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Manchester and Salford Sanitary Association.

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ANNUAL REPORT

OF THE

COMMITTEE

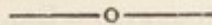
OF THE

MANCHESTER AND SALFORD

SANITARY ASSOCIATION,

BEING

A SUMMARY OF THEIR PROCEEDINGS FOR THE YEAR 1871.



MANCHESTER :

POWLSON & SONS, PRINTERS, 26, SOUTH KING STREET.

1872.



At the ANNUAL MEETING of the Manchester and Salford Sanitary Association,
held at the Town Hall, King Street, on Monday, May 13th, 1872 :

THE RIGHT REVEREND THE LORD BISHOP OF MANCHESTER IN THE CHAIR.

The Annual Report having been read ;

It was moved by THOMAS TURNER, Esq. ; seconded by J. LASCELLES, Esq. ;

That this Meeting cordially approving of the proceedings of the Committee, as set forth in their Report, request that the said Report may be printed and extensively circulated.

Moved by Dr. JAMES HARDIE ; seconded by Dr. NOBLE ;

That inasmuch as one of the fundamental objects of the Association is the prevention of disease, this Meeting trusts that the Committee will use every means in their power to secure all possible precautions being taken to prevent the spread of infectious disorders.

Moved by C. E. CAWLEY, Esq., M.P. ; seconded by T. MELLOR, Esq. ;

That the practical efforts of the Committee to improve the condition of the poorer classes by directing attention to the sanitary laws, deserve the encouragement and pecuniary support of this Meeting and the public in general.

Moved by JOHN CHADWICK, Esq. ; seconded by J. WESTMORELAND, Esq. ;

That the best thanks of the Meeting be given to the President, Vice-Presidents, Committee, and Officers for the unwearied attention they have devoted to promoting the interests of this Association ; and that the following Noblemen and Gentlemen be requested to act for the ensuing year. (For the names see following page.)

J. MANCHESTER, Chairman.

The Chair having been taken by THOMAS TURNER, Esq. :

It was moved by CHARLES ROBERTSON, Esq. ; seconded by S. WOODCOCK, Esq.

That the thanks of the Meeting be given to the LORD BISHOP OF MANCHESTER, for presiding on this occasion, and for the interest he evinces in the welfare of the Association.

D. J. LEECH, M.D., } Hon.
C. H. KNIGHT, } Secs.

MANCHESTER AND SALFORD SANITARY ASSOCIATION

Committee and Officers for the Year 1872.

President :

The Right Rev. The LORD BISHOP OF MANCHESTER.

Vice-Presidents :

The Worshipful the MAYOR of MANCHESTER.

The Worshipful the MAYOR of SALFORD.

The Very Rev. the DEAN of MANCHESTER.

MARQUIS of HARTINGTON.

Hon. ALGERNON EGERTON, M.P.

Sir E. ARMITAGE.

Sir JAS. L. BARDSLEY, M.D.

Sir THOMAS BAZLEY, Bart., M.P.

JOHN CHEETHAM, Esq.

Sir W. FAIRBAIRN, Bart., F.R.S.

A. H. HEYWOOD, Esq.

Rev. Canon RICHSON, M.A.

Sir JOSEPH WHITWORTH, Bart.

Treasurer :

OLIVER HEYWOOD, Esq.

Chairman :

THOMAS TURNER, Esq., F.L.S., F.R.C.S.

Deputy-Chairman :

DANIEL NOBLE, M.A., M.D., F.R.C.P., Ardwick Green.

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Dr. A. RANSOME.

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J. F. ROBERTS, Esq.

Professor ROSCOE, B.A.,
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WM. ROYSTON, Esq.

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C. H. KNIGHT, Esq.

COTTAGE-DWELLINGS SUB-COMMITTEE:

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J. LASCELLES, Esq., B.A.
Dr. MORGAN.

Dr. A. RANSOME.
J. F. ROBERTS, Esq.
WM. ROYSTON, Esq.

Communications for the Committee may be addressed to—

THOMAS TURNER, Esq., Chairman,
77, Mosley Street.

Dr. NOBLE, Deputy Chairman,
32, Ardwick Green.

OLIVER HEYWOOD, Esq., Treasurer,
St. Ann's Street.

The Honorary Secretaries, { Dr. LEECH, 345, Stretford Road.
C. H. KNIGHT, Esq., 88, Mosley Street.

Or to

Mr. JOHN POLLITT, Secretary,

At the Offices of the Association, 33, Pall Mall.

(Near to the Bank of England.)

R E P O R T

FOR 1871.

IN presenting the Report for 1871, the Committee think it advisable, once more, briefly to call attention to the objects for which the Association was originally formed, and to the means which have been since adopted to carry out those objects.

In the first Annual Report of the Committee it was stated—
“The principal aim of the Association is to bring to bear upon the inhabitants generally of this district, and specially on the working classes, such an amount of knowledge pertaining to Physiological and Sanitary Science, as may induce an intelligent attention to the ascertained Laws of Health, and produce as the certain consequence, an intellectual, moral, and religious improvement in the masses of the people.” It was also shown that, to carry those objects into effect, it would be necessary carefully to examine into the sanitary condition of the inhabitants, and also into the causes of disease. In addition, therefore, to the distribution of tracts and the delivery of public lectures conveying instruction in sanitary matters, committees were formed to report on the sanitary condition of every district throughout the town, and upon the habits of the people living in those districts. Investigations were also undertaken to ascertain the connection between certain probable causes of ill health and the prevailing diseases, and communications were made to municipal authorities, boards of guardians, and other public bodies, in order to obtain the removal of prominent causes of sickness.

During the nineteen years which have elapsed since the first report was issued, the objects of the Association, as indi-

cated in that report, have been steadily kept in view. Efforts have been continually made to diffuse amongst the inhabitants of this locality a knowledge of the Laws of Health, and to induce private individuals and public bodies to act in accordance with these laws. Every year many lectures have been delivered in various districts of the town on sanitary subjects, and special lectures and instruction have been given to City Missionaries and others, who, from mixing much with the poorer classes, are likely to be useful aids in spreading sanitary knowledge. Thousands of tracts containing advice and instruction on subjects connected with health have been published and distributed gratuitously; and whenever an epidemic has been impending, pamphlets, describing the precautions most likely to be of service, have been issued.

Investigations on many subjects bearing on public health have been undertaken, and reports prepared. Founded on these reports, representations, memorials, and petitions, have been forwarded to the municipal, parochial, and government authorities.

Amongst other things to which the Committee of the Association called the attention of the corporate authorities, was the necessity for appointing Officers of Health in Manchester and Salford; and memorials strongly urging such appointments were forwarded to the respective town councils. Subsequently an Officer of Health was elected for each borough. These appointments rendered unnecessary a very laborious part of the work which the Association had at first performed, viz.: the sanitary inspection of the various districts in the town. This inspection is now made by the Officers of Health and their subordinates. On the other hand, however, work not at first contemplated has been undertaken.

The necessity for close observation of the prevailing sickness, as well as of the mortality of this locality, soon became apparent to the Committee, and, in 1860, arrangements were made by which, through the kindness of the medical officers connected

with the various Hospitals, Dispensaries, Unions, and Prisons in Manchester and Salford, weekly returns of all sickness occurring amongst those who receive gratuitous medical attendance were obtained. These returns, together with a summary of the points most worthy of notice in it, and a meteorological report for the district have been published every week since.

In the annual reports the statistics contained in the weekly returns for the past twelve months have been examined, and such indications as they seem to afford have been carefully noted. When the returns had appeared for ten years, an analysis of the weekly returns for that period was made, and conclusions which might be drawn from them were pointed out.

Into the lessons taught by these statistics the Committee cannot here enter. They are, however, both numerous and important, and it is evident that we have yet much to learn as to the causes and course both of epidemics and diseases ordinarily prevalent, and that when the records of sickness and mortality are examined, each year teaches its own sanitary lessons. The collection and examination of the returns of sickness and mortality, therefore, now form an important part of the work of the Association.

Turning to the proceedings of the Committee in the past year, attention will first be directed to these returns and their analysis; afterwards, the lessons to be derived from them will be considered, and the points to which the attention of the Committee has been specially directed, will be set forth.

Between 1861 and 1871 no addition was made to the institutions from which reports were received; but since the commencement of the latter year, records of sickness have been obtained from the Children's, Southern, and Lock Hospitals, from Crumpsall Workhouse, and from the Hulme Dispensary, and the Committee take this opportunity of thanking the Medical Officers of these, and the other institutions and districts from which returns have been furnished. All the returns are complete for the year, with the exception of those from one of the

Salford Union districts. Some sources of fallacy having been discovered to be due to the method of collecting the returns, measures have been taken to ensure correct reports for the future.

The epidemic of Small-Pox which has prevailed during the past year is the most important feature in the sanitary history of 1871. Towards the close of 1870 the rapid spread of Small-Pox in London, Liverpool, and other places, indicated that ere long a similar visitation might be expected in Manchester and Salford. The Committee believing that many in these boroughs were entirely unprotected by vaccination, and that a still larger number were only partially protected, distributed above 5,000 copies of a pamphlet showing the importance of vaccination, and the advantages of re-vaccination.

Some of the public authorities, and especially the Health Committee of the Manchester Corporation, and the Manchester and Chorlton Boards of Guardians, took active steps to promote the performance of vaccination; and there can be no doubt that the virulence of the epidemic in Manchester was decreased by the efforts thus made.

It was not till the second week in April that the returns of sickness indicated the spread of Small-Pox in Manchester and Salford. In that week 32 cases came under treatment, the average number observed in the previous twelve weeks being 14. From this time to the middle of July the Small-Pox returns continued to increase. In the last week in May 68 cases were observed; at the end of June the number had risen to 116. The highest number recorded was in the second week in July, when 141 cases came under treatment in public practice. At the end of that month the numbers fell to 90, and from this time the Small-Pox returns declined till November; then the numbers increased again. In the beginning of November 38 cases came under treatment in a week; at the end of that month 60 were observed in the same period, and in the week ending December the second 82 cases came under treatment.

After this a decline again took place, but in the last week in the year 52 cases were returned, showing that the epidemic, though on the wane, had not died out.

A large number suffering from Small-Pox were sent into hospital, and those transferred from out-door medical districts into the Infirmary or Workhouse Hospitals count twice in the returns. Although, therefore, the numbers given in the reports express correctly the relative rise and fall of the disease from week to week, the total number obtained by adding together the weekly returns is considerably in excess of the actual number of cases which came under treatment in public practice.

Through the kindness of the contributors to the reports a return has been obtained of the cases attended outside, and subsequently sent into hospital. By subtracting these from the total cases reported, the above-mentioned source of error is removed, and it is found that 1,910 suffering from Small-Pox came under observation in public practice. Of these 168 died, or one in 11. As nearly every case of Small-Pox came under treatment, this ratio probably represents correctly the proportion of deaths to recoveries amongst the lower classes in the epidemic of 1871 in Manchester and Salford. In the hospitals 1 in 7 of the admissions from this district, for Small-Pox, died. This shows that there is a material difference between the hospital death-rate and the real death-rate of Small-Pox. It is probable that a similar difference holds good in other diseases. The number of deaths from Small-Pox registered during the year was 456. In 1870 it was 76; in 1869 it was 70; and in 1868 it was only 13. More than a third of the total number of deaths occurred in public practice.*

* The Registrar General includes in his returns of mortality from different diseases the deaths occurring at three hospitals—Crumpsall, Withington, and Monsall, which, though outside the municipal boundaries, receive most of their patients from the district within them; in the weekly return of births and deaths these are not given. As returns of sickness and death in public practice are received from these places, the figures of the Registrar General are used when comparing the deaths in public practice with the total deaths.

Next to Small-pox, Measles was the most prevalent and fatal of the zymotic diseases in 1871. The number of cases coming under treatment was 1,995, and of these 76 died, or 1 in 26. Since very few of those suffering from Measles are removed to hospital, the number of cases returned represents fairly the number of cases met with in public practice. The proportion of deaths to recoveries, as given in the returns, is probably larger than the actual death rate from Measles, amongst the lower classes, for many cases of Measles do not come under medical treatment. The total mortality in Manchester and Salford, from this disease was 408; about one-sixth of the deaths occurred in public practice. In 1870 the Measles return was comparatively small, and only 72 deaths were registered. Towards the end of the year, however, the numbers began to rise, and in the summary for the week ending December 10th, it was stated that an epidemic of Measles would probably soon break out. For that week 11 cases were returned, and 7 deaths registered.

During January and February, in the following year, there was a gradual increase in the number of cases reported, and in the last week of the latter month 54 cases were recorded. By the end of March the number had risen to 94, and the deaths to 24. In the first quarter of the year 527 cases of Measles were returned, and 117 deaths took place. During the second quarter of the year the epidemic prevailed severely; 6,149 cases came under treatment, and 273 deaths were registered.

In July the visitation rapidly declined, and in August the number of cases and the deaths recorded were below the average. In the last quarter of the year only 44 cases were reported and 10 deaths registered. The contrast between the second and fourth quarters, as regards the prevalence of Measles, is very remarkable.

During the last two years Scarlet Fever has been markedly less prevalent in this locality than it was in 1868 and 1869. In public practice 586 cases of this disease came under treat-

ment in 1871, and of these 39 died, or 1 in 15. Though this proportion represents correctly the mortality of Scarlet Fever in public practice, it is probably higher than the actual death-rate among the lower classes; for, in Scarlet Fever as in Measles, many of the mild cases are never attended by a medical man. The public death-rate from Scarlet Fever was only 1 in 35 in 1870. In 1869 the number of deaths caused by Scarlet Fever was 655; in 1870 it fell to 349; and during the last year only 314 were registered. Only one-eighth of the deaths from this Fever occurred in public practice.

Dr. Ransome has shown in his analysis of the Weekly Returns for ten years that, in Manchester and Salford, Whooping Cough observes a two years' cycle, becoming epidemic every other winter and prevailing during the following spring. In the winter and spring of 1869-70 the Whooping-Cough returns were exceedingly large, and the mortality was very high. In the winter and spring of 1870-71 the returns and mortality were small, and so they continued till the fourth quarter of 1871 when the anticipated rise took place,—the number of cases treated increasing from 374 in the third quarter to 539 in the fourth, whilst the deaths registered from Whooping-Cough rose from 59 in the third to 186 in the fourth quarter.

Thirteen hundred and sixty-six cases of Whooping-Cough were observed in public practice during the year, of which 54 died, or 1 in 25. This, however, only represents the mortality in the more severe forms of Whooping-Cough, since in the lower classes cases of Whooping-Cough do not, as a rule, receive medical treatment, unless they are very severe, or unless some complication arises. One-sixth of the deaths from Whooping-Cough occurred in public practice.

Fever has not prevailed to any great extent in Manchester and Salford this year, and the return of sickness from this cause is not half as large as it was in 1870, when it was swollen by the epidemic of Relapsing Fever which broke out at the end of 1869 and lasted throughout the greater part of the following

year. Many cases of this form of Fever were reported in 1871, occurring for the most part amongst the very lowest classes. More Typhus than Typhoid Fever was observed in the first quarter of the year, but the reverse obtained in the last two quarters, and more especially in the fourth, when 215 cases of Typhoid and only 65 of Typhus were reported. Three hundred and eighty deaths were registered from Fever during the year; in 1870 the number was 505; and in 1869 it was 552. Out of 462 deaths which were registered in the two boroughs, and in the hospitals connected with them, 112, or nearly one-fourth, occurred in public practice.

Every year, in the latter part of summer, Diarrhœa gives rise to a large amount of sickness and mortality. In 1871 it was unusually prevalent and fatal, 5,791 cases of it having been treated in public practice. Of these 221 died, or 1 in 26.

Altogether 1,354 deaths were registered from Diarrhœa, being 190 more than in 1870; and more by 351 than in 1869. The mortality was greatest in the last week in August and the first fortnight in September. In these three weeks 465 deaths were ascribed to Diarrhœa, more by 9 than Small-Pox caused during the whole year. Two hundred and twenty-one deaths or one-sixth of the 1,354 registered, from Diarrhœa, occurred in public practice.

The influence of zymotic disease and Diarrhœa on mortality in Manchester and Salford is shown in the following table, which gives the death-rate in each of the boroughs for every ten thousand inhabitants :—*

	<i>Manchester.</i>		<i>Salford.</i>	
Small-Pox	7	..	18	
Scarlet Fever	7	..	4·8	
Measles	8·5	..	12·7	
Whooping-Cough	6	..	9	
Fever	10·8	..	6·2	
Diarrhœa	27	..	28	

* In making this table the statistics given in the quarterly returns of the Registrar General have been used.

A large number of cases of Small-Pox and Fever are sent into the Infirmary from outside districts and some from Salford. Should any of these cases die they help to swell the Manchester death-rate from these diseases. The difference, therefore, between the mortality in Manchester and Salford as regards Small-Pox is rather greater, and as regards Fever rather less than appears from this table.

During 1871, 7,500 cases of zymotic disease were treated in public practice, and of these 437 died. The death-rate from zymotic disease was 3·8 in Manchester and 4·8 in Salford. It is impossible to compare the returns of sickness obtained this year with those of past years, because of the increased number of institutions from which reports are received. The death returns, however, show an increase of fatality from zymotic diseases, as compared with last year.

	1867.	1868.	1869.	1870.	1871.
Small-pox	7	13	70	76	456
Measles	338	279	427	72	408
Scarlatina	554	1510	655	349	314
Whooping Cough	478	316	283	505	318
Fever	641	930	552	505	380
Total zymotic diseases	2,018	3,048	1,987	1,507	1,876
TOTAL deaths from all causes..	13,763	14,474	12,761	12,816	14,184

On the whole the state of public health during 1871, as indicated both by the sickness and death returns, was far from satisfactory; 98,390 cases of sickness were reported in public practice, of which 3,508, or 1 in 27, died. In 1870, 1 in 29·9 died. The deaths exceeded those of 1870 by 2,327. One-fourth of the increase in the mortality is due to the excessive prevalence of Zymotic diseases and Diarrhoea.

Indications of considerable interest are afforded by the analysis which has been given of the statistics of sickness and mortality in 1871. It appears that more than one-eighth of of the total mortality of Manchester and Salford was directly due to zymotic diseases, and even this proportion does not fully represent the influence which they have on the death rate, since

attacks of Small-Pox, Scarlet Fever and the like, even though recovered from, not unfrequently give rise to other ailments ultimately fatal. The great prevalence of zymotic diseases is due to the neglect of precautions, the necessity for which has long been pointed out by the Committee of the Manchester and Salford Sanitary Association.

There can be no doubt that the gradual increase of Small-Pox during the last few years, culminating in the epidemic of 1871, is due to the insufficiency with which vaccination has been carried out. At the commencement of the present epidemic, Dr. Leigh, the officer of health for Manchester, calculated from an extensive house to house visitation which he caused to be made, that there were, in Manchester alone, nearly 4,000 people who had never been vaccinated, and this be it remembered, after vaccination had been attended to with unusual vigour, in anticipation of an increased prevalence of Small-Pox. We cannot wonder that in a population containing so many unprotected people such an epidemic as we have had should occur. The death rate from Small-Pox in Salford was nearly three times that in Manchester, and this shows that, in proportion to the population, many more were unprotected in the former, than in the latter borough. It is evident therefore that increased attention to vaccination arrangements is especially required in Salford. It has been shown that in public practice during the epidemic of last year, 1 out of every 11 attacked with Small-Pox died. The proportion of deaths to cases would certainly not be greater amongst those who did not come under treatment in public practice, and since 456 deaths from small-pox were registered during the year, at least 5,000 people must have had Small-Pox in Manchester and Salford. Apart from the mortality, the loss and misery which the occurrence of 5,000 cases of such a loathsome disease induced must be exceedingly great. Unless more effectual measures are taken to ensure the vaccination of the whole population than were formerly adopted, the history of past years as regards Small-Pox will repeat itself; for a longer

or shorter time, this disease will prevail only to a limited extent as it did in 1868, '69, and '70; then again, an epidemic like that of 1871 will break out. It is true that the law relating to compulsory vaccination, which came into force in 1871, will be more effectual in securing the performance of this operation in early life, than was the law which it replaced; a few, however, will escape vaccination in infancy under the present law, as a larger number escaped under the old law, and no means have been provided by which these can be reached afterwards.

Notwithstanding the late epidemic, there are still a considerable number in Manchester and Salford who are unprotected, and whilst this is the case, Small-Pox will continue to add to the mortality of this locality. In order to ensure the vaccination of the entire population, house-to-house visitations should be made from time to time throughout the town; those who are found to have escaped vaccination in infancy, should be induced to go to the vaccination stations, and any who from apathy, or want of opportunity, cannot be got to the stations, should be vaccinated at their own homes. This might be readily accomplished, because the neglect of vaccination is not, as a rule, due to any strong objection to the operation, but to carelessness or ignorance. A regulation at present in force, however, prevents domiciliary vaccination, since the public vaccinator can make no charge for those vaccinated at their own houses. Before vaccination can be efficiently carried out, this regulation will have to be rescinded or modified. The committee regret that it is proposed to decrease the stringency of the present law concerning vaccination, by enacting that in future no one shall be fined more than twice for neglecting it, as this decreased stringency will lead to a certain number remaining unprotected. Small-Pox will not cease to form a factor of the death rate till every member of the community is protected.

For preventing the spread of Scarlet Fever and the various forms of Continued Fever, disinfection and isolation should be carried to a much greater extent than they have been hitherto.

It is satisfactory to observe that since 1868 the mortality from both Scarlet and Continued Fever has decreased every year, but, from the course of these diseases in the past, it is certain that an epidemic of one or both will break out sooner or later, unless active measures are taken to promote disinfection and isolation. The committee are glad to find that the erection of disinfecting ovens, a measure which they have long advocated, has now been accomplished in Manchester, and they believe the active disinfection which has been initiated, will have a marked effect in preventing the spread of zymotic disease.

For the isolation of those suffering from infectious disease, the present hospital accommodation is quite insufficient, except in the case of paupers, for whom there is ample provision in the Workhouse Hospitals.

It appears from the returns, that in 1871, only one-fourth of those dying from Fever, and one-eighth of those who died from Scarlatina were treated in public practice. It may be concluded, therefore, that at least three-fourths of the cases of Fever, and seven-eighths of the cases of Scarlatina, occurred in those who did not receive gratuitous medical advice. It is certain that complete isolation of infectious disease can not be carried out in a very large majority of the families living in this locality, and therefore before the isolation of ailments of this kind can be effectually accomplished, extensive hospital provision will have to be made. This becomes more manifest when the actual numbers for whom it is required are taken into consideration. Scarlet Fever, for instance, has been comparatively infrequent during the past year, the mortality being only about one-fifth of what it was in 1868. The death rate in public practice, 1 in 13, has been high compared with former years, (in 1870 it was 1 in 35); and the public death rate from this cause has been shown to be higher than the real death rate, yet since 324 deaths from Scarlet Fever were registered in Manchester and Salford, it is certain that at least 4,212 people must have suffered from it in the two

boroughs, and the probability is that the number was much larger. To prevent the spread of this disease, a large proportion of those attacked should have been removed to hospital; at present however there are only 70 beds, apart from work-house accommodation, for the reception of infectious cases. This will be increased to 158 when the Monsall and Pendlebury Hospitals are complete, but this number would be quite insufficient for the Scarlet Fever cases requiring isolation, even at a time when the disease does not prevail extensively. When it is considered that in addition to Scarlet Fever, provision is required for Small-Pox and Fever, and that epidemics may at any time appear, it is evident that hospital accommodation for infectious disease must be largely increased, before effective isolation of these ailments can be accomplished.

It is doubtful whether isolation can ever be carried out in Whooping Cough and Measles with sufficient strictness to be of service in decreasing the mortality which they cause; but there is no doubt that a very large proportion of this mortality is due to the neglect of hygienic laws, and to the want of knowledge and care on the part of those who have the charge of children suffering from those ailments; both Whooping-Cough and Measles are much more fatal in the lower than in the upper classes, and this is to a great extent due to the neglect of precautions which would be taken if the working classes were better informed as to the laws of health and disease. To impart this information by lectures, tracts, and otherwise, has been, and will be the constant endeavour of the Committee. In analysing the statistics of sickness and mortality for 1871, it was found that one-sixth of the deaths from Measles and Whooping-Cough occurred in public practice, and it is probable that this proportion would be larger, were it not that numbers of cases of these ailments are treated by, and die whilst under the care of druggists, who as a rule, refuse to have anything to do with scarlet fever, small-pox, and what they look upon as serious diseases.

The excessively high death rate from zymotic and other diseases in Manchester and Salford, is, to a great extent, due to the impure air which is breathed by so large a portion of the population of this locality. Many of the causes of this impurity might be, and ought to be removed. Flowing through the town are rivers composed almost entirely of sewage and manufactory refuse, which is continually giving off foetid gases. Many of the houses are so built that free circulation of air round or through them is impossible. The drainage is arranged in such a way, that sewer gas is continually entering the dwellings in which the working classes live : for the pipe leading from the sink is, as a rule untrapped, and goes directly into the drain, which after receiving the most offensive part of the contents of the ashpit, enters the sewer ; the street grids being trapped, the pipes entering the houses form the chief means by which the sewers are ventilated, in fact, they form so many chimneys to the sewers, the warmth inside the houses promoting an upward current. The want of ventilation still further contributes to render the air impure inside the houses, whilst the mixture of excreta and decaying vegetable and animal matter, which is often allowed to accumulate for weeks in the ashpits close to the houses, contaminates the air immediately outside. The ill effects of impure air do not show themselves at once, but the constitution is gradually impaired in those who are constantly breathing a contaminated atmosphere. This is markedly the case in children, and is the one cause of the high mortality which prevails amongst them, especially from some forms of zymotic disease and from Diarrhœa. During the past year 1354 people, chiefly children, were carried off by the latter disease, and from investigations which were made with a view of determining the conditions leading to death from this cause, there is reason to believe that a very large proportion of those who died from Diarrhœa, were suffering from constitutional disease before they were attacked with Diarrhœa.

Hereditary influence and improper feeding doubtless have some effect in inducing such disease, but the foul air to which young children are continually exposed in the majority of the cottages of the labouring classes, has a still more potent influence. There is no doubt too, that Diseases of the Lungs also are aggravated, if not caused by the depressed vital condition which want of pure air induces.

During the past year the attention of the Committee has been specially directed to river pollution, and to the condition of cottage dwellings, and sub-committees have been appointed to investigate both subjects. Purification of the water courses in Manchester and Salford is essential as a first step towards improving the sanitary condition of the town, for the wide diffusion of the mephitic vapours of the river is incompatible with a healthy condition of the locality. The question of the purification of rivers is now before Parliament, and the Committee hope that, after some modifications, the Public Health Bill of Mr. Stansfeld, which deals with this question, will become law.

The Committee are glad to observe that the formation of an intercepting sewer for the purpose of preventing the entrance of sewage into the river, has already been determined on by the Corporation of Salford, and it is to be hoped that before long, a similar construction may be arranged for in Manchester, for by no other means can sewage be effectually kept out of the river. Into the intercepting sewers when made, the greater part of the manufacturing refuse may be turned with advantage, instead of into the river as at present.

With respect to cottage dwellings, the Committee are of opinion that much might be done at a small expense to increase their salubrity. Direct communication between the inside of a house and the drain outside, ought not to be allowed; and not only should it be made unlawful to build cottages with such connection, but steps should be taken to do away with it in houses already built. Proper ventilation

should be made compulsory in every habitation, and the old ashpit system should be abolished as soon as possible.

Experiments are now being conducted in Manchester and Salford, to determine the best mode of dealing with excreta, and these experiments the Cottage Sub-committee is carefully watching, with a view of ascertaining the relative advantages of the different processes employed.

The Committee are glad to observe that it is proposed to form an Association, for the purpose of building houses, which, though healthy, shall be let at such a rental as working men can afford to pay. They look upon this movement as a very important one, and are convinced from an examination of what has hitherto been done in this direction, that it is quite possible to build houses in which the arrangements shall not contravene sanitary law, and which can be let at a low rental, yielding at the same time a moderate profit to the builder. But however well constructed a house may be in a sanitary point of view, the dirty, careless habits of the inmates may render it unhealthy. Pure air does not prevent the evil effect of bad habits, nor does it render good nursing during sickness less necessary. To instruct the working classes in personal matters of this kind, whilst quite out of the province of municipal or parochial authorities, is the primary function of the Sanitary Association. During the past year, Lectures on Sanitary subjects, have been given in various parts of the town; but the funds of the Association have not been sufficient to allow of the distribution of pamphlets or papers on subjects relating to health, with the exception of the pamphlet on vaccination, which was disseminated as widely as possible.

The Committee have not been in communication either with the Municipal or Parochial authorities during the past year, because no advantage could have been derived from such communication, whilst legislative changes in sanitary regulations were impending.

At the commencement of 1871, a sub-committee was appointed to watch and report on sanitary legislation, and when Mr. Göschen's bill was brought before Parliament last session, a report was made by the sub-committee suggesting several amendments which the Act required. The report was agreed to, and arrangements were made for the introduction of these amendments if the bill had got into committee. A similar course is being adopted with regard to Mr. Stansfeld's Public Health Bill.

Before concluding their report, the committee wish to draw attention to the financial position of the Association. At the beginning of the year the balance in hand was £22 5s. 5d., at the end it was only £13 6s., and this notwithstanding that the work of the Society has been considerably curtailed, in order to keep within the limits of the income. The committee greatly regret that they have to narrow their sphere of operations, owing to the want of funds necessary for more extensive action.

REPORT OF THE

Meteorology of Manchester and the District,

AS CONNECTED WITH DISEASE.

THE weather of the past year was very severe during January and the first week of February. To the middle of March unusual mildness followed, and this again was followed by cold weather in the remainder of March. The summer months were unusually cold in consequence of the great and constant amount of rain fall. October retained its character as the wettest month of the year. The temperature suddenly declined to a low point in November, but rose again slightly towards the end of the year.

In tracing the connection between weather and disease, I find the comparison pretty much as I have found it in previous years. Whooping Cough is most prevalent in the coldest months of the year, and during, or just after wet summer weather. The past year has given additional evidence of this rule. The number of seizures of Whooping Cough in January was very large, but fell away fast in the mild weather of February, slightly increased again with the cold weather of March, abated again in the mild weather of April, May, and June, and rose rapidly again in the wet summer months. Diarrhœa and Dysentery, as usual, attained their maximum in the hottest of the summer months; and curious enough the unusually mild weather of February and April of the past year, show an increase in this form of

disease. And during wet summer weather, this disease seems to prevail as widely as it does during very hot dry weather. Bronchitis attained its maximum during the very cold weather of January and November, and its minimum in the warm weather of July. Rheumatism and Scarlatina, as usual, show an increase in wet weather, and during the damp cold seasons of winter.

It seems to me that one fertile source of disease, and especially of fevers, is the great want of town or rather of street ventilation. The Corporation of Salford has erected an anemometer at their observatory in order that the mean rate at which the air passes through the streets of the town may be known. A similar one, and about the same height from the ground, has been erected at Eccles. It is yet too early, as they have only been erected a few months, to draw any conclusions from the results obtained; but I feel pretty certain that ere long it will be shown that more disease is spread through the want of street ventilation than from any other cause. I am now able to show that not a single draught of fresh air has passed through some of the confined streets of Salford for nearly two days, at a time too, when the fever rate was running high; weather we cannot help, but much might be done to prevent the diseases that are connected with it, if the people could be shown the awful results which follow from disregard of its effects.

Tables showing these effects have now for four years been published in my reports to the Salford Corporation, and I cannot do better than refer anyone who is sufficiently interested in seeing the relationship that exists between weather and disease, to the facts and figures there set forth.

THOMAS MACKERETH, F.R.A.S., F.M.S.

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MANCHESTER AND SALFORD

RETURN FROM PAUPER CHARITABLE AND PUBLIC Cases of Disease coming under

	MANCHESTER.																	
DISEASES.	POOR LAW DISTRICTS.								PUBLIC INSTITUTIONS.									
	St. Peter's	St. Andrew's	St. George's	Cathedral	St. Jude's	St. Michael's	Workhouse.	Crumpsall Workhouse.	ROYAL INFIRMARY.					St. Mary's Hospital	Clinical Hospital	Children's Hospital	City Gaol	Lock Hospital
									In-patients	Out-patients	District I.	District II.	District III.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Small-pox	24	16	19	15	34	10	260	6	601	..	21	10	19	40	3	63	4	..
Measles	9	15	25	22	10	22	26	68	12	14	1	17	22	51	111	646	..	..
Scarlet Fever	2	4	5	6	5	11	2	21	32	1	1	15	7	16	23	104	..	..
Diphtheria	..	..	..	..	..	1	29	9	1	..	..	..	..	..	..	1	..	..
Whooping-cough	3	3	13	2	9	4	3	58	..	58	..	1	8	149	182	489	..	..
Croup	3	..	..	..	..	1	..	2	..	1	..	..	..	2	3	4	..	..
Diarrhoea.....	32	42	30	23	31	79	259	74	3	239	3	6	17	543	671	1355	270	..
Dysentery	6	2	2	1	..	1	16	..	..	15	..	1	4	15	5	73	5	..
Malignant Cholera.....	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..
Erysipelas	17	4	2	6	..	3	61	9	4	64	9	8	14	21	9	1	18	..
Continued Fever..	77	16	44	21	34	57	275	4	25	3	5	6	15	91	30	157	..	..
Typhus	..	..	..	1	1	1	120	..	31	..	3	3	4	3	..	8	..	..
Enteric or Typhoid „	..	2	..	1	7	3	43	..	71	..	3	1	3	31	23	69	..	..
Febricula	11	5	9	3	8	61	120	44	13	69	18	12	43	336	37	124	105	..
Ague	..	..	..	..	..	1	29	..	..	1	..	..	..	..	..	1	..	..
Rheumatic Fever	7	..	7	4	7	4	213	4	92	134	50	50	82	9	8	57	6	..
Puerperal Fever.....	..	..	..	1	..	..	2	..	..	1	..	..	..	14	..	..	2	..
Bronchitis and Catarrh..	201	238	118	79	113	167	570	107	40	1561	88	123	179	597	747	1814	193	..
Influenza.....	..	..	1	2	..	..	55	2	..	2	4	4	..	..	..	2	4	..
Pleurisy and Pneumonia	15	7	4	12	5	16	144	24	21	29	8	5	18	76	74	213	29	..
Phthisis	7	21	17	26	19	44	462	35	35	1184	61	64	87	128	123	117	48	..
Constitutional Syphilis ..	1	2	1	13	1	28	479	2	24	451	1	3	6	110	118	142	140	1099
All other Diseases and Accidents.....	655	254	686	169	172	345	4003	1814	2184	9607	159	263	380	3738	4144	4041	246	..

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SANITARY ASSOCIATION.

INSTITUTIONS OF MANCHESTER AND SALFORD.

Treatment during the year 1871.

SALFORD.					HULME.				CHORLTON.				ARD-WICK		DISEASES.
POOR LAW DISTRICT.		PUBLIC INSTITUTIONS.			POOR LAW DISTRICTS.										
Greengate	Regent Road	Workhouse	Royal Hospth. & Dispensary	County Gaol.	St. George's	Medlock	St. Philip's	Hulme Dispensary	Poor Law District	Chorlton Union Workhouse	Dispensary	Southern Hospital	Poor Law District	Ardwick & Ancoats Dispensary	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
57	38	236	198	2	41	16	14	73	54	261	57	5	21	7	Small-pox
29	13	11	137	..	32	14	31	251	45	47	154	44	6	13	Measles
4	..	2	80	..	2	..	7	49	8	15	76	37	1	10	Scarlet Fever
1	..	..	..	..	..	..	..	..	1	..	..	..	..	1	Diphtheria
12	5	6	66	..	13	2	1	52	10	1	54	117	1	22	Whooping-cough
..	1	..	11	..	..	..	1	7	1	1	12	..	..	..	Croup
70	63	9	275	160	27	22	35	60	62	196	158	440	12	89	Diarrhœa
10	13	9	12	..	2	1	4	2	7	1	9	9	..	9	Dysentery
..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	Malignant Cholera
6	1	144	3	3	4	6	4	12	9	14	24	18	5	9	Erysipelas
16	10	..	89	..	6	6	17	5	4	139	70	20	22	23	Continued Fever
8	..	..	27	..	..	2	3	5	14	9	33	..	..	2	Typhus
4	1	..	33	..	23	8	..	54	10	13	1	25	6	24	Enteric or Typhoid "
28	..	..	280	19	9	37	41	51	56	30	296	95	3	52	Febricula
..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	Ague
13	7	23	7	5	10	16	10	47	16	37	64	11	30	131	Rheumatic Fever
..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	Puerperal Fever
207	285	82	2353	193	141	110	118	275	287	547	773	342	143	493	Bronchitis and Catarrh
1	3	..	..	1	..	3	..	..	..	6	33	12	..	2	Influenza
10	42	2	168	20	8	14	9	86	4	79	62	72	1	30	Pleurisy and Pneumonia
62	46	49	813	9	42	35	22	144	65	256	157	35	25	349	Phthisis
10	16	..	435	49	11	9	17	6	37	77	8	23	..	21	Constitutional Syphilis
407	513	1056	8123	157	266	272	323	737	809	2323	1735	2413	271	3560	{ All other Diseases and Accidents

is indebted for the annexed Returns.

(20) *Dr. T. M. Johnson,*

(21)

(22)

(23) *Dr. Braddon,*

(24) *Mr. S. Woodcock,*

(25) *Dr. Alex. Wilson,*

(26) *Mr. H. M. Williamson,*

(27) *G. Lorimer,*

(28) *Joseph Foster,*

(29) *George Clements,*

(30) *Mr. S. Hosegood,*

(31) *Dr. T. W. Rhodes.*

(32) *Mr. J. V. L. Westmacott,*

(33) *J. Sutherland.*

