2 deaths occurring outside the District among persons belonging thereto, and excluding 6 deaths occurring within the District among persons not belonging thereto.

a Including 2 deaths occurring outside the District among persons belonging thereto. b Excluding 1 death occurring within the District of a person not belonging thereto.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population in 1891.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phtisis Death Rate.	Respi- ratory Death Rate.		Under 1 year.	1 and under 5.	2 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
HUTTON-WITH-ROBY	2878	4625	4625	131	28.3	16.0	3.67	1.08	3.45	145	74	19	18	6	1	20	10
INCE-IN-MAKERFIELD	2320	19255	21001	863	41.0	21.3	2.61	0.47	4.61	187	449	162	111	20	16	89	51
IRLAM	4634	4653	5000	117	23.4	9.6	1.00	0.20	1.80	111	48	13	8	4	..	13	10
<i>Kearsley</i>	996	7993	8500	254	29.8	21.1	2.82	0.82	4.35	216	180	55	32	5	7	56	25
KIRKHAM	857	4003	4076	120	29.4	19.3	1.47	1.22	3.18	183	94	25	15	1	5	21	27
LANCASTER (Borough) ..	1680	31034	37029	938	27.4	14.0	1.19	0.93	2.89	162	729	154	50	22	32	312	153
LATHOM AND BURSROUGH.	13654	6798	7325	241	32.9	14.8	4.23	1.63	2.01	116	109	28	17	7	8	26	23
LEES	202	3877	4057	111	27.3	20.2	2.95	0.73	3.69	171	82	19	25	2	2	19	15
LEIGH	6347	28702	35250	1300	36.8	21.1	3.54	1.13	5.10	180	702	232	138	29	34	181	88
LEVENSHULME	605	5506	8500	244	28.7	11.2	0.70	2.11	2.35	81	96	20	5	9	6	39	17
<i>Leyland</i>	3651	5970	6000	204	34.0	23.6	2.50	2.33	5.16	181	142	37	18	6	10	45	26
LITHERLAND	855	4440	6740	226	33.5	14.3	1.63	0.59	4.15	150	97	34	17	2	4	23	17
LITTLEBOROUGH	7736	10878	11314	276	24.3	14.3	1.32	1.32	2.56	115	162	32	11	11	13	68	27
LITTLE CROSBY	1811	641	641	16	24.9	6.2	Nil	1.56	1.56	Nil	6	..	..	..	1	3	2
<i>Little Hulton</i>	1706	6697	7178	235	32.7	15.7	3.06	0.55	4.04	136	113	32	19	4	10	34	14

* Including 1 death occurring outside the District of a person belonging thereto, and excluding 1 death occurring within the District of a person not belonging thereto. † Excluding 15 Workhouse deaths of persons not belonging to the District. ‡ Excluding Workhouse deaths. § Excluding 250 deaths not belonging to the Borough which occurred in Public Institutions. || Including 42 deaths occurring outside the District among persons belonging thereto. ¶ Including deaths occurring outside the District among persons belonging thereto. a Excluding 2 deaths of persons not belonging to the District.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.		At all Ages.	Under 1 year.	1 and 2 under 3.	3 and 4 under 5.	5 and 6 under 7.	7 and 8 under 9.	
LITTLE LEVER.....	806	5168	5651	163	28·8	17·5	2·65	1·06	3·00	184	99	30	19	6	12	23	9
LITTLE WOOLTON	1387	1131	1191	17	14·2	5·8	Nil	0·83	Nil	58	7	1	..	1	1	1	3
LONGRIDGE	3123	4101	4354	140	32·1	24·8	3·67	2·52	3·44	178	108	25	14	3	4	45	17
LYTHAM	2238	4656	5285	113	21·3	*10·7	Nil	†1·32	†2·08	†123	74	17	4	1	2	31	19
MIDDLETON (Borough) ..	4741	21310	24000	621	25·8	†21·0	§1·50	1·50	4·58	196	474	123	62	21	24	161	83
MILNBOW	5183	8046	9240	189	20·4	16·0	1·62	1·40	3·24	164	148	31	21	9	4	43	40
MORECAMBE	1753	6476	9538	196	20·5	||11·3	¶1·04	¶0·94	¶1·78	¶132	155	37	14	7	3	53	41
Mossley (Borough).....	3929	14162	14508	352	24·2	15·0	0·96	1·44	2·82	153	219	54	23	11	11	77	43
MOSS SIDE	420	23833	26000	416	16·0	11·8	1·30	1·26	2·53	151	307	63	20	10	19	123	72
MUCH WOOLTON	970	4545	4545	127	27·9	a15·8	1·76	1·54	2·20	173	74	22	6	1	3	28	14
NELSON (Borough).....	3185	22700	30000	913	30·4	13·7	0·90	0·63	3·23	140	412	128	64	20	24	120	56
NEWTON-IN-MAKERFIELD.	3103	12361	14249	501	35·1	b14·9	c1·96	0·70	3·22	113	217	57	33	10	16	65	36
NORDEN	6033	3955	4000	76	19·0	12·7	1·25	0·50	2·25	144	51	11	3	5	1	18	13
ORMSKIRK	573	6298	6298	223	35·4	d23·6	2·70	1·58	7·30	179	199	40	29	2	7	77	44

* Excluding the deaths of 17 visitors.

† Excluding deaths of visitors.

‡ Including 32 deaths occurring outside the Borough of persons belonging thereto. § Including 1 death occurring outside the Borough of a person belonging thereto. || Excluding the deaths of 47 visitors. ¶ Excluding deaths of visitors. a Excluding 2 deaths occurring within the District among persons not belonging thereto. b Including 2 deaths occurring outside the District among persons belonging thereto, and excluding 6 deaths occurring within the District among persons not belonging thereto. c Including 2 deaths in Hospital outside the District of persons belonging thereto. d Excluding 50 Workhouse deaths of persons not belonging to the District.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.						Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.	Under 1 year.		1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
Orrell	1618	4914	5090	193	37.9	21.6	3.33	1.37	3.92	145	110	28	25	6	5	23	23
OSWALDTWISTLE	4883	13296	14200	448	31.5	15.2	0.91	0.91	3.30	136	216	61	20	9	9	73	44
PADHAM	926	11311	13600	356	26.1	17.9	2.79	0.73	3.67	168	244	60	57	10	21	40	56
PENBERTON	2894	18400	20831	839	40.2	19.2	3.60	0.91	3.74	168	401	141	95	17	21	78	49
PRESCOT.....	297	6745	7000	274	39.1	*19.7	3.57	1.00	4.14	116	138	32	36	4	4	27	35
PRESTWICH	3174	8384	8685	232	26.7	14.6	0.80	0.80	2.99	81	127	19	14	5	5	53	31
RADCLIFFE.....	3100	20020	26000	726	27.9	18.6	2.88	0.84	4.07	196	486	143	84	24	33	113	89
RAINFORD	5872	3472	3687	118	32.0	16.5	2.71	1.62	1.62	144	61	17	8	9	2	14	11
RAMSBOTTOM.....	6295	16725	17245	395	22.9	14.4	1.33	0.81	2.89	134	249	53	36	8	11	87	54
RAWTENSTALL (Borough).	9528	29507	30000	800	26.6	†18.2	†1.63	†1.33	†4.10	†173	599	141	60	24	26	218	130
REDDISH	1541	6854	7600	229	30.1	15.1	2.63	1.57	2.10	131	115	30	12	10	8	33	22
RISHTON.....	2981	6056	7300	200	27.3	13.8	1.64	1.36	3.56	140	101	28	10	2	7	37	17
ROYTON	2112	13395	14200	391	27.5	22.5	3.23	1.68	5.00	227	320	89	50	16	15	103	47
ST. ANNES-ON-THE-SEA....	3212	2588	4224	87	20.5	§7.3	Nil	|| Nil	|| 0.94	34	37	3	3	2	1	13	15

* Including 10 deaths occurring outside the District among persons belonging thereto. † Excluding 52 deaths of persons not belonging to the Borough. ‡ Excluding deaths of persons not belonging to the Borough. § Including 1 death occurring outside the District of a person belonging thereto, and excluding 7 deaths of visitors. || Excluding death of a visitor.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1891.	Estimated to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.		At all Ages.	Under 1 year.	1 and 2.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.
<i>Skelmersdale</i>	1941	6720	7200	238	33.0	18.1	0.69	5.55	193	132	46	25	6	9	35	11	
SOUTHPORT (Borough) ...	7526	41406	47243	1036	21.9	*13.1	†0.99	†1.01	†1.86	710	134	64	24	32	250	206	
STANDISH-WITH- LANGTREE	3264	5416	5900	209	35.4	†17.1	1.69	0.84	4.57	172	100	36	14	1	6	28	15
STRETTFORD	3254	21751	24500	540	22.0	§13.7	||1.22	1.10	2.77	142	334	77	28	7	19	116	87
SWINTON AND PENDLEBURY	2222	21624	25600	803	31.3	*18.6	*3.12	*0.78	*3.55	478	150	93	37	19	108	71	
TRAWDEN	6807	2354	2449	76	31.0	19.1	1.63	1.63	4.08	184	47	14	10	1	4	10	8
TURTON	4943	7100	7150	152	21.2	12.8	0.83	1.11	2.37	144	92	22	10	2	7	34	17
TYLDESLEY-WITH- SHAKERLEY	2489	12891	14000	512	36.5	†18.9	63.64	1.42	†3.71	144	261	74	59	19	14	55	40
ULVERSTON	3120	9948	10015	249	24.8	†16.8	1.39	0.59	2.19	128	169	32	18	11	3	43	62
UPHOLLAND	4685	4443	4443	166	37.3	18.9	1.57	0.90	5.85	150	84	25	12	2	7	30	8

* Excluding the deaths of 89 persons not belonging to the Borough, and including 27 deaths occurring outside the Borough among persons belonging thereto. † Including deaths of persons not belonging to the Borough, and including deaths occurring outside the Borough among persons belonging thereto. ‡ Including death of a person belonging to the District occurring outside the District.

§ Including 4 deaths occurring outside the District of persons belonging thereto, and excluding 2 deaths occurring within the District of persons not belonging thereto. || Including 4 deaths occurring outside the District of persons belonging thereto, and excluding 2 deaths occurring within the District of persons not belonging thereto.

a Including 9 deaths occurring outside the District of persons belonging thereto, and excluding 5 deaths occurring within the District of persons not belonging thereto. b Including 1 death occurring outside the District of a person belonging thereto, and excluding 5 deaths occurring within the District of persons not belonging thereto. c Including 5 deaths occurring outside the District of persons belonging thereto. d Including 35 deaths in the Workhouse.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.						Rate of Infant Mortality measured by the proportion of deaths under 1 yr to 1000 births	Mortality from all causes at subjoined ages.					
		Census, 1891.	Estimate to middle of 1896.		Birth Rate.	Death Rate.	Death Rate from the seven principal Zymotic Diseases.	Phthisis Death Rate.	Respi- ratory Death Rate.	Under 1 year.		1 and 5.	5 and 15.	15 and 25.	25 and under 65.	65 and upwards.	
URMSTON	992	4042	5700	125	21.9	*8.7	*0.70	0.17	1.75	104	48	13	4	1	2	16	12
WALTON-LE-DALE	4682	10556	10930	339	30.1	14.3	1.09	1.18	2.65	129	157	44	22	3	11	57	20
Warrile	3106	3952	4000	69	17.2	†14.7	1.25	†1.00	†3.25	†144	175	16	10	2	4	85	58
WARRINGTON (Borough) ..	2004	52743	58092	2143	36.8	§19.0	||3.06	||1.25	||3.63	163	1137	350	221	43	40	334	149
WATERLOO-WITH- SEAFORTH	1524	17328	21119	547	25.9	14.3	1.98	0.94	2.46	140	302	77	60	12	9	86	58
WESTHOUGHTON	4341	11077	12215	485	39.7	15.5	1.47	0.65	3.76	129	190	63	27	8	12	49	31
WHITEFIELD	1398	5900	6200	179	28.8	20.0	2.74	1.12	4.19	189	124	34	8	6	3	45	28
WHITWORTH	6200	9766	10100	218	21.5	18.0	2.27	0.69	3.66	178	182	39	28	10	8	72	25
WIDNES (Borough)	3039	30011	32000	982	30.6	14.8	1.93	0.90	3.21	152	474	150	55	25	34	139	71
WITHINGTON	5728	23838	27500	602	21.8	*11.5	a0.83	b0.90	b2.50	6111	900	92	51	13	53	442	249
WITHNELL	3320	3026	3500	95	27.1	11.1	0.85	0.28	3.71	127	39	12	..	5	1	13	8
WORSLEY	5584	11036	12424	302	24.3	13.2	1.93	0.80	2.41	135	164	41	17	6	13	51	36

* Including 2 deaths occurring outside the District.

* Including 2 deaths occurring outside the District of persons belonging thereto. † Excluding 116 deaths in the Dearnley Workhouse of persons not belonging to the District.

‡ Excluding 32 deaths occurring in the Borough of persons not belonging thereto. § Excluding 585 deaths which occurred in Chorlton Union Workhouse among persons not belonging to the District, and including 3 deaths which occurred outside the District among persons belonging thereto.

a Excluding deaths not belonging to the District, and including 3 deaths in Monsall Hospital among persons belonging to the District. b Excluding Workhouse deaths not belonging to the District.

TABLE II.—DEATHS registered during the year, 1896, in the **URBAN SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Diseases and Localities, and distinguishing Deaths of Children under five years of age.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
			Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.			Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
ABRAM	Under 5	5 & upwards..	..	10	1	1	3	1	..	3	..	..	..	..	..	..	..	..	..	7	13	1	2	27
	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	12	1	2	11	11
ACCINGTON (Borough).....	Under 5	5 & upwards..	..	6	5	2	21	..	10	25	3	..	5	3	..	..	4	7	43	68	79	39	5	137
	..	..	..	..	..	..	..	10	..	3	..	..	..	..	..	..	..	..	..	79	39	13	165	
ADLINGTON	Under 5	5 & upwards..	..	..	..	1	..	2	..	1	..	..	..	..	..	..	..	..	2	7	8	11	..	14
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	11	1	17	
ALLERTON.....	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	..	2	
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	..	4	
ASHTON-IN-MAKERFIELD	Under 5	5 & upwards..	..	41	5	..	8	..	..	8	..	..	2	1	1	..	3	1	1	29	22	14	1	76
	..	..	..	2	1	..	..	..	..	..	..	..	..	1	..	..	..	..	17	22	14	14	55	
ASHTON-UNDER-LYNE (Borough).....	Under 5	5 & upwards..	..	4	12	1	17	..	14	21	3	..	10	..	..	5	2	2	88	58	66	5	205	
	..	..	..	..	8	1	1	..	1	3	..	..	..	..	..	..	..	..	88	149	66	12	353	
ASPULL	Under 5	5 & upwards..	..	11	2	..	11	..	1	1	..	..	1	..	..	..	..	..	7	24	8	1	43	
	..	..	..	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	24	8	3	25	
Astley Bridge	Under 5	5 & upwards..	..	..	..	1	5	1	2	1	..	..	2	..	..	..	..	..	5	7	12	..	28	
	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	12	4	3	34	
ATHERTON.....	Under 5	5 & upwards..	..	33	3	..	3	1	1	12	..	..	..	..	..	..	1	..	16	33	1	1	58	
	..	..	..	1	..	..	..	5	..	2	..	..	..	..	..	..	..	..	..	43	25	5	97	

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
Age at Death.		Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fevers.				Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
								Typhus.	Enteric or Typhoid.	Other or doubtful.													
Under 5	AUDENSHAW	..	16	..	1	3	4	..	..	1	..	..	..	..	..	..	2	..	1	11	..	3	26
5 & upwards..		..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	6	13	13	1	26
Under 5	Bacup (Borough)	..	1	2	4	..	12	..	..	4	..	..	..	1	1	..	8	2	22	54	24	2	104
5 & upwards..		..	..	..	3	..	..	..	..	1	1	4	1	..	..	..	8	2	22	57	24	13	128
Under 5	BARROWFORD	..	..	..	..	2	4	..	..	1	..	..	..	..	..	..	..	..	..	7	1	3	14
5 & upwards..		..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	3	7	8	3	19
Under 5	BILLINGE	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	1	2	4	..	..	1	7
5 & upwards..		..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	2	6	4	..	4	13
Under 5	BIRKDALE	..	2	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..	33
5 & upwards..		..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	6	16	13	2	82
Under 5	BLACKPOOL (Borough)	..	4	5	1	4	8	..	..	..	26	..	..	3	..	..	1	..	2	34	..	4	119
5 & upwards..		..	..	4	..	1	..	..	..	7	..	4	..	..	..	..	1	..	39	78	53	12	207
Under 5	BLACKROD	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	4	..	..	12
5 & upwards..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	14	2	2	5
Under 5	BRIERFIELD	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5 & upwards..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Under 5	CARNFORTH	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	4
5 & upwards..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	4	..	9
Under 5	CASTLETON	..	6	9	1	1	1	..	..	2	..	..	..	..	..	..	..	..	1	14	..	..	15
5 & upwards..		1	1	6	1	..	..	..	..	..	2	..	..	..	..	..	..	1	2	16	7	2	19

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																			
			Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.			Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
									Typhus.	Enteric or Typhoid.	Other or doubtful.											
CHADDERTON.....	Under 5 5 & upwards..	1 ..	10 1	5 6	1 1	4 ..	19 ..	.. ..	.. ..	8 1	.. ..	.. ..	.. ..	.. 2	.. ..	.. ..	.. 1	28 2	1 45	1 37	2 11	99 100
Childwall	Under 5 5 & upwards..	.. ..	.. ..	.. ..	.. ..	.. ..	1 ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
CHORLEY (Borough)	Under 5 5 & upwards..	.. ..	18 1	5 1	1 1	9 4	12 ..	.. ..	1 11	10 ..	.. ..	2 ..	3 ..	.. ..	.. ..	.. 4	4 7	1 27	59 57	2 37	3 14	148 140
CHURCH	Under 5 5 & upwards..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	2 ..	2 ..	.. ..	.. ..	1 ..	.. ..	.. ..	.. ..	.. ..	.. 6	5 13	.. 2	1 3	22 23
CLAYTON-LE-MOORS	Under 5 5 & upwards..	.. ..	1 ..	3 ..	1 1	2 1	.. ..	.. 1	4 ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. 6	11 16	1 8	2 3	36 34
CLITHEROE (Borough)	Under 5 5 & upwards..	.. ..	8 ..	.. ..	.. ..	2 ..	10 1	.. ..	2 ..	4 ..	.. ..	.. ..	1 ..	.. ..	.. ..	.. 1	.. ..	.. 10	15 13	.. 14	.. 6	35 88
COLNE (Borough)	Under 5 5 & upwards..	.. ..	46 6	5 4	.. ..	.. ..	12 ..	.. ..	1 3	5 2	.. ..	.. ..	4 ..	.. ..	.. ..	.. 3	.. ..	3 33	54 45	.. 31	4 15	85 59
CROMPTON	Under 5 5 & upwards..	.. ..	20 ..	.. 1	.. ..	4 ..	7 ..	.. ..	.. 1	3 1	.. ..	.. ..	.. 1	.. ..	.. ..	2 ..	2 ..	17 ..	16 27	.. 19	1 ..	73 47
CROSTON	Under 5 5 & upwards..	.. ..	.. ..	1 ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. 2	2 3	.. 3	.. ..	10 11
DALTON-IN-FURNESS	Under 5 5 & upwards..	.. ..	.. ..	.. ..	1 ..	.. ..	11 ..	.. ..	1 ..	3 ..	.. ..	.. ..	.. ..	.. ..	.. ..	1 ..	1 ..	2 10	22 14	.. 11	1 1	33 82

Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.

URBAN SANITARY DISTRICTS.	Age at Death.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fevers.				Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
								Typhus.	Enteric or Typhoid.	Other or doubtful.	Continued Fevers.												
DARWEN (Borough).....	Under 5 5 & upwards..	..	14	5	2	2	26	..	8	..	17	..	3	..	..	..	6	2	2	82	..	5	131
DENTON	Under 5 5 & upwards..	..	16	8	..	3	2	..	3	..	1	..	..	..	..	..	..	..	27	54	34	13	186
DROYLSDEN	Under 5 5 & upwards..	..	2	1	3	1	7	..	2	..	3	..	3	..	..	..	..	..	19	25	23	4	62
ECCLES (Borough)	Under 5 5 & upwards..	..	39	4	1	..	12	..	1	..	22	..	..	..	..	..	..	..	1	18	..	1	34
FAILSWORTH	Under 5 5 & upwards..	..	2	..	3	1	7	..	2	..	3	..	..	..	..	..	..	..	11	25	1	4	99
FARNWORTH	Under 5 5 & upwards..	..	8	3	..	1	7	..	10	..	23	..	2	1	2	..	..	..	6	21	..	2	43
FLEETWOOD	Under 5 5 & upwards..	..	2	5	..	1	..	..	..	..	2	..	..	..	..	..	..	..	1	40	2	..	148
FLEETWOOD	Under 5 5 & upwards..	..	..	5	2	..	2	..	..	..	1	..	..	..	..	..	..	..	25	49	26	8	102
FULWOOD	Under 5 5 & upwards..	..	..	4	1	..	..	..	..	..	1	..	..	..	..	..	3	8	..	..	..	..	50
FULWOOD	Under 5 5 & upwards..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	5	..	..	43
GARSTON	Under 5 5 & upwards..	..	2	5	..	1	1	..	8	..	18	..	1	1	..	..	..	..	..	38	27	1	9
GARSTON	Under 5 5 & upwards..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	11	3	53
GOLBORNE	Under 5 5 & upwards..	..	5	2	..	..	4	..	..	..	..	..	..	..	..	..	..	..	9	33	2	2	46
GOLBORNE	Under 5 5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	6	..	1	32

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																				
	Age at Death.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.			Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
								Typhus.	Enteric or Typhoid.	Other or doubtful.												
GORTON	Under 5 5 & upwards..	..	28 2	5 2	8 ..	2 ..	17 1	..	2 ..	20 ..	..	2 ..	..	..	..	2 3	..	24 ..	48 53	..	2 4	110 61
GRANGE	Under 5 5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2 11	..	..
GREAT CROSEY.....	Under 5 5 & upwards..	..	..	..	1	2 ..	2 ..	..	2 ..	1 ..	..	..	..	..	..	..	..	6 ..	3 10	..	3 27	21
GREAT HARWOOD.....	Under 5 5 & upwards..	..	9 3	3 ..	..	..	3 ..	..	2 ..	3 1	..	..	..	1	..	1	..	10 ..	16 20	1 17	..	41 37
HASLINGDEN (Borough)	Under 5 5 & upwards..	..	..	1	4 1	9 1	9 ..	..	1 9	2 5	..	..	..	1	..	..	1	25 ..	17 37	..	1 11	64 73
HAYDOCK	Under 5 5 & upwards..	..	5 ..	1 ..	1 ..	2 ..	5 ..	..	..	1 ..	..	..	..	..	..	1	1	9 ..	14 9	..	1 3	45 43
HEATON NORRIS	Under 5 5 & upwards..	..	..	1 ..	..	..	1 ..	..	2 ..	..	..	..	..	..	..	..	2 ..	..	7 25	..	3 3	15 35
HEYWOOD (Borough)	Under 5 5 & upwards..	4	11 ..	3 4	1 1	4 1	11 2	..	1 ..	9 3	..	3 ..	..	1	..	1	2	15 44	57 72	..	1 13	65 102
Hindley	Under 5 5 & upwards..	1	30 ..	7 1	..	1 ..	1 ..	2 6	1 ..	17 1	..	4 ..	..	1	..	1	..	1 12	61 47	3 29	3 9	101 68
HORWICH	Under 5 5 & upwards..	..	2 ..	11 2	5 ..	2 2	9 1	3 5	..	2 1	..	..	..	..	..	..	..	..	31 32	..	5 3	74 39

TABLE 11.—Continued.

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
Age at Death.		Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
		Typhus.	Enteric or Typhoid.	Other or doubtful.	Diarrhoea or Dysentery.																		
HURST	Under 5	..	2	2	6	1	1	..	..	..	..	..	..	..	..	2	..	14	7	..	1	22	
	5 & upwards..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	8	21	21	8	3	26	
HUYTON-WITH-ROBY	Under 5	7	1	..	4	1	1	..	..	..	..	..	..	1	..	..	..	..	9	..	1	14	
	5 & upwards..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	7	4	1	15	
INCE-IN-MAKERFIELD.....	Under 5	26	2	1	4	5	..	2	9	1	..	..	..	1	..	1	..	1	50	..	3	169	
	5 & upwards..	1	2	..	..	..	..	6	1	..	..	..	..	..	..	1	..	9	47	9	15	84	
IRLAM	Under 5	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	12	
	5 & upwards..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	3	3	..	18	
Kearsley	Under 5	9	1	..	..	2	..	..	6	..	..	..	..	..	..	1	..	..	22	..	1	46	
	5 & upwards..	1	..	..	..	..	..	5	..	..	..	..	..	..	..	1	..	7	15	11	6	47	
KIRKHAM	Under 5	..	2	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	7	1	..	27	
	5 & upwards..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	9	4	..	32	
LANCASTER (Borough)	Under 5	2	..	1	2	18	..	1	10	..	1	..	..	2	..	..	..	1	44	..	1	124	
	5 & upwards..	1	..	2	..	1	..	..	1	..	..	..	..	..	..	..	..	58	110	50	18	271	
LATHAM AND BURSROUGH	Under 5	15	3	..	..	1	..	..	3	..	..	..	..	..	..	1	1	1	8	..	..	14	
	5 & upwards..	3	1	1	..	..	..	..	1	..	..	..	..	1	..	1	1	11	7	1	4	29	
LEES	Under 5	6	1	2	..	3	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	26	
	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	3	9	4	..	19	
LEIGH.....	Under 5	18	14	3	6	12	..	1	50	..	..	..	..	..	..	..	..	2	85	..	4	174	
	5 & upwards..	..	4	1	1	1	..	10	4	..	..	..	..	4	..	4	3	35	85	32	21	126	

TABLE II.—Continued.

Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																						
URBAN SANITARY DISTRICTS.	Age at Death.	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
								Typhus.	Enteric or Typhoid.	Other or doubtful.	Diarrhœa or Dysentery.											
MIDDLETON (Borough)	Under 5 5 & upwards..	..	10	1	1	9	3	..	1	..	11	..	..	..	..	3	..	..	46	..	5	99
MILNROW	Under 5 5 & upwards..	..	7	2	1	1	1	..	..	..	2	..	..	..	..	..	..	13	10	..	3	53
MORECAMBE	Under 5 5 & upwards..	..	..	1	..	..	1	..	..	..	8	..	..	..	..	..	1	13	7	1	1	33
Mossley (Borough).....	Under 5 5 & upwards..	..	..	..	3	1	7	..	1	..	2	..	..	1	..	..	..	19	19	14	1	51
MOSS SIDE	Under 5 5 & upwards..	..	4	1	2	..	10	..	5	..	11	..	1	..	..	..	2	33	9	27	2	64
MUCH WOOLTON	Under 5 5 & upwards..	..	..	..	1	1	1	..	1	..	4	..	..	1	..	..	1	7	1	9	..	20
NELSON (Borough).....	Under 5 5 & upwards..	..	1	3	2	7	7	..	1	..	4	..	..	6	..	..	1	2	41	1	..	123
NEWTON-IN-MAKERFIELD	Under 5 5 & upwards..	..	1	1	4	1	2	..	1	..	5	1	..	2	..	1	1	1	17	20	..	55
NORDEN	Under 5 5 & upwards..	..	..	3	1	..	..	..	5	..	2	..	..	1	..	1	4	9	29	9	9	40
ORMSKIRK	Under 5 5 & upwards..	..	..	1	1	1	1	..	..	..	1	..	..	1	..	..	..	2	3	5	1	18
	Under 5 5 & upwards..	..	7	1	1	..	..	..	..	..	7	..	..	..	..	..	2	1	13	17	1	38
		..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	33	..	4	64

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
			Smallpox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
Orrell	Under 5	5 & upwards..	..	10	2	..	1	2	..	..	2	..	..	2	..	..	..	..	7	11	..	1	24	..
	Under 5	5 & upwards..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	10	..	30	..
OSWALDTWISTLE	Under 5	5 & upwards..	..	..	..	..	1	..	..	..	9	..	1	3	..	..	..	1	12	23	1	2	44	..
	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	1	..	..	24	12	4	78	..
PADHAM.....	Under 5	5 & upwards..	..	8	2	2	1	3	..	2	..	2	..	2	..	..	..	..	10	28	1	2	66	..
	Under 5	5 & upwards..	..	6	..	7	2	5	1	1	2	..	1	..	..	..	4	..	..	22	11	4	53	..
PEMBERTON	Under 5	5 & upwards..	1	32	7	1	3	11	..	..	13	..	..	13	..	..	1	1	1	40	..	4	122	..
	Under 5	5 & upwards..	..	1	3	2	2	..	4	..	..	..	..	..	..	..	1	1	18	38	19	4	67	..
PRESCOT.....	Under 5	5 & upwards..	..	11	2	..	..	5	..	..	2	..	..	2	..	..	..	..	7	14	..	..	34	..
	Under 5	5 & upwards..	..	2	1	..	..	1	..	..	1	..	..	1	..	..	..	..	..	15	5	3	35	..
PRESTWICH	Under 5	5 & upwards..	..	1	1	1	..	4	..	..	..	..	..	..	..	..	..	1	1	9	..	..	17	..
	Under 5	5 & upwards..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	6	17	16	..	..	50	..
RADCLIFFE.....	Under 5	5 & upwards..	..	9	14	..	3	9	..	1	27	..	1	27	..	..	2	..	22	53	1	1	109	..
	Under 5	5 & upwards..	..	..	4	..	4	..	..	9	2	..	..	2	..	..	..	..	..	53	25	13	124	..
RAINFORD	Under 5	5 & upwards..	..	1	3	1	..	..	..	..	1	..	..	1	..	..	..	1	1	2	1	1	14	..
	Under 5	5 & upwards..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	5	4	4	5	1	17	..
RAMSBOTTOM	Under 5	5 & upwards..	..	1	..	10	6	7	..	1	..	..	..	1	..	..	..	..	14	22	..	1	42	..
	Under 5	5 & upwards..	..	..	..	2	1	..	1	1	1	..	..	1	..	..	..	..	..	28	37	8	62	..
RAWTENSTALL (Borough)	Under 5	5 & upwards..	..	23	2	3	2	8	..	..	11	..	1	11	..	..	..	2	2	39	1	4	105	..
	Under 5	5 & upwards..	..	1	3	1	1	1	3	..	6	..	3	6	..	..	1	..	48	97	55	19	160	..

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
			Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
									Typhus.	Enteric or Typhoid.	Other or doubtful.	Diarrhoea or Dysentery.												
REDDISH	Under 5	5 & upwards..	..	1	3	1	1	1	..	2	..	8	..	..	1	..	..	..	1	11	4	14	1	21
RISHTON	Under 5	5 & upwards..	..	..	2	..	..	1	..	..	..	1	..	..	..	..	1	..	..	12	12	4	24	
ROYTON	Under 5	5 & upwards..	..	1	1	..	1	4	..	1	..	3	..	..	1	..	2	..	1	14	10	..	12	
ROYTON	Under 5	5 & upwards..	..	21	2	3	..	8	..	..	..	7	..	..	1	..	..	1	3	37	31	4	23	
ST. ANNES-ON-THE-SEA	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	21	34	31	5	56	
ST. ANNES-ON-THE-SEA	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5	..	4	
SKELMERSDALE	Under 5	5 & upwards..	..	..	..	..	1	1	..	1	..	2	..	..	..	..	..	..	..	23	6	..	21	
SKELMERSDALE	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	17	..	7	44	
SOUTHPORT (Borough)	Under 5	5 & upwards..	..	5	14	4	..	8	..	3	..	9	1	..	..	..	3	2	58	27	70	15	126	
SOUTHPORT (Borough)	Under 5	5 & upwards..	..	1	4	1	..	..	..	..	..	1	..	..	..	..	..	..	..	27	64	2	290	
STANDISH-WITH-LANGTREE	Under 5	5 & upwards..	..	1	..	..	..	..	..	3	..	2	..	..	..	..	..	..	1	16	..	1	26	
STANDISH-WITH-LANGTREE	Under 5	5 & upwards..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	2	4	11	2	2	25	
STRETTFORD	Under 5	5 & upwards..	..	..	1	2	1	6	..	3	..	13	..	..	..	..	2	..	2	20	29	6	57	
STRETTFORD	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	25	48	31	15	111	
SWINTON AND PENDLEBURY	Under 5	5 & upwards..	..	12	13	2	2	13	..	11	..	18	..	3	1	..	..	..	4	41	2	3	132	
SWINTON AND PENDLEBURY	Under 5	5 & upwards..	..	..	8	..	..	1	..	..	..	2	..	3	..	..	..	..	16	50	31	15	98	
TRAWDEN	Under 5	5 & upwards..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	1	6	..	..	13	
TRAWDEN	Under 5	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	4	..	12	

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
			Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
									Typhus.	Enteric or Typhoid.	Other or doubtful.													
TURTON	Under 5	5 & upwards..	..	3	..	..	..	2	1	..	..	1	..	..	..	..	..	..	..	1	9	..	1	15
TYLDESLEY-WITH-SHAKERLEY	Under 5	5 & upwards..	..	29	6	..	..	6	..	5	..	1	..	..	..	1	..	..	2	6	26	2	..	50
ULVERSTON	Under 5	5 & upwards..	..	..	1	1	..	1	2	..	..	5	2	..	..	1	..	..	..	..	7	1	3	30
UPHOLLAND	Under 5	5 & upwards..	..	3	3	..	..	2	..	..	1	..	..	..	..	..	..	1	..	..	14	1	..	14
URMSTON	Under 5	5 & upwards..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..	6	1	..	..	9
WALTON-LE-DALE	Under 5	5 & upwards..	..	2	1	1	3	4	..	3	..	1	..	..	1	..	..	2	..	..	11	1	1	41
Wardle	Under 5	5 & upwards..	..	..	..	1	..	..	1	..	2	..	..	..	1	..	..	..	..	9	21	..	..	24
WARRINGTON (Borough)	Under 5	5 & upwards..	..	62	7	1	1	44	..	4	..	49	..	..	..	..	..	5	..	1	124	1	5	276
WATERLOO-WITH-SEAFORTH	Under 5	5 & upwards..	..	1	3	..	..	..	4	1	..	4	..	..	4	..	..	5	..	76	91	77	27	269
WESTHOUGHTON	Under 5	5 & upwards..	..	6	3	1	..	8	..	5	..	14	1	..	..	..	..	..	..	1	29	..	1	74
			..	..	2	..	..	1	..	1	..	1	..	..	..	..	..	..	..	19	23	23	8	82
			..	1	..	2	..	1	1	..	2	6	1	..	2	..	..	1	..	..	32	..	3	44
			..	..	..	..	..	1	..	5	..	1	1	..	1	..	..	..	..	8	14	7	1	53

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.	Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
		Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.				Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
WHITEFIELD.....	Under 5 5 & upwards..	..	..	1	..	..	2	..	2	..	7	..	..	..	..	..	..	..	7	10	14	3	22 35
WHITWORTH.....	Under 5 5 & upwards..	..	1	4	2	7	6	..	4	..	2	..	1	1	1	..	..	..	7	14	23	7	1 30 64
WIDNES (Borough).....	Under 5 5 & upwards..	..	1	2	2	1	10	..	2	..	8	1	2	..	..	1	..	3	46	58	9	4 23	125 112
WITHINGTON.....	Under 5 5 & upwards..	..	7	1	..	3	14	..	5	..	9	..	2	1	1	..	10	156	23	180	67	2 12	85 321
WITHNELL.....	Under 5 5 & upwards..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	1	3	10	3	2 9	8 9
WORSLEY.....	Under 5 5 & upwards..	..	..	5	1	..	1	..	1	..	6	..	1	..	..	..	1	10	6	24	10	9	38 41

TABLE III.—DEATHS registered during the year 1896, in the **RURAL SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Ages and Localities, and showing also the Area and Population of such Localities, and the Birth-rate and Death-rate therein during the year.

RURAL SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.				Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.							
		Census, 1891.	Estimate to middle of 1896.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.		Respi- ratory Death- rate.	At all Ages.	Under 1 year.	1 and 2.	5 and under 15.	15 and 25.	25 and under 35.	35 and upwards.
BARTON-UPON-IRWELL ..	6865	7159	8140	202	24.8	13.6	1.22	0.61	3.43	123	112	25	15	4	9	29	30
BLACKBURN	20823	9243	9243	259	28.0	14.8	1.29	0.86	2.27	104	137	27	12	11	10	48	29
BOLTON	25026	31665	35775	1033	28.8	14.4	1.03	0.58	3.24	141	518	146	61	17	30	112	152
BURNLEY	41164	14146	16000	392	23.6	*13.9	0.78	0.96	3.13	122	229	48	18	14	13	64	72
Bury	14643	14051	14551	315	21.6	15.1	1.23	0.75	3.91	85	220	27	23	19	17	72	62
CHORLEY	40043	16396	17650	522	29.5	14.3	0.84	0.67	2.66	137	253	72	21	15	10	78	57
CLITHERGE (Lancashire portion)	30889	7101	7101	159	22.3	†15.6	0.70	0.98	3.66	106	115	17	6	2	4	43	43
FYLDE	47349	11938	13426	410	30.5	16.0	1.04	1.04	2.60	109	216	45	19	8	12	67	65
GARSTANG	60199	12151	12151	259	21.3	13.7	0.74	0.65	3.12	108	167	28	12	5	8	52	62
LANCASTER	55174	14477	12410	341	27.4	†13.8	1.36	1.45	2.25	105	190	36	18	9	25	59	43
Leigh	11568	7729	8120	241	29.6	§17.3	1.47	1.18	3.81	132	137	32	29	5	5	35	31

* Including 7 deaths occurring outside the district among persons belonging thereto, and excluding 5 deaths occurring within the district among persons not belonging thereto. † Excluding 4 deaths occurring within the district among persons not belonging thereto. ‡ Excluding 18 deaths in Asylum. § Including 4 deaths occurring outside the district among persons belonging thereto.

TABLE III.—Continued.

RURAL SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.						Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1891.	Estimate to middle of 1896.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.	Under 1 year.		1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
LIMEHURST	5426	9020	9420	324	34.3	17.7	0.95	1.16	3.29	123	167	40	17	6	5	63	36
LUNESDALE	75734	7347	7347	167	22.7	15.3	0.95	1.22	1.77	125	113	31	4	6	6	26	40
ORMSKIRK	68614	25684	27520	711	25.8	11.8	1.065	0.76	2.43	98	344	70	36	19	21	108	90
PRESTON	49063	15200	15200	374	24.6	15.9	0.85	1.11	2.82	131	243	49	15	9	15	87	68
SEFTON	16324	7744	7744	173	22.3	13.3	1.29	0.90	1.80	104	103	18	14	7	6	35	23
ULVERSTON	128462	18773	18773	427	22.7	12.1	0.63	1.11	1.86	72	228	31	18	10	7	79	83
WARRINGTON (Lancashire portion)	15549	10589	12659	354	27.9	13.4	1.18	0.78	1.97	141	170	50	24	4	8	47	37
WHISTON	31925	19108	18652	531	28.4	13.4	2.62	0.75	2.46	116	483	79	54	13	29	168	140
WIGAN, DIVISION 1	8907	4233	4250	165	38.8	17.2	3.76	0.94	2.82	127	76	21	4	4	7	24	16
Do. DIVISION 2	2794	1462	1462	49	33.4	15.7	1.36	1.36	4.10	122	23	6	3	..	2	8	4

* Including 8 deaths occurring outside the district among persons belonging thereto, and excluding 25 deaths occurring within the district among persons not belonging thereto.
 † Excluding 7 deaths occurring within the district among persons not belonging thereto.
 ‡ Excluding 23 Workhouse and Asylum deaths of persons not belonging to the district.
 § Excluding 2 deaths occurring within the district among persons not belonging thereto.
 || Excluding Workhouse and Asylum deaths.

TABLE IV.—DEATHS registered during the year 1896, in the **RURAL SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Diseases and Localities, and distinguishing Deaths of Children under five years of age.

RURAL SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																						
	Age at Death	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fevers.				Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phtthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	
								Typhus.	Enteric or Typhoid.	Other or doubtful.														
BARTON-UPON-IRWELL	Under 5 5 & upwards..	..	5	1	1	..	..	..	2	..	..	..	..	1	..	..	..	..	..	5	10	5	5	23
		..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	..	5	35
BLACKBURN	Under 5 5 & upwards..	..	..	1	2	..	1	..	1	6	..	..	..	..	..	..	..	..	2	1	7	15	1	23
		..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	14	..	..	55
BOLTON	Under 5 5 & upwards..	..	1	8	1	1	8	..	2	12	..	..	8	..	..	..	..	1	..	21	40	22	2	134
		..	..	1	1	..	1	..	..	2	2	..	..	..	..	..	..	..	..	..	76	..	12	164
BURNLEY	Under 5 5 & upwards..	..	1	1	1	1	2	..	1	4	..	..	2	..	..	..	..	2	3	3	21	26	1	30
		..	..	..	..	1	..	..	3	..	..	..	..	2	..	..	..	..	13	31	..	14	71	
Bury	Under 5 5 & upwards..	..	2	..	1	2	3	..	3	2	..	..	..	..	..	..	..	..	1	13	44	22	1	25
		..	..	4	1	4	..	..	..	2	2	..	..	..	..	..	..	..	10	22	..	4	76	
CHORLEY	Under 5 5 & upwards..	..	2	1	..	5	2	..	5	3	..	..	3	..	2	..	..	4	3	12	24	1	2	51
		..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	32	23	10	66	
CLITHEROE (Lancashire portion) ..	Under 5 5 & upwards..	..	1	1	..	..	2	..	..	1	..	..	..	..	..	..	1	5	7	8	10	..	11	
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	5	45	

TABLE IV.—Continued.

RURAL SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																					
			Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Continued Fever.			Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.		
FYLDÉ.....	Under 5 5 & upwards..	..	1	3	1	1	..	2	..	..	1	4	..	..	..	..	1	2	..	..	5	..	2	45
		..	..	1	..	..	..	..	..	..	..	1	1	..	..	..	1	1	..	..	30	15	8	74
		..	..	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	1	22
GARSTANG.....	Under 5 5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	27	..	4	83
		..	..	..	..	..	7	..	..	3	..	5	2	..	1	..	..	..	..	8	20	12	14	64
		..	..	..	..	..	1	1	..	1	..	1	..	..	..	..	..	..	..	18	20	12	14	64
LANCASTER	Under 5 5 & upwards..	..	6	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	8	..	..	33
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	11	13	5	37
		..	1	1	..	..	..	..	..	3	..	3	..	..	..	..	2	1	..	11	15	14	10	50
LIMEHURST	Under 5 5 & upwards..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	4	4	..	..	28
		..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	9	9	8	1	47
		..	..	..	..	1	4	..	1	..	1	..	2	1	..	..	..	1	..	21	29	27	13	124
LUNESDALE	Under 5 5 & upwards..	..	2	7	..	1	..	3	1	..	1	..	..	..	..	..	..	..	..	..	8	1	1	47
		..	..	3	1	..	..	..	..	4	..	1	..	..	..	..	..	3	..	17	35	14	2	103
		..	..	..	1	..	3	..	..	..	..	3	3	..	..	..	..	..	..	7	5	11	8	34
OEMSKIRK	Under 5 5 & upwards..	..	..	2	..	4	..	..	..	..	..	2	..	..	..	..	..	..	..	..	9	1	1	16
		..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	9	11	8	34
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	11	8	34
PRESTON	Under 5 5 & upwards..	..	2	1	2	..	4	..	..	..	..	1	..	..	..	..	..	..	..	9	9	26	2	101
		..	..	..	1	..	..	..	..	1	..	..	3	..	..	..	..	..	..	21	26	23	2	101
		..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE IV.—Continued.

RURAL SANITARY DISTRICTS.	Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																				
		Small-pox.	Measles.	Scarlatina.	Diphtheria.	Croup (not Spasmodic).	Whooping Cough.	Typhus.	Enteric or Typhoid.	Other or doubtful.	Diarrhoea or Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Influenza.	Phtthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.
WARRINGTON (Lancashire portion)...	Under 5	..	3	..	..	..	3	..	..	2	..	..	1	..	..	..	..	10	12	..	1	53
	5 & upwards..	..	..	1	..	..	..	5	..	1	..	1	..	..	..	..	..	..	13	5	9	51
WHISTON	Under 5	1	20	3	2	1	11	1	1	5	..	1	1	..	..	..	1	53	30	25	6	51
	5 & upwards..	..	1	..	1	..	..	2	1	3	..	1	..	..	..	..	..	..	54	9	13	195
WIGAN, DIVISION 1.....	Under 5	..	1	..	..	..	3	1	1	4	..	..	..	..	..	..	..	4	4	8	..	11
	5 & upwards..	..	..	1	..	1	..	4	..	1	..	..	..	..	..	..	..	..	8	..	5	19
Do. DIVISION 2.....	Under 5	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	2	2	..	..	5
	5 & upwards..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4	..	2	6

TABLE V.—DEATHS and CASES NOTIFIED (or Ascertained) in 133 Districts supplying Monthly Returns during the Year ending December 31st, 1896.

Month.	FEVERS.														Deaths from all Causes.																						
	Small-pox.		Diphtheria.		Membranous Croup.		Erysipelas.		Scarlet Fever.		Typhus.		Enteric.		Other or doubtful.		Puer-peral.		Measles.		Chicken-pox.		Whooping Cough.		Total of preceding columns.		Deaths from										
	Notified Cases.		Deaths.		Notified Cases.		Deaths.		Notified Cases.		Deaths.		Notified Cases.		Deaths.		Notified Cases.		Deaths.		Notified Cases.		Deaths.		Notified Cases.		Deaths.		Diarrhoea & English Cholera.			Bronchitis, Pneumonia, and Pleurisy.			Influenza.		
	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.	Notified	Deaths.			
January	12	..	71	16	20	113	8	819	42	..	..	139	29	15	1	18	13	99	115	..	1	47	60	1357	305	18	582	13	2496								
February ..	10	2	83	14	36	121	6	738	36	..	..	141	34	13	..	20	13	118	99	..	..	8	59	1283	299	22	532	17	2384								
March.....	12	1	79	20	36	103	1	602	40	..	..	162	34	6	2	11	3	150	115	9	2	24	42	1194	289	33	500	14	2448								
April	8	2	84	23	14	116	1	604	30	..	..	123	26	10	1	8	3	139	79	2	1	7	56	1115	238	24	513	13	2268								
May.....	24	3	38	6	23	117	11	612	25	..	..	115	34	13	2	11	6	193	83	..	..	81	66	1227	249	22	478	24	2279								
June.....	12	2	51	8	14	82	5	698	36	..	..	116	4	16	..	11	10	85	57	1	..	99	63	1185	196	62	412	7	2243								
July.....	3	..	49	19	16	94	1	803	30	1	1	133	21	24	2	14	8	64	71	..	1	8	41	1269	208	197	297	8	2253								
August	..	..	57	11	10	92	1	755	28	1	..	237	45	14	3	12	4	16	43	..	..	39	34	1233	176	256	297	10	2306								
September..	..	..	56	8	15	136	5	830	28	..	..	221	38	23	3	20	13	68	26	4	1	30	39	1403	179	83	241	8	1945								
October	..	..	71	12	21	125	3	883	44	..	..	251	43	14	1	15	8	120	37	..	..	27	37	1527	202	43	464	11	2322								
November...	..	..	54	10	19	146	3	733	45	2	1	196	37	22	..	21	14	117	64	5	..	26	54	1341	239	31	843	31	2815								
December ..	..	..	109	27	21	128	7	725	39	6	2	176	33	19	3	23	11	27	89	1	..	26	63	1261	296	23	761	14	2858								
Year.....	81	10	802	174	214	1373	52	8862	423	10	4	2010	378	189	18	184	106	1196	878	22	6	422	614	15395	2876	814	5920	170	28617								

* Notified in 9 districts.

