[Report 1886] / Medical Officer of Health, Leicester Borough.

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Borough of Leicester.

ANNUAL REPORT

UPON THE

HEALTH OF LEICESTER

DURING THE YEAR

1886,

And the proceedings taken to prevent Adulteration of Food, &c.,

BY

HY. TOMKINS, M.D., B.Sc., San. Sci. Dipl., &c.,

Medical Officer of Health; Medical Superintendent to the Fever Hospital; Public Analyst for the Borough, &c.

Associate of Owen's College.
Member of Committee of the Manchester and Salford Sanitary Association, &c.

Corporation of Leicester

Sanitary Committee.

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Meets weekly, on Friday, at 3.30 p.m.

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Tables, Diagrams, and Tabulated Statements.

NOTE.—Of the above Tables those marked thus (*) are drawn up in accordance with the suggestions made by the Society of Medical Officers of Health with a view to securing some uniformity in the various reports throughout the country, for purposes of comparison, &c. H. T.

HEALTH DEPARTMENT,

TOWN HALL,

LEICESTER,

March 23rd, 1887.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

I have the pleasure to present to you my Annual Report upon the Health of Leicester and the work of the department during the year 1886.

It is gratifying to be able to again point to a low death rate for so large an urban community, and to a marked decrease in the deaths from all ordinary infectious diseases.

Amongst the various subjects treated of in this report, I may perhaps be permitted to draw your attention to two which have received some special consideration at my hands during the past year. I allude to a report upon the Slaughter Houses of the town and to another upon some observations in connection with the causation of Summer Diarrhœa so prevalent in Leicester.

I would also take this opportunity of expresssing the satisfaction I feel in holding office under a Corporation which shews itself in most matters so well in the van of sanitary progress.

And remain, Gentlemen,

Your obedient servant,

HY. TOMKINS.

By an Order of the Local Government Board, dated March, 1880, Article 18, Section 14, it is prescribed, that, Medical Officers of Health shall—

"Prepare an Annual Report to be made to the end of "December in each year, comprising a summary of the "action taken during the year for preventing the spread of "disease and an account of the sanitary state of his district "generally at the end of the year.

"The report shall also contain an account of the inquiries "which he has made as to conditions injurious to health "existing in his district, and of the proceedings in which "he has taken part or advised under the Public Health "Act, 1875, so far as such proceedings relate to those "conditions.

"Also an account of the supervision exercised by him, or on "his advice, for sanitary purposes over places and houses "that the Sanitary Authority have power to regulate, with "the nature and results of any proceedings which may have "been so required and taken in respect of the same during "the year.

"It shall also record the action taken by him, or on his "advice, during the year in regard to offensive trades, and "to factories and workshops.

"The report shall also contain tabular statements of the "sickness and mortality within the district, classified "according to diseases, ages, and localities."

Report of Medical Officer of Health, 1886.

I.

SANITATION.

Health and Sanitary Condition in 1886.—In considering the state of the public health generally in Leicester during the past year, it is satisfactory to find that so far as is shewn by the vital statistics for that period it compares favourably with former years, the death rate having been 19·6 per 1000, as against 21·2 the average for the past ten years. In comparison too with the *average* mortality of the 28 large towns of the Kingdom Leicester stands well, as the mortality during 1886 in these large urban communities containing a population of more than nine millions was 20·9. In the preceeding year the death rate in Leicester was only 19·4, the unusually (for Leicester) small number of deaths from diarrhœa with a corresponding increase in 1886 accounts fully for the slightly increased rate during the year just ended.

Mortality compared with other towns.

In saying that the rate of mortality in 1886 was 19·6 per 1000 against 21·2 per 1000 as the last decennial average, it is worth stopping a moment to point out what the true meaning of these figures is. People speak very glibly about a death rate of so much per 1000 but few actually realize what a rise or fall of only one per 1000 really means. Put into language the meaning of the above figures is that during the year just ended 223 persons would have died who at its close were living had the death rate reached the average of the preceeding 10 years.

Prevalence of Infectious Disease.—With the exception of measles which during the December quarter of the year became very widely spread, and which epidemic is still going on; no serious outbreak of infectious disease has occurred in 1886.

From the information obtained under the act for the notification of infectious disease 1280 cases have come under cognizance *i.e.*, 1 Small Pox, 817 Scarlet Fever, 51 Diphtheria, 141 Typhoid Fever, 258 Erysipelas, and 12 Puerperal Fever.

Notification of Infectious Disease.—With respect to the notification of Erysipelas, another year's experience has only served to emphasize the opinion given in last year's report, that for sanitary purposes it is of very slight service, and the money spent thereon little better than wasted. The bulk of the cases reported are very trivial, and in some instances where a patient is subject to periodical attacks of Erysipelas, notification has been received two or three times in as many months, in respect of the same patient. The Council would be well advised to remove this disease from the list of those to be reported.

Uselessness of reporting erysipelas.

It may be of interest to note that compulsory notification of infectious disease is now in operation in 45 towns, amongst the latest to acquire these powers being Ashton, Ripon, and Torquay, which obtained their Acts in 1886.

When Leicester in 1879 acquired the same there were only four other towns in the Kingdom that possessed this important aid in grappling with zymotic disease; but at the present time most of our largest towns have corresponding regulations in force.

Increase of notification of infectious disease throughout country.

Shewing how professional opinion has changed in relation to this question, it is worthy of note that in the Public Health section, at the annual meeting of the British Medical Association, held at Brighton, in August last, the following resolution was passed:—

"That the Public Health section of the British Medical Association having considered the papers read and the remarks made upon them, are of opinion that the time has arrived when the protection afforded under the Acts for the Compulsory Notification of Infectious Disease should be extended to the population generally, and they recommend the Council to consider at an early date the advisability of endeavouring to promote general legislation with this object in view."

The Medical profession and compulsory notification

This expression of professional opinion of the country generally is but an echo of that found in Leicester, where opposition of a very pronounced character was made by the members of the medical profession in the town when the Health Authorities first made application to Parliament for these powers, and many of those who were at that time most pronounced in their antagonism to them are now to be found among the warmest advocates of the system.

Advantages of notification.

That the knowledge thus gained of the existence of infectious disease is of the utmost benefit, each year's experience only serves to confirm, for amongst other things it enables prompt isolation to be carried out to a greater extent than was ever known before, and instructions and cautions given at every infected house, thus helping materially to educate and impress the people with the importance of some of the first principles of Sanitation.

It renders possible for the first time the carrying out of a more thorough process of disinfection in place of mere shams which too often passed under that name. It affords a means of control over food supplies &c. from infected houses. It enables precautionary measures to be adopted with a view to prevent spreading of disease at schools, and lastly, but by no means least, it brings under observation a vast number of un-sanitary conditions on premises thus visited by the officers of the Sanitary Department.

Until the past year dependence was placed almost entirely upon the medical profession for this notification, but it having come to the knowledge of the Sanitary Committee that in numerous instances cases of infectious disease had occured in houses where no medical man was in attendance, it was resolved to direct public

attention to the fact, that under such circumstances, the householder or person having the charge of the patient was responsible for reporting the existence of the disease, and the town was placarded to that effect in September last.

Imported case of Small Pox.

Small Pox.—The, one case met with, was in the person of an artizan, who came into the town seeking work, and who evidently had brought the disease either from Sheffield or Nottingham, he having been in those towns some 12 or 14 days before. The usual prompt measures were adopted: the patient was removed to the Small Pox Wards, and two other persons who had been in contact with him were subjected to 14 days quarantine and were re-vaccinated, both of whom escaped the disease, the room he had occupied was thoroughly disinfected, and the bedding he had slept on destroyed. No other case occurred.

It may be interesting to observe that during the year one of the leading medical journals sent down a special commissioner to investigate the system adopted in Leicester, whereby it was able year after year to keep free from Small Pox. In this report (see *Lancet*, June 5th, 1886) full justice is done to the thoroughness and promptitude with which the disease is grappled, though in common with all who have had much experience in dealing with t in epidemic form, it sounds a note of warning, as to what may be in the future for a town the bulk of whose population is growing up practically un-vaccinated.

Decrease of Scarlet Fever.

Scarlet Fever.—After some years of what may almost be termed Chronic epidemic prevalence has considerably abated. It was stated in last year's report that after a more vigorous attempt to get a larger proportion of the patients removed to Hospital, and other strict precautionary measures, the disease had markedly diminished; this reduction has continued, there having been only 817 cases reported as against 1816 for the preceeding year. The mortality shews a corresponding decrease 45 deaths in 1886 against 69 in in 1885. Of these 434 were removed for isolation to the Fever Hospital (for details of these see Hospital Report page 38).

The average annual number of Certificates of Scarlet Fever sent in by the medical men of the town during the five years ending December 31st, 1885, is 1050, which figures do not however represent the whole of the cases as in numerous instances the same Certificate embraces two or more cases. But although at the present time Scarlet Fever is at a low ebb it is too much to hope that it will permanently remain so, for many adverse factors, some of them unknown, are against us. Take the aggregation of large numbers of children in the Board Schools of the town, one unsuspected case attending school before the infection is gone may infect a dozen other children. On more than one occasion during the past year a child has been discovered attending school having undoubtedly been recently suffering from a mild attack of the disease, the mother not suspecting what the child's ailment had really been.

Agencies at work causing spread of Scarlatina.

Again, although by the operation of the notification of infectious disease, the greater proportion of all the cases occurring *within the Borough* are known to us and all necessary precautions enforced, and children prevented from attending school from an infected house, yet in those houses which are situate across the boundary of the Borough any knowledge we get of infection is hap-hazard, and it is certain that in some cases children attending schools whose homes were outside of the Borough have been the means of conveying infection, the existence of which was unknown to the health authorities. But perhaps a more serious obstacle to our successfully coping with this disease is the apathy and ignorance on the part of the people themselves. Small Pox they fear, Typhus Fever and Cholera is held in dread, but by too many Scarlatina is looked upon as a necessary evil incidental to childhood, and, without the strictest supervision, neglect of the most elementary precautions is the rule rather than the exception, and it is to be feared we are as yet a long way removed from the ideal community described by Mr. Frederick Harrison, in a lecture delivered in Leicester last October, on "The City, Ancient, Modern, Mædieval, and Ideal," where "to expose a person to

infection, to spread contagion in a district, in any way would be considered a crime and an act of ruffianism."

In one instance, parents were threatened with legal proceedings, who allowed their child to run about in the streets whilst in a highly infectious condition, but on permitting it to be removed to the Fever Hospital prosecution before the justices was not proceeded with.

Another source of danger is the importation of infected food or drink from outside the Borough, the source of which infection the authorities are ignorant of. Thus in the early part of the year it came to the knowledge of the Officer of Health that from a small farm, a few miles from the Borough, milk and butter was being brought into Leicester, at which farm, the wife of the farmer was lying ill with malignant Scarlet Fever, her husband at the same time waiting on his wife and attending to his work in the dairy and milk house. Of still greater interest from a scientific point of view is the discovery that has been made during the past year that cows suffering from a certain disease may infect their own milk, which when drunk is capable of developing Scarlatina in the human subject. By a thorough scientific investigation of a suspected milk supply in connection with a sudden outbreak of the disease in North London it was shewn and the conclusions are irressistable *that the cow herself* may be the source of the infection, independent of any disease in man or other extraneous conditions. This is a serious fact to have to face and points to the necessity for more stringent supervision of dairies, and the need wherever a milk snpply is suspected of thoroughly boiling it ere it be used.

Production of Scarlet Fever by infectious cows.

The other infectious diseases call for no special comment here, but the Borough is to be congratulated on a considerable decrease in the mortality of them all compared with 1885, which latter year was by no means an unfavourable one. The mortality from Scarlet Fever shews a decrease of 30%, Measles 25%, Diphtheria 60%, Whooping Cough 50%, and Typhoid Fever 50 per cent.

Details see Vital Statistics page 60 et. seq.

Anthrax.—This somewhat rare disease, in England, made its apperance at a vilage in the County, a few miles from Leicester, in July last, and was a matter of some practical interest to the inhabitants of the town, from the fact that a carcase of one of the the beasts suffering from the disease, was dressed as meat and brought into Leicester for sale. Enquires were at once instituted with the result that it was found. The said carcase had not been retailed here but had been sent on to the Metropolitan Meat Market. Precautions were taken with respect to the hide of the same beast which came into the Hide and Skin Market. The unfortunate man who brought the meat to Leicester contracted the disease from handling it and died from the effects thereof, and several other men who had the slaughtering of the affected cattle also became infected and were seriously ill.

Outbreak of Anthrax or Splenic Fever.

It is satisfactory to know that as a result of representations made to the Privy Council owing to this local outbreak, Anthrax or Splenic Fever has been included in the Act relating to the Contagious Diseases of Animals, and that notice of its existence must be given and proper methods for its extermination adopted, so that less risk will in the future exist both to animal and man by concealment of the disease.

It is a striking illustration of the extreme vitality of the germs of these zymotic diseases, that, within the last few weeks a horse taken into the field where the carcases of the above cattle were buried, in July and August last, at once contracted the disease and died. That the disease was without doubt Anthrax was demonstrated by experiment in the laboratory of the Health Department, by your Medical Officer of Health.

Vitality of disease germs.

Diarrhœa.—In reviewing the health of the Borough for 1886, Diarrhœa again stands out as the one blot upon an otherwise fair record, 256 deaths resulted from it against 186 for 1885. (Details of deaths see page 68.)

Increased diarrhœa prevalency was general throughout the country, and as usual was confined chiefly to the September or third quarter of the year, when no less than 15,936 deaths were

Increased amount of Diarrhœa in 1886

caused by this disorder. Had but one-tenth part of this mortality been caused by cholera or small pox how keenly would the public mind have been directed towards it, yet with such power does familiarity with any given conditions act that year by year this slaughter, and chiefly of infant life, takes place without exciting any very special interest or remark, though it be almost certain that a large proportion of this mortality is due to preventable causes.

The meteorological conditions were those now recognized as always accompanying increased prevalence of this disease, viz. a high temperature and a low rainfall. The mean temperature during the third quarter was 1·5 in excess of the mean average of the past 115 years, and the rainfall was 2·46 inches below the average of the past 70 years.

In only one town of the kingdom did the death rate from diarrhœa exceed that of Leicester, this being at Norwich. Enquiries from that town elicited but little information throwing light upon the causes at work there: the sewerage system was stated to be very bad, and that probably the geological position and surroundings had some influence in its production. Norwich lying in a hollow, with a damp subsoil in the lower parts of the town.

In no town in the kingdom does greater interest attach to this disorder than in Leicester. Notorious for many years as one of the greatest sufferers from its ravages, anything tending to throw light upon its causation and etiology must be hailed with satisfaction.

Former enquiries into causes of Diarrhœa.

Considerable time and labour have been bestowed upon the subject by former workers in this town, notably by Drs. Buck and Franklin, by Dr. Sloane and by Dr. Johnston, formerly Medical Officer of Health, and their various reports form instructive reading for those interested in the subject. Much of the work of these observers serves to shew the insufficiency of various theories put forward to account for summer diarrhœa, such as improper feeding and neglect of infants, early marriages, employment of mothers in factories and mills, damp subsoil, a humid state of atmosphere, a high summer temperature, sewer gas. Amongst all these and

other supposed causes, the *one* condition which it is certain must exist before the disease is produced, is *an increased temperature*, the higher the temperature the higher the diarrhœa mortality and *vice versa*.

Insufficiency of many alleged causes.

But a little consideration will suffice to prove that to none of these causes can the disease be absolutely attributed, and that they only act as excitants. Improper feeding and neglect of young children harmful as they may be are not *the cause*, for the disease is not confined to infants but attacks persons of every age (see statistics page 69.) It is only the very young and the very old who succumb to it, besides whatever the neglect and the improper feeding, &c. is, it is in operation the whole year through whereas this disease is confined to the September quarter only.

That a humid atmosphere and a high temperature are not the proximate cause is proved by the fact that in some of our large towns diarrhœa is, comparatively speaking, absent, and yet the temperature and rainfall is the same as that of other towns where the disease is most virulent. Thus between Derby and Leicester, speaking generally, the meteorological conditions must be the same, yet how different the prevalence of this disease: similarly in other parts of the country the difference is extreme between towns of like character situate in the same county such as Preston and Oldham where similar conditions of temperature and rainfall prevailed. Sewer gas again *per se* cannot be the direct cause for gas exists in the sewers at other times besides the short period over which this disorder extends.

On page 37 of the Health report of Leicester for 1880, Dr. Johnston speaking of diarrhœa, has the following:—

> "The more immediate cause will be found, if I mistake not, to consist of fungoid impurities in the air derived from the putrefaction of animal refuse."

It is more than probable that the truth of this statement will ultimately be proved.

During the past summer some work of an experimental nature has been undertaken in the Laboratory of the department with a view, if possible, of throwing a little additional light on the obscure problems connected with this subject.

Bacterial origin of disease.

In recent years our knowledge of the causation of many diseases has increased tenfold, more especially of those whose origin is due to low forms of living organisms, of an exceedingly minute character, and to which in all probability, most of the zymotic or infectious diseases owe their existence.

Bacteriology or the study of these micro-organisms has by the labors of such men as Koch in Germany, Pasteur and Miquêl in France, and Tyndall, Klein, Watson-Cheyne, &c. in this country been raised almost to the position of a new science, and by means of improved apparatus and methods of research our knowledge of these minute forms of life is daily becoming more exact and abundant.

It is upon these lines that the observations during the past summer have been carried out, and a report in abstract was presented to the Sanitary Committee in November last, of which the following contains the principal features :—

A report upon some Bacteriological observations in connection with the summer diarrhœa.

Presented to the Sanitary Committee, November, 1886.

Mr. Chairman and Gentlemen.

During the summer just gone, diarrhœa has again been exceedingly prevalent in Leicester, and I have endeavoured to obtain by observation and experiment some little additional information which might help to throw more light upon the obscure causes that tend to produce it. I had already made myself familiar with the work done in this direction by former observers in the borough, and finding that much of the ground had been cleared before me, determined to confine my enquiries to a more or less definite line.

Past records, like that of the previous summer, shew that the mortality from this disease is confined, roughly speaking, to an area bounded by the canalized portion of the river Soar, Jarrom Street, Oxford Street, Peacock Lane, St. Martin's, Cank Street, Humberstone Gate, and Humberstone Road, as far as Cobden Street, and thence round by the Great Northern Station, in fact to the

low-lying and flat part of the town, see Map in appendix. In this area which at a very liberal estimate cannot contain more than one third of the entire population of the Borough 216 deaths occurred out of the total number of 256.

The thought at once suggests itself what is there acting over this area, what common cause is at work, which apparently is not present in other districts of the town? The water supply is the same; the food supply cannot be materially different, and one is naturally driven to suspect the air. The question I set myself to solve therefore was in what respect does the atmosphere of this "diarhœa area" differ from that elsewhere. Already grave suspicions had fallen upon some œrial contamination as being the probable cause. But sewer gas, effluvia,, miasms, malaria, bad smells give us no real explanation, these terms are little better than cloaks for our ignorance. The Scientist of the present day demands something more tangible and real than this. More offensive smells can be produced by the chemist in the laboratory but which carry with them no power to produce disease. Air from sewers is not dangerous merely because it has been in a sewer but because *a something* has been added to it whilst there. If the atmosphere contains a something which can produce disease the problem to solve is *what is that something*. We have absolute proof that many of the zymotic diseases are the result of germs or spores of micro-organisms being received into the body. Germs of one kind or another are universally present in the atmosphere, wherever living beings exist, and it is only in mid-ocean or in the highest altitudes of mountain ranges that we find the air free from them. But it is not to be thought that all these micro-organisms are harmful and injurious, many of them serve important functions in the economy of nature, carrying on processes of the utmost benefit, nay of the first importance to the well-being and very life of man! but in the same way that we have in the animal and the vegetable world, both harmful and harmless forms, so in these minuter forms of life we have species most useful as well as others the most baneful in character.

It is needless and would be out of place to go into detail here of the methods &c. adopted in the examination of the air of the various parts of the town or into the pathological conditions &c. met with in the bodies of those dead of the disease. Suffice it to say that I have made these examinations after the most approved modern methods, now adopted by Bacteriologists, and the general results I have obtained have been as follows:—In the atmosphere of the lower lying districts or the "Diarrhœa area" (coloured pink on the map) I have found no less than from two to seven thousand germs per cubic metre, the latter large number was from the air issuing at a street ventilator near Russell Square, whilst in the higher districts of the town, on the Racecourse and in the neighbourhood of St. Stephen's Road, the number obtained was only from sixty to nine hundred per cubic metre. When these where subjected

to artificial cultivation they were found to be micro-cocci and bacilli of various forms and sizes and differed amongst themselves both in naked eye and microscopic appearances.

In addition to examining the atmosphere I have also examined the bodies of a few patients who have died from Diarrhœa, but although I have received the hearty co-operation of the medical profession, I have only in a few instances been able to make the examination within a sufficiently short time of death to be of any service in this work. In three instances I have obtained growths of organisms from the kidneys, twice from the spleen, twice from the mesenteric glands, once (doubtfully) from the blood taken from the right side of the heart, and as was to be expected, from the ulcerations and mucous membrane of the intestines, I have obtained them always in abundance. And here in passing it may be remarked that the difference in the position and character of these ulcerations, and the absence of enlargement of the spleen proves that this disease is quite separate and distinct from Typhoid Fever, to which, some observers have thought it allied.

In all instances where cultivated growths of micro-organisms were obtained the nutritive gelatine in which they were grown became completely liquified. In the cultivations from those of the air the rate of growth was slower and the gelatine liquified less quickly.

But although I have been able to demonstrate the presence of these microbes it is another thing to trace with certainty their connection with the disease under consideration.

To demonstrate indisputably that any micro-organism is the cause of any particular disease four conditions are necessary :—

(a.) The presence of the organism in the body or tissues of the person or animal suffering must be shewn.

(b.) This organism must be attained and if possible grown and cultivated under proper conditions.

(c.) These separated and cultivated microbes must then be capable when introduced into a healthy body of producing the original disease, and lastly—

(d.) In the body of the animal or person in which the disease is thus artificially produced the same organism must again be found.

I am far from being able to tell you that I have succeeded in doing this but I have gone a little way in this direction. By the administration of a very small dose of these cultivated growths obtained from the air of the contaminated parts of the town, and of the growths obtained from the kidneys and intestinal ulcerations, I have been able to induce with certainty a sharp attack of Diarrhœa, lasting from twelve to twenty-four hours.

To sum up all that one can say with certainty, so far, is that :—

I.—In the atmosphere of the "diarrhœa area" of the town micro-organisms or their germs exist in ten-fold abundance compared with other parts.

II.—That from the bodies and organs of patients dead of Diarrhœa micro-organisms have also been obtained.

III.—That all these have been cultivated artificially through several generations, and that—

IV.—These cultivated specimens when taken into the body are capable of producing Diarrhœa.

I am, Gentlemen,

Yours obediently,

November 1st, 1886. HY. TOMKINS, M.D.

The above report is undoubtedly open to criticism at many points. None know so well as those engaged in this kind of work the numerous liabilities that exist to error and mistake. Every point requires corroboration and confirmation many times over. Much more will require to be done, for as yet scarcely the fringe of the subject has been touched, but seeing that up to now the true origin of Summer Diarrhœa has baffled all search, every fact, however small, tending to throw light upon it is welcome. Should, however, it become demonstrated and proved beyond reasonable doubt this Diarrhœa is due to the presence of specific micro-organisms or their germs in the air, the question then arises whence do they come, and why do they exist in such larger numbers in some districts of the town than in others. Here again it is easy to theorize. But we KNOW that the most favourable conditions for their life are warmth, moisture, and dead organic matter, with the absence of light and fresh air. Suspicion has long attached to the sewers of the town, which especially in the diarrhœa area are of a most unsatisfactory character, being too small, too flat, without efficient means of flushing, and constantly liable to stagnant deposits and overflow, conditions in every way favourable for the growth of these minute bodies. Further, it should be remembered that for many years past much of the soil

Necessity for much further observation.

surrounding the sewers and the basements of many houses have been polluted by the contents of the sewers finding their way thereto and thus forming an excellent breeding ground for their development. For it is not to be thought that after each subsidence of overflow the soil is left as it was before, but it retains a considerable quantity of organic matter in which numerous bacteria find a congenial home for multiplication and growth. Before, however, the problem of the true etrology of this disease is satisfactorily solved, it will be necessary that the work and observations in connection therewith be carried on in some more or less uniform plan, not in one town or district only but throughout the country, wherever the disease prevails and the conditions &c. existing there compared with those in other towns and districts where it is comparatively absent.

Favourable conditions existent for development of Bacteria.

It is thus that some useful results may be hopefully looked forward to from the enquiries which have been for some time in progress under the direction of the Local Government Board.

Sewers.—One of the most important pieces of sanitary work sanctioned by the Council and commenced during the past year is the re-construction of the main sewers of the town.

In February the Borough Surveyor presented a comprehensive report to the Council upon this subject, shewing the insufficiency of the present obsolete sewers and giving particulars of his proposed New Drainage Scheme. In this scheme the work is divided into six sections, and embraces upwards of 15¼ miles of new sewers varying in size from 6ft. 3in. downwards. They will be of the most approved shape and construction, and provided with a mechanical system of flushing, by which it is hoped that the new sewers may be kept much cleaner and more free from deposit than are the old ones. An important provision will also be made for preventing, after sudden storms, the overflow and backing up of the contents of the sewers into the basements of houses in the lower parts of the town by the construction in each of the above sections of a storm overflow or free outfall into the

New system of Sewers for Borough.

river and canal during these times ; each section of the system thus relieving itself and not sending on its contents to overfill those sewers lying in the lower district.

The estimated cost of the work so far sanctioned is £132,000.

Sewer cleansing &c. in '85 and '86.

During the two years '85 and '86 there has been constructed in public and private streets, 9288 yards of new foul sewers and 4818 yards of new storm sewers. Of the former, that running along New Bridge Street and Aylestone Road, and that passing along Narborough Road and Great Holme Street are of large size and will form part of the new system about to be carried out. During the last two years 3688 yards of old sewers have been cleansed and ventilated making with that done in previous years (see Officer of Health's report for '84) a total of 29,432 yards up to the end of 1886.

It is scarcely needful at the present day to emphasize the importance of a well devised and perfect system of sewer to a large community. It is of equal importance to a town that its sewers should be clean as that its streets should be so, and were they always in the condition they should be much less would be heard of offensive smells and sewer gas evolved therefrom.

During the last Summer when the heat was greatest an attempt was made by the daily gradual introduction of a powerful disinfectantine to the sewers of the low-lying parts of the Borough, to minimize the putrefactive changes which so rapidly take place under an increased temperature, with a view chiefly of preventing the great prevalence of Diarrhœa, but it cannot be asserted that the experiment was attended with much good result so far as concerns the latter object.

Nuisance from Street Ventilators.

During the year a large number of the surface ventilators in the middle of the streets have been closed in deference to complaints made concerning them. The subject of surface ventilators in the middle of our street has of late received some attention, and experience, as well as theory certainly shows, that where sewers are liable to contain more or less abundant deposit, which deposits must necessarilly evolve products of putrefaction

and decomposition, it is an undesirable thing to give vent to these in the middle of a populous street at the road level. That some vent must be provided to allow of their escape is certain, but this escape or vent should one would think be carried as high in the air as possible to prevent harm and nuisance arising therefrom. In connection with the sewers a practice which is very common in the town of turning waste water into them at a high temperature is much to be condemned and it is worth consideration whether some restrictions should not be placed thereon.

In an Act of Parliament lately promoted by the Borough of Sunderland, for various sanitary purposes, persons are prohibited from turning steam or water over 110° F. into the public sewers, a provision which has much to commend it.

Opening of a New Park.

Parks and Open Spaces, &c.—In August last the new Spinney Hill Park was formally opened to the public, the Mayoress performing the opening ceremony, and the day was made somewhat of a general holiday. A large number of the leading townspeople were invited to a luncheon by the Mayor, in the park, and in the evening a display of fireworks was provided, at which it was estimated some 20,000 people were present.

On the same day and place a presentation of a valuable service of silver plate was presented to Mr. Alderman Windley, subscribed for by the members of the corporation in recognition of the interest and energy displayed by him in the matter of this new park in particular, and in the sanitary work of the town in general. The land here acquired is some 36 acres in extent, the cost £18,000, and will supply the wants of the South-eastern part of the town for many years to come. The North side is well provided for by the Abbey Park. The district now chiefly in need of a similar provision is the Western portion of the town, which is rapidly extending. The land which at one time it was proposed to acquire for this purpose being now covered with houses. In the direction of providing small open spaces or squares for use as playgrounds, &c., and to act as breathing spaces in the more densely crowded districts

Desirability of open spaces in crowded districts.

of the borough, no movement has yet been made. When once land in the centre of our large towns has been built on or become desirable building land, the enhanced value of the same renders it almost impossible to ever acquire even small areas as open spaces. This fact renders it the more imperative that local authorities should acquire sufficient land for this purpose well in advance of the omnivorous builder in those localities, which will most probably in the near future be taken up with dwellings for the people.

It is not to be doubted that one of the chief difficulties the sanitarian has to cope with in our large urban communities is a vitiated and impure condition of the atmosphere, and one of the most important aids to remedy this is the provision of as many open spaces as may be practicable to counteract the crowding together of the people on confined areas.

Pure air is as much a vital necessity for a healthy vigorous condition of body as pure water and pure food. Pure water can be provided by every local authority, and food supplies are diligently watched in addition to the consumer having a remedy more or less in his own hands, but in the matter of a pure air supply the individual is, to a large extent, helpless. He can exercise no choice in the matter, such as it is he must use daily, hourly, constantly, and it is therefore the more necessary that those who have the guardianship of the public health should neglect no means for providing as pure a supply as possible.

Necessity of pure air.

It is certain that one of the chief causes tending to keep down the mortality, especially in the early years of life, of our rural population, as compared with the dwellers in towns, is the purer air constantly enjoyed by the former, for in many other respects the sanitary condition of rural districts is far behind that of our large cities

Gas Impurities.—In the early part of the year under review, the attention of the public was directed to the quality of the gas supplied in the borough, and some rather grave charges were brought against it by various correspondents in the public

Alleged impurity of gas.

press. It was alleged that the proportion of sulphur compounds present therein, was in so large an excess as to be deleterious to health and injurious to the furniture and decorations of dwelling houses.

As a result of this, it was suggested by the council that an examination of the gas supply should be made independently of the officials of the gas works, as is the custom in other towns. If this were done, and the results thereof published periodically, it would prevent the possibility of such charges being made unless there were gronnds for the same.

Slaughter Houses.—During the year, owing to complaints of the slaughter houses in various parts of the town, a special enquiry was made by the Officer of Health into the condition of the whole of these places at present existent within the borough, and the following report presented to the sanitary committee :—

Report upon the Slaughter Houses of the Borough in 1886.

December, 1886.

MR. CHAIRMAN AND GENTLEMEN,

In accordance with your instructions I have examined the whole of the slaughter houses of the Town to the number of sixty-nine, and beg to present the following report thereon. I have made a classification of them into three divisions, **A, B** and **C,** according to the greater or less degree of nuisance connected therewith inasmuch as it rarely happens that in the centre of a crowded community, a slaughter house can exist, under any circumstances, without causing an undesirable condition of the surroundings, for, *Firstly*, the work carried on is such as to be inseparable from the production of filthy debris filth too of a most objectionable character, for, in addition to the manure and offal, &c. there is the blood and other fluids which cannot be prevented from soaking into the ground, and often finding their way into the public sewers; these materials in the rapidity with which they decompose, and the offensiveness of the products evolved therefrom, are secondary only to the putrefaction of dead bodies, and are active factors in producing a polluted condition of the atmosphere and soil. *Secondly*, there are other features connected with them scarcely less objectionable *i.e.* the nuisance arising from the constant bringing in of living animals to busy streets which are often with difficulty got into the narrow passages and small yards

leading to the slaughter houses, and the unpleasant and (to children) demoralizing sights to be witnessed where these places, as they are in many instances, open and exposed to public view.

In classifying them I have therefore taken into consideration not only their direct effect as pollutors of the air and soil, but also these other objectionable features.

In class A, which includes the best appointed, the most roomy, the least surrounded by dwellings, and in which the nuisance connected with them is at a minimum, I have placed eleven.

In class B the surroundings are much less satisfactory and constitute a greater degree of nuisance, these number twenty-seven ; whilst in class C which are in the highest degree objectionable and call for urgent remedy, there are twenty-nine. In addition to these, two others are at present disused.

It may be interesting to note that to twelve of the slaughter houses no shops are attached, butchers coming to them from various parts of the town or district to kill there, thus inflicting a nuisance on the adjacent inhabitants to which they themselves are not subjected.

In fifteen instances the slaughter house opens directly on to the public pathway, nothing intervening between them and the street, and thus when the doors are open affording an uninterrupted view of the work going on within.

In twelve cases the manure pits in which the refuse and manure is stored until removal, are below the level of the ground to a depth varying from 1½ to 3ft., an arrangement highly to be condemned.

An attempt was made during the enquiry to obtain the number of different butchers who use the same Slaughter House, but it was difficult to obtain with accuracy this information. In twenty cases they were used by a number varying from two to four or five each. In twenty it was stated only one butcher used them, in the remainder the information was unreliable or not obtainable.

At eight Slaughter Houses only pigs are killed.

It may in connection with this subject not be out of place to quote what my predecessors have said in former years when speaking of the Slaughter Houses within the Borough, thus so far back as 1857, nearly 30 years ago, Mr. Moore, then Medical Officer of Health, writes as follows, at page 9 in his Annual Report to the Board of Health for that year :—

> "They have a plentiful supply of water and are kept as free from nuisance as they can possibly be, but their existence at all in a town so densely populated as Leicester is a blot upon our sanitary measures, which becomes more and more apparent every year."

And even prior to this, in the year 1849, Mr. Buck then Medical Officer of Health writes : —

> "All the powers possessed by the Local Board of Health will not prevent the continuance of many of the present evils by which they (the Slaughter Houses) are surrounded. * * * * It is not likely that the present state of things in Leicester will be violated much longer. * * * * The time has come when these extensive sources of evil must be entirely removed from the precincts of the Borough."

The subject is alluded to in similar terms in many succeeding years, in the report for 1865 the following occurs :—

> "They are and always will be, so long as they are allowed to exist, a nuisance to their immediate neighbourhood and a blot upon our sanitary regulations, I therefore regret that it has been found necessary to consent to their perpetuation rather than interfere with vested interests."

It is, therefore, patent to all that an evil has for a long time existed, which it is desirable to remedy, for, looking back 20 or 30 years we find things are to day practically the same as they were then, or rather they are worse, and this for two reasons : firstly, the town is more thickly populated, and in many places the slaughter houses have been more surrounded and hemmed in by new buildings than they were in former days ; and secondly, owing to the non-granting of any new licenses more killing goes on and more refuse and filth is produced than when each slaughter house was used only by the owner of the shop to which it was attached.

Seeing that the town is now well supplied with public abattoirs it would seem that the time has now come when some attempt should be made to deal with this long standing nuisance. It is not for me to suggest in what manner this would best be done as some legal questions are probably involved therein. I have shewn that a nuisance exists, that it is avoidable is proved by the fact that in all the new parts of the town which have sprung up during the last 10 or 15 years in the West End, by the Great Northern Railway Station, and in all the large districts of the Highfields, &c., slaughter houses are non-existant and yet no difficulty is experienced with respect to the meat supply of the large population resident in these districts.

I am, Gentlemen,

Your obedient servant,

HY. TOMKINS.

As a result of the above report, enquiries were made by the Town Clerk as to the powers possessed by other towns in dealing with these places and also as to what powers exist in connection therewith in Leicester. The result is not encouraging for it would seem that before any radical measures can be adopted in Leicester additional powers must be acquired for that purpose.

Mortuary.—During the year a proposal to erect a public mortuary has been brought before the Council by the Sanitary Committee and received the unanimous consent and approval of that body. Plans have been prepared and a site selected for the same, but owing to a most unreasonable opposition from another public body the work has not yet been commenced. Leicester, in this matter, is behind the times, and the need that exists for a mortuary is seen from the fact that from drowning alone nineteen deaths were recorded during 1886, many of these bodies when taken from the water, having had to be placed in an outbuilding or stable of the nearest public house.

Necessity for and opposition to erection of mortuary.

Baths.—The success of the Public Baths has become so well-established that an extension of those in Bath Lane is about to be made whereby additional accommodation will be provided for female bathers. The discussions that have taken place in the Council and elsewhere shew the need that exists for similiar establishments in other populous parts of the town, and it is the intention of the Sanitary Committee to provide, as soon as may be expedient, additional baths to supply the needs of the Humberstone Road and adjoining districts. Such baths have now become a necessity for all crowded populations. During the past year the number of bathers has been 80,457, of whom 5144 were women and girls.

Proposed extension of baths.

Scavenging.—During the year a small matter, yet not without some interest to many of the inhabitants, has received attention at the hands of the Sanitary Committee, of the abatement of the nuisance caused at the Wharf in Belgrave Gate from boats in which offal and other objectionable refuse is deposited. The work has been curtailed as much as possible and arrange-

ments have been entered into with the Great Northern Railway for the erection of a shed and siding on their line which when completed will furnish a means of getting the contents of the pail-closets removed rapidly, and is hoped without nuisance, from the town to the country. The pans with air-tight covers, now in use, number upwards of 2000, and when all the old ones shall have been replaced with this improved pattern their removal to the depôt should be effected without causing any nuisance.

Necessity for further means of refuse disposal.

A matter which will force itself before long upon the attention of the Committee is the means of disposal of the many tons (thirty-nine thousand annually) of refuse removed daily from the ash pits &c. of the town. The "tips" to which this material is now taken are fast becoming filled and the desirability of erecting a "destructor" for the better and more sanitary disposal of this stuff must shortly be discussed.

Resignation of Mr. Wand.

Inspection of Food, Meat, &c.—Owing to ill health the Sanitary Committee have with much regret lost the services of Mr. Wand, who for a long term of years has so satisfactorily performed the important duties of Inspector of Meat, &c. Inspector Coles has been appointed in his place and, as his previous experience combines a knowledge of the details of the meat trade, with some years of police work in the Borough, there is every reason to believe the appointment will prove a wise one. The new officer has already shewn considerable ability in the detection of unsound meat.

The following quantities of meat &c. have been condemned and destroyed during the year:—

	TONS.	CWT.	QRS.	LBS.
Meat	3	6	2	10
Fish	26	15	2	22
Fruit	3	10	3	26

Hares	228
Rabbits	145
Fowls and Ducks	261
Head of Game	100
Geese	24

Prosecution for diseased meat.

One prosecution was instituted against a farmer from Thrussington, who had deposited the carcase of a beast at the Great Northern Railway Station for conveyance to the London Meat Market. A fine of £10 and costs or two months imprisonment was imposed. The fine was paid.

Systematic inspection of houses.

House to House Inspection.—During 1886 the special systematic inspection of the houses and premises within the borough has made some considerable progress. Seeing that the number of houses is upwards of 27,000 the magnitude of this work is at once apparent, and as it is being done by the ordinary staff in addition to their other duties and regular work, some time must necessarily elapse ere it be fully completed; at the end of the year, 22,773 had been completed, (see Inspector's report, page 32.) The number of insanitary conditions discovered, some of them, of a most dangerous nature would be a surprise to many inhabitants of the town were they to be published in detail, and often these discoveries are made in the best class of houses, or rather in the better houses built prior to the present decade. No such blunders or errors of construction and sanitary arrangements are permitted now, in the building of new houses; the chief source of defects in our modern dwellings are the tricks and carelessness of the British workman.

As a rule this house to house inspection is welcomed by the people, but now and again the inspectors meet with opposition in their work, and their visits are not received in a spirit of cordiality. It is to be hoped that in the near future anything like factious opposition to these officers will be a thing of the past and that the public will come to look upon them in no sense as troublesome intruders, but as their friends, ready to help and assist in removing objectionable conditions and making the surroundings of their homes more healthful and pure.

Bakehouses.—There are 177 bakehouses in the town, they have been regularly inspected, and the proper cleansing and whitewashing enforced. With few exceptions they are all of them, from a sanitary point of view, satisfactory, as to position and construction, &c.

Lodging Houses not satisfactory.

Lodging Houses.—The common lodging houses, 29 in number, and licensed to accommodate 646 persons, have been constantly supervised, but it is a matter of regret that the same cannot be said of these as of the bakehouses of the town, for with few exceptions, they are anything but what the sanitarian or humanitarian can wish. The remarks on this subject in the health report for the previous year are as strongly applicable now as they were then.

Offensive Trades.—The number of these in the borough is not great; a few soap and tallow works and tripe boiling shops are the chief ones, (see table page 35.) One soap works was registered after complying with conditions to prevent nuisance, and one proposed large place of the same kind for which application was made was ultimately taken outside the town owing to representation by the Medical Officer of Health that the intended site was not a proper one, and certain to be a source of nuisance to the surrounding populous neighbourhood.

Factories.—No special feature has occurred during the year in connection with these. In several instances sanitary defects have been discovered as the result of house to house inspection, or when investigating the occurrence of illness among the employes, in no instance has any difficulty been experienced in getting improvements or alterations when necessary carried out.

Smoke Nuisance.—A watch has regularly been kept upon the large chimneys of the works and mills of which there are about 230, and several offenders have been brought before the Sanitary Committee and cautioned, but it has not been considered necessary to institute proceedings before the magistrates. Leicester is by no means a smoky town but there is at times and especially in one or two known localities a tendency to carelessness in this respect and the emission of an unnecessary amount of dense black smoke.

Houses unfit for Human Habitation.—There have been closed during the year nine houses upon the order of the Medical Officer of Health who certified they were in such a condition as to be prejudicial to health and unfit for human habitation.

Condemnation of dwelling houses.

Sanitary Legislation.—Dairies and Cow Sheds order 1886.—The past year has been a very barren one in respect to Sanitary Legislation. In June last an enactment was passed transferring the powers of supervision and registration of dairies and cow sheds, under the Contagious Diseases (Animals) Act of 1875, formerly vested in the Privy Council, and Authorities acting under that Act, to the Local Government Board and Sanitary authorities throughout the country, who, without doubt, are the proper bodies to supervise this work. The powers possessed are still however very imperfect and insufficient to safeguard so important an article of food as our milk supplies.

Transfer of supervision of dairies.

No power under this Act exists for obtaining information of infectious disease existing at a dairy &c. by which the milk may be infected, nor to compel notification of certain disease in the cows themselves, which are more than probably concerned in the propagation of disease to man.

Shop Hours Regulations.—This other small sanitary measure was also passed in June last, and has for its object the prevention of over-work in shops of young persons under the age of 18 years and forbids the employment of such for a longer time than seventy-four hours in any one week. As, however, no special person or authority, official or otherwise, has been charged with the duty of seeing that the Act is put into operation, it is likely to remain practically a dead letter.

Laboratory.—In addition to the work performed in the laboratory in carrying out the provisions of the Act for the prevention of food adulteration (see analyst's report page 76) the laboratory has during the year been of much service in many

other ways. Thus without it the investigations previously alluded to in connection with Diarrhœa could not have been carried out. Observations and experiments in connection with the outbreak of Anthrax, the examination of sewage effluents, disinfectants, and other matters of a like nature have also been carried on, in fact questions in connection with health matters are constantly arising which, without the apparatus and appliances of a well equipped laboratory cannot be properly pursued.

The work of Sanitary Inspectors.—That the work of this department has been unremittingly carried on the appended report of the Chief Inspector fully testifies :—

TOWN HALL LEICESTER,
March 15th, 1886.

To the Medical Officer of Health.

DEAR SIR,

I beg to submit my report on the sanitary work &c. executed during the year 1886.

Yours faithfully,
FRANK ALLEN,
Chief Inspector.

Chief Inspector's Report for 1886.

"During the year 5959 houses have been examined and reported upon in the systematic house to house inspection, the total number thus inspected up to the end of 1886 is now 22,773.

"Statement **A** gives details of the work carried on by the Sanitary Inspectors during the year, and Statement **B** shews the character of the nuisances abolished or remedied together with the work carried out under formal and informal orders, a large proportion of this being executed without the service of legal notices. In addition to the work performed by the Inspectors as per Statement **A** Inspector Braley has obtained samples of food under the Sale of Food and Drugs Act, and Inspector Pearce has acted as Inspector of Canal Boats. No serious breach of the regulations referring to the boats has been discovered and very few children were on board them. There are now 73 Canal Boats registered in Leicester.

STATEMENT A.

Shewing the work done by the Sanitary Inspectors during the Year 1886.

	1886	1885
House to House Inspection	5959	9099
Special Inspections and Investigations of Complaints	13,679	8666
Re-inspections to ascertain the progress of Sanitary and Informal Orders ...	12,706	8577
Contagious Diseases	7500	7293
Slaughter Houses	401	356
Common Lodging Houses...	565	520
Bakehouses...	713	654
Canal Boats...	37	128
Total No. of Inspections...	41,560	35,293
No. of Samples purchased for Analysis under the Sale of Food and Drugs Act ...	166	94
No. of Samples of Well Water taken ...	36	31
„ „ Water Works Water ...	5	
No. of Stacks reported for Smoke Nuisance	14	13
No. of Cases sent to the Fever Hospital ...	443	903
„ Houses disinfected by the Sanitary Staff	778	1428
„ Schools do. do. ...	45	
„ Houses disinfected by the Occupiers	35	
No. of Notices sent to Schools	1534	2180
No. of Swine reported to the Medical Officer	225	167
„ Dilapidated Houses do.	9	9
„ Filthy Houses do.	9	125
„ Prosecutions under Food and Drugs Act	9	2
* „ Houses in which Smoke Test was used	203	147

* Amongst the 203 houses in which the Smoke Test Apparatus was used 170 were found to have defective connections with the main sewers and allowed the air from these to pass into the house or premises.

STATEMENT B.

Shewing work carried out under Formal and Informal Orders during the year 1886.

	No. of Orders.
To abolish Manure-pits and Ashpits	92
„ repair do. do.	416
„ erect new do. do.	28
„ provide Ashtubs or bins	106
To abolish Privies	22
„ „ Privy Cesspools or Vaults	9
„ „ Pail Closets	26
To erect new Water Closets	57
„ „ „ Pail Closets	18
„ repair, alter, or rebuild Closets	266
„ fix Closet Hoppers and Syphons	40
„ fix Flushing Apparatus and lay on Water Supply...	53
„ repair do. and do. ...	102
„ provide Pails	16
To alter and ventilate Soil Pipes	171
„ fix ventilated Syphons	266
„ lay New Drains	99
„ relay or repair defective drains	603
„ clear choked drains	206
To abolish Cisterns and fill up and cover Wells ...	7
„ cleanse and repair Cisterns	105
To fix lead or iron Sink Wastes	575
„ fix Traps or Gully Gratings	883
„ reset Gullies or provide new Gratings	203
To erect, alter, screen, or repair Urinals	231
„ repair, re-hang, or provide new doors for Closets and Dwellings	157
„ repair, renew, and make good spouting	261
„ cleanse and limewash Closets and Passages ...	724
To pave Yards and Passages, or repair paving ...	732
„ provide new, or relay and repair Floors	304
To repair Roofs	246
„ repair dilapidated Houses...	25
To cleanse and limewash houses	1372
„ cut off, take up, and stop old drains	237
To ventilate Workshops and Dwellings	0
„ remove manure and offensive matter	5
To remove Animals kept in such a condition as to be a nuisance	135
To close Wells and to lay on Waterworks supply of Water	20
To alter Chimneys and Miscellaneous	476
TOTALS...	9254

"The courts and houses not fronting public thoroughfares have been regularly inspected each quarter, and also at other times as occasion requires, for in some of these the Inspectors find it difficult owing to the careless habits of the people to keep them in a satisfactory and clean state. Work is constantly being done in these places with a view of making them more comfortable and healthy. The majority of the houses, some 1800 in number, in these courts are very old, containing only two rooms, and having no space at the rear. On the whole, however, they are tolerably free from the common Infectious diseases as seen from the following figures. In the whole of the Borough the number of persons known to have suffered from these diseases has been 9·2 per 1000 of the population; in the courts only 5·4 per 1000, and in houses situate in streets the proportion has been 10·0 per 1000 of the population.

"In Statement C is given a tabulated list of houses and premises which require regular visitation and supervision.

STATEMENT C.

Shewing the Number of Offensive Trades carried on, and Registered and Licensed Premises within the Borough requiring the attention of the Inspectors.

DESCRIPTION OF TRADE.	NO.
Slaughter Houses	70
Tripe Houses	27
Common Lodging Houses	29
Bakehouses	177
Cow Sheds	173
Milk Shops and Dairies	264
Tallow Melters	4
Grease Works	1
Ammoniacal Liquor Works	2
Chemical Works	2
Carpet Beating Works	1
Fellmonger	1
Bone Boiler	1
Soap Boiler	1
Knackers Yard	1
Total	754

"In connection with the sanitary defects met with in dwelling houses I could direct attention to one of the most common, the existence of drains in the cellars, which being improperly trapped or allowed to become dry and untrapped are a source of danger to the inhabitants of the house, and not unfrequently their chief use is to admit sewage from the backing up of the sewers into the basement of the houses. Experience goes to prove that all cellar drains should be looked upon with suspicion, and where they cannot be abolished they should be disconnected outside the building by a ventilated syphon. Defective and foul ash pits form a large item in the list of defects: there are 11,500 ash-pits in the town, equal at a moderate calculation to an area of three acres of refuse.

"In new districts where building is going on the introduction of dry portable ash-bins is being recommeded as superior in every way to the old ash-pit."

II.

FEVER HOSPITAL.

Report for Twelvemonths ending December 31st, 1886.

The main portion of the Hospital was in use during the whole year, being chiefly occupied by patients suffering from Scarlet Fever, more than 50 per cent. of all the persons suffering from this disease in the town having been removed there for isolation and treatment. Much less objection is now offered by the bulk of the people to the removal of their children there, and its benefits are appreciated by them, for, in small houses and crowded districts it not only relieves the friends of the strain and expense of nursing the sick at home, but the patient also is benefited by the purer air, and greater freedom from confinement and restraint as the Hospital grounds afford a pleasant means of exercise during the long period of convalescence which is denied them when shut up in their own homes in the town; thus, while the community at large benefits by the removal of an infectious disease from its midst, both the patients and friends benefit also at the same time. During the year a few patients of a better class than usual have been received, but until some accomodation of a superior and more private character be provided, it is not to be expected that persons who are able to pay for such accomodation will make much use of this means of isolation. Amongst the projects put forward as worthy to commemorate the Jubilee year was a proposal to build a New Fever Hospital, one more worthy of the town than the present unsightly and obsolete buildings, but it appeared to be the prevailing opinion that whenever this be done, the funds for it should be provided out of the public rates.

Less objection to removal to Hospital.

Proposed new Fever Hospital.

The main block of buildings has been thoroughly cleansed and varnished throughout and now presents a very comfortable appearance on the inside, but the two detached barn-like structures have not been meddled with and are in fact not worth spending money upon.

There has been admitted during the year a total of 457 patients : 1 suffering from Small Pox, 10 from Measles, and 439 from Scarlet Fever (see Table B), of these latter 434 came from within the Borough and five from the County, *i.e.*, Kibworth, Melton, and Market Bosworth.

During the year some anxiety and trouble has been caused by the introduction into the Hospital of Chicken Pox and Measles, children having fallen sick with these complaints soon after entering the Hospital the disease being in the incubation stage on their admission. The 10 cases of Measles alluded to above were sent either in mistake, as Scarlatina or as suffering from Scarlatina immediately following upon Measles.

The accompanying tables give details of the patients admitted, the numbers during each month and the ages of the same.

TABLE A.—General Summary.

Remaining under treatment, January 1, 1886 ...	130
Admitted during the year	457
Total number under Treatment ...	587
Discharged cured	517
Died	19
Remaining in hospital, December 31, 1886 ...	51
Total	587

TABLE B.

Shewing Number of Various Diseases with Death Rate of each.

	Remaining in hospital Jan. 1, '86.	Admitted.	Recovered.	Died.	Mortality per cent.	Remaining Dec. 31, '86.
Scarlet Fever	130	439	503	15	2·9	51
Small Pox ...	0	1	1	0	0	0
Measles	0	10	10	0	0	0
Unclassified	0	5	1	4	80·0	0
Quarantine ...	0	2	2	0	0	0
Totals	130	457	517	19	3·2	51

TABLE C.

Shewing Monthly Admissions of Scarlet Fever.

January.....	45	July	37
February	38	August	43
March	33	September	53
April.....	25	October	37
May	32	November	52
June	18	December	26
		Total.....439	

TABLE D.

Shewing the Ages of Patients Suffering from Scarlet Fever, and the Ages of those who died from the same.

Ages of Patients.	No. Admitted.	No. of Deaths.
Under 1 year	2	1
From 1 to 2 years ...	30	0
,, 2 to 3 ,, ...	43	2
,, 3 to 4 ,, ...	56	1
,, 4 to 5 ,, ...	49	4
,, 5 to 6 ,, ...	54	2
,, 6 to 7 ,, ...	43	1
,, 7 to 8 ,, ...	31	1
,, 8 to 9 ,, ...	25	1
,, 9 to 10 ,, ...	26	0
Over 10 years.....	90	2
Total	449	15

TABLE E.

EXPENDITURE, &c.

	£	s.	d.	£	s.	d.
DISPENSARY, viz. :—						
Drugs	16	9	6			
Instruments and Appliances ...	2	14	0			
Wines and Spirits...	4	9	0			
Dispensary Sundries	0	9	2			
Mineral Waters	5	2	2			
Disinfectants	12	0	0			
				41	3	10
HOUSE EXPENSES, viz. :—						
Butchers Meat, Fish and Poultry	325	15	3			
Bread	44	17	6			
Butter	107	10	11			
Milk	213	14	1			
Ale and Porter	42	2	8			
Groceries and other Provisions ...	181	0	10			
Gas	63	18	0			
Coal	168	17	6			
				1147	16	9
Salaries and Wages				450	18	9
Advertising, Printing and Stationery				5	1	0
Linen, Woollen and Smallwares				30	8	9
Bedding				85	4	5
Fixtures and Furniture				79	5	9
Domestic Implements and Utensils				32	2	9
*Alterations and Repairs				585	18	1
Painting and Whitewashing				82	13	3
Rates, Taxes and Insurance				8	15	9
Carriage of Goods and Postage				0	1	10
Garden Seeds, Plants, &c.				12	8	2
Water Rate and Fittings				14	3	2
Rental of Telephone				19	0	0
Harness, Cart and Ambulance				14	3	0
Sundries				30	15	0
				£2640	0	3

* Of the above Expenditure £500 was on account of structural alterations and additions to the buildings, and is not part of the ordinary maintenance charges of the hospital.

RECEIPTS.

	£	s.	d.
Maintenance of Patients repaid	9	15	0
Sale of Horse	7	0	0
Sale of Garden Produce	2	1	7
	£18	16	7

Death-rate in Hospital.

The low death-rate among the patients suffering from Scarlet Fever—only 2·9 per cent.—is exceedingly satisfactory and fully justifies the statement previously made, that in the interest of the patients themselves removal to Hospital from their crowded homes is highly beneficial.

The bulk of the cases have been of a mild type, only 10 would be designated Scarlatina Maligna. In 30 the throat symptoms were so severe as to be classed as Scarlatina Anginosa.

Complications of Scarlatina.

The followiug complications and sequelæ occurred amongst the 439 admitted. 32 patients suffered from Albuminuria with more or less dropsy. In 3 instances the patients were thus suffering when admitted to Hospital, not having been sent in the early stage of the disease. In 30 cases the Fever was followed by Otorrhœa, and in 12 instances by Inflammation or Suppuration of the Cervical Glands.

Complications in fatal cases.

Of the fatal cases five died within the first week of the attack, from the immediate effects of the Fever, three others died at a latter period. Three deaths were caused by Albuminuria, one by Albuminuria complicated with Empyema, one by exhaustion from prolonged Suppuration of Glands, one by Articular Rhumatism, and in one the patient was in an advanced stage of Phthisis, in addition to suffering from Scarlet Fever.

Cost, &c. of patients in Hospital.

The total Expenditure for the year has been £2640 0s. 3d. from which has to be deducted receipts £18 16s. 7d. leaving a net sum of £2621 3s. 8d. as the total cost of the establishment. From this however a further sum of £500 (see foot-note to Table E) should be taken in estimating the cost for ordinary maintenance and treatment of patients. The cost per patient thus amounts to £3 12s. 3d. The daily average number of occupied beds has been 70 and the average length of time that each patient was in the Hospital was 44 days. The total cost therefore per patient per week is 11s. 6d., a sum which the most rigid economist cannot cavil at.

This is somewhat higher than the cost per patient in the preceding year, but is fully accounted for by the diminished numbers under treatment for the expenditure of a Hospital cannot be curtailed in proportion to the smaller number admitted.

The following presents have been sent to the Hospital for the use and amusement of the inmates :—

Rev. CANON VAUGHAN, dressing gown, easy chair, a large supply of books, toys, periodicals, &c.

Mr. ALDERMAN WINDLEY, a constant supply of papers, &c.

Messrs. SPENCER, Market Place, Cassell's History of England.

Mr. THORNTON, St. Peter's Road, dolls and toys.

Mr. NEWETTT, Oxford Street, sweets and confectionery.

Mr. YATES, Bartholomew Street, toys and books.

Mr. COOPER (Messrs. Cooper, Corah, & Co's.), large number of Christmas Graphics.

Miss THOMPSON, The Fosse, dolls, &c.

Mr. COUNCILLOR FRANKLIN, scrap book.

KYRLE SOCIETY, scrap books, &c.

ST. LUKE'S CHURCH, flowers from flower service.

III.

VITAL STATISTICS.

Area, Population, and Density.—Owing to the rejection by Parliament in the early part of 1886 of the bill for extending the boundaries of the Borough the area remains unaltered, containing still 3030 acres or about four and three quarter square miles.

The population of the Borough is estimated in the middle of 1886 by the Registrar General to have been 139,606 or an increase on the previous year of 3459 persons. It is more than probable that this estimate is somewhat too high and in the weekly returns published by him this fact is noted. At the present time, however, building is going on with increased rapidity, and as it is impossible to state with accuracy during intercensal years what the population really is, the Registrar's figures will be used in the following statistics. The natural increase of population that is the excess of births over deaths during the year has been 2125 thus leaving 1334 as the number added to the population by new comers to the town in excess of those who left in the same period.

Estimated population probably too high.

The natural increase was equal to a rate of 1·52 per cent of the population.

The density of population can of course be stated as an average of about 46 souls per acre, but as many acres of the town are quite unbuilt upon, whilst other parts are densely crowded with dwellings, the actual density or number of persons living on these latter parts connot be given.

Density of Population.

Inhabited Houses and Rateable Value.—The number of inhabited houses as estimated from information supplied in the Surveyor's office was in the middle of the year 26,934 and the rateable value of the Borough amounted to £468,621. At the time the last census was taken in 1881 the average number of persons per occupied house was found to be 4·9.

Increase of Marriage rate.

Marriages.—The marriages registered in the Borough for the year have been 1222, an increase of 106 on the number contracted in the preceding twelve months. These figures are equal to a marriage rate of 17·5 per 1000, an increase of 1·2 on 1885. This is a satisfactory feature, as indicating that the prosperity of the town has not declined in the twelve months just ended.

From Table **I** it will be seen that since 1880 to the end of 1885 notwithstanding the steady increase of the population the number of marriages has steadily decreased year by year. The one now under review shews however for the first time a marked rise in this respect.

Increase of Birth rate.

Births.—The births like the marriages shew an increase on the previous year. The number registered has been 4858 being 176 in excess of 1885 and equal to a birth-rate of 34·8 this exceeds the average birth-rate of the 28 large towns of the kingdom by 1·6 where it only reached 33·2 per 1000 (see Tables **I** and **II.**, page 45). The birth rate in all England and Wales in 1886 was only 32·4, the lowest recorded in any year since 1848. In most of our large towns and in the country generally there has been a marked decrease in the birth rate during the past few years, and, as the birth rate of any country or town is usually directly connected with its prosperity it is satisfactory to find that Leicester is not at present losing ground as indicated by this test. Of the 4858 births 2497 were males and 2361 females.

TABLE I.

Showing the Population, Inhabited Houses, Marriages, Births and Deaths, for the Year 1886, and ten years preceding.

The Year.	Estimated Population.	No. of Inhabited Houses.	Marriages.	Registered Births.	Corrected Number of Deaths.			Deaths in Public Institutions.
					Total all ages.	Under one year.	Under five years.	
1886	**139,606**	***26,934**	**1222**	**4858**	**2738**	**1052**	**1383**	**265**
1876	113,581	22,848	1230	4781	2558	956	1400	
1877	117,462	23,695	1183	4753	2515	897	1254	
1878	119,845	24,438	1107	4779	2500	981	1360	
1879	117,610	24,616	1141	4687	2651	878	1366	
1880	120,325	24,794	1179	4860	2960	1070	1727	
1881	123,120	24,974	1153	4711	2654	965	1374	
1882	126,275	25,511	1201	4855	2528	942	1297	
1883	129,483	25,818	1207	4823	2484	913	1271	
1884	132,773	25,937	1152	4851	2937	1133	1615	
1885	136,147	26,794	1114	4682	2641	907	1315	
Average of ten years, 1876-1885	123,662	24,942	1166	4778	2642	964	1398	

NOTE a.—Population at census 1881 was 122,376.
,, b.—Area of present Borough in acres 3030.
NOTE c.—Number of inhabited houses at census 24,974.
,, d.—Average number of persons per house at census, 4·9

* The number of inhabited houses in 1886 is estimated from data in Surveyor's office. In previous years the figures have been supplied by the Overseers.

TABLE II.

Shewing the Annual Birth and Death Rates, Death Rates of Children, and Proportion of Deaths in Public Institutions, in a Thousand Deaths for the year 1886, and ten years preceding.

In Year.	Birth rate per 1000 of the Population.	Corrected Death Rate per 1000 of the Population.	Deaths of Children under 1 year per 1000 of Registered Births.	Deaths of Children under 1 year per 1000 of Total Deaths.	Deaths of Children under 5 years per 1000 of Total Deaths.	Deaths in Public Institutions per 1000 of Total Deaths.
1886	**34·80**	**19·61**	**216·5**	**384·2**	**505·1**	**96·7**
1876	42·09	22·52	199·9	373·7	547·3	
1877	40·46	21·41	188·7	356·6	498·6	
1878	39·87	20·72	205·2	392·4	548·0	
1879	37·31	21·10	187·3	331·1	513·0	
1880	40·39	24·70	220·1	360·3	581·6	
1881	38·26	21·56	204·8	363·2	517·7	
1882	38·44	20·05	194·4	372·6	513.1	
1883	37·24	19·18	190·7	367·5	511·6	
1884	26·53	22·12	233·5	381·6	543·9	
1885	34·38	19·39	193·5	343·4	513·8	
Average of ten years, 1876-1885.	37·48	21·27	201·8	364·2	528·8	

Illegitimacy.—Amongst the births there were registered 234 as illegitimate, being 1 in 20 of the total number or five per cent. of all births. These figures show a slight increase on 1885 when the total was 204, equal to 1 in 23 of all births.

Vaccination.—From the Vaccination returns kindly supplied by the Clerk to the Guardians, it appears that only 1122 children have been vaccinated during the past year, being considerably less than 25 per cent. of the children born.

Increasing opposition to Vaccination.

The opposition to this operation is in Leicester more firmly established than ever. At the last Election of the Guardians (upon whom devolves the duty of seeing the law relating thereto carried out), this question of vaccination or no vaccination was made the principal one upon which the election was decided, with the result that a majority was returned pledged not to enforce the same, and the vaccination laws are to-day in Leicester absolutely in abeyance. No prosecutions are instituted against defaulters, and no one who cares to neglect this precautionary measure in relation to his children's safety has any pressure brought to bear upon him in the matter. The sad feature about the whole business is that it is the young children of the town who are growing up in thousands unprotected and are running a risk to their lives; they have but to come in contact with the first breath of infection of Small Pox to at once contract this loathsome disorder. And seeing that as yet Small Pox is always present, in some part of the country, and with our modern improved means of rapid communication, they can hardly expect to pass through life (at least many of them) without at some time or other being brought into dangerous proximity to its contagion.

When a person has arrived at years of discretion there is more justification for neglecting the repetition of the operation if he be so minded.

Deaths.—During the 52 weeks of 1886 there have been registered 2801 deaths within the Borough. This is, however, not the actual number belonging to the town: 19 patients died at the Fever Hospital and 35 at the Borough Asylum whither they had been removed for treatment, and 52 patients died at the

Infirmary, and 63 at the County Asylum who had been brought into these institutions from the County and surrounding districts. By adding the former and subtracting the latter a corrected total of 2738 deaths is obtained which represents the true mortality of the town during the year under notice.

These figures shew an increase of 97 on the previous year and are equal to a death rate of 19·6 per 1000, per annum, as compared with 19·4 in 1885. The average death rate during the past 10 years has been 21·3 and in only two of those years, *viz.*, 1883 and in 1885 was the death rate lower than in the past year (see Table **II** page 46).

Death in various quarters of year.

In the first quarter of the year 658 deaths occurred, in the second 588, in the third 829, and in the last quarter 663. The slightly higher death rate this year was entirely due to the increase in the third and fourth quarters, this excess having been caused by a larger number of deaths from Diarrhœa than in the summer of 1885.

	1886.	1885.	1884.
1st Quarter	658	750	623
2nd „	588	602	583
3rd „	829	746	942
4th „	663	543	821
Total	2738	2641	2969

Leicester Compared with other Towns.—In Table **III.** is presented in tabular form the death rates of our large English towns, from which it will be seen that Leicester occupies again a very creditable position especially for a manufacturing town, only six towns have a lower death rate than Leicester.

Favourable comparison with other towns.

The mortality of the whole Country during 1886 shews a slight increase on the previous year, being 19·3 against 19·0 per 1000, in 1885. In the 28 large towns of the Kingdom, representing an urban population of upwards of 9,000,000 of persons, the rate was 20·9 in 1886 as against 20·5 in 1885. Thus whether Leicester be compared with the country generally, or with the large towns only, it more than holds its former position, as the increase in the death rate of Leicester has been during the past year only 0·2 as against 0·4 in the towns and 0.3 in the country at large.

TABLE III.

Death Rate of the large English Towns during each of the past 10 years.

	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
28 large Towns						**22·3**	**21·6**	**21·6**	**20·5**	**20·9**
London	21·5	23·0	22·7	21·6	21·2	21·4	20·4	20·4	19·7	19·9
Brighton	18·8	21·3	19·1	19·8	19·0	21·7	19·2	17·9	17·1	17·1
Portsmouth	18·0	19·9	17·6	19·8	19·7	21·5	18·6	19·4	19·7	23·8
Norwich	20·7	24·3	21·7	24·3	19·5	20·6	19·6	21·2	20·3	23·3
Plymouth	22·0	25·8	22·9	35·1	19·9	21·2	20·9	21·1	22·3	23·5
Bristol	22·5	22·2	21·9	21·0	19·6	19·2	17·9	18·4	19·7	19·3
Wolverhampton	24·4	23·5	23·0	21·3	21·2	22·4	21·3	23·4	20·2	22·2
Birmingham	24·1	25·5	22·1	20·7	20·0	20·9	21·3	21·4	19·3	19·9
Leicester	**22·6**	**22·1**	**23·2**	**25·0**	**21·8**	**20·0**	**19·2**	**22·1**	**19·4**	**19·6**
Nottingham	21·1	20·1	21·6	23·8	22·4	23·6	21·2	22·9	19·9	20·4
Liverpool	26·3	29·2	26·9	27·1	26·7	26·5	26·7	25·2	23·8	23·8
Manchester	28·5	29·2	28·3	26·9	25·5	26·7	27·6	26·4	26·5	26·3
Salford	26·4	27·1	26·7	28·0	22·6	23·2	22·4	22·3	21·1	22·1
Oldham	25·1	27·0	22·8	24·7	22·8	24·6	22·0	24·5	22·0	22·8
Bradford	23·3	24·1	22·9	22·9	19·7	21·2	18·4	20.1	17·7	19·2
Leeds	23·0	24·7	23·5	22·0	21·6	23·2	23·3	24·2	19·9	21·9
Sheffield	23·1	26·6	22·9	22·9	21·1	21·7	22·9	22·4	20·7	19·8
Hull	21·5	24·1	22·0	23·4	23·8	23·2	22·8	21·1	17·2	18·8
Sunderland	22·9	25·9	22·3	25·0	20·9	26·5	24·5	23·0	23·8	19·5
Newcastle	23·0	24·5	24·4	22·8	21·8	23·1	25·4	23·1	26·1	22·2
Derby									18·1	18·2
Birkenhead									19·5	19·1
Bolton									20·8	23·1
Blackburn									21·8	25·5
Preston									27·1	28·9
Huddersfield									20·1	19·6
Halifax									19·7	22·7
Cardiff									25·7	22·6

Points to be observed in comparing one town with another.

True Comparative Death Rates.—In comparing one town with another it is always to be remembered that unless the element of different age and sex, constitution of the population in the various communities be taken into account, false conclusions may be arrived at as to their comparative healthinesss. In Table **IV.**, the recorded and the corrected death rates are placed side by side. In the second column is shewn what the death rate of each of these towns would have been in 1886 had the populations consisted of similiar proportions of the two sexes and had contained the same proportion of persons at different ages.

The third column is of much interest. 1000 has been fixed as the standard number for the country generally and the towns arranged in their relative healthiness as compared with this standard. The meaning of it is this, that when due allowance has been made for varying age and sex distribution, it is found that while out of a certain number of persons living throughout England and Wales 1000 die, out of the same number living in Brighton only 912 die, and of the same number living in Preston no less than 1627 have died. Leicester is seen to be bracketed with Birkenhead 6th on the list when thus compared.

TABLE IV.

Recorded and Corrected Death Rates in 20 large English Towns during 1886.

Towns in the order of their Corrected Death Rates.	Recorded Death Rates per 1000 per annum	Corrected Death Rates per 1000 per annum	Comparative Mortality Figure.
England and Wales ...	19·3		1000
28 Large Towns.....	20·9	22·2	1150
Brighton	17·1	17·6	912
Derby	18·2	18·9	979
Hull	18·8	19.4	1005
Bristol.....	19·3	20·0	1036
Sunderland	19·5	20·3	1052
Birkenhead.....	19·1	20·5	1062
Leicester	**19·6**	**20·5**	**1062**
London	19·9	21·1	1093
Bradford	19·2	21·1	1093
Birmingham	19·9	21·3	1103
Sheffield	19·8	21·3	1103
Huddersfield	19·6	21·5	1114
Nottingham	20·4	21·6	1119
Norwich	23·3	22·3	1155
Wolverhampton	22·2	22·9	1186
Plymouth	23·5	23·3	1207
Leeds	21·9	23·4	1212
Newcastle	22·2	23·5	1217
Salford	22·1	24·0	1243
Portsmouth.....	23·8	24·5	1269
Cardiff.....	22·6	24·5	1269
Halifax	22·8	24·7	1280
Oldham	22·8	25·3	1310
Bolton.....	23·1	25·4	1315
Liverpool	23·8	26·1	1352
Blackburn	25·5	27·8	1440
Manchester.....	26·3	29·4	1523
Preston	28·9	31·4	1627

Importance of infantile death-rate.

Mortality at Different Ages.—Dr. Farr was one of the first Sanitarians to point out that the true test of the healthiness or otherwise of any community, is the death rate in the *first few years of life*, and the death rate of children under five years of age should always be specially considered. It is solely this high death rate in these early years that prevents Leicester taking a first place on the health roll of the country.

Table **V.** gives the estimated population living at five groups of ages with the number of deaths during 1886 at each of those œtal periods and the death rate per 1000 per annum.

The figures of the Standard English Life Table Rates are appended for comparison. This Table is a very interesting and instructive one, and shews what has just been stated, that were it not for the excess of mortality amongst children and especially during the first twelve months of their life, Leicester would have an exceptionally low death rate. Each of the groups of ages after the first shew a less mortality than that of the Standard English death rates.

TABLE V.

Estimated population at Five groups of Ages, with Actual number of Deaths and the Death Rate per 1000, compared with English Standard Life Tables.

	Estimated Population 1886.	Deaths 1886.	Mortality per 1000.	Deaths per 1000 according to Standard English Life Tables.
Under 1 year	4,231	331	23·2	
1 to 5 years	4523	1052	232·5	
Total under 5	18,754	1383	73·7	56·3
5 to 20	44,758	140	3·1	4·8
20 to 40	42,697	273	6·3	8·1
40 to 60	24,064	340	14·1	16·4
over 60	9333	602	64·5	69·8
All Ages	139,606	2738	19·6	18·5

TABLE VI.

Infantile Mortality.

Deaths under one year per 1000 Births.

	1886.	1885.	1884.
London	159	148	155
Bristol	149	152	143
Derby	150	137	145
Sunderland	151	158	166
Plymouth	154	156	150
Newcastle	155	172	156
Brighton	160	131	147
Birkenhead	162	137	140
Hull	164	128	169
Huddersfield	167	157	163
Sheffield	168	164	172
Bradford	167	143	181
Cardiff	168	189	184
Halifax	171	132	176
Portsmouth	174	131	128
Oldham	174	166	183
Wolverhampton	175	140	189
Birmingham	175	157	174
Nottingham	180	157	196
Leeds	181	155	184
Manchester	183	175	183
Bolton	186	160	194
Liverpool	188	174	194
Salford	198	174	184
Norwich	202	136	187
Blackburn	209	170	187
Leicester	**216**	**193**	**233**
Preston	233	218	222
Average of 27 Provincial Towns	177	161	168

Increased infantile mortality in 1886.

Infantile Mortality.—The deaths of children under one year of age have been 1052, this is 145 in excess of the preceding year. The proportion of these infantile deaths to the births registered is 216 per 1000 and form more than one third of all the deaths (see Table **II.**, page 46). Throughout the country generally the rate was 150 per 1000. In the 28 large towns of the Kingdom the rate was 169 per 1000, and in the 27 large provincial towns (that is the same towns exclusive of London) the rate was 177 per 1000.

Towns with high infantile mortality.

A rise in the infantile mortality is observed throughout the country during the past year. In Table **VI.** is shewn the different towns compared with each other, and as in former years, Leicester is seen to occupy almost the worst place on the list. Preston is again the only town with a higher rate than our own. Norwich, Blackburn, and Salford, are also seen to have a very high Infantile death rate. In Leicester the excess this year has been chiefly due to an increased fatality from Diarrhœa and Lung Diseases. The other principal diseases to which this loss of infant life is due are Atrophy and Debility, Convulsions, and Premature Birth (see Table **VII.**).

TABLE VII.

Rates of Mortality of Children, under one year of age, from chief Infantile Diseases, per 1000 Births.

	1886.		1885.	
	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.
From all causes	1052	216·5	907	193·0
Atrophy and Debility	252	51·8	242	51·7
Diarrhœa.....	229	47·1	168	33·7
Convulsions	127	26·1	133	28·4
Lung Diseases	296	60·9	113	24·1
Premature Birth.....	95	19·5	78	16·6
Tubercular dis.	59	12·1	38	8·1
Measles	11	2.3	12	2·5
Scarlet Fever	5	1·0	6	1·3
Whooping Cough ...	18	3·7	21	4·5

In Table VIII. it is seen that in the third quarter of the year the deaths under one year of age are more than double the number of any other quarter, and, in fact more than 40 per cent. of all these deaths occur in the three months ending September 30th, each year.

Infantile death in various quarters.

TABLE VIII.

Deaths in each Quarter of the Year under one and over one year of age.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.
1886.					
Under 1 year	185	181	467	219	1052
Over 1 year	473	407	362	444	1686
Total	658	588	829	663	2738
1885.					
Under 1 year	227	211	357	112	907
Over 1 year	523	391	389	431	1734
Total	750	602	746	543	2641
1884.					
Under 1 year	191	169	513	260	1133
Over 1 year	432	414	429	561	1836
Total	623	583	942	821	2969

Few educated persons, who in any way, come into close contact with the homes of the poorer classes can fail to be struck with the ignorance and mistaken notions that prevail, respecting the most rudimentary principles pertaining to the preservation of a healthy condition of body. Amongst young parents especially this ignorance is often lamentable.

Ignorance of rules of health.

In matters of feeding, washing, sleeping, and ventilation the simplest rules are constantly ignored and violated. Babies of tender years are fed on whatever their parents may be having, not excluding such articles of food as stewed eels, tripe, and pork sausages. What must be thought of a mother who in her

extremity with a sick babe, who refused its milk, had been giving it toasted cheese with whiskey and water? Again take the matter of ventilation, especially of sleeping rooms, which at best are too often overcrowded, and yet in these same overcrowded apartments every means is taken to keep out a little fresh air; crevices, windows, and fire places are carefully stopped with rags, paper, or other obstructive material. One mother, on being expostulated with, was fully convinced she was doing her children a service by thus as she expressed it, "Keeping out the night air." That the night air is something different to the day air and possesses some noxious qualities is a very wide spread delusion.

What can be done to combat all this ignorance and spread a little sound knowledge of the elementary laws which go so far to make a *mens sana in corpore sano?* Surely it is to our educational authorities we must look for help. Children in our Board Schools are taught advanced mathematics, science, botany, and natural history; they are instructed in the elements of the laws relating to the life of plants and animals, but those pertaining to their own life and well-being are almost entirely neglected.

Means for spreading knowledge of hygiene.

The first principles of hygiene and conditions for health might well find a place in the curriculum of at least the advanced classes. Mothers should know and understand that it is to the detriment of their own health as well as that of their offspring to be working in the factory and mill to within a few weeks of their confinement and to resume work again within a few weeks afterwards.

To the schoolmaster as much as to the sanitarian must we look in the future for a spread of that knowledge amongst the masses of the people which shall materially help to diminish our annual infantile mortality.

Illegitimate Death Rate.—Perhaps one of the most striking examples that can be adduced as to the effect of maternal care upon the death rate of infants is the high mortality always found amongst those born illegitimately.

In Leicester, during 1886, there were 234 births of illegitimate children, and there were 85 deaths of the same under one year of age, or more than 36 per cent. Thus whilst amongst the legitimate births the deaths per 1000 were 216, amongst the illegitimate they reached 363 per 1000.

Ward Mortality.—From causes which are self-evident the mortality in the different wards of the borough varies enormously. Thus, whilst in the fifth or East Mary's where the population consists largely of the well-to-do classes, comfortably housed and fed, where the sanitary surroundings of the homes and dwellings are good and the latter not too densely crowded, the death rate is only 11·5, whilst in the third or Middle Margaret's Ward, where the opposite conditions too largely prevail the death rate is 22·0 per 1000 (see Table IX.).

Difference in death-rate of various Wards.

TABLE IX.

Deaths at Different Ages and Death Rates in various Wards of the Borough.

	All Ages.	Under 1 year.	1 year to 5.	Over 5 years.	Estimated Population.	Ward Mortality per 1000 Living.
1.—St. Martin's Ward	29	10	3	16	2243	12·9
2.—N. Margaret's	294	127	36	131	14919	19·7
3.—M. Margaret's	816	365	114	337	36955	22·0
4.—E. Margaret's	684	209	62	413	33656	20·3
5.—E. Mary's	127	17	16	94	10179	11·5
6.—W. Mary's	489	180	52	257	25662	19·0
7.—All Saint's	299	144	45	110	15992	18·7
Total	2738	1052	328	1358	139606	19·6

N.B.—The Mortality of the fourth or East Margaret's Ward is somewhat over-stated, as owing to the absence of the necessary information, the deaths in the Workhouse, which is situate in this Ward, cannot be distributed to the district from whence the persons came.

Classified Causes of Death.—The eight great classes into which the various diseases are now divided, are seen, in Table X. to have been the causes of death in the following proportion :—The first or zymotic group has 15·3 per cent. of all deaths ; the

Proportion of deaths from different groups of disease.

second or parasitic diseases and third or dietic diseases practically nil; the fourth or constitutional diseases 13·6 per cent; the fifth or local diseases 45·8; the sixth or developmental group 21·0; the seventh or deaths from violence 2·9, and the last which includes all other deaths had 1·1 per cent. of the whole number.

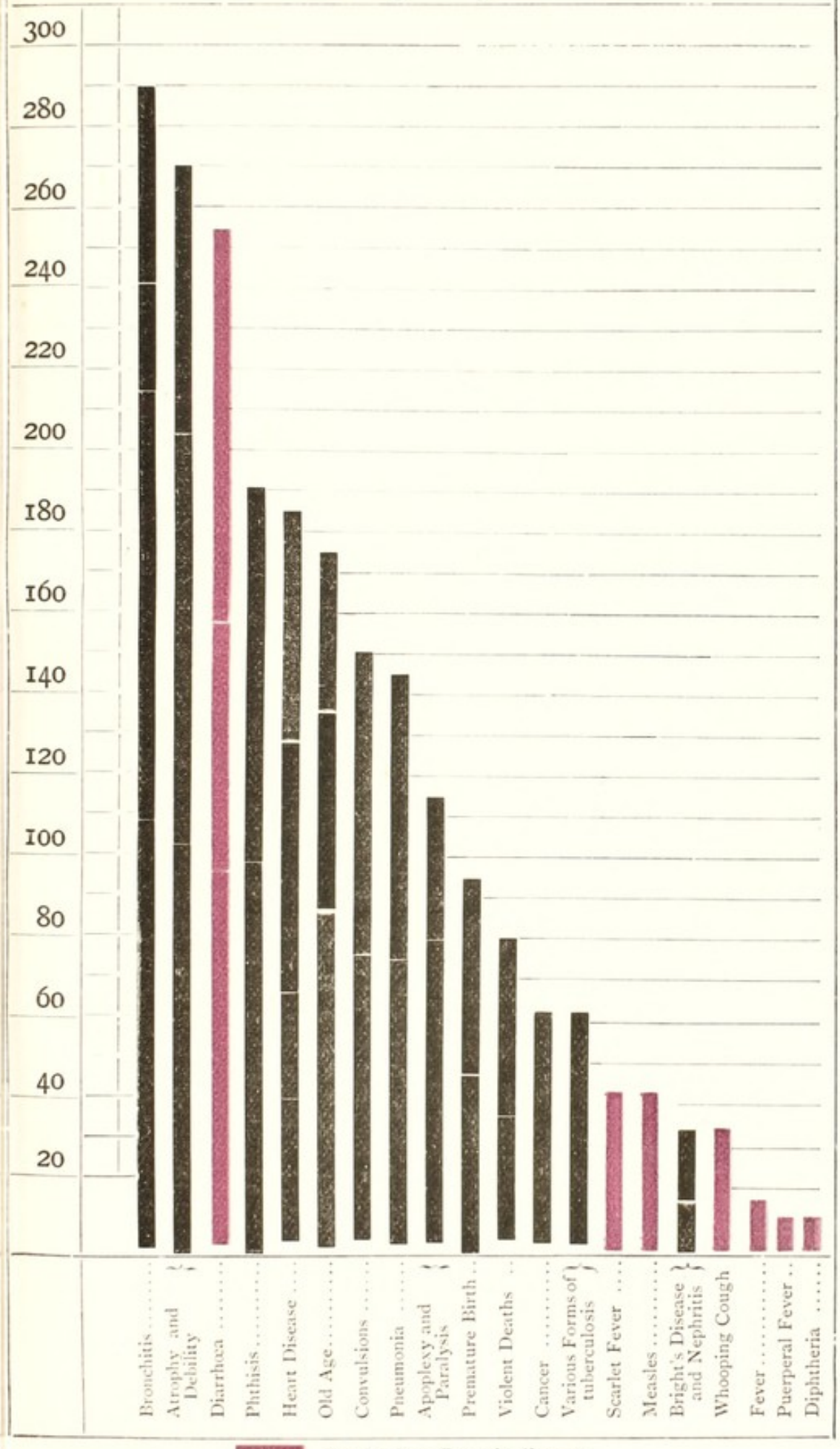
The following diagram shews in a graphic form the relative mortality from 20 of the principal causes of death. In the appendix will be found the mortality tables in which full details are given of all deaths and the ages thereat arranged according to the nosology now generally adopted in this country.

TABLE X.

Total Deaths, Death-rate, and per centage of Deaths of the eight principal groups of disease.

	1886.			1885.		
	Total Deaths.	Rate per 1000 living.	Per centage of Total Deaths.	Total Deaths.	Rate per 1000 living.	Per centage of Total Deaths.
Zymotic Disease	420	3·0	15·3	518	3·8	19·6
Parasitic ,,	3	0·02	0·001			
Dietic ,,	2	..	...	.	...	..
Constitutional	373	2·6	13·6	338	2·4	12·8
Local ,,	1254	9·0	45·8	1143	8·4	43·3
Developmental	575	4·1	21·0	528	3·9	19·9
Violence	80	0·6	2 9	74	0·54	2·8
Ill defined	31	0·2	1·1	40	0·29	1·5

Diagramatic View of 20 of the principal causes of death during the year 1886.



Class I.—ZYMOTIC DISEASES.

Zymotic Death Rate.—In the first or Zymotic group of disease we have included, besides the commonly known infectious Fevers, *i.e.*, Small Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhus, Typhoid, and which are termed the Miasmatic Diseases, others of a less distinctly infectious nature such as Dysentry, Diarrhœa, and Cholera, Ague Glanders, Cow Pox, Hydrophobia, Splenic Fever, Syphilis, Erysipelas, Pyemia, Puerperal Fever, and a few other rare diseases.

The deaths from the whole of these have been 420 and is equal to a rate of 3·0 per 1000, per annum, being 0·8 below the same rate of 1885, notwithstanding the increased number of deaths from Diarrhœa last summer.

Of these 420 deaths, 137 belong to the Miasmatic group, 256 to the Diarrhœa group, and the remaining 27 to the less common Zymotics. Setting aside these latter 27 we have a total of 393 deaths from the common Zymotics giving a death rate of 2·8 per

TABLE XI.

Shewing total number of deaths from common Zymotics and the death-rate per 1000 in 1886, and during the previous ten years.

	Deaths in 1886.	Average No. per year during ten years ending 1885.	Death-rate per 1000 per annum in 1886.	Average annual death-rate per 1000 during the ~~year~~ ending 1885.
Small Pox	0	1·7	0	0·001
Measles	43	57·8	0·31	0·46
Scarlet Fever	44	96·5	0·31	0·78
Diphtheria	4	10·5	0·03	0·08
Whooping Cough	27	58·7	0·20	0·47
Fever	19	27·1	0·14	0·22
Diarrhœa	256	232·1	1·83	1·87
	393	484·4	2·82	3·89

10 years.

1000 which compares by no means badly with the same rate of the other large towns of the country. In the 28 towns including London the rate was 2·9 per 1000, whilst exclusive of London that is in the 27 large provincial towns the rate was 3·0 per 1000. The deaths rate from the common Zymotics ranged from 1·8 in Derby and 1·9 in Brighton to no less than 5·1 in Portsmouth and 5·7 in Preston.

Fairly low miasmatic death-rate.

In discussing these Zymotic diseases it will be observed on further perusal of this report that were it not for our large diarrhœa mortality Leicester would occupy an unusually good position amongst the large urban populations and so far as relates to the common infectious diseases, it is at present amongst the healthiest of English towns.

Zymotic mortality in different Wards.

In Table **XII.** is shewn the distribution of the various zymotic deaths in the different Wards of the Borough, from which it is seen that the third, or middle Margaret's, has had the largest number both actually, and also in proportion to the population, though it should be stated that the excess is chiefly from Diarrhœa; the other Zymotics with the exception of Measles are below the numbers of other wards, whose population is not so great as this.

TABLE XII.

Deaths from Seven Chief Zymotic Diseases in 1886, distributed into Wards.

	Whooping Cough.	Small Pox.	Measles	Scarlet Fever.	Diphtheria.	Fever.	Diarrhœa.	Total.
1.—St. Martin's Ward	0	0	0	0	0	0	1	1
2.—N. Margaret's ,,	1	0	6	1	1	0	29	38
3.—M. ,, ,,	9	0	17	11	1	5	95	138
4.—E. ,, ,,	12	0	6	12	0	3	48	81
5.—E. Mary's ,,	0	0	2	3	0	3	3	11
6.—W. ,, ,,	3	0	2	8	1	6	40	60
7.—All Saints' ,,	2	0	10	4	1	2	40	59
Institution deaths distributed.								

Number of persons suffering from some of the common Zymotics.

Amount of Sickness from Infectious Diseases.—In addition to the number of deaths caused during the year by the various infectious diseases we are enabled by means of the information obtained through the notification of the existence of these diseases to state with approximate accuracy *how many persons have been ill* from the six common Zymotic or Miasmatic ailments. As previously stated the total number has been 1280, the following Table (Table **XIII.**) shews the varying prevalence of these over the four quarters of the year.

TABLE XIII.

Shewing number of persons suffering from Infectious Disease 1886.

	Scarlet Fever.	Typhoid Fever.	Diph-theria.	Ery-sipelas.	Pueperal Fever.	Small Pox.
First Quarter	253	14	5	71	1	0
Second ,,	145	26	11	53	3	1
Third ,,	219	45	9	63	3	0
Fourth ,,	200	56	26	71	5	0
Total number during 1886	817	~~258~~ 141	51	~~141~~ 258	12	1
Total number during 1885	1816	216	55	294	8	8

These figures shew a marked diminution from those of the preceding year when the total was 2397 and are in agreement with the diminished mortality from the same diseases durihg the year under review. This satisfactory feature of the present report is mainly due to the falling off in numbers of patients suffering from Scarlet Fever, and at the time of writing, the Borough is comparatively free from this disease, the fresh cases arising throughout the whole of the community not exceeding four to six weekly.

Districts of Town affected by Zymotic Disease.—The distribution throughout the Borough of these Zymotics has not fallen with marked severity upon any particular districts, but they have been scattered more or less regularly according to the distribution of the population (see Map appendix).

Each will now be considered briefly in detail.

Small Pox.—Only one case has occurred throughout the year, as against eight in the previous year, and this was in the person of a tramp who came to the town seeking work. There was no death from Small Pox. In the 28 large English towns the

Imported case of Small Pox.

death rate during the year has been 0·007 per 1000, and in the 27 Provincial towns it was 0·009 per 1000. There has been an unusually small amount of Small Pox throughout the country generally during 1886. Liverpool shewed the greatest prevalence 29 deaths having occurred there. In the 28 large towns (that is including London) only 70 deaths resulted from Small Pox.

The yearly average number of deaths in Leicester for the past ten years has been 1·7 and the average annual death rate per 1000 only 0·001.

In five out of the last ten years no death has been caused in Leicester from this disease (see Table **XIV.** page 65).

Measles.—Forty-three deaths were due to Measles. The mortality from this disease shews a decrease of twenty-five per cent. on 1885, when fifty-two deaths were registerd. They were distributed over the four quarters of the year, thus :—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1	7	15	20

Present epidemic of Measles.

At the end of 1885 the Borough was free from measles, no death was recorded from it during the fourth quarter of that year, but towards the autumn of 1886 it again became very prevalent and at the present time extensively prevails throughout the town. Such measures as are feasible are being taken with a view to check its spread and prevent the high mortality, which, owing the co-existence of a very low temperature is most likely to result from it.

The death rate per 1000, during 1886, has been 0·31.

TABLE XIV.

Shewing the Number of Deaths from the principal Zymotic Diseases in the Ten Years, 1876 to 1885, and in the Year 1886.

Disease.	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	Annual Average of Ten Years. 1876-1885.	Proportion of Deaths to 1000 Deaths in Ten Years, 1876-1885.	Total Deaths in 1886.	Proportion of Deaths to 1000 Deaths in 1886.
Small Pox	0	6	1	0	0	2	5	3	0	0	1·7	0·64	0	0
Measles	50	40	45	72	166	7	74	15	57	52	57·8	21·8	43	15·7
Scarlet Fever	173	33	12	105	119	184	72	91	63	113	96·5	36·5	44	16·0
Diphtheria	10	9	5	11	23	11	5	6	11	14	10·5	3·9	4	1·4
Whooping Cough	33	65	82	61	27	122	19	59	66	52	58·7	22·2	27	9·8
Fevers (Typhus	0	0	0	0	0	0	0	0	0	0	0	...	0	0
Fevers (Enteric	43	20	31	21	46	29	19	10	16	36	27·1	10·5	19	6·9
Fevers (Simple Continued	0	0	0	0	0	0	0	0	0	0	0	...	0	0
Diarrhœa	263	185	302	88	398	193	214	148	344	186	232·1	87·8	256	93·5
Totals	572	358	478	358	779	548	408	332	557	453	484	183	393	143

Subsidence of Scarlatina in the Borough.

Scarlet Fever.—The diminished mortality from this disease is perhaps one of the most agreeable facts to record in compiling this report—only 44 deaths were caused by it as against 113 in the previous year. The average annual number of deaths during the preceeding ten years has been 96·5 and has ranged from 12 to 184 per annum (see Table **XIV.** page 65).

Of the 44 deaths 15 occurred at the Fever Hospital, and as was noted last year the per centage of *recoveries* amongst patients treated in the Hospital is much greater than that found amongst those treated in their own homes. Thus, amongst the patients treated in Hospital the mortality was only 2·9 per cent., whilst amongst those treated in their own homes the mortality was 8 per cent.

The total number of persons known to have suffered from Scarlet Fever has been 817 the total deaths were 44, giving a mortality of 5·4 per cent. of persons attacked.

Leicester has materially improved her position amongst the large English towns with respect to the mortality from Scarlet Fever. The death rate here during 1886 was equal to 0·31 per 1000 of the population, whilst in 1885 it was nearly three times as high. In the 27 large Provincial towns the rate was 0·32 per 1000.

TABLE XV.

Deaths from Scarlatina during each Lunar Month of the following Years.

Year.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	Total.
1879	0	1	4	1	4	2	1	7	13	20	15	19	20	107
1880	12	7	4	13	6	7	3	4	12	5	16	12	17	118
1881	12	6	9	6	7	11	18	18	31	24	19	19	12	192
1882	6	12	5	2	2	2	2	2	3	9	11	7	8	71
1883	4	2	3	3	8	7	6	3	5	5	12	15	18	91
1884	8	12	5	2	7	5	2	3	4	2	3	5	5	63
1885	2	10	5	6	3	9	4	14	9	15	10	10	16	113
1886	**9**	**11**	**2**	**4**	**2**	**0**	**0**	**1**	**3**	**2**	**2**	**4**	**4**	**44**

Table **XV.** shews the distribution of the deaths throughout the 13 lunar months of the year and affords comparison with the same periods of the past seven years. It also shews that during this year, for the first time since January, 1879, a month, and even two months have passed by without any deaths being recorded from it.

Table **XVI.**, shewing the proportion of deaths to persons attacked at different ages, confirms the experience alluded to in last year's report, that the most dangerous years of child life, as to mortality in Scarlatina, are the first five or six, and that after this age the per centage of deaths to attacks rapidly decreases.

TABLE XVI.

Shewing Mortality at different ages of persons suffering from Scarlet Fever.

	1886.			1885.		
	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.
Under 1 year	35	5	14·3	24	6	25·0
1 to 2 years	58	6	10·3	174	30	17·2
2 to 3 „	49	9	18·3	242	25	10·3
3 to 4 „	98	5	5·1	276	16	5·8
4 to 5 „	90	5	5·5	217	13	5·9
5 to 6 „	86	6	6·9	219	6	2·7
6 to 7 „	75	2	2·6	152	5	3·2
7 to 8 „	92	3	3·2	143	3	2·1
8 to 9 „	32	2	6·2	90	3	3·3
9 to 10 „	41	0	0·0	58	2	3·4
Over 10 years.....	155	1	0·6	206	4	1·9
Ages not stated ...	6	0	0·0	15	0	0
Totals...	817	44	5·4	1816	113	6·2

Diphtheria.—Fifty-five cases of Diphtheria have been notified during the year, of which four only died. In 1885 14 deaths resulted from it. The annual death rate was therefore only 0·03 per 1000; in the 27 large Provincial towns it was 0·11 per 1000,

Small number of deaths from Diphtheria.

per annum. It is worth noting how much more prevalent or at least more fatal Diphtheria is in London than in the Provinces. In London 846 deaths were caused by it, equal to a death rate of 0·20 per 1000, per annum.

Whooping Cough.—The mortality from Whooping Cough has been less than in the preceding year. 27 deaths occurred in 1886 against 52 in 1885. The death rate in Leicester has been 0·20 per 1000, per annum, as compared with 0·40 in the 27 Provincial towns.

Fever.—Nineteen deaths only have resulted from "Fever," being just half the number of the preceding year.

Freedom from Typhus in Leicester.

These deaths may be practically set down as due to Typhoid as the vague term "Fever" now, seldom includes much other, besides this. In Leicester, at all events, no Typhus can be included as our town is one of the few large urban communities in which Typhus is now *literally and absolutely unknown.*

The number of persons suffering from Fever coming to the knowledge of the health department has been 141, thus shewing a mortality of 13·4 per cent. of attacks. The death rate per 1000, per annum, is 0·14 per 1000 and will bear favourable comparison with the rest of the country where in the 27 large towns the same rate was 0·28, being double the mortality of Leicester.

Diarrhœa.—This disease has been already discussed at some length, the statistics only for the past year will now be given.

256 deaths were due to it and shewn an excess over the preceding year of 70, the average annual number of deaths for the previous ten years has been 232, in four of these years the number was higher than in 1886 (see Table **XI.** and **XIV.**). The distribution of these deaths in the Borough will, on reference to the Map in appendix, be seen to have been chiefly confined within the area coloured pink. Throughout the country generally Diarrhœa has been more fatal, following on the prolonged heat in the late summer months.

In all England and Wales no less than 23,462 deaths were registered as due to Diarrhœa; in 1885 the number was only 12,558.

Towns having large Diarrhœa mortality.

In Leicester the death rate per 1000, per annum, was 1·83 as compared with 1·3, the rate in the 27 large Provincial towns. The highest rates were recorded in Salford 1·8, Preston 2·0, and Norwich 2·4 per 1000, per annum. So that bad as our own case has been at least two other towns have exceeded us.

Following the practice of former years medicine was again distributed gratuitously in the poorer parts of the town; the number of patients for whom Diarrhœa mixture was supplied from the various stations was 6280; in 1885 the number was only 3432, another indication how much more extensively the disease prevailed last summer than in the previous one.

The accompanying statement shews the ages of these patients and once more serves to prove that the disease is by no means confined to *infants*, although the mortality therefrom is almost entirely amongst them.

Number and Ages of Patients suffering from Diarrhæa in the summer of 1886, to whom medicine was supplied gratuitously,

Under 1 year	329	5 years to 6	88	10 years to 20	676
1 year to 2	752	6 „ to 7	92	20 „ to 60	2970
2 „ to 3	275	7 „ to 8	74	Over 60	564
3 „ to 4	200	8 „ to 9	68		
4 „ to 5	128	9 „ to 10	64	Total all ages	6280

Erysipelas.—The cases of Erysipelas reported have been 258 as against 294 in 1885.

The deaths registered from it were, however, *only five*, ample proof of the trivial character of many of these cases. True Idiopathic Erysipelas especially when as is usually the case it affects the head and face being a much more fatal disease than the above figures would indicate.

Class II.—PARASITIC DISEASES.

Class III.—DIETIC DISEASES.

The number of deaths from these two classes has been so small (five only) as to require no special notice amongst recorded statistics.

Class IV.—
CONSTITUTIONAL DISEASES.

To this important group of diseases were assigned 373 deaths of which 201 were males and 172 females.

Most prominent amongst these we find the various tubercular diseases which caused 252 deaths, and of these 158 were males and 94 females. By reference to the table of deaths in appendix it will be seen that Phthisis or Pulmonary Consumption was the chief cause of these tubercular deaths and amongst them there was a large excess of males (Table **XVII.**)

Cancer was the cause of death in 63 cases and shews an excess of death in females over males, there having been only 19 of the latter but 44 of the former. In 1885 also the deaths from cancer were 63.

Class V.—LOCAL DISEASES.

To this class are ascribed 1254 deaths, nearly one half of all the deaths. Diseases of the heart and of the lungs, exclusive of Phthisis, furnish the largest proportion, next in order coming diseases of the nervous system. A year or two ago some amount of excitement was produced throughout the country by the alleged injury being done to children of school age by over-pressure in school work. If this allegation be still true one would expect to find an increased amount of nervous diseases amongst children. So far as the mortality returns for Leicester shew, nervous diseases are not upon the increase here at the present time. Convulsions cause the largest proportion of deaths (see Table **XVII.**) in this group, and swell the numbers thereof, but these deaths almost all occur among infants and young children before school age is reached (see Mortality Tables appendix).

Over-pressure of children in schools.

TABLE XVII.

Showing the Number of Deaths at all ages in 1886, from certain groups of Diseases, and proportions to 1000 of Population, and to 1000 Deaths from all causes; also the Number of Deaths of Infants under one year of age from other groups of Diseases and proportions to 1000 Births and to 1000 Deaths from all causes under one Year.

DIVISION I. (All ages.)	Total Deaths.	Deaths per 1000 of Population at all ages.	Deaths per 1000 of Total Deaths at all ages.
1. Zymotic Diseases	420	3·0	153
2. Pulmonary Diseases	496	3·5	177
3. Principal Tubercular Diseases ...	252	1·8	92
DIVISION II. (Infants under one year.)	**Total Deaths.**	**Deaths per 1000 of Births.**	**Deaths per 1000 of Total Deaths under one year.**
4. Wasting Diseases ... ... (includes Tabes Mesenterica.)	279	57·4	255
5. Convulsive Diseases	127	26·1	120

Class VI.—
DEVELOPMENTAL DISEASES.

The past year shews a larger number of deaths in this group than in the previous year, 575 deaths being placed here against 520 in the year 1885. Old Age caused 175, Premature Birth 95, and Atrophy and Debility 269. These latter deaths are perhaps in one sense the most unsatisfactory of any deaths to be recorded. It is to this group in conjunction with Diarrhœa that the high Infant mortality of the town is due. The true meaning and causes of them are very vague and undefined and the remarks under the heading Infant Mortality have special relation to these deaths. The distribution in the Wards of some of the more important groups of deaths are shewn in Table XVIII.

TABLE XVIII.

Distribution, in the different Wards, of deaths from six important groups of disease.

	Six chief Zymotic dis.	Diarrhœa.	Devel-opm'l.	Acute Resp'raty.	Phthisis.	Convul-sions.
1 St. Martin's Ward ...	0	1	10	4	2	1
2 N. Margaret's „ ...	9	29	50	64	25	17
3 M. „ „ ...	43	95	159	149	56	52
4 E. „ „ ...	33	48	155	98	48	32
5 E. Mary's „ ...	8	3	28	22	14	1
6 W. „ „ ...	20	40	85	91	37	33
7 All Saints' „ ...	19	40	66	59	11	20

N.B.—The mortality of the fourth, or East St. Margaret's Ward, is a little over-stated, as owing to the absence of the necessary information, the deaths in the workhouse, which is situate in this Ward, cannot be distributed to the districts from whence the patients came.

Class VII.—
DEATHS FROM VIOLENCE.

The deaths from Accidents of all kinds, poisoning, drowning, suffocation, and the like numbered 80, being equal to 2·9 per cent of all the deaths, an increase of 0·1 per cent. on the preceding year.

Amongst these deaths were one murder, nine suicides, and one judicial execution.

Class VIII.
ILLDEFINED AND UNSPECIFIED CAUSES.

Thirty-one deaths were registered, the cause of which was unknown, or of which the reputed cause was so vague and undefined as not to come within either of the preceding classes.

Inquests.—The number of deaths which have formed the subject of a Coroner's Enquiry has been 270, or 9·8 per cent. of the total deaths. In the previous year 248 inquests were held.

Uncertified Deaths.—These deaths are those which have been registered on the information supplied by the friends of persons dead, but which have not been certified by a medical man or by the coroner. They were 61 in number and are equal to 2·2 per cent of all deaths, a rate which bears favourable comparison with the country at large. The average of the 27 Provincial towns was 3·2 per cent. and ranged from 0·8 in Plymouth to 7·7 in Halifax.

Low percentage of uncertified deaths.

ANALYST'S REPORT.

BOROUGH ANALYST'S LABORATORY,
TOWN HALL, LEICESTER,
March, 1887.

To the Sanitary Committee.

MR. CHAIRMAN AND GENTLEMEN,

I beg to report that during the year 1886 I have had submitted to me for analysis 168 samples of food and forty-three samples of water. The articles of food are larger in number than in any previous year (see following Table), and the proportion of adulterated samples is also much larger than has hitherto been recorded.

ARTICLES ANALYZED IN 1886.

Commodity Analyzed.	Number of Samples.	Number of Genuine Samples.	Number of Adulterations.	Remarks.
Milk	103	85	18	Five Prosecutions: fines, 20/-, 20/-, 20/-, 40/-, and £5 with costs were inflicted. In nine instances the offenders were brought before the Sanitary Committee and cautioned.
Butter	17	14	3	Two prosecutions, one fined 40/- and costs, the other case dismissed owing to doubt whether it was sold as genuine butter.
Bread	14	14	0	
Lard	3	3	0	
Spirits	10	8	2	Two prosecutions, one fined 20/- and costs, the other dismissed, defendant pleaded guilty but offered an explanation.
Vinegar ...	3	3	0	
Flour	5	5	0	
Coffee	6	5	1	Cautioned by Sanitary Committee.
Oatmeal ...	6	6	0	
Pepper ...	1	0	1	
Total	168	143	25	

Two of the above samples (one butter and one pepper) were submitted by private persons the others were obtained by the Inspectors.

Probably this higher per centage is chiefly due to the fact that a different method of obtaining samples for analysis has been adopted than heretofore, by the employment of persons acting under the direction and observation of the Inspector instead of the Inspector himself directly purchasing the various articles. Few of the adulterations in the present day can be termed harmful or dangerous to health, but are usually of the nature of frauds upon the

purchasers. In the case of milk the abstraction of cream or the addition of water are the common *mal*-practices, both of which cause the sophisticated article to be of less value as a food than the genuine one, and seeing how important an article this is in the dietary of infants and invalids such frauds should not be lightly condoned. In the case of butter, the butter substitutes, now so largely sold and consumed, form a nutritious and wholesome article of food, but seeing that their cost is only one half that of good butter, such substitute should be sold for what it really is and not as butter. A Bill dealing with this subject is now before Parliament having for its object a more rigid control over the sale of butterine, &c.

Number of Samples Analyzed and proportion of Adulterated Articles in 1886 and five previous years.

	Number of Samples Analyzed.	Number of Samples Adulteratd	Per Centage of Samples Adulteratd	Number of Prosecutions.	Per Centage of Adulterated Samples in following articles.			
					Milk.	Butter.	Spirits.	Groceries.
1886	168	25	14·8	9	17·4	17·6	20·0	28·4
1885	87	0	0·0	0	0·0	0·0	0·0	0·0
1884	96	4	4·2	4	6·4	0·0	22·2	0·0
1883	138	10	7·2	4	8·9	0·0	22·2	17·6
1882	130	1	0·8	1	0·0	0·0	0·0	25·0
1881	131	7	5·3	6	12·0	0·0	0·0	10·0

Well Waters.—Forty-three samples of water from wells in various parts of the Borough have been analyzed during the year, of which 21 were condemned as unfit for drinking purposes and a pure supply from the Corporation mains has been substituted. It is singular to note how changes in the existing condition of things is oftimes, resented, even when such a prime necessity for health is concerned as a pure water supply. More than once, strong objections have been raised to the use of the town water, in place of that from a polluted well. A striking illustration of this, was lately published by Mr. Councillor Southern of the Manchester Corporation, which is worth quoting. A well supplying a row of cottages had been condemned, but the tenants objected to have it closed, Mr. Southern called and the following conversation ensued between him and one of the tenants :—

"Well, Mrs. Goddard, what about this town's water?"

"Well, what about it, Mester Southen?"

"Why, would it not be better to have pure water within the house than to have to go with a bucket for dirty water that is not fit to drink?"

"Eh! You're quite mistaen. It's noan dirty. Why it's as clear as gin. They com'n fro miles round for that well wayter"—

"Miles round? Come"—

"Well, they us't come from ever so far when th' wells were dry."

"Why, it's no better than ditch water, and the drainage of the road with its horse droppings and what not runs into it. It cannot be clean. Besides, the doctor's examined it, and he says it's unfit to drink."

"The doctor's a foo, and you ne'er tasted it. Come and look at it?"

It was raining hard at the time, and I thought it an ill-advised invitation on her part, but I said—"Come on," and taking the old body under my umbrella we trudged along to the well. As I expected the water was turbid and muddy. I said—"Well, Mrs. Goddard, it does not look quite as clear as gin?"

"Nawe," she said. "Yo see its bin raining rayther hard. Yo should see it when its sattledt."

There was a horse leech sporting on the surface. I pointed it out with my umbrella, and said—"What in the world is that?"

She replied—"Why, its a horse laych!"

"A horse leech! Dear me, that would be an awkward thing to get into the tea-pot, wouldn't it?"

She answered—"Eh! Mestur Southern, dun yo think aw've lived five and sixty year an' aw'm sich a foo as to let a horse laych get i'th inside o' my tay-pot."

It was no use pursuing the matter further. The old body had not an "open mind." She finished me off by declaring she wouldn't "swop that well wayter for a' th' pipe wayter i' Manchestur," so I gave her up as a bad job. Yet Mrs. G. was a clean and highly intelligent woman compared with some tenants."

It is satisfactory to observe the decrease in the number of wells within the Borough. In last year's report it was stated that there were 469 wells still in use while at the end of 1886 there were only about 360; one can only hope that this rapid process of extermination may continue to go on, as wells, situate in the centre of a crowded community are ever to be regarded with grave suspicion.

The water supplied from the Corporation mains has been examined at three different times, and, with the exception of an undue amount of colouring matter in the early part of the year, derived apparently from the leaves and vegetable material on the land from whence the water is collected, was of excellent purity.

I am, Gentlemen,

Your obedient servant,

HENRY TOMKINS, B.Sc.,

Public Analyst.

APPENDIX.

METEOROLOGICAL RETURNS,

Births, Deaths, and Mortality from Zymotic Diseases, &c., for each week of 1886.

Week.		Thermometer.							Births.	Deaths.			Deaths from								
No.	Date. of ending.	Highest.	Lowest.	Mean.	Humidity Mean.	Rainfall.	Wind Veloc. miles average per day.	Barometer. Mean.		All ages.	Under 5.	Over 5.	Small Pox.	Scarlet Fever	Measles.	Diptheria.	W. Cough.	Fever.	Diarrhœa.	Respiratory	Phthisis.
1	Jan. 9	50·6	23·5	35·3	89	0·29	228·2	29·779	104	54	22	32	...	3	...	...	1	...	...	10	7
2	„ 16	46·2	26·5	36·5	88	1·04	243·3	29·759	98	53	14	39	...	5	...	...	...	...	...	14	1
3	„ 23	32·1	24·7	32·4	91	0·47	150·4	29·389	113	42	10	32	...	...	...	...	1	...	...	9	7
4	„ 30	34·8	29·0	35·4	89	0·66	186·4	29·592	91	41	15	26	...	1	...	...	...	...	...	15	1
5	Feb. 6	43·8	29·0	35·6	91	0·10	117·1	30·336	93	47	15	32	...	3	...	...	2	1	...	9	2
6	„ 13	48·0	24·0	35·6	88	0·20	127·5	29·716	102	42	14	28	...	4	...	...	...	...	...	7	3
7	„ 20	47·6	27·2	34·4	91	0·11	132·2	30·049	70	46	19	27	...	2	1	...	...	...	...	7	6
8	„ 27	41·2	25·5	33·7	89	...	84·2	30·279	124	46	19	27	...	2	...	...	1	...	...	13	4
9	Mar. 6	45·0	24·0	32·2	85	0·62	174·2	29·678	85	51	19	32	...	...	...	...	2	...	1	12	5
10	„ 13	41·8	23·5	31·4	85	...	145·1	30·356	110	56	24	32	...	1	...	...	1	...	...	16	7
11	„ 20	45·0	28·0	37·8	87	0·48	162·9	30·019	94	53	19	34	...	...	...	...	1	...	...	21	3
12	„ 27	63·0	38·5	52·3	85	0·28	260·1	29·918	116	63	31	32	...	1	...	...	4	...	...	11	6
13	April 3	58·8	35·5	47·7	80	1·59	356·4	29·766	97	67	39	28	...	2	...	...	1	...	4	13	3
14	„ 10	56·2	32·8	44·7	79	0·90	283·7	29·596	117	47	25	22	...	2	...	...	...	...	...	16	3
15	„ 17	54·5	30·0	43·1	79	0·24	156·7	30·122	122	48	24	24	...	...	...	...	1	...	...	13	5
16	„ 24	66·2	38·0	47·4	87	0·40	147·3	29·969	95	37	30	7	...	...	...	...	1	...	1	10	1
17	May 1	66·4	31·2	46·5	79	0·19	169·5	30·049	79	50	25	25	...	1	...	...	2	...	1	1	...
18	„ 8	77·2	33·0	55·2	54	...	120·8	30·304	106	58	21	37	...	...	...	1	...	...	1	9	11
19	„ 15	65·2	36·0	46·5	86	2·35	175·9	29·652	73	50	22	28	...	1	...	...	...	...	...	15	5
20	„ 22	61·0	37·2	51·2	83	1·34	219·2	29·906	100	48	18	30	...	...	...	...	...	1	...	9	3
21	„ 29	62·2	40·4	51·4	78	1·02	172·2	29·706	88	45	17	28	...	...	1	...	...	...	1	8	1

24	„	19	63·0	44·2	53·7	68	0·23	187·9	29·945	73	43	16	27	...	...	1	...	...	...	...	7	2
25	„	26	55·8	44·0	55·6	71	0·03	152·1	29·956	94	37	7	30	...	...	2	...	1	...	1	5	4
26	July	3	81·6	66 5	64·9	64	...	70·0	30·244	71	39	19	20	...	...	3	...	...	...	1	10	5
27	„	10	83·1	46·2	62·9	65	0·83	110·6	30·065	113	40	15	25	...	...	4	...	...	...	2	2	3
28	„	17	69·0	46·3	59·0	75	1·33	192·2	29·813	85	48	20	28	...	...	3	...	...	1	9	1	4
29	„	24	80·0	55·3	64·3	72	0·66	221·0	29·766	97	64	29	35	...	...	1	1	...	...	8	4	4
30	„	31	71·2	46·6	58·2	78	0·92	160·8	29·744	78	83	53	30	...	1	2	...	...	...	29	5	3
31	Aug.	7	76·8	43·6	59·3	79	0·11	119·5	29·837	96	81	49	32	...	...	2	...	...	...	23	4	6
32	„	14	70·5	47·5	59·2	75	1·40	157·7	29·516	97	55	29	26	...	...	1	...	...	...	20	1	4
33	„	21	70·5	49·5	60·3	81	0·27	124·9	30·074	97	68	34	34	...	...	1	...	...	1	19	4	7
34	„	28	75·0	53·2	62·6	85	0·02	119·8	30·016	90	63	44	19	...	1	...	...	...	...	20	4	2
35	Sept.	4	82·3	48·2	62·8	82	0·72	137·5	30·069	87	67	42	25	...	2	...	...	1	...	20	3	2
36	„	11	70.6	44·0	59·9	82	0·45	240·7	29·848	88	90	58	32	...	...	...	...	1	1	33	4	3
37	„	18	73·0	41·0	58·6	75	0·04	148·3	30·211	100	61	30	31	...	...	1	...	...	1	17	1	3
38	„	25	64·0	41·5	52·5	77	0·15	145·6	29·985	75	51	27	24	...	...	...	...	...	2	9	2	7
39	Oct.	2	73·0	45·0	58·0	81	0·45	236·2	29·881	92	58	28	30	...	...	...	...	...	2	11	6	2
40	„	9	75·0	46·2	57·9	90	1·07	102·5	29·877	89	48	19	29	...	2	...	...	...	...	7	6	4
41	„	16	59·0	39·2	50·9	84	1·69	237·5	29·362	92	51	19	32	...	1	1	...	...	1	5	7	4
42	„	23	56·8	34·9	48·8	93	0·94	124·6	29·659	92	45	9	36	...	...	1	...	...	...	3	12	4
43	„	30	61·0	41·0	50·3	89	0·20	181·9	30·179	106	47	21	26	...	1	3	...	...	...	2	8	2
44	Nov.	6	59·0	33·2	47·3	90	0·55	189·0	29·753	85	44	11	33	...	...	1	...	...	...	1	9	2
45	„	13	47·5	30·2	42·2	91	1·16	172·1	29·506	84	46	15	31	...	...	2	1	...	2	2	9	3
46	„	20	53·7	31·6	45·0	93	0·23	153·9	29·752	110	51	16	35	...	2	...	...	2	1	1	12	4
47	„	27	50·2	30·2	41·9	96	0·03	35·1	30·539	89	53	16	37	...	1	2	...	...	1	...	9	5
48	Dec.	4	49·0	21·3	37·0	89	0·33	173·4	29·880	84	48	14	34	...	1	1	...	...	...	...	15	4
49	„	11	54·0	28·5	42·5	92	1·17	321·7	29·179	93	59	21	38	...	2	...	...	...	...	...	16	3
50	„	18	46·8	20·0	35·3	95	1·05	125·1	29·475	97	63	21	42	...	2	2	...	1	2	...	16	3
51	„	25	42·5	21·5	32·6	92	0·42	164·4	29·878	84	50	19	31	...	...	4	...	...	1	1	16	4
52	Jan.	1	39·8	20·0	31·2	94	0·81	118·5	30·077	76	58	21	37	...	...	3	1	1	...	...	13	4

Localities in which Deaths from Zymotic Diseases have occurred in 1886, arranged into Wards and Streets.

DIARRHŒA.

	No. of Deaths.
WARD I.	
No Deaths.	
WARD II.	
Abbey-street	1
Caroline ,, ...	2
Crane ,, ...	2
Craven ,, ...	1
Devonshire-street ...	1
Friday ,, ...	1
Gravel ,, ...	1
Goodacre ,, ...	1
Garfield ,, ..	3
Grove ,, ...	1
Luke ,, ...	1
Lower Church-gate	1
Liverpool-street ...	1
Leadenhall ,, ...	1
Northgate ,, ...	1
Nursling ,, ...	2
Northumberland-street	5
Old Mill-lane	1
Olphin-street	1
Royal East-street ...	1
Royal Kent ,, ...	2
Sanvey-gate	1
Spittalhouse-street ...	1
South Church-gate ...	1
Thames-street	1
Watling ,, ...	1
WARD III.	
Argyle-street	4
Alfred ,, ...	1
Birkley ,, ...	1
Brook ,, ...	3
Burley's-lane	1
Bedford-street	4
Birstall ,, ...	7
Belper-street	1
Benford ,, ...	2
Belgrave-gate	2
Brittannia-street ...	3
Belgrave-road	1
Brunswick-street ...	1
Cranbourne ,, ...	2
Crab ,, ...	2
Christow ,, ...	1
Chester ,, ...	2
Catherine ,, ...	2
Curzon ,, ...	1
Denman ,, ...	4
Denmark ,, ...	1
Dorset ,, ...	6
Dryden ,, ...	2
Denmark ,, ...	1
Diseworth ,, ...	1
Elm ,, ...	1
Eaton ,, ...	2
Gresham ,, ...	4
Gladstone ,, ...	2
Grafton-place	1
Grosvenor-street ...	3
Kenyon ,, ...	1
Lee ,, ...	1
Lower Willow-street	1
Milton ,, ...	2
Metcalf ,, ...	2
Martin ,, ...	1
Providence-place ...	2
Piccadilly	1
Palmerstone-street ...	2
Rudkin ,, ...	1
Rodney ,, ...	2
Syston ,, ...	5
Spinner ,, ...	1
Upper Brunswick-street	1
Willow-street	2
Wheat ,, ...	3
Wharf ,, ...	3
WARD IV.	
Biddulph-street ...	1
Baker ,, ...	1
Bartholomew-street	1
Basil ,, ...	1
Charnwood ,, ...	2
Clipstone ,, ...	2
Donnington ,, ...	1
Dysart ,, ...	1
Frank ,, ...	2
Gopsall ,, ...	1
Lead ,, ..	1
Lewin ,, ...	1
Maxfield ,, ...	1
Occupation-road ...	2
Roslyn-street	1
Sherrard ,, ...	2
Sussex ,, ...	1
Southampon-street ...	1
Swaffam ,, ...	1
St. Stephen's-road ...	1
St. Saviour's ,, ...	1
Union	5
Upper Kent-street ...	1
Upper Conduit ,, ...	3
Yeoman ,, ...	1
Worthington ,, ...	1
WARD V.	
Albion-street	1
Ashwell ,, ...	1
Chatham ,, ...	1
Wellington-street ...	1
WARD VI.	
Bakehouse-lane ...	1
Bonners ,, ...	1
Clara-street	1

DIARRHŒA (Continued).

	No. of Deaths.
WARD VI. (continued).	
Carlisle-street	2
Coventry ,, ...	1
Dannett ,, ...	1
Fuller ,, ...	2
Fairfax ,, ...	1
Fitzroy ,, ...	2
Gray ,, ...	1
Garton ,, ...	1
Great Holme-street	3
Goswell ,, ...	1
Hinckley-road	1
Kate-street	1
Laxton ,, ...	2
Little Holme-street	1
Lower Brown ,, ...	1
Mostyn-street	2
New Bridge ,, ...	3
Noble ,, ...	1
Oxford ,, ...	2
Outram ,, ...	2
Ruding ,, ...	2
Talbot-lane	2
Thornton-lane	1
West Bridge-square	1
WARD VII.	
All Saint's-road ...	6
All Saint's-terrace ...	1
Alexander-street ...	1
Blue Boar-lane ...	1
Black Friar's-street ...	1
Burgess-street	1
Causeway-lane	3
Cardinal-street ...	1
Frog Island	1
Friars' Causeway ...	4
Highcross-street ...	3
Jurywall ,, ...	1
Littleton ,, ...	1
Mill-lane	2
Northgates	1
Orton-street	1
Pingle ,, ...	1
Redcross-street ...	5
St. Peter's-lane ...	1
Swan-street	2
St. Leonard's-street	1
Wolsey-street	2

TYPHOID FEVER.

WARD I.

No Deaths.

WARD II.

Sanvey-gate	1

WARD III.

Brougham-street ...	1
Curzon ,, ...	1
Gresham ,, ...	1
Gladstone-street ...	1
Little Bedford-street	1

WARD IV.

Upper Kent-street ...	1
Upper Tichbourne-st.	2

WARD V.

Dover-street	1
Havelock-street ...	1
Slawson ,, ...	1
Tower-street	1

WARD VI.

Andrew-street	1
Freeman's Common	1
Jarrom-street	1
Upper Brown-street	1

WARD VII.

Alice-street	
Cumberland-street ...	1

SCARLET FEVER.

WARD I.

Millstone-lane	1

WARD II.

Clarence-street ...	1
Grafton ,, ...	1
Gas ,, ...	1

WARD III.

Birstall-street	2
Brook ,, ...	1
Brunswick-street ...	1
Crab ,, ...	2
Catherine ,, ...	1
Curzon ,, ...	1
Eaton ,, ...	1
Gordon ,, ...	1
Humberstone-road	1
Melton-street ...	1
Palmerstone ,, ...	1
Russell ,, ...	1
Syston ,, ...	1

WARD IV.

Charnwood-street ...	1
Clipstone ,, ...	2
Mount ,, ...	1
Mere-road	1
Myrtle ,, ...	1
Porter-street	1
Queen ,, ...	1
Rosslyn-street	1
Richard ,, ...	1
St. Stephen's-road ...	1
Skipworth-street ...	1

WARD V.

Albion-place	1
Cresent-street	1
Freeman's Common	1
York-street	1

WARD VI.

Gray-street	1
Leamington-street ...	1
New Bridge ,, ...	1
Oxford ,, ...	1
Redcross ,, ...	1
The Hollow	1

WARD VII.

Abbey-gate	1
Abbey-lane	1
Thornton-lane	1

MEASLES.

	No. of Deaths.
WARD I.	
No Deaths.	
WARD II.	
Church-gate	1
Devonshire-street ...	2
Royal East ,, ...	1
WARD III.	
Brook-street	4
Curzon ,, ...	1
Chester ,, ...	1
Cranbourne-street ..	1
Denmark ,, ...	1
Lee ,, ...	1
Palmerstone-street ...	1
Milton ,, ...	1
Martin ,, ...	3
Melville ,, ...	1
Rodney ,, ...	1
Wanlip ,, ...	1
WARD IV.	
Charnwood-street ...	1
Elm ,, ...	1
Mount ,, ...	1
Spinney Hill-road ...	1
William-street	1
WARD V.	
Albion-hill	1
Dover-square	1
WARD VI.	
Fuller-street	1
Filbert ,, ...	1
Jarrom ,, ...	1
New Bridge-street ...	1
WARD VII.	
All Saint's-road ...	4
Cardinal-street ...	2
Emerald ,, ...	1
Opal ,, ...	1
Soar-lane	1
St. Leonard's-street	1
White-street	1

WHOOPING COUGH.

WARD I.	
No Deaths.	
WARD II.	
Crane-street	1
WARD III.	
Britainnia-street ...	1
Brandon ,, ...	1
Birstall ,, ...	1
Denman ,, ...	1
Eaton ,, ...	1
Gresham ,, ...	1
Palmerston-street ...	1
Willow ,, ...	1
WARD IV.	
Evington-street ...	1
Kent ,, ...	1
Mount ,, ...	1
Maynard ,, ...	1
Peel ,, ...	1
Preston ,, ...	1
Stoughton ,, ...	1
Sherrard ,, ...	2
Sutherland ,, ...	1
Shenton ,, ...	1
Upper Kent-street ...	1
WARD V.	
Nelson-street ...	1
WARD VI.	
Bonner's-lane	1
Chestnut-street ...	1
Henshaw ,, ...	1
WARD VII.	
All Saints'-road ...	1
Littleton-street ...	1

DIPHTHERIA.

WARD I.	
No Deaths.	
WARD II.	
Gold-street	1
WARD III.	
Metcalf-street	1
WARDS IV. and VI.	
No Deaths.	
WARD V.	
Walnut-street	1
WARD VII.	
Pingle-street	1

Deaths Registered in the Borough of Leicester during the fifty-two weeks ending Jan. 1, 1887.

NOTE.—The deaths of non-residents occurring in Public Institutions situated in the Borough are excluded, and the deaths of residents occuring in Public Institutions beyond the limits of the Borough are included.

	0 to 1		1 to 5		Under 5		5—20		20—40		40—60		60—80		80 and upwards.		Over 5		All Ages.		Total.
Class I.	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
SPECIFIC FEBRILE OR ZYMOTIC DISEASES.																					
1.—Miasmatic Diseases.																					
Smallpox—Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox—Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox—Not known	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox—Not stated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	8	3	10	18	18	21	2	2	...	...	...	...	...	...	...	...	2	2	20	23	43
Scarlet Fever (Scarlatina)	4	1	12	11	16	12	6	9	1	...	...	...	...	...	...	...	7	9	23	21	44
Diphtheria	...	...	1	2	1	2	...	1	...	...	...	...	...	...	...	...	...	1	1	3	4
Whooping Cough	9	9	3	6	12	15	...	...	...	...	...	...	...	...	...	...	...	...	12	15	27
Typhus Fever	...	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever	...	..	...	1	...	1	1	5	7	1	...	2	1	1	...	...	9	9	9	10	19
Simple Continued Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Miasmatic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2.—Diarrhœal Diseases.																					
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoea	125	104	15	7	140	111	...	...	...	...	...	1	...	4	...	...	...	5	140	116	256
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—Malarial Diseases.																					
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...	...
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4.—Zoogenous Diseases.																					
Cowpox, and Effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hydrophobia	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Splenic Fever	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...

5.—Venereal Diseases.																						
Syphilis	1	7	...	1	1	8	...	...	1	...	...	1	...	...	...	...	1	1	2	9	11
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6.—Septic Diseases.																						
Erysipelas	1	1	...	...	1	1	...	...	...	...	...	...	...	2	...	1	...	3	1	4	5
Pyæmia Septicæmia	...	1	...	...	...	1	...	...	...	4	...	...	1	...	...	...	1	4	1	5	6
Puerperal Fever	...	...	..	...	...	...	...	...	...	4	...	1	...	...	...	...	...	5	...	5	5
Class II.	148	126	41	46	189	172	9	17	9	9	...	5	2	7	...	1	20	39	209	211	420
PARASITIC DISEASES.																						
Thrush and other Vegetable Parasitic Diseases	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	1
Class III.	...	2	...	...	...	2	...	...	1	...	...	...	...	...	..	...	1	...	1	2	3
DIETIC DISEASES.																						
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1
Purpura and Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alcoholism (*a* Del. Tremens	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Alcoholism (*b* Intemperance	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	..	1
Class IV.	...	...	...	..	...	...	...	1	...	...	...	...	1	...	...	...	1	1	1	1	2
CONSTITUTIONAL DISEASES.																						
Rheumatic Fever	...	...	...	...	...	...	1	3	...	...	1	...	1	...	...	...	3	3	3	3	6
Rheumatism	...	...	...	...	...	...	2	...	...	3	1	1	...	...	...	...	3	4	3	4	7
Gout	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	...	2
Cancer, Malignant Disease	...	...	...	...	...	...	1	...	1	5	8	19	9	20	...	...	19	44	19	44	63
Cancrum Oris (Noma)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rickets	1	2	1	...	2	2	...	...	...	...	...	...	...	...	..	...	...	...	2	2	4
Tabes Mesenterica	11	16	2	3	13	19	...	1	...	...	...	...	...	...	...	...	...	1	13	20	33
Phthisis	1	...	2	4	3	4	12	13	53	44	41	16	4	...	...	...	110	73	113	77	190

Deaths Registered in the Borough of Leicester during the fifty-two weeks ending Jan. 1, 1887.

	0 to 1.		1 to 5.		Under 5.		5—20.		20—40.		40—60.		60—80.		80 and upwards.		Over 5.		All Ages.		Total.
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Hydrocephalus and Tubercular Meningitis	16	4	9	1	25	5	3	1	...	...	...	...	...	...	...	...	3	1	28	6	34
Other forms of Tuberculosis	5	6	5	2	10	8	1	...	3	2	2	1	1	...	...	...	7	3	17	11	28
Scrofula	...	...	...	...	...	...	...	1	..	...	...	1	...	...	...	...	...	2	...	2	2
Anæmia, Chlorosis, Leucocythæmia	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1
Diabetes	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	1	2	1	2	3
Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class V.																					
LOCAL DISEASES.	34	28	19	10	53	38	20	20	57	54	55	39	16	21	...	...	148	134	201	172	373
1.—Diseases of Nervous System.																					
Inflammation of Brain or Membranes	12	9	11	17	23	26	7	8	2	7	...	...	...	...	...	...	9	15	32	41	73
Apoplexy, Softening of Brain, Paralysis	...	...	...	...	...	...	...	1	6	2	13	15	36	34	7	1	62	53	62	53	115
Insanity, General Paralysis of Insane	...	...	...	...	...	...	...	...	1	...	4	...	...	...	...	...	5	...	5	...	5
Chorea	...	...	...	...	...	...	...	1	...	...	...	...	...	...	..	...	...	1	...	1	1
Epilepsy	1	...	...	...	1	...	...	1	1	5	1	3	3	1	...	...	5	10	6	10	16
Convulsions	82	45	12	10	94	55	1	1	...	...	...	...	...	...	...	...	1	1	95	56	151
Laryngismus Stridulus	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	1	...	1	...	1	1	...	...	2	...	...	...	...	1	3	1	4	5
Other Diseases of Nervous System	...	...	...	...	...	...	...	1	1	...	1	2	3	...	...	...	5	3	5	3	8
2.—Diseases of Organs of Circulation.																					
Pericarditis and Endocarditis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	1
Heart Disease	...	1	...	2	...	3	...	6	10	19	32	33	46	34	4	...	92	92	92	95	187
Aneurism	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	3	...	3	...	3
Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	2	2
Other Diseases of Blood Vessels	...	...	...	...	...	...	...	1	...	2	...	2	1	3	...	...	1	8	1	8	9
3.—Diseases of Respiratory Organs.																					
Laryngitis	1	1	2	1	3	2	3	.	...	...	...	1	1	...	...	...	4	1	7	3	10
Bronchitis	63	39	25	28	88	67	3	5	3	6	12	17	33	50	5	2	56	80	144	147	291
Pleurisy	...	...	2	...	2	...	...	1	...	...	...	...	...	...	..	...	...	1	2	1	3

Pneumonia	21	13	21	19	42	32	4	1	9	8	15	11	9	14	1	...	38	34	80	66	146
Asthma and Emphysema	..	...	...	...	...	...	...	...	2	1	...	1	1	3	...	...	3	5	3	5	8
Croup	1	2	5	3	6	5	2	2	...	...	...	...	...	...	...	...	2	2	8	7	15
Other Diseases of Respiratory Organs	5	...	2	3	7	3	1	...	2	1	3	...	2	2	...	2	8	5	15	8	23
4.—Diseases of Digestive Organs.	186	110	80	84	266	194	21	30	38	53	84	87	135	142	17	5	295	317	561	511	1072
Gastritis	3	1	...	...	3	1	...	...	...	...	1	1	...	...	...	...	1	1	4	2	6
Other Diseases of Stomach	...	1	...	...	...	1	1	...	1	...	1	1	3	2	...	...	6	3	6	4	10
Enteritis	7	4	...	...	7	4	...	...	1	1	...	1	...	1	...	...	1	3	8	7	15
Peritonitis	...	...	2	...	2	...	...	...	...	3	...	1	...	2	...	1	...	7	2	7	9
Ascites	...	...	...	...	...	..	...	...	...	...	...	1	...	...	...	1	...	2	...	2	2
Obstructive Diseases of Intestines	1	1	...	...	1	1	1	...	2	...	2	3	4	4	...	...	9	7	10	8	18
Fistula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pancreas Disease, &c.	...	...	...	...	...	...	...	.	...	...	1	...	...	...	...	...	1	...	1	...	1
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	1	...	4	...	1	...	...	...	6	...	6	6
Jaundice, and other Diseases of Liver	...	2	1	...	1	2	...	1	2	1	5	3	5	5	...	...	13	10	14	12	26
5.—Diseases of Urinary Organs.																					
Nephritis	...	...	2	...	2	...	...	...	1	1	3	4	3	..	...	...	7	5	9	5	14
Bright's Disease (Albuminuria)	...	...	...	...	...	...	...	2	4	...	5	5	6	2	...	...	15	9	15	9	24
Diseases of Bladder or Prostrate	...	...	..	...	...	...	...	...	...	...	1	...	1	2	...	...	2	2	2	2	4
Calculus (Stone)	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Urinary System	1	...	...	...	1	...	...	...	...	1	4	...	3	...	...	...	7	1	8	1	9
6.—Diseases of Reproductive System.																					
(a) Organs of Generation.																					
Male Organs	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	...	2
Female Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	2	2
(b) Of Parturition.																					
Abortion, Miscarriage	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	1
Placenta Prævia, Flooding	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	2	2
Other Accidents of Childbirth	1	...	...	...	1	...	...	...	1	9	...	...	...	...	...	...	1	9	2	9	11

Deaths Registered in the Borough of Leicester during the fifty-two weeks ending Jan. 1, 1887.

	0 to 1		1 to 5		Under 5		5—20		20—40		40—60		60 - 80		80 and upwards		Over 5		All ages		Total.
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
7.—Diseases of Integumentary System.																					
Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulcer, Carbuncle	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	3	...	3	...	3
Other Diseases of Skin, &c.	2	...	...	1	2	1	...	...	...	...	...	...	...	...	1	...	1	...	3	1	4
8.—Diseases of Bones and Joints.																					
Caries and Necrosis	...	...	...	...	...	...	3	2	...	...	...	1	...	1	...	...	3	4	3	4	7
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	1	1	1	2
Other Diseases of Bones and Joints... ...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	2	...	2
9.—Diseases of Organs of Special Sense.																					
Ear, Eye, Nose	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10.—Diseases of Lymphatic System &c.																					
Lymphatics and Spleen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchocele, Addison's Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1
Quinsy...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1
Class VI. DEVELOPMENTAL DISEASES.	201	119	86	85	287	204	26	37	51	73	111	112	163	164	18	8	369	394	656	598	1254
Premature Birth...	55	40	...	...	55	40	...	...	...	...	...	...	...	...	...	...	...	...	55	40	95
Atelectasis	2	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3
Congenital Malformations	3	6	...	...	3	6	...	...	...	...	...	...	...	...	...	...	...	...	3	6	9
Teething	6	9	6	3	12	12	...	...	..	...	...	...	...	...	...	...	...	...	12	12	24
Atrophy, Inanition, Debility	147	105	8	8	155	113	...	...	...	...	...	1	...	...	...	...	...	1	155	114	269
Old Age	...	...	...	...	...	...	...	...	...	...	...	...	48	62	22	43	70	105	70	105	175
	213	161	14	11	227	172	...	...	...	...	...	1	48	62	22	43	70	106	297	278	575

DEATHS FROM VIOLENCE.

1.—Accident or Negligence.

Fracture and Contusions	...	..	4	...	4	...	2	..	2	...	2	...	5	4	2	1	13	5	17	5	22
Gunshot Wounds	...	...	...	..	...	...	...	...	...	...	1	...	..	..	..	...	1	...	1	...	1
Cut, Stab	...	...	...	..	...	...	...	..	...	...	1	..	...	...	.	...	1	..	1	...	1
Burns and Scalds	...	...	6	4	6	4	...	..	...	...	...	...	...	2	...	...	...	2	6	6	12
Poison	1	...	...	...	1	...	...	...	..	...	...	...	...	.	..	...	...	...	1	..	1
Drowning	.	...	...	...	...	...	6	...	4	2	1	2	4	..	...	...	15	4	15	4	19
Suffocation	4	7	..	1	4	8	...	...	...	...	...	...	...	...	...	..	...	...	4	8	12
Otherwise	...	...	...	...	...	...	...	...	...	1	...	...	...	..	...	...	...	1	..	1	1

2.—Homicide.

Manslaughter	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
Murder	...	..	...	...	...	..	...	...	.	...	...	1	...	...	...	...	...	1	..	1	1

3.—Suicide.

... ...	4	2	2	1	..	...	...	3	6	3	6	9
... ...	1	...	Exe	cuti	on	Gaol	...	...	1	...	1	...	1

Class VIII.
DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.

5	7	10	5	15	12	8	...	7	7	7	5	10	6	2	1	34	19	49	31	80

(*e.g.*, Dropsy, Abscess, Tumour, Hemorrhage, Death from Natural Causes, Mortification, &c.) ... ...

5	3	2	2	7	5	1	1	4	1	4	1	1	5	1	..	11	8	18	13	31
5	3	2	2	7	5	1	1	4	1	4	1	1	5	1	...	11	8	18	13	31

Class I. Zymotic diseases	148	126	41	46	189	172	9	17	9	9	..	5	2	7	..	1	20	39	209	211	420
,, II. Parasitic diseases	...	2	..	..	...	2	...	...	1	...	...	.	..	...	...		1	...	1	2	3
,, III. Dietic diseases	..	...	..	..	...	...	..	1	..	...	...	..	1	...	..	..	1	1	1	1	2
,, IV. Constitutional diseases ...	34	28	19	10	53	38	20	20	57	54	55	39	16	21	..	...	148	134	201	172	373
,, V. Local diseases	201	119	86	85	287	204	26	37	51	73	111	112	163	164	18	8	369	394	656	598	1254
,, VI. Developmental diseases ...	213	161	14	11	227	172	...	...	..	...	...	1	48	62	22	43	70	106	297	278	575
,, VII. Violent deaths	5	7	10	5	15	12	8	..	7	7	7	5	10	6	2	1	34	19	49	31	80
,, VIII. Ill-Defined	5	3	2	2	7	5	1	1	4	1	4	1	1	5	1	...	11	8	18	13	31
Totals	606	446	172	159	778	605	64	76	129	144	177	163	241	265	43	53	654	701	1432	1306	2738

INDEX.

LEICESTER :

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FROM A SPECIAL SURVEY.
1886.
SHEWING LOCALITIES OF DEATH FROM THE FOLLOWING DISEASES:
DIARRHŒA
SCARLET FEVER
TYPHOID FEVER
RECREATION GROUND
THE ABBEY PARK
BELGRAVE ROAD GROUND
GREAT NORTHERN RAILWAY
MIDLAND COAL DEPOT
THE SPINNEY HILL PARK
CATTLE MARKET
THE FREEMENS MEADOW
THE FREEMENS COMMON
GAS WORKS
ALLOTMENTS


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