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HEALTH DEPARTMENT.



REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING

1905

BY THE

MEDICAL OFFICER OF HEALTH.



AC 2488

HEALTH DEPARTMENT.

REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING

1905

BY

E. W. HOPE, M.D., D.Sc.,

Medical Officer of Health.




(Ordered by the Health Committee to be printed, 10th May, 1906.)

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APPENDIX.

Local Government Board Tables of Population, Births, Deaths, Infantile Mortality and Infectious Sickness.

Plan-Map showing Birth Rate in Districts of City.

 " " Death Rate " "

 " " Number of Deaths of Infants under one year out of every 1000 born.

 " " Density of Population in Districts of City.

Tables of Total Deaths registered in the City.



RETROSPECT.

A brief survey of the sanitary history of the City is of sufficient importance to call for careful consideration, and for various reasons amply rewards the time and attention given to it. Apart from the useful information afforded, it shows the directions in which progress has been most marked, and makes plain the fact that the great obstacles in the way of sanitary progress and improvements have only been removed by steady, unceasing perseverance and with great monetary outlay; it furnishes the most convenient means for an inquiry into results, and, as the best test of the value of the measures which have been adopted, is useful also for present and future guidance.

The exceptional character of the difficulties which have been, and still have to be, encountered in Liverpool, render a study of its sanitary history additionally valuable; the evidence laid before the Commissioners at their Inquiry into the subject of Health of Towns, &c. (1842-3), leaves no room for doubt that whilst in some particulars the condition of a few other cities was almost the same as that of Liverpool, yet there were many in which it must be acknowledged that Liverpool was worse than any of them.

For many years anterior to the passing of the Registration Act for England and Wales, in 1842, attention had been from time to time directed to the varying incidence of mortality and disease, but when that Act had been in operation for a few years the marked difference in the mortality of the town and country districts attracted the attention of careful observers.

It became sufficiently apparent that various causes contributed to this difference, the most prominent of those causing the high mortality of Liverpool being the concentration of large numbers of individuals within narrow compass, and the consequent vitiation of the atmosphere of towns; and where this crowding together of a poor population was most marked, disease of a highly contagious character appeared—more especially Typhus Fever,—affecting not only those in whom it originated, but spreading from person to person, from house to house, and from street to street. Could the atmosphere in such localities have

Registration
Act, 1842.

Typhus
Fever.

been renewed from time to time, the evil would be diminished, but from the high value of land in the larger towns, which were the seats of industry, from the desire on the part of builders and landlords to secure the most profitable investment for their money and from the total ignorance or neglect of hygienic principles, the dwellings of the poor were constructed with absolute inattention to the means necessary to secure an efficient ventilation either in the houses themselves, or in the courts and streets in which they were erected.

Population of the City, 1841. The population of the City by the census of 1841 amounted to 223,000, 160,000 of whom were estimated to belong to the working classes, and more than one-third of these lived in courts and cellars, the remainder living in houses or rooms facing the front street.

Courts. The courts varied from 9 to 15 feet wide, and having 6 to 8 houses on each side. They were connected with the street by a passage or archway about 3 feet wide, and in the older courts the entrance was built over, forming a tunnel.

Houses. The houses themselves were three storeys high, containing three rooms one above the other, being back to back, and side to side, with others of similar construction, and so had no yards, or open-air space at the sides or the rears.

The Cellars The cellars were 10 to 12 feet square, generally flagged, but frequently having only the bare earth for a floor, and sometimes less than 6 feet in height. There was frequently no window, so that light and air could gain access to the cellar only by the door; the top of which was often no higher than the level of the street, consequently the cellars were dark, and ventilation was out of the question. They were generally

Back Cellar. damp from defective drainage. There was sometimes a back cellar, used as a sleeping apartment, and having no direct communication with the external atmosphere, deriving its scanty supply of light and air solely from the door of the front apartment. The population inhabiting these cellars amounted to upwards of 20,000.

Out-Offices. This being the vicious construction of the dwellings themselves, it is surprising to read that the whole of the cellar population were absolutely without out-offices, or place of deposit for their refuse matter. With regard to the courts, certain insufficient out-offices were provided, but these were situated in close proximity to the doors and windows of some of the houses, and used in common by all the occupants of the houses

in the court. Whether, on the whole, the inhabitants derived any advantage from them is open to doubt, since they were kept in such an abominably ruinous and filthy condition as to make it a matter of wonder how they could possibly be used at all. They became full to overflowing; their contents finding their way through the mouldering walls which confined them, spread a layer of abomination over the entire surface of the court, and even oozing into the cellars and the rooms where the family slept. There were no drains, and, had there been any, there was an entire absence of sewers in the front streets with which they could communicate. Drains and Sewers.

The system of scavenging and cleansing in the streets inhabited by the poorer classes was defective in the extreme, being imperfectly performed by paupers. None of the streets were visited oftener than once a week, and frequently a much longer interval intervened. The courts, indeed, were never visited by the public scavengers at all. Scavenging and Cleansing.

Most of the houses were occupied by two or more families, and many of those on the front streets were densely peopled lodging-houses, unregistered and without supervision. This being the case, and bearing in mind the structure and arrangement of the houses, it is not surprising to learn that Liverpool at that time, as in certain parts it does to-day, exhibited the greatest density of population attained in the heart of any English city.

It was in the lodging-houses, where no control of any kind was exercised, that overcrowding was carried to the highest pitch. In every room of such houses, with the exception of the kitchen or common-room, the floor was covered with bedsteads, each of which received at night as many human beings as could be crowded into it, and this too, often without distinction of sex or regard to decency. But the cellars, more especially the double cellars, were used in the same manner at night. "The floor of these cellars," Dr. Duncan states, "often the bare earth, is covered with straw, and there the lodgers, all who can afford to pay 1d. for the accommodation, range themselves as best they may until scarcely a single available inch of space is left unoccupied." Lodging Houses, no Control.

With regard to water supply, it would appear that in 1845, owing to the inadequate supply of water in the city, much mischief had been done to warehouses by fires; and this circumstance led to steps being taken to procure a better supply of water for the purpose of extinguishing Water Supply in 1845.

fires. Whilst negotiations for this most desirable object were in progress, a memorial signed by upwards of 5,000 people was presented to the Highway Board (then the Board of Health), pointing out that it was extremely desirable that there should also be a constant and abundant supply of water for purposes relating to the health, cleanliness, and comfort of the poorer classes of the community.

Water
Storage.

Arrears.

From the report of an enquiry into the subject held by the Highway Board, it would appear that water was supplied to the lower districts of the town only at odd intervals, sometimes two or three times a week, and then for periods varying from half-an-hour to an hour, and usually between the hours of six and seven in the morning. Consequently unless the people went to the supply pipes at those hours to get water, they got none at all; and if they did get it they would require to carry home in vessels a sufficient quantity to last them until the next supply was available. And, furthermore, this water had to be kept in the unclean dwellings amidst the unclean surroundings already referred to. The water was supplied by two private water companies, the Harrington Company and the Bootle Company, which had agreed together as to the price to be charged for it, which appears to have been at a very high rate. By a practice of these companies, arrears due from a former tenant were frequently charged to a new one, or the supply to the new one was cut off; for example, the water would be cut off from a court of ten houses, because the owner would not pay the water rent due by former tenants. This, no doubt, was an illegal act, but still it was done. Large numbers of courts were destitute of water, the supply having been cut off for non-payment, and the inhabitants had no other water to use from year's end to year's end, except what they begged or stole from their neighbours.

Inadequate
Water Supply

An incident of the mischief resulting from the inadequate water supply to the lower districts, was the large number of prosecutions, arising from fights and squabbles amongst the people, in their efforts to get their vessels filled with water during the short time that the supply was available; furthermore, the tap being out of doors, possibly in an adjoining court, a large number of people, fourteen or more, would be seen standing, in inclement weather, waiting their turn to get a supply. Naturally enough this stinted supply induced personal and domestic uncleanness, and there was practically no water at all for washing the exteriors of the courts, even had their occupants desired

to wash them; in fact, the officers of the Water Company checked such a use of water, actually threatening the inhabitants with prosecutions for waste for so using it.

It is remarkable that there should have been any opposition to the provision of water for sanitary purposes, but there was, and a very strong opposition, and from well-intentioned men, who believed that needless waste would result, or that it would not be used; and, to borrow an expression from one of them, "many of the lower orders, if they had a sea of water, would not avail themselves of it."

As an outcome of the enquiry held by the Highway Board, a mass of evidence was produced showing that dirt of the dwellings, persons, and clothing was injurious, morally and physically, to an extent which it would be impossible to exaggerate.

It is interesting to observe the condition of the Common Day Schools to which the children were sent. From the report of Mr. Riddall Wood, who spent some time in investigating the then state of education in the borough, it appears there were some 12,000 scholars attending schools, the condition of which, he states, "is wretched in the extreme." He describes them as dark and confined, damp and dirty, and used as dwelling, dormitory, and schoolroom by the teacher's family. Forty of them were cellars. So close and offensive was the atmosphere in many of them as to be intolerable to a person entering from the open air, and the condition was aggravated by filth and offensive odour arising from other sources. I cannot learn that there were any playgrounds.

The schoolrooms were sometimes used also to keep animals in, and Mr. Wood specially alludes to one in a garret, where a large number of children were found in a room 10 feet by 9, the room also being occupied by poultry and three dogs. There was only one small window at which sat the master obstructing three-fourths of the light it was capable of admitting.

"The masters and mistresses," Mr. Wood states, "were generally ignorant of the depressing and unhealthy effects of the atmosphere which surrounded them."

So far as their sanitary or insanitary conditions were concerned, other cities were in some respects as bad as Liverpool, to say worse would perhaps be going too far, and the condition of all cities was such as to furnish a very fruitful field for the application of hygienic

principles, provided that those principles could be agreed upon, that the Legislature would adopt them, and that means could be found to give them application when they were adopted.

Absence of
Sanitary
Measures.

Such, then, being the condition, it need hardly be said that the idea of adopting sanitary measures, which we now know to be essentials, but which may be regarded comparatively as refinements, had never been suggested. For example, the inspection and analysis of food; the control of bakehouses and places where food was prepared; the examination of dairies and shippens; the control of offensive trades; the suppression of smoke and other nuisances; the control of factories and workshops; disinfection; the isolation of the sick; and a host of other matters were never contemplated, they were at that time far beyond the range of practical application, and no staff existed or could be called into existence for the purpose. But the conditions described, viz., the vicious construction of the dwellings, the insufficient supply of out-offices and of receptacles for refuse and excrementitious matter, the absence of drains, the want of water, and the filth and the overcrowding of the population tended, amongst other evils, to favour one well known and definite form of disease, viz., Typhus Fever, and it is not surprising to find, under the conditions described, that 1 person in 25 of the working-class population of Liverpool was annually affected with this disease, and in more than one of certain streets specified, during an average of five years, no less than 1 in 10 of the inhabitants was attacked yearly with fever, thus almost the whole of this section of the population must have suffered from Typhus at one time or another. Another form of disease intimately associated with the foul conditions alluded to is Phthisis (consumption), and the various forms of Tubercular Diseases, which are always prevalent amongst the inhabitants of dark, filthy and ill-ventilated dwellings, and are the direct outcome of breathing and re-breathing contaminated air. This form of disease was extremely prevalent, and, having regard to the noxious state of the atmosphere, and the effluvia constantly arising from collections of filth, such a consequence is not surprising.

It was in 1842 that an Act was passed entitled "An Act for the Promotion of the Health of the Inhabitants of Liverpool"; and in 1846 the Liverpool Sanitary Act came into operation. These Acts tended not only to check the repetition of some of the existing evils, but tended

in some measure, where they could be applied, to ameliorate them. The beginning of 1847 witnessed an enormous immigration into the city, owing to the prevalence of the potato famine in Ireland. By the end of June of that year it is estimated that upwards of 300,000 destitute persons had landed in Liverpool. Many passed through to other towns, but it is estimated that some 80,000 had located themselves in Liverpool, occupying every nook and corner of the already overcrowded lodging-houses, and forcing their way into cellars which had been closed under the provisions of the Health Act of 1842. In different parts of the city, fifty or sixty of these destitute people were found in a house containing three or four small rooms about 12 feet by 10 feet, and in more than one instance upwards of forty were found sleeping in a cellar.

Then occurred the severest epidemic visitations of which any record remains. Fever, dysentery, and small-pox made their appearance in these crowded quarters, and fever spread with amazing rapidity, thousands of patients being under treatment by the dispensary and parish medical officers, cases being so numerous as to completely baffle the attempts of the parish authorities to deal with them. Hospital after hospital was opened in different districts of the town. The lazarettoes in the river were, by consent of the Government, converted into hospital ships, and still the cases so accommodated were more than twice outnumbered by those for which no accommodation was available. In the beginning of May, the epidemic burst through the barrier which had hitherto seemed to confine it to the poorer classes of the inhabitants. It invaded the better-conditioned districts of the town, which had previously escaped its ravages, and, gradually creeping up among the wealthier classes of society, nearly 6,000 persons were destroyed during the twelve months from this cause of sickness alone. In one street, Lace Street, no less than 472 persons died from it and other causes during the year, being one-third of the entire population of the street.

Epidemic
Disease.

Action of
Parish
Authorities.

The total deaths in the city during the year reached 21,129, of which 381 were due to Small-pox, 2,589 to Diarrhœa and Dysentery, and 5,845 to Fever.

During the succeeding year, this epidemic came to a close, and the sanitary history of that year, in comparison with 1847, was uneventful, although, viewed by modern lights, the mortality of that year was appalling.

Emigration
and Cholera.

At the very commencement of 1849 a family of emigrants arrived, suffering from cholera. The condition of the city still furnished a suitable developing place for such a disease, and, during the spring, cases became more and more frequent. With the approach of summer, this disease had become epidemic, and in the course of the year no less than 17,000 deaths were registered, of which 7,000 were directly ascribed to cholera and allied diseases. The behaviour of the disease was at that time imperfectly understood, but the conditions prevailing in the city were of such a kind that the measures adopted with a view to checking it were but of little avail.

Special
Orders and
Means of
Alleviation.

In July, 1849, the General Board of Health of the Privy Council—whose position corresponded with that of the Local Government Board of to-day—issued special orders, under the Diseases Prevention Act, to deal with the emergency by authorising the removal of the sick, or the healthy, from rooms occupied by one or more families where cholera or other zymotic disease had appeared, as also for the removal of dead bodies whose retention in rooms occupied by the living might be prejudicial to health.

All means of alleviation, and practically the sanitary administration of the town, fell upon either the Select Vestry in the Parish of Liverpool, or the Guardians of the West Derby Union in the extra-parochial districts, which at that time included Toxteth. The provision of Hospital accommodation also fell upon these bodies, but it appears to have been chiefly made by the Select Vestry. The temporary Hospitals were erected in Queen Anne Street and Vauxhall Road, also in Ansdell and Chipping Streets in the Toxteth district, also at Harper Street and Brownlow Hill. It is interesting to note that the mortality in Queen Anne Street Hospital was 57 per cent., that in the other Hospitals a trifle under 50 per cent. This excessive mortality of course shows that it was not until the patients were dying that they were removed to Hospital at all, a circumstance which is not surprising, considering that the Hospitals were not erected until the outbreak had far outgrown the possibilities of being coped with in this way; indeed, some of these places were not opened until the beginning of September, and they were too late to be of any use whatever.

The chief medical work at this time fell upon the Dispensaries. A large staff of medical men was appointed by the Guardians with a view to

detect cases at their early commencement, and also with a view to their treatment at their homes. They were assisted by 60 or 70 lay visitors.

The great object was to discover cases in the earliest premonitory stages, but, notwithstanding the extensive use of every means to make known the importance of attending to the first symptoms, it was found impossible to convince the people that ordinary diarrhœa could be attended with danger. Many who denied the existence of premonitory symptoms were afterwards attacked with fatal cholera.

Twenty medical practitioners were appointed to visit daily those streets, or houses in streets, in which the epidemic was most prevalent, and there is no doubt that those measures materially limited the ravages of the epidemic.

The Diseases Prevention Act, designed only to meet epidemic emergencies, ceased to take effect at the close of the outbreak. The temporary isolation buildings, with the exception of those at Brownlow Hill, were taken down, and so far as Hospital accommodation or other special preventive measures were concerned, the City was again in the same position that it was at the commencement of the outbreak. The temporary Hospital at Brownlow Hill was maintained and was not replaced until 1863, when the "New Fever Hospital" at Brownlow Hill was erected, containing 160 beds, at a cost of £6,000.

It was not only cholera and typhus fever which were provided for by the parochial authorities, for, with the exception of a comparatively small and unknown private institution, there was no other Hospital accommodation either for these or for any other forms of infection. Even small-pox was treated in the Workhouse Hospital Wards, and the Smallpox. results of this were what might have been anticipated. Those going to and fro conveyed the infection to their friends or to those living near whom they visited, and it is quite open to question whether the removal of small-pox patients to the Hospital at these times helped in any way to check the spread of infection, although, of course, it must have been an immense alleviation to the sufferer that he should be taken from his home, and to his friends that they should be relieved of the anxieties attendant upon nursing him.

Coming down to the sixties, it is found in 1863, when the population had risen to about 450,000, the deaths from all causes amounted to

15,266, not apparently from any visitation of cholera or any form of epidemic disease, but the general mortality "was fed by every class of disease."

The great loss of infant life was already receiving comment at this time, which seems to be one of considerable commercial depression, a still remaining effect of the American War. Strangers and unskilled labourers from a distance had continued to flock to the town in the vain search of employment, increasing thereby the list of the indigent, and some 17,000 paupers were in receipt of weekly relief from the Vestry. This season was one of considerable distress, not only in Liverpool, but also in the manufacturing centres, and, curiously enough, it is recorded that while benevolence did not altogether neglect this crowded wretchedness, yet "there was a tension of sympathy for the manufacturing centres, and thousands of pounds were sent to other districts, while want, misery and sickness abounded in our own streets."

Improving Sanitation.

The general sanitation of the City had in the lapse of years undergone improvements in many directions; sewerage, lighting and cleansing of streets, water supply, baths, closing cellar dwellings, opening up courts and alleys, and obviously great advantage was already derived from a staff, though small, of house-to-house nuisance inspectors.

Bye-laws for regulating air space about new dwellings had been framed, although many parts of the City inhabited by the labouring class were still in courts; it is estimated that upwards of 18,000 court houses existed upon what had once been open spaces or gardens, the courts themselves being close, confined and unventilated, and poisoned by the exhalations of middens. Many districts were still recorded from which typhus fever was never absent, although it is doubtful if the community yet realised the general danger arising from this circumstance.

With regard to the question of overcrowding, a staff of inspectors was appointed for the inspection of common lodging-houses, with a special view of limiting overcrowding, an overcrowding which it must be recollected at that time arose, as it does, although to a minor extent at the present day, from the bad arrangements of the families themselves, a whole family sleeping in one room of the house when other rooms of the house were empty and available. Much of what is known as indecent overcrowding was attributable to indifference and stupidity, and was found to prevail where poverty afforded no extenuating excuse.

The excessive drunkenness of these times was regarded as a result of destitution, rather than as a cause of it. Every series of inquiries into outbreaks of disease brought drunkenness into prominence.

In 1865 attention was being directed specially to what were known then as the "fever districts," notably the group of streets which a generation later were dealt with under the Liverpool Improvement Act, and which are now known as the Adlington Street Area of Artizans' Dwellings. This area figures in almost all past records of fever and disease in Liverpool, and at the time in question it was dealt with, though in an ineffectual manner, by removing a house here and there, with a view to opening up the courts to air and sunshine.

The year 1866 was a very serious one for Liverpool, largely owing to 1866. the greatly increased prevalence of typhus fever, the actual mortality from this disease amounting to no less than 1,523, the same districts which had on previous epidemics suffered most heavily again being those to show the heaviest mortality.

But still greater misfortune was pending, for cholera was again imported into the City, whilst the work of the Sanitary Authorities was hampered by the fact that there were a number of common lodging-houses exempt from supervision, owing to the circumstance that the houses in question were licensed for the sale of spirituous liquor, a condition calling surely for more, rather than less, supervision. Some of these houses were grossly overcrowded, and it was in these lodging-houses that the earliest victims of the disease had been lodging.

During the spring emigration was, as usual, very active, Emigrants large numbers of Dutch and German emigrants coming, *via* Hull, and Cholera. through Liverpool, for America. Cholera had been known to be present in Rotterdam and some other seaports, and was believed also to have existed in the district of the Low Countries.

The emigrant ship "The England" left Liverpool on March 28th, cholera developed on board on April 3rd, spreading with rapidity, and on the 9th April, when the vessel put into Halifax, there had been 92 deaths on board out of a full complement of 1,200 persons.

The "Virginia," a sister ship of "The England," left Liverpool on the 4th April, with 721 on board. Three deaths occurred on the 12th April, fifty deaths occurred before the 22nd of the month, when the

passengers were removed to the quarantine vessel "Falcon," at New York; fifty-five deaths subsequently occurred on the "Falcon," making a total of 105 deaths. The reception of this news in Liverpool caused much consternation and anxiety.

On May 2nd a German emigrant died in the Workhouse Hospital and a Dutch child died in the street *en route* to the Workhouse Hospital. This child in the first instance had been taken to the Northern Hospital, and was sent from thence to the Workhouse Hospital.

Hospitals
Wanted.

On the same day the "Helvetia" sailed from Liverpool with 925 steerage passengers; before arriving at Queenstown, however, two deaths from cholera occurred, the vessel was denied admission into Cork Harbour, and returned to Liverpool on May 4th. As the only available place for any who might sicken would be a ward in the Workhouse Hospital, an order was obtained by telegraph from the Home Secretary, under the Diseases Prevention Act, preventing the landing of the sick and the dissemination of the passengers.

Two vessels, the "Warcloud" and the "Jessie Munn," were hired and fitted up, the first as a reception place for the healthy, and the "Jessie Munn" as a Hospital, this vessel being moored alongside the "Helvetia."

Improvised
Accommoda-
tion.

A certain number were removed to a Depôt at Birkenhead, and a warehouse was rented at Bankhall to accommodate others. A Hospital Ward was fitted up in connection with this latter place, but it was subsequently found to be more convenient to keep a van ready at hand for the immediate removal to the cholera ward in the Workhouse Hospital of any persons among whom the slightest premonitory signs of the disease showed itself. The deaths on the "Jessie Munn" were nineteen males and 7 females. Eleven persons removed to Hospital from the "Helvetia," and also the surgeon of that vessel died.

Three other emigrant ships, viz., the "Virginia," "Union," and "Peruvian," had outbreaks of cholera, the latter, which sailed on the 15th May, with 758 passengers, had 110 deaths on board. It would thus appear that the stream of emigration which continued without any cessation exposed the City to grave peril.

The events in the City, to which reference must now be made, fully justified the anxieties to which the aspect of matters gave rise.

What appear to have been unrecognised cases of the disease occurred in Dale Street, Major Street, and elsewhere, but the first important centre of the outbreak was in a court house in Bispham Street (part of the Adlington Street area already alluded to), in a house which the Grand Jury had already condemned in the preceding year as unfit for human habitation.

In recording the subsequent proceedings, Dr. Trench says:—

“The probability was only too evident, that in a neighbourhood so squalid and overcrowded, and among a population so indigent and wretched, the spark, if of the true contagious cholera, would burst into a conflagration; therefore, immediate efforts were made, both by the relieving officers and myself, to induce the friends of the deceased to consent to the speedy burial of the corpse. The family refused to listen to our counsels and elected to keep the body until Tuesday, in order that it might be waked during the night watches of Monday. It was laid on a board on the floor of the lower or sitting apartment of the cottage, and in this room, where men and women eat, drank and slept, the orgies of the coronach, embracing the co-operation of scores of people, were maintained, amidst drunken and profane ribaldry, during the day and night. When I again went on the Tuesday morning, to try either by threats or persuasions to hasten the funeral, I found the whole place reeking with tobacco smoke and with the loathsome and disgusting emanations of drunken unwashed bacchanals. The three houses were crammed with men, women and children, while drunken women squatted thickly on the flags of the court before the open door of the crowded room where the corpse was laid. There had been, in the presence of death, one of those shameful carousals, which, to the disgrace of the enlightened progress and advanced civilisation of the nineteenth century, still linger as dregs of ancient manners among funeral customs. It was a rash challenge to the dreaded pestilence; and how, and with what fearful results accepted, the mortality returns of the next four months will too clearly show. Suffice it now to mention that before the period of a week had passed, John Boyle, the husband of the woman, was also among the dead, and before the end of July forty-eight persons had died from cholera within a radius of 150 yards from the court which had been the scene of the ill-timed revelry.”

Drink and
Disease.

The commencement of the epidemic appears to date from the period and place of Mrs. Boyle's death. A few, out of many, interesting incidents of the times may be mentioned; the effects of the common privy are alluded to in the following terms:—

“The effects, also, of a common privy in spreading the poison among different families are notable in the history of its progress among the residents of courts and street houses so supplied. Children seem to me to have been peculiarly liable to this mode of imbibing or being inoculated with the germs of disease; for the little creatures sit and idle away time in those receptacles of filth, climb on seats stained with dejections, and even pursue their infantile games on the floor beneath the pestiferous shelter of the roof.”

“The house No. 4 (13 Court, Bispham Street) in which McAnally died, overlooks the cesspool. This 13 Court became an active centre for the spread of contagion; there was much drinking and excitement before the funeral rites, and great efforts to consummate a wake. The corpse of McAnally had to be removed by the authorities with force, while men and women, in maudlin and frantic drunkenness, clung to it, and howled, and blasphemed, and wept.

No. 5 Court contains four houses, and a common privy at the end. The house No. 2, in which the deaths occurred, is the furthest from the privy. John Darling, a lodger, had returned ill from his work; he was attended by Alice Barrat. This house, also, became a centre of infection, for the friends, believing that the officers were going to seize the beds and bedding without payment, sold them surreptitiously.”

There is no need to quote further from these melancholy records.

A High
Death Rate.

The total deaths in the City during the year 1866 amounted to 20,198, making a rate of mortality equal to 41·7 per 1,000 of the inhabitants.

Improved
Scavenging.

It was not until 1867 that scavenging was taken in hand by the Health Committee itself, the work hitherto having been done by contract.

Mr. Reynolds, the Veterinary Superintendent, states that under the methods in vogue in 1867 there was always in the City awaiting removal something like 64,000 tons of filthy refuse stored up in ashbins and middens, many of the middens at that time being of enormous size,

practically channels extending the whole length of the street, and more or less filled with faecal and other offensive matter. The contrast between that system and the present is too well known to need comment.

It has since been found necessary that the whole of the cleansing and stripping of the infected rooms, as well as the disinfection of clothing, &c., should be carried out by the Corporation staff at the general cost of the ratepayers.

Overcrowding has been prevalent in Liverpool, as no doubt has been the case in most other large centres, from the earliest records, and, curiously enough, the excuses put forward at the present day are very similar to those put forward in bygone years. But overcrowding as we know it to-day is an altogether different matter to the overcrowding of former years.

For example, Dr. Duncan (1850-60) found that it was impracticable to ask for a larger amount of cubic space per individual than 250 feet, and it was not for 20 years or more that that standard was raised to 300 cubic feet, but by inspection and careful supervision it was then found that this step could safely be taken. As the years passed on, and sanitary control became still more efficient, it was found possible to raise this standard once more, and to raise it very materially. By the bye-laws which the Health Committee drafted in 1901 the standard was accordingly raised to 400 cubic feet per person. The result may be made plain in this way, that what would not have been regarded as overcrowding 20 years ago is dealt with as overcrowding at the present day, and a room in which under the old Regulations 12 persons would be allowed to sleep, would now be permitted to be occupied only by 9, this ensuring a very much larger amount of air space for each person, and putting an absolutely different complexion upon the offence known as overcrowding.

It is gratifying also to know that, even gauged by this higher standard, overcrowding is becoming very much less frequent than it formerly was.

The year 1883 witnessed practically the extinction, at all events in epidemic prevalence, of typhus fever. It was fully realised by this time that the only way of effectually checking the disease which in 1882 and 1883 had caused 593 and 540 deaths, respectively, was to adopt means to isolate in Hospital those who were infected by it at the earliest possible

Prevention
of Over-
crowding.

Typhus
Fever. Final
Outbreak.

moment. To accomplish this end, two things were essential; first, it was necessary that Hospital accommodation should be available; and, secondly, administrative methods should be improved so as to ensure immediate discovery of the sick persons or the infected persons, and to cause their removal.

Additional medical assistance, therefore, was provided in 1883. The ambulance and disinfecting staff was increased and strengthened, with the results desired.

The deaths from typhus, which in 1882 had been 593, and in 1883 540, fell the following year (1884) to 205, most of these cases being a continuation from the outbreak of 1883, and occurred in the early part of 1884. This number was the lowest recorded, at all events during any one of the preceding forty years. The marked decline followed, and, with relatively trifling interruptions, has continued up to the present time. These "interruptions" tell a very important story, point a very important moral, showing plainly enough that any relaxation of effort would be again followed by spread of this highly infectious disorder.

Hospitals
under
consideration

The Sanitary Authority had not yet risen to a sense of its obligations in the matter of Hospital accommodation, and the various Boards of Guardians were still looked to to provide accommodation in the Workhouse for this and all other forms of disease which required to be isolated. The question of the necessity of Hospital accommodation was, however, forcing itself very unmistakably upon the Council at this time.

It had become abundantly evident that an essential factor in the prevention of epidemic disease was the provision of adequate accommodation in Hospital for sick persons of all grades of society, since, owing to the intricacy and closeness of business and social intercourse, all classes were alike liable, not only to receive, but also to impart infection, and the futility of isolating some and leaving perhaps an equal number under similar conditions to spread infection had become by this time fairly apparent. The question, however, of Hospital accommodation was a difficult and complex one, and it was, moreover, hampered with the knowledge that it would be an exceedingly costly business. Unfortunately, therefore, the question was procrastinated still further.

The various Boards of Guardians were becoming more alive to the fact that it was no part of their duty to make Hospital provision of the character contemplated, and this opinion was strengthened by the very definite expressions of opinion of the officers of the Local Government Board, both on the Poor Law side and on the Sanitary side.

Vigorous protests arose on all sides as to the impropriety of continuing to send infectious cases to the care of bodies charged only with the relief of the destitute, and the various Boards gave notice that they could no longer receive such cases, the most long suffering of them all, viz., the Select Vestry, giving notice in 1888 that it was out of the power of the Vestry to afford the Corporation further assistance in providing accommodation for persons suffering from infectious disease.

About the year 1866, Dr. Gee, then Physician to the Brownlow Hill Workhouse, was so impressed with the straits of those persons above the pauper class, in whose families infectious sickness broke out, that he inaugurated a small private paying Institution, or Home, in Netherfield Road, which district at that time was not built up as it is now. This Hospital lingered on under the precarious support of charitable contributors until it was taken over and modernised by the Corporation in 1886, and until then it was of very little use.

In December, 1884, the Medical Institution had been asked to give their views as to the number of beds to be provided, and the reply of that body—based upon such information as it could glean—was a very definite one, viz., a minimum of 400 beds, in addition to 150 beds for small-pox. This number fairly approximated to the number recommended by the Medical Officer of Health, and, in response, the Grafton Street Hospital was constructed in 1888, containing 88 beds. The Dock Board was approached to allow Hospitals to be erected upon their estate at Parkhill. This the Board consented to do upon a monthly tenancy, and on this site seven wards of a more or less temporary character were erected. Some of these, together with a few tents, which proved to be useless, and a few sheds constructed partly of Willesden paper, served their purpose for a year or two, the Dock Board being able to extend the lease.

In the absence of any likelihood of the land being wanted, the Corporation were encouraged to put up buildings of a more appropriate

character, and although the tenancy was not extended, yet the Corporation have been undisturbed upon this very excellent temporary site for nearly a quarter of a century.

It is plain that imported disease will work its ravages under conditions such as those which formerly existed in Liverpool. There were at those times all the necessary conditions; there were none of the protective measures which would be conferred by proper sanitation, and by the existence of the necessary powers and an administrative staff to enforce them. Finally, there was the want of a proper means of isolating the sick.

As the decades have rolled on, public opinion has become awakened, and in recent times people have come to see that there will be no epidemics, provided that proper measures are available, that all of those measures admit of application, and that due means are taken to ensure that they shall be applied.

But advances in sanitation are beset with quite as much difficulty now as they were in former years, and receive quite as many checks as formerly. One instance may be quoted in illustration. The evil produced by existing cellar dwellings has so impressed the Health Committee, the Parliamentary Committee, and the City Council, that they unanimously decided to apply to Parliament for powers to deal with these dwellings. Their decision, however, required to be ratified by what is known as a Town's Meeting, and at the Town's Meeting this beneficent clause was, in the expressive language of the newspaper report, "howled down."

It may be sufficient to say that little by little, and step by step, as public opinion and other circumstances permitted sanitary measures to be carried into effect, so the improvement followed. No doubt, the steps were too short, and the progress unnecessarily slow, and the adoption of half measures necessitated practically going over the ground again. Conspicuous examples of this are obvious in the former methods of scavenging, in dealing with insanitary property, and in other ways. Work, for example, in connection with the Adlington Street Area was undertaken in 1865, which constituted so great an advance upon the previous condition of affairs that it was officially described as "adequate to the very large necessities of the case." This, however, proved far from being accurate, and the area was only adequately dealt with 30 years later by a complete demolition of the whole of the insanitary hovels upon it, some 300 in number.

Those who desire fuller information upon these points will find it in the various Reports alluded to, but the accompanying table indicates with sufficient clearness what has happened in regard to the prevalence of the infectious diseases during the last few decades, and a study of this in the light of what has already been said upon the general sanitary condition of the City will enable the reader to gauge the progress of events.

Number of Deaths from the undermentioned forms of disease during the decades 1856 to 1905, together with the rates per 100,000 of the average population, and the average populations for the same periods.

DISEASE.		1856 to 1865, Average Population 443,938.	1866 to 1875, Average Population 493,405.	1876 to 1885, Average Population 538,651.	1886 to 1895, Average Population 536,974.	1896* to 1905, Average Population 691,351.
Scarlet Fever	Total Deaths.....	5,994	7,894	4,212	2,575	2,013
	Rate per 100,000	1,350	1,599	781	479	291
Typhus Fever	Total Deaths.....	7,482	6,527	2,855	371	251
	Rate per 100,000	1,685	1,322	530	69	36
Measles	Total Deaths.....	3,215	4,257	5,178	3,995	3,290
	Rate per 100,000	724	862	961	743	475
Whooping Cough	Total Deaths.....	4,779	4,968	4,723	3,224	3,304
	Rate per 100,000	1,076	1,006	876	600	477
Smallpox	Total Deaths	1,673	2,374	908	88	195
	Rate per 100,000	376	481	168	16	28
Phthisis	Total Deaths.....	15,572	16,476	13,754	11,436	12,632
	Rate per 100,000	3,507	3,339	2,553	2,129	1,827

* City Boundaries extended in 1895.

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The remaining pages briefly record the work of the Health Department during the year 1905. They do not deal, however, with the important operations of other Departments (whose work, nevertheless, bears directly or indirectly upon the Public Health), since these are recorded elsewhere.

Attention must be called to the fact that, notwithstanding the continued high birth-rate, the rate of mortality has been the lowest ever recorded in Liverpool.

E. W. HOPE,

MEDICAL OFFICER OF HEALTH.

PUBLIC HEALTH DEPARTMENT,

MUNICIPAL OFFICES,

LIVERPOOL, *May 10th*, 1906.

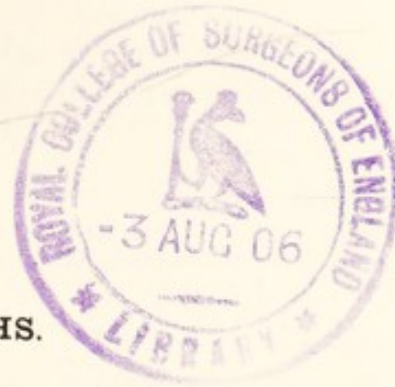
STATISTICS
RELATING TO
BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,
ZYMOTIC DISEASES AND THEIR INCIDENCE.

SUMMARY

OF

VITAL STATISTICS FOR 1905

Area of City	...	...	...	...	...	...	16,619 Acres.
Population	...	...	...	...	...	...	733,714
Density	...	...	...	...	...	...	44.1 Persons per Acre.
Births	...	...	...	...	...	...	24,350, Birth-rate 33.2.
Deaths	...	...	...	...	...	...	14,103, Death-rate 19.2.
Infantile Mortality	...	...	...	...	...	...	3,710 Deaths under one year, or 154 per 1,000 Births.
Zymotic Death-rate (7 principal Zymotic Diseases)	...	...	...	...	...	...	2.5 per 1,000.
Phthisis Death-rate	...	...	...	...	...	...	1.5 per 1,000.

**BIRTHS.**

During the fifty-two weeks of the year, terminating on Saturday, December 30th, 1905, the returns of the local registrars recorded 24,350 births within the city. Of the total births 12,349 were males and 12,001 were females.

The birth-rate in the City of Liverpool is considerably above the average of the great towns. During 1905 the birth-rate was 33·2 per 1,000 of the population ; the average of the previous five years (1900-1904) being 33·3. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

The variations in the birth-rate and the distribution of the births in the different wards and districts of the city, which together comprise 16,619 acres (26 square miles), are indicated upon the accompanying plan-map (see Appendix), and have also been arranged in the following tables:--

BIRTHS.

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		1905.		Corrected Average Rate per 1000 during the 5 years 1900-1904.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Births.	Rate per 1000	
Scotland	285	275	257	262	283	274	280	254	2170	41.2	41.3
Exchange	154	169	154	141	169	151	135	161	1234	29.6	29.8
Abercromby	230	208	236	219	198	201	210	213	1715	33.5	31.9
Everton	574	574	581	510	597	514	546	517	4413	35.6	36.0
Kirkdale	296	296	299	318	282	281	274	278	2324	33.0	34.1
West Derby—West	375	387	348	389	384	336	334	338	2891	32.2	33.8
Toxteth	442	438	430	477	445	419	387	398	3436	32.6	33.0
Walton	261	229	286	275	259	243	268	254	2075	33.9	32.6
West Derby—East	210	195	186	168	214	181	161	188	1503	31.7	29.0
Wavertree	139	128	150	146	147	136	131	124	1101	33.6	33.9
Sefton Park	77	83	95	87	79	81	82	70	654	18.9	19.8
(late Toxteth Rural)											
Garston	96	80	83	96	93	94	84	90	716	36.2	34.5
Fazakerley.....	17	15	18	10	14	18	14	12	118	33.0	27.2
City.....	3156	3077	3123	3098	3164	2929	2906	2897	24350	33.2	33.3

The birth-rate is still very high in the old parts of the city, in some instances higher than in the rapidly-extending areas in the suburbs. The high birth-rate amongst the poorer classes no doubt partially results from very early marriage.

The following table shows the population, number of births, and the corrected birth-rate per 1,000 during the last twenty-five years:—

Year.	Population.	No. of Births.	Rate per 1,000.
1881	551,617	20,762	37·6
1882	548,065	20,498	37·4
1883	544,547	19,907	36·6
1884	541,031	20,071	37·1
1885	537,548	19,464	36·2
1886	534,088	19,559	36·6
1887	530,649	18,414	34·7
1888	527,233	17,777	33·7
1889	523,838	17,676	33·7
1890	520,466	17,592	33·8
1891	518,302	17,832	34·4
1892	519,590	17,758	34·2
1893	520,882	18,328	35·2
1894	522,178	17,893	34·3
*1895	652,523	22,006	33·7
1896	658,050	21,943	33·3
1897	663,633	22,280	33·6
1898	669,243	22,227	33·2
1899	674,912	22,488	33·3
1900	680,628	22,762	33·4
1901	686,332	21,980	32·0
** 1902	710,337	24,283	34·2
1903	716,810	23,910	33·3
1904	723,430	24,278	33·5
*** 1905	733,714	24,350	33·2

The foregoing table shows the decrease in the birth-rate during the last 25 years. This decrease has, however, been even more pronounced in other parts of the country, and notwithstanding the decline in Liverpool, the birth-rate in this City is still amongst the highest, being exceeded by only two of the towns having a population of more than 100,000.

* City area extended.

** Garston included.

*** Fazakerley included.

The following table shows the *Natural* increase or decrease of population, that is, the increase or decrease in the number of births over deaths during the year 1905, in the several districts of the City. In only one district, viz., Exchange, is any decrease shown; the nett result in the City showing an increase of births over deaths of 10,247.

DISTRICTS.	Population.	Births.	Deaths.	Number of Births over Deaths.	Number of Deaths over Births.
Scotland	52,692	2,170	1,659	511	—
Exchange	41,674	1,234	1,308	—	74
Abercromby	51,149	1,715	1,006	709	—
Everton	123,741	4,413	2,466	1,947	—
Kirkdale	70,310	2,324	1,377	947	—
West Derby—West	89,689	2,891	1,563	1,328	—
Toxteth	105,290	3,436	1,931	1,505	—
Walton	61,127	2,075	869	1,206	—
West Derby—East	47,428	1,503	749	754	—
Wavertree	32,774	1,101	449	652	—
Sefton Park (late Toxteth Rural)	34,530	654	374	280	—
Garston	19,739	716	299	417	—
Fazakerley	3,571	118	53	65	—
City	—	24,350	14,103	10,247	—
Hospitals (Residences outside City)	—	—	746	—	—
Total ...	733,714	24,350	14,849	—	—

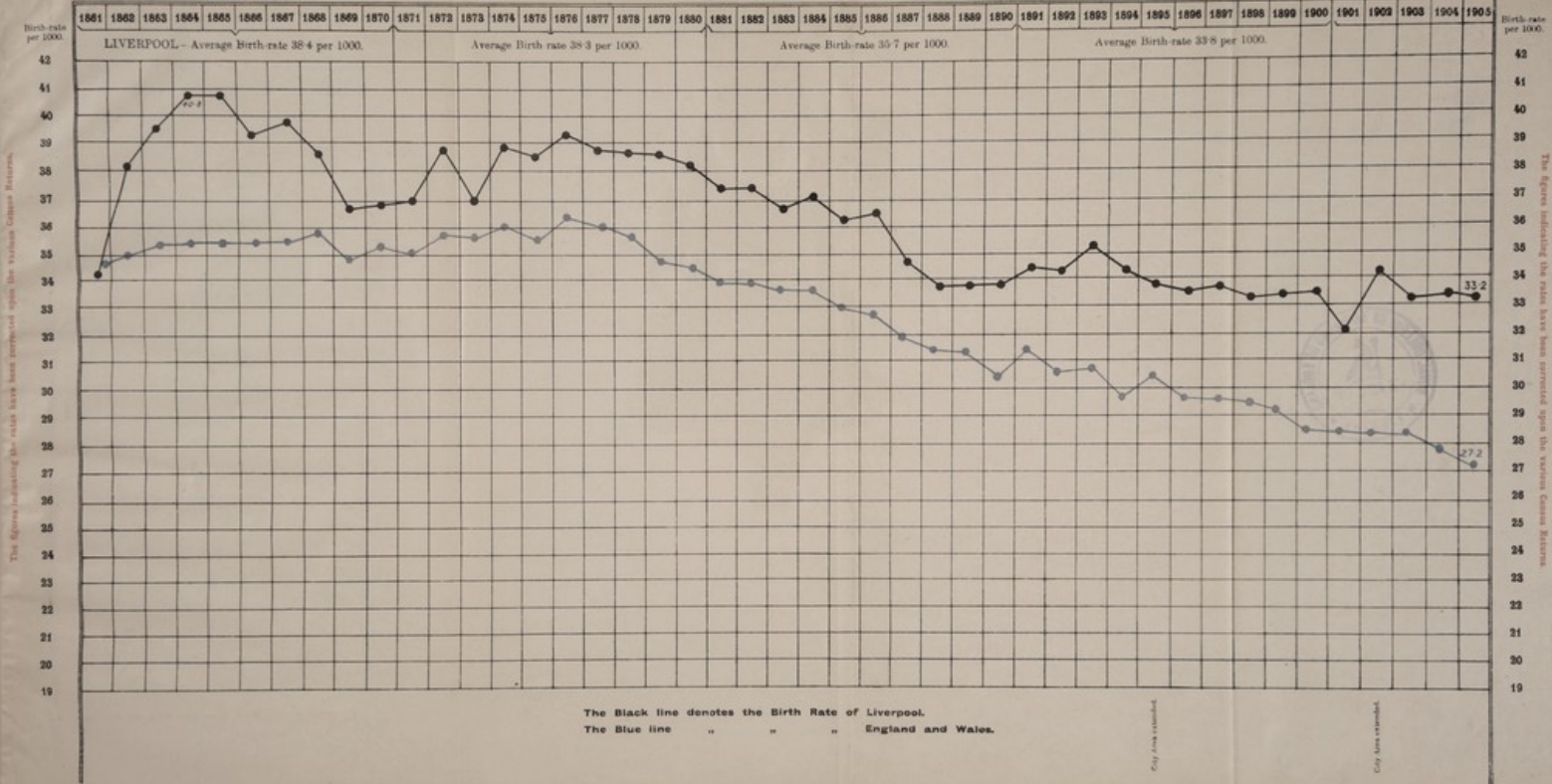
The following tables give the estimated population, number of births recorded, and birth-rate of eighty-two of the large towns of the United Kingdom.

TOWNS.						Estimated Popula- tion in the middle of the year 1905.	No. of Births.	Annual Rate to 1,000 of population.
London	...	...	...	...	...	4,684,794	126,620	27.1
Croydon	...	...	...	...	...	147,704	3,895	26.4
Willesden	...	...	...	...	...	138,080	4,134	30.0
Hornsey	...	...	...	...	...	84,070	1,554	18.5
Tottenham	...	...	...	...	...	116,232	3,580	30.9
West Ham	...	...	...	...	...	294,997	9,029	30.7
East Ham	...	...	...	...	...	123,381	3,671	29.8
Leyton	...	...	...	...	...	114,555	3,209	28.1
Walthamstow	...	...	...	...	...	116,297	3,350	28.9
Hastings	...	...	...	...	...	66,820	1,182	17.7
Brighton	...	...	...	...	...	127,183	2,911	23.0
Portsmouth	...	...	...	...	...	201,975	5,641	28.0
Bournemouth	...	...	...	...	...	66,168	1,110	16.8
Southampton	...	...	...	...	...	114,897	2,868	25.0
Reading	...	...	...	...	...	77,674	1,992	25.7
Northampton	...	...	...	...	...	92,441	1,927	20.9
Ipswich	...	...	...	...	...	70,802	1,954	27.7
Great Yarmouth	...	...	...	...	...	52,353	1,433	27.4
Norwich	...	...	...	...	...	116,741	3,205	27.5
Plymouth	...	...	...	...	...	116,000	2,966	25.6
Devonport	...	...	...	...	...	76,864	2,227	29.1
Bristol	...	...	...	...	...	358,515	9,653	27.0
Hanley	...	...	...	...	...	64,667	2,167	33.6
Burton-on-Trent	...	...	...	...	...	52,424	1,328	25.4
Wolverhampton	...	...	...	...	...	99,456	2,851	28.7
Walsall	...	...	...	...	...	92,998	2,769	29.9
Handsworth	...	...	...	...	...	61,721	1,486	24.1
West Bromwich	...	...	...	...	...	67,823	2,137	31.6
Birmingham	...	...	...	...	...	542,959	15,857	29.3
King's Norton	...	...	...	...	...	69,630	1,782	25.7
Smethwick	...	...	...	...	...	62,605	1,910	30.6
Aston Manor	...	...	...	...	...	81,320	2,129	26.3
Coventry	...	...	...	...	...	75,134	2,147	28.7
Leicester	...	...	...	...	...	228,132	5,888	25.9
Grimsby	...	...	...	...	...	68,153	1,984	29.2
Nottingham	...	...	...	...	...	251,671	6,652	26.5
Derby	...	...	...	...	...	122,207	3,095	25.4
Stockport	...	...	...	...	...	98,320	2,666	27.2
Birkenhead	...	...	...	...	...	116,035	3,707	32.0
Wallasey	...	...	...	...	...	62,460	1,657	26.6

TOWNS.							Estimated Popula- tion in the middle of the year 1905.	No. of Births.	Annual Rate to 1,000 of population.
Bootle...	...	...	...	...	...	...	62,758	2,070	33·1
St. Helens	...	...	...	...	...	...	89,843	3,239	36·2
Wigan...	...	...	...	...	...	...	86,581	2,917	33·8
Warrington	...	...	...	...	...	...	68,301	2,281	33·5
Bolton	...	...	...	...	...	...	178,111	4,446	25·0
Bury	...	...	...	...	...	...	58,594	1,273	21·8
Manchester	...	...	...	...	...	...	631,185	18,543	29·5
Salford	...	...	...	...	...	...	231,514	7,079	30·7
Oldham	...	...	...	...	...	...	140,225	3,395	24·3
Rochdale	...	...	...	...	...	...	86,390	1,880	21·8
Burnley	...	...	...	...	...	...	101,682	2,666	26·3
Blackburn	...	...	...	...	...	...	133,067	3,193	24·1
Preston...	...	...	...	...	...	...	115,721	3,263	28·3
Barrow-in-Furness	...	...	...	...	...	...	60,306	1,826	30·4
Huddersfield	...	...	...	...	...	...	94,888	2,256	23·8
Halifax	...	...	...	...	...	...	108,419	2,072	19·2
Bradford	...	...	...	...	...	...	286,799	6,044	21·1
Leeds	...	...	...	...	...	...	456,787	12,338	27·1
Sheffield	...	...	...	...	...	...	440,414	13,070	29·8
Rotherham	...	...	...	...	...	...	59,794	1,911	32·0
York	...	...	...	...	...	...	82,362	2,298	28·0
Hull	...	...	...	...	...	...	258,127	7,744	30·1
Middlesbrough	...	...	...	...	...	...	98,369	3,431	35·0
Stockton-on-Tees	...	...	...	...	...	...	52,425	1,584	30·3
West Hartlepool	...	...	...	...	...	...	71,313	2,079	29·2
Sunderland	...	...	...	...	...	...	152,761	5,238	34·4
South Shields	...	...	...	...	...	...	109,360	3,501	32·1
Gateshead	...	...	...	...	...	...	120,620	3,938	32·7
Newcastle-on-Tyne	...	...	...	...	...	...	264,511	8,478	32·1
Tynemouth	...	...	...	...	...	...	53,595	1,775	33·2
Newport, Mon.	...	...	...	...	...	...	72,880	2,275	31·3
Cardiff	...	...	...	...	...	...	180,054	5,139	28·6
Rhondda	...	...	...	...	...	...	124,988	4,670	37·5
Merthyr Tydfil	...	...	...	...	...	...	73,848	2,820	38·3
Swansea	...	...	...	...	...	...	96,384	3,068	31·9
Edinburgh	...	...	...	...	...	...	336,577	7,743	23·1
Glasgow	...	...	...	...	...	...	809,986	24,316	30·1
Dundee	...	...	...	...	...	...	164,269	4,600	28·0
Aberdeen	...	...	...	...	...	...	167,537	4,896	29·2
Dublin	...	...	...	...	...	...	378,994	11,182	29·6
Belfast	...	...	...	...	...	...	358,680	11,395	31·9
LIVERPOOL	...	...	...	...	...	...	733,714	24,350	33·2

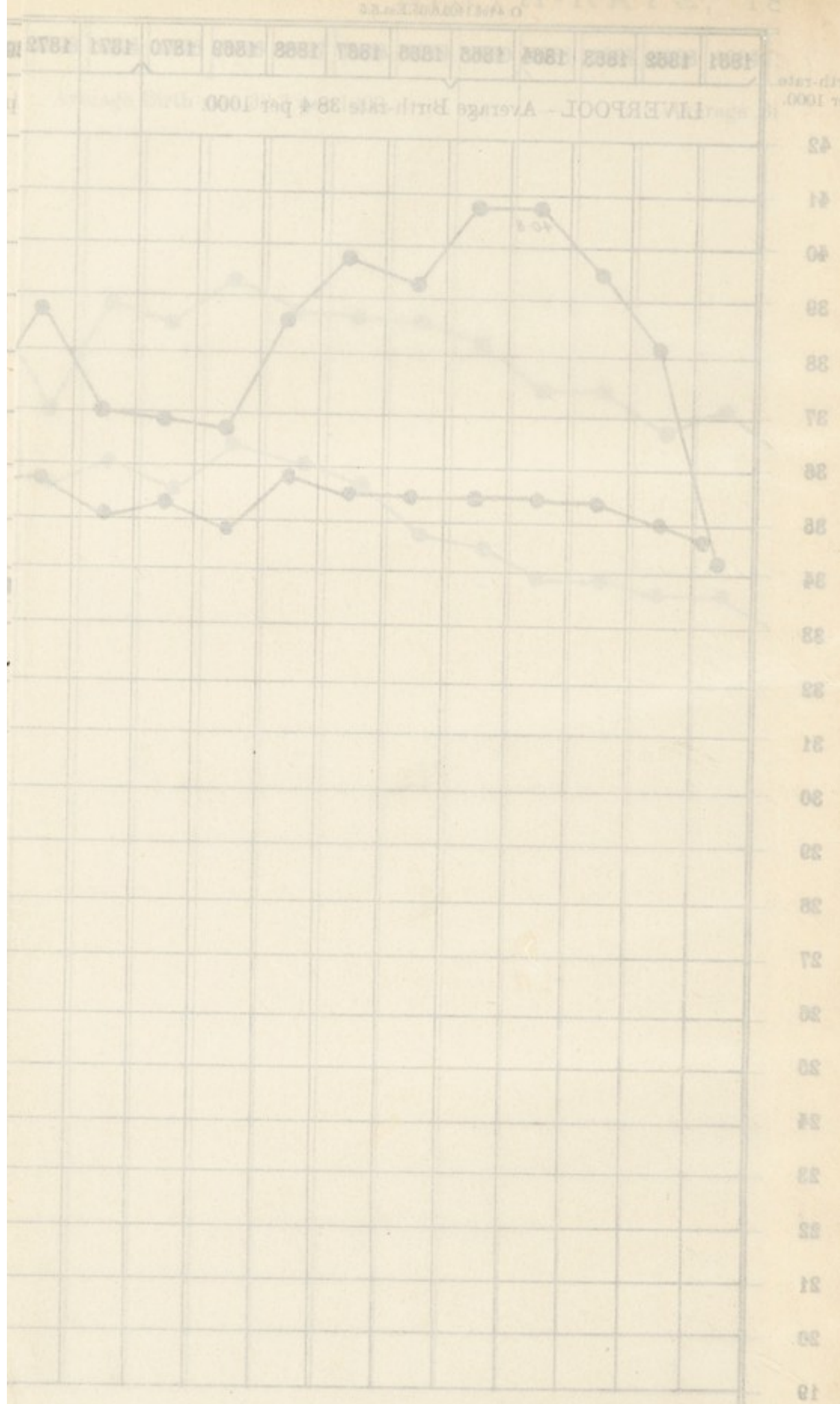
BIRTH-RATE, 1861-1905.

Q 4721000000000000



The figures indicating the rate have been corrected upon the various Census Returns.

The figures indicating the rate have been corrected upon the various Census Returns.



The Black line denotes the Birth Rate
 The Blue line " " " "

DEATHS.

The most interesting, as well as the most important statistics are those dealing with mortality and its causes. These are set forth in the ensuing pages; the total death-rate of the city during the year was 19·2 per 1,000, the lowest recorded in Liverpool; the average rate during the ten years since the extension of the city boundaries (1896-1905) has been 21·8. The deaths in public institutions of 746 non-residents, equal to 1·0 per 1,000, have been eliminated from the total deaths.

On comparing the death-rates of one locality with those of another, it is necessary, before any correct conclusions can be drawn from the comparison, to ascertain whether the populations of the two localities are comparable in point of age; if they are not, certain corrections must be made. Quite apart from conditions of sanitation, mortality varies widely at different age-periods, as the next table shows; consequently the death-rate of the community is largely influenced by the proportions living at each age-period; the effect of a high birth-rate in raising the crude death-rate is well seen by the table, which also indicates plainly enough how the crude returns are modified if there happens to be an unusual proportion of the population at any one age-period. A hospital for foundlings, or a home for aged people, will have a very different influence upon the mortality returns of the District than a school containing an equal number of boys from 10 to 15 years of age.

If, for example, we could conceive that the whole population of Liverpool consisted of persons between the ages of 20 and 30, the death-rate last year would have been 5·1 per 1,000; if, on the other hand, we could conceive that it consisted entirely of people above 60 years, the death-rate would be 74·7 per 1,000. It is plain that any variation in the *proportions* living at the respective age-periods would affect the death-rate, and this with absolutely no change whatever in the condition of municipal sanitation.

THE FOLLOWING TABLE SHOWS THE ANNUAL RATE OF MORTALITY PER 1,000 AT EACH OF TWELVE AGE-PERIODS* DURING LAST YEAR IN LIVERPOOL, AS WELL AS THE TOTAL NUMBER OF DEATHS.

THE DIFFERENCES WHICH THE FIGURES SHOW ARE VERY STRIKING:—

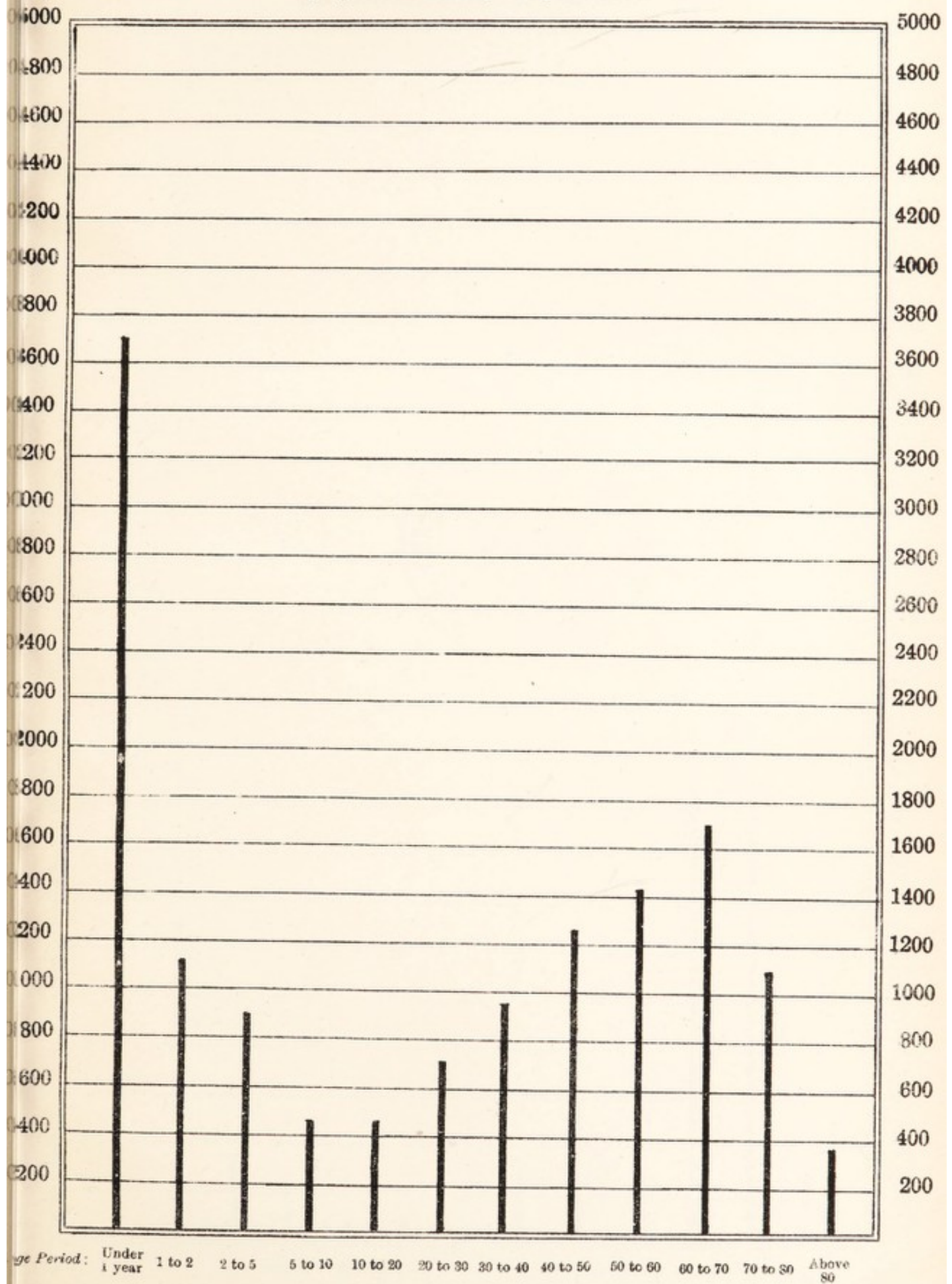
1905.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 and upwards.	Total at all Ages.
Rate of Mortality per 1,000 living at ages indicated.	154.0	63.9	17.3	5.5	3.0	5.1	8.9	15.8	27.8	57.9	100.7	176.8	19.2
Total Number of Deaths at each Age Period.	3710	1132	891	433	440	729	950	1219	1410	1725	1086	378	14103

(See Comparative Charts on next two pages).

* Excepting in Column 1, which indicates the rate of mortality per 1,000 births during the year.

CITY OF LIVERPOOL.

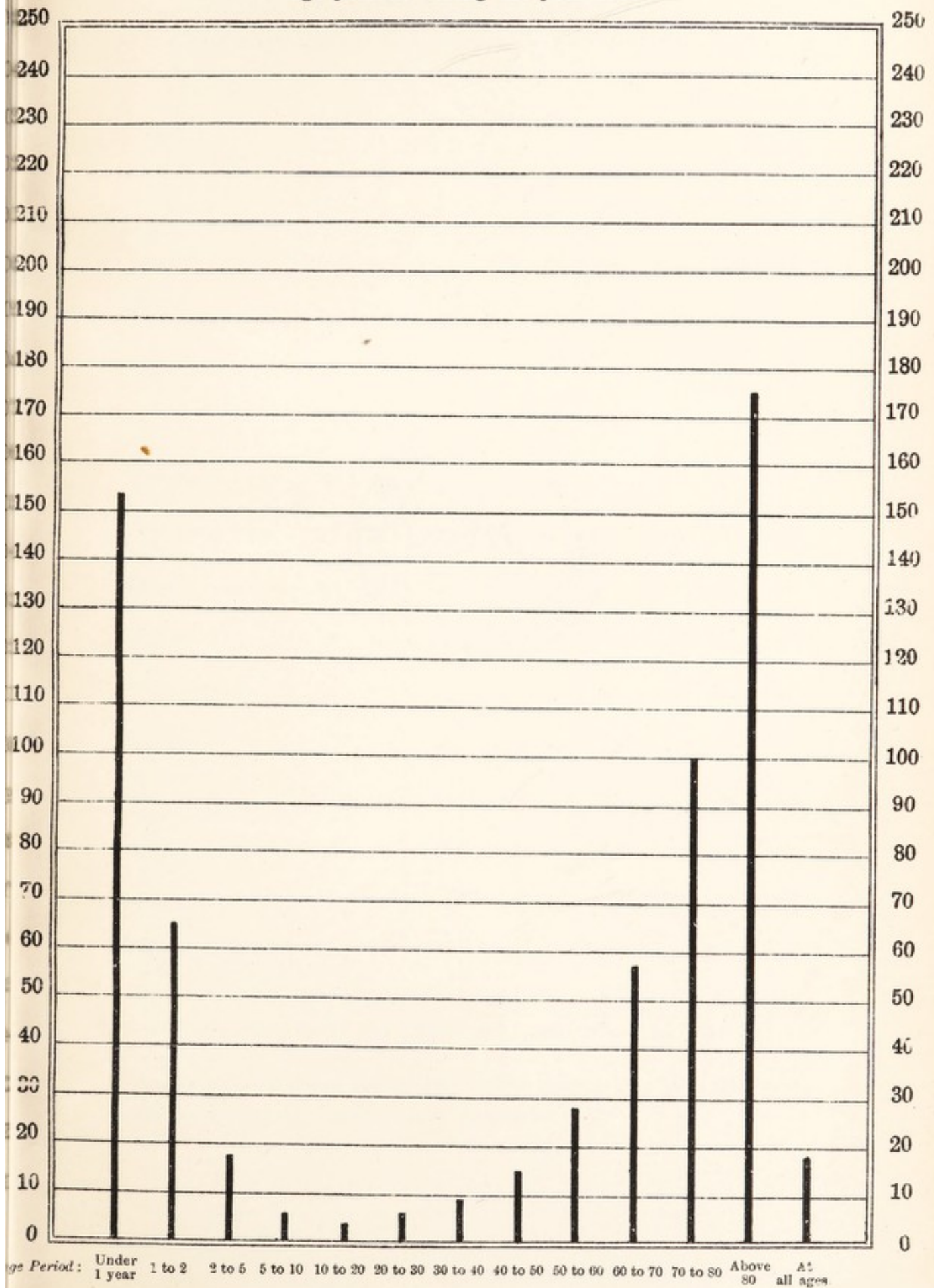
Comparative view of the total number of Deaths at twelve different age periods during the year 1905.





CITY OF LIVERPOOL.

Comparative view of the Death Rate per 1000 at each of the twelve age periods during the year 1905.





The following table gives the total number of deaths occurring in each of the four quarters of the year, allocated to each district:—

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Year.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total Deaths.
Scotland	197	222	194	180	248	226	193	199	1659
Exchange	176	165	165	121	189	162	182	148	1308
Abercromby	132	131	134	105	139	104	126	135	1006
Everton	297	292	297	244	326	330	355	325	2466
Kirkdale	187	166	161	146	205	182	173	157	1377
West Derby (West)..	210	210	197	193	192	158	195	208	1563
Toxteth	260	266	228	210	253	236	240	238	1931
Walton.....	97	115	105	82	104	102	143	121	869
West Derby (East)...	97	111	81	80	90	90	94	106	749
Wavertree	62	75	45	47	56	40	58	66	449
Sefton Park	51	57	32	46	35	43	50	60	374
(late Toxteth Rural)									
Garston	39	35	29	37	37	32	44	46	299
Fazakerley	6	7	8	4	4	8	11	5	53
Deaths of Non-Resi- dents of the City in Workhouses and Hospitals.....	125	69	126	63	110	68	118	67	746
Total Deaths in City	1936	1921	1802	1558	1988	1781	1982	1881	14,849

Deaths of residents of the City in Public Institutions have been transferred to the districts from whence they came.

DEATHS IN PUBLIC INSTITUTIONS

Deaths in Public Institutions are referred to the Districts from whence the patients came, but the following table shows that the deaths of 4,908 persons occurred in the undermentioned Institutions for the treatment of the sick:—

	Total Deaths.	Non-Residents of City.
Parish Workhouse	1,311	108
Royal Infirmary	358	117
Children's Infirmary	37	8
Lying-in Hospital	19	3
Consumption Hospital	19	4
Hahnemann Hospital	19	—
David Lewis Northern Hospital	234	50
Stanley Hospital	200	26
Royal Southern Hospital	201	37
Mill Road Infirmary	761	100
Hospital for Women	31	12
City Hospital North	114	3
Do. South	48	—
Do. Parkhill	161	6
Do. East, Mill Lane	78	1
Do. Priory Road	2	—
Do. Fazakerley	13	—
Walton Workhouse	704	146
Belmont Road Workhouse	64	56
St. Joseph's Home	42	37
Toxteth Workhouse	358	4
Home for Incurables	5	1
House of Providence	5	2
Home for Destitute Infants	13	4
Turner Memorial Home	10	3
St. Augustine's Home	19	7
Kirkdale Home	30	2
Grove Mount Home	10	—
Walton Gaol	15	6
Garston Accident Hospital	4	—
Other Public Institutions	23	3
	4,908	746

From the returns made as to the residences of these persons 4,162 of the deaths in these establishments are classified in the districts from whence the patients were removed, viz.:—586 under Scotland district,

650 under Exchange district, 380 under Abercromby district, 719 under Everton, 343 under Kirkdale, 412 under West Derby (West), 536 under Toxteth, 205 under Walton, 133 under West Derby (East), 70 under Wavertree, 67 under Sefton Park (late Toxteth Rural), 56 under Garston and 5 under Fazakerley; 553 were non-residents, who had sought relief in Liverpool Institutions, and of the remainder, 193 were waifs, strangers to the city, whose previous residences were unknown.

In Liverpool the proportion of deaths which takes place in Public Institutions is larger than is the case in other towns, and the fact is an interesting one, as something may be learned of the social conditions of a locality when so large a proportion in times of sickness seek refuge in public institutions, more especially in the workhouses. Generally it implies poverty and want; but on the other hand, it may also, and no doubt does, imply that the institutions have a wide reputation, and attract sufferers to them not only from within the city, but from a distance. Probably both of these conditions exercise influence; but be that as it may, the fact remains that there is no provincial city in which so large a proportion of the deaths takes place in workhouses and hospitals.

The following table shows the percentage of deaths which have occurred in public institutions during the 5 years, 1901-1905, in the great towns of Birmingham, Leeds, Manchester and Liverpool:—

	1901.	1902.	1903.	1904.	1905.	Average.
Birmingham	19·8	24·6	23·9	22·4	22·2	22·6
Leeds	14·0	14·5	14·8	14·6	15·0	14·6
Manchester	23·3	23·2	24·5	24·1	23·2	23·7
Liverpool	27·3	28·5	30·8	27·8	33·0	29·5

The results of the allocation of deaths in public institutions to the districts from whence the patients had been removed, and the addition of these to the number of deaths of residents in those various districts,

are shown in the following table, from which a calculated rate of mortality per 1,000 per annum of the inhabitants has been made. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

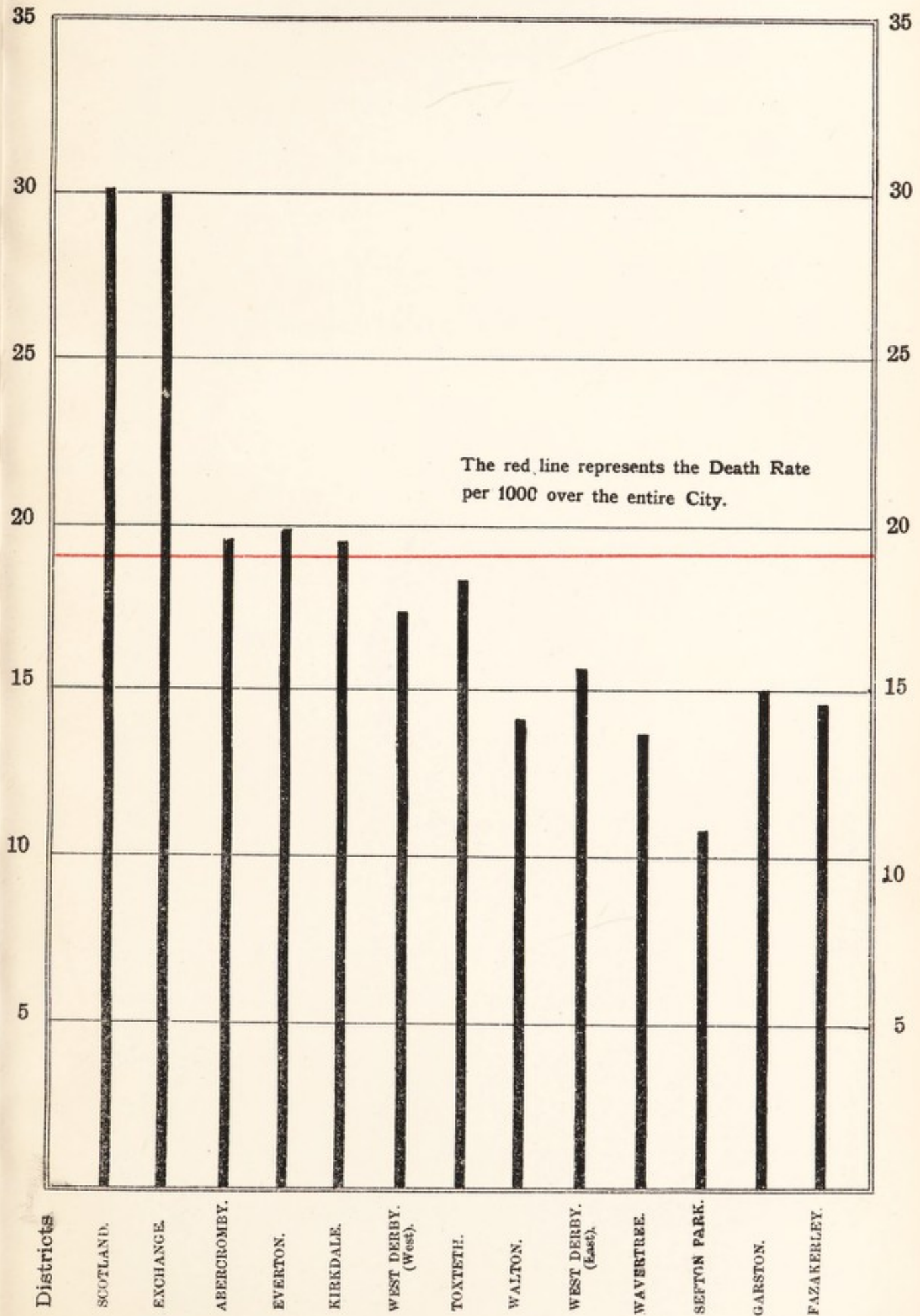
DISTRICTS.	Population.	1905.		Corrected Average Rate per 1000 during the five years 1900-1904.
		Deaths.	Rate per 1000	
Scotland	52,692	1,659	31·4	32·4
Exchange	41,674	1,308	31·3	33·4
Abercromby	51,149	1,006	19·6	22·1
Everton	123,741	2,466	19·9	23·0
Kirkdale	70,310	1,377	19·6	21·1
West Derby (West)	89,689	1,563	17·4	19·7
Toxteth	105,290	1,931	18·3	22·3
Walton	61,127	869	14·2	15·4
West Derby (East)	47,428	749	15·8	16·6
Wavertree	32,774	449	13·7	15·3
Sefton Park (late Toxteth Rural)	34,530	374	10·8	11·2
Garston... ..	19,739	299	15·1	17·3
Fazakerley	3,571	53	14·8	10·0
City	733,714	14,103	19·2	21·6

The District Registrars' Returns show that there were 32 deaths (25 of women and 7 of men) at the age of 90 and upwards, viz., 4 males and 13 females at 90, 1 female at 91, 2 females at 92, 1 male and 2 females at 93, 3 females at 94, 1 male and 1 female at 95, 1 male and 2 females at 97, and 1 female at 98.

The death-rate per 1,000 for 1905 in each of the districts of the city is indicated upon the appended map. Scotland and Exchange districts, it must be remembered, contain a great number of common lodging-houses, some of which are resorted to by non-residents of the districts, persons of very migratory habits, and often indigent and broken down. This class tends to swell the mortality of these two districts. Last year the rate in Scotland district was increased by about one per 1,000 from this cause, and in Exchange district by about four per 1,000.

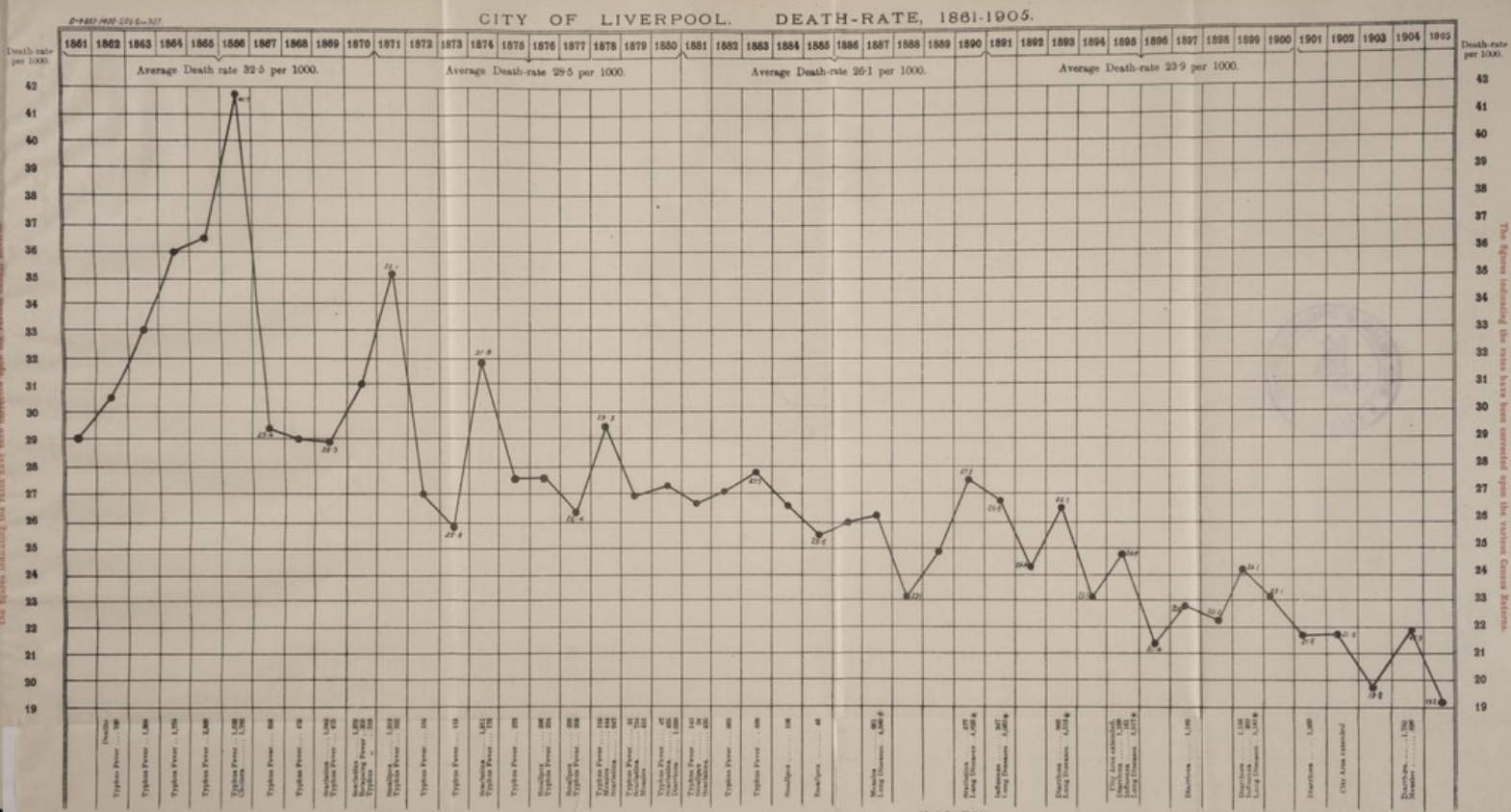
CITY OF LIVERPOOL.

Comparative view of the Death Rate per 1,000 in the different districts of the City during the year 1905.



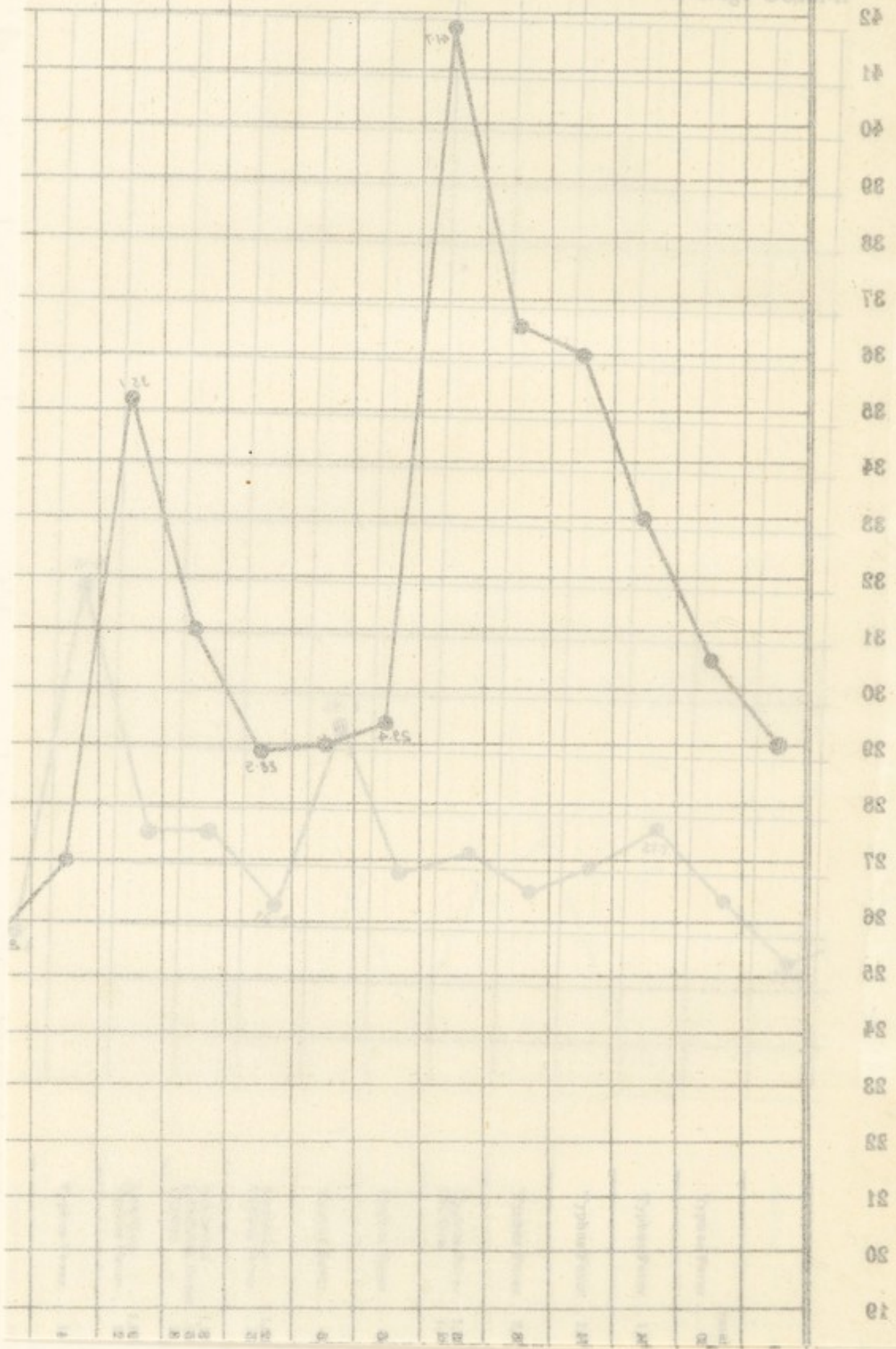


CITY OF LIVERPOOL. DEATH-RATE, 1861-1905.



1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873
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Average Death rate 32.5 per 1000



The following table shows the population, number of deaths, and the corrected death-rate per 1,000 during the last twenty-five years:—

Year.	Population.	No. of Deaths.	Rate per 1,000.
1881	551,617	14,733	26·7
1882	548,065	14,818	27·0
1883	544,547	15,074	27·7
1884	541,031	14,382	26·6
1885	537,548	13,764	25·6
1886	534,088	13,919	26·1
1887	530,649	14,006	26·4
1888	527,233	12,159	23·1
1889	523,838	13,047	24·9
1890	520,466	14,293	27·5
1891	518,302	13,911	26·8
1892	519,590	12,671	24·4
1893	520,882	13,919	26·7
1894	522,178	12,073	23·1
*1895	652,523	16,215	24·8
1896	658,050	14,060	21·4
1897	663,633	15,117	22·8
1898	669,243	14,853	22·2
1899	674,912	16,276	24·1
1900	680,628	15,785	23·1
1901	686,332	14,879	21·6
**1902	710,337	15,396	21·6
1903	716,810	14,240	19·8
1904	723,430	15,851	21·9
***1905	733,714	14,103	19·2

* City area extended.

** Garston included.

*** Fazakerley included.

The following tables give the estimated population, the number of deaths recorded, and the death-rate of eighty-two of the large towns of the United Kingdom:—

TOWNS.							Estimated Population in the middle of the year 1905.	No. of Deaths.	Annual Rate to 1000 of Popula- tion.
London	...	...	...	...	...	...	4,684,794	73,002	15·6
Croydon	...	...	...	...	...	...	147,704	1,839	12·5
Willesden	...	...	...	...	...	...	138,080	1,595	11·6
Hornsey	...	...	...	...	...	...	84,070	635	7·6
Tottenham	...	...	...	...	...	...	116,232	1,479	12·8
West Ham	...	...	...	...	...	...	294,997	4,366	14·8
East Ham	...	...	...	...	...	...	123,381	1,435	11·7
Leyton	...	...	...	...	...	...	114,555	1,180	10·3
Walthamstow	...	...	...	...	...	...	116,297	1,248	10·8
Hastings	...	...	...	...	...	...	66,820	851	12·8
Brighton	...	...	...	...	...	...	127,183	1,711	13·5
Portsmouth	...	...	...	...	...	...	201,975	3,345	16·6
Bournemouth	...	...	...	...	...	...	66,168	814	12·3
Southampton...	...	...	...	...	...	...	114,897	1,648	14·4
Reading	...	...	...	...	...	...	77,674	1,038	13·4
Northampton	...	...	...	...	...	...	92,441	1,157	12·6
Ipswich	...	...	...	...	...	...	70,802	1,034	14·6
Great Yarmouth	...	...	...	...	...	...	52,353	824	15·8
Norwich	...	...	...	...	...	...	116,741	1,892	16·3
Plymouth	...	...	...	...	...	...	116,000	1,946	16·8
Devonport	...	...	...	...	...	...	76,864	1,067	13·9
Bristol	...	...	...	...	...	...	358,515	5,203	14·6
Hanley	...	...	...	...	...	...	64,667	1,245	19·3
Burton-on-Trent	...	...	...	...	...	...	52,424	600	11·5
Wolverhampton	...	...	...	...	...	...	99,456	1,488	15·0
Walsall	...	...	...	...	...	...	92,998	1,311	14·1
Handsworth	...	...	...	...	...	...	61,721	620	10·1
West Bromwich	...	...	...	...	...	...	67,823	1,132	16·7
Birmingham	...	...	...	...	...	...	542,959	8,752	16·2
King's Norton	...	...	...	...	...	...	69,630	630	9·1
Smethwick	...	...	...	...	...	...	62,605	831	13·3
Aston Manor...	...	...	...	...	...	...	81,320	1,066	13·1
Coventry	...	...	...	...	...	...	75,134	1,092	14·6
Leicester	...	...	...	...	...	...	228,132	3,017	13·3
Grimsby	...	...	...	...	...	...	68,153	1,007	14·8
Nottingham	...	...	...	...	...	...	251,671	4,141	16·5
Derby	...	...	...	...	...	...	122,207	1,775	14·6
Stockport	...	...	...	...	...	...	98,320	1,640	16·7
Birkenhead	...	...	...	...	...	...	116,035	1,782	15·4
Wallasey	...	...	...	...	...	...	62,460	781	12·5

TOWNS.							Estimated Population in the middle of the year 1905.	No. of Deaths.	Annual Rate to 1000 of Popula- tion.
Bootle...	...	...	...	...	...	...	62,758	1,139	18·2
St. Helens	...	...	...	...	...	...	89,843	1,528	17·1
Wigan...	...	...	...	...	...	...	86,581	1,608	18·6
Warrington	...	...	...	...	...	...	68,301	1,159	17·0
Bolton...	...	...	...	...	...	...	178,111	2,677	15·1
Bury ...	...	...	...	...	...	...	58,594	954	16·3
Manchester	...	...	...	...	...	...	631,185	11,327	18·0
Salford	...	...	...	...	...	...	231,514	3,910	16·9
Oldham	...	...	...	...	...	...	140,225	2,514	18·0
Rochdale	...	...	...	...	...	...	86,390	1,437	16·7
Burnley	...	...	...	...	...	...	101,682	1,679	16·6
Blackburn	...	...	...	...	...	...	133,067	2,151	16·2
Preston	...	...	...	...	...	...	115,721	2,067	17·9
Barrow-in-Furness	...	...	...	...	...	...	60,306	877	14·6
Huddersfield	...	...	...	...	...	...	94,888	1,606	17·0
Halifax	...	...	...	...	...	...	108,419	1,581	14·6
Bradford	...	...	...	...	...	...	286,799	4,357	15·2
Leeds ...	...	...	...	...	...	...	456,787	6,946	15·2
Sheffield	...	...	...	...	...	...	440,414	7,467	17·0
Rotherham	...	...	...	...	...	...	59,794	815	13·7
York ...	...	...	...	...	...	...	82,362	1,167	14·2
Hull ...	...	...	...	...	...	...	258,127	4,185	16·3
Middlesbrough	...	...	...	...	...	...	98,369	2,056	21·0
Stockton-on-Tees	...	...	...	...	...	...	52,425	930	17·8
West Hartlepool	...	...	...	...	...	...	71,313	1,127	15·8
Sunderland	...	...	...	...	...	...	152,761	2,837	18·6
South Shields	...	...	...	...	...	...	109,360	1,754	16·1
Gateshead	...	...	...	...	...	...	120,620	1,864	15·5
Newcastle-on-Tyne	...	...	...	...	...	...	264,511	4,432	16·8
Tynemouth	...	...	...	...	...	...	53,595	1,032	19·3
Newport, Mon.	...	...	...	...	...	...	72,880	1,146	15·8
Cardiff...	...	...	...	...	...	...	180,054	2,398	13·4
Rhondda	...	...	...	...	...	...	124,988	2,375	19·1
Merthyr Tydfil	...	...	...	...	...	...	73,848	1,628	22·1
Swansea	...	...	...	...	...	...	96,384	1,601	16·7
Edinburgh	...	...	...	...	...	...	336,577	5,425	16·2
Glasgow	...	...	...	...	...	...	809,986	14,460	17·9
Dundee	...	...	...	...	...	...	164,269	2,955	18·0
Aberdeen	...	...	...	...	...	...	167,537	2,707	16·2
Dublin	...	...	...	...	...	...	378,994	8,038	21·3
Belfast	...	...	...	...	...	...	358,680	7,179	20·1
LIVERPOOL...	...	...	...	...	...	...	733,714	14,103	19·2

The above table is, with the exception of Liverpool, taken without correction from the Returns of the Registrar-General of England and of Scotland.

INFANTILE MORTALITY.

In previous reports this important subject has been dealt with in considerable detail, but it is necessary to allude again to some of the salient features.

The term "infant" is restricted to twelve months of age. It will be seen from the tables, or perhaps more readily from the plan-maps in the appendix, that the loss of infant life in the various districts of the City varies widely, the range during the year being from 84 per 1,000 in the district where it is the lowest, up to 240 in the district where it is the highest. Even in the lowest, the death-rate of infants is more than four times as high as the general death-rate of the community.

The accompanying tables in the appendix contrast two districts of about equal population in respect to their infantile mortality, &c.

As regards the nature of the illness to which death is most commonly ascribed, it must be borne in mind that the obscurity of symptoms of illness in infants and young children often leaves a doubt as to which of two or more causes was the primary one. However, during the year 1905 the total number of deaths of infants under one year of age was 3,710, developmental diseases accounted for 1,060, premature birth being answerable for 462, and atrophy for 528; general experience justifies the assumption that the atrophy owed its origin in a very large proportion of cases to want of proper feeding. Zymotic diseases accounted for 899 deaths, the great majority of them, viz., 681 being due to diarrhœa, the exciting cause being no doubt the same as that in the case of atrophy, viz., improper feeding. Following upon this comes whooping-cough with 60 deaths, and measles with 59 deaths. Under the heading, "Diseases of the digestive system," no less than 267 deaths of infants are recorded, under that of "Diseases of the respiratory system" 677 deaths of infants are recorded, and under that of "Diseases of the nervous system" 496 deaths of infants are recorded.

It is an interesting fact that the number of deaths per 1,000 births attributed to premature birth during 1905 is again more than double the number per 1,000 births in 1873. Since the latter date there has been a steady increase in the number of deaths recorded from premature birth.

Inquests were held on the bodies of 77 infants, under 12 months of age, who had been accidentally suffocated, usually by their mothers, whilst in bed.

The natural guardian of the infant is the mother, and it is only with extreme caution that the efforts of the municipality can be specially directed to the preservation of infant life, but such efforts have been made in a variety of ways.

Hospital provision is now available for infants suffering from whooping-cough and measles, where they can be received together with the mother, or other natural guardian of the child, if necessary. With regard to feeding, there is strong evidence that the efforts of the Health Committee in widely circulating instructions as to the feeding of infants, in employing a large staff to give verbal instructions and to supervise, in establishing sterilized milk depôts at which milk specially prepared for infants can be obtained, in improving the general sanitation of slums, &c., have resulted in marked benefit. The difficulty which is encountered in some towns, in which the work of the mother necessitates leaving the infant, is not always the reason why it is left in this city; but that the infant is very commonly left unattended, or in incompetent hands, is notorious.

The death-rate per thousand amongst infants must necessarily be largely in excess of the death-rate per thousand at any other yearly age-period. This is due to the frailty of the infant, to immaturity, to congenital defects, inherited weakness, and inability to resist ailments which in children of an older growth would have but trifling effects. But making all due allowance for these circumstances, a loss remains to be accounted for out of all proportion to what may be called the normal or unavoidable loss of life.

It is the experience of Liverpool, and no doubt of all other large centres of population, that the rate of infant mortality during a year

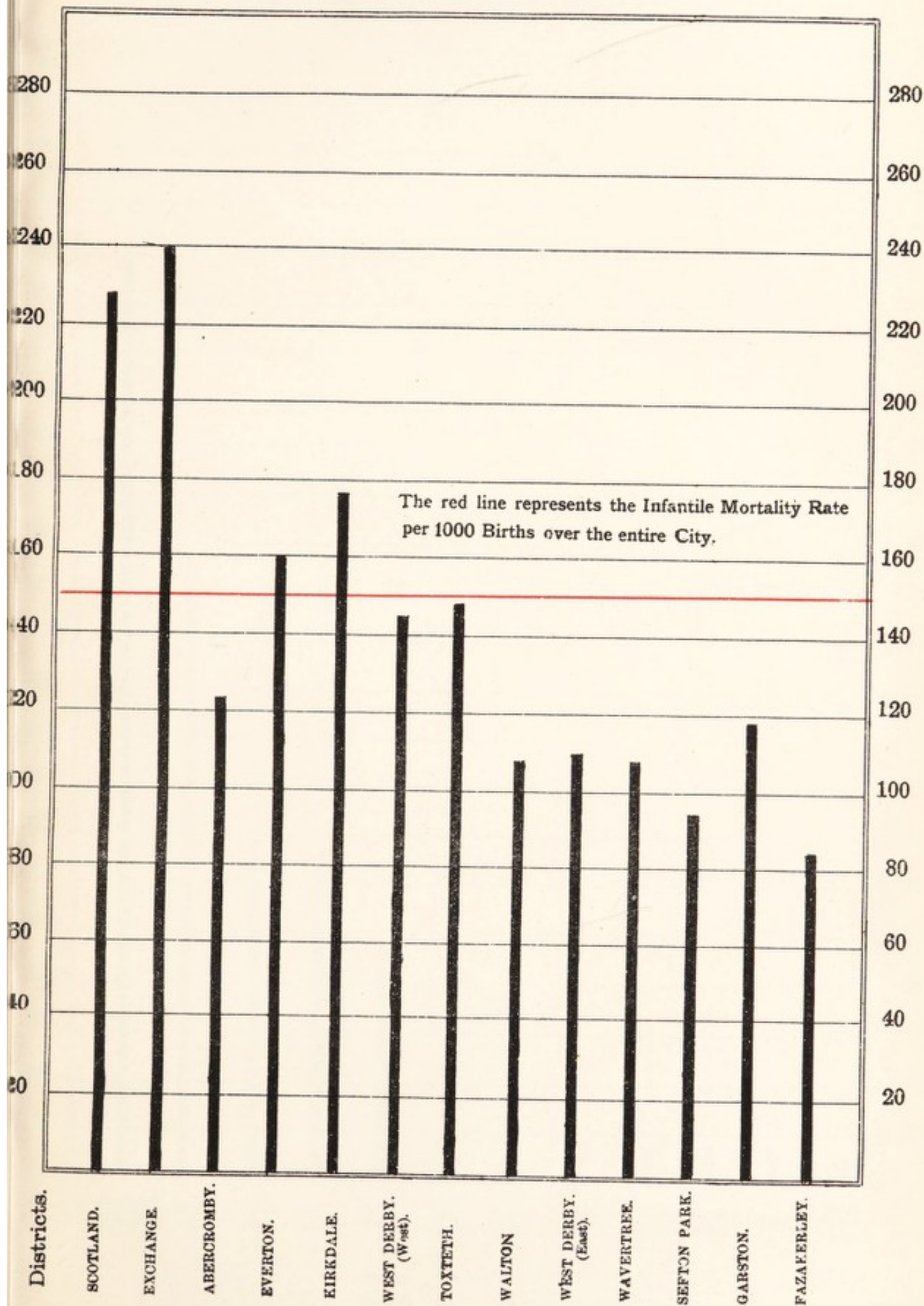
varies very widely in different wards or districts, as well as at different seasons; thus in 1905, the rate in two adjoining districts of Liverpool, viz., Abercromby District, with a population of 51,100, was 124 per thousand born; and Exchange District, with a population of 41,600, was 240 per thousand born. In other districts of the built-up parts of the City there are various ranges between these two extremes, yet a very much closer analysis is available than this. It has been found, for example, that in the worst districts there are many instances in which parents have successfully reared every member of a large family, whilst side by side with these there are examples too numerous in which all, or nearly all, of the infants born have perished before attaining the age of twelve months. Broadly speaking, the distinction would appear to lie in the amount of intelligence, attention and care which the mother is able and willing to bestow upon her offspring. Clearly, if the mother is drunken, either usually or even occasionally, the prospects of life for the infant are small. If she is exceptionally lacking in intelligence, or is dirty and indolent, or reduced in circumstances to very extreme poverty, the prospects of rearing the infant are lessened; but whilst these extreme cases are happily rare, it does seem that want of knowledge, or want of intelligence, are most commonly met with.

With regard to the unequal seasonal incidence of infant mortality, every inquiry shows that one great cause of destruction of infant life operates in the summer and autumn; but with the advent of drought and of heat the mortality amongst infants is invariably raised to an excessive degree. It is not to be supposed that this season of the year is accompanied by any change in the conduct of mothers towards their offspring; clearly it is not so; the same conditions, so far as domestic aspects are concerned, prevail all the year through.

All inquiries show that this increase is due to one cause, and that that cause is associated with the way in which the infant is fed. Methods of feeding, in fact, which are not productive of any exceptional mischief under ordinary conditions, do become in the summer and autumn months destructive in the highest degree.

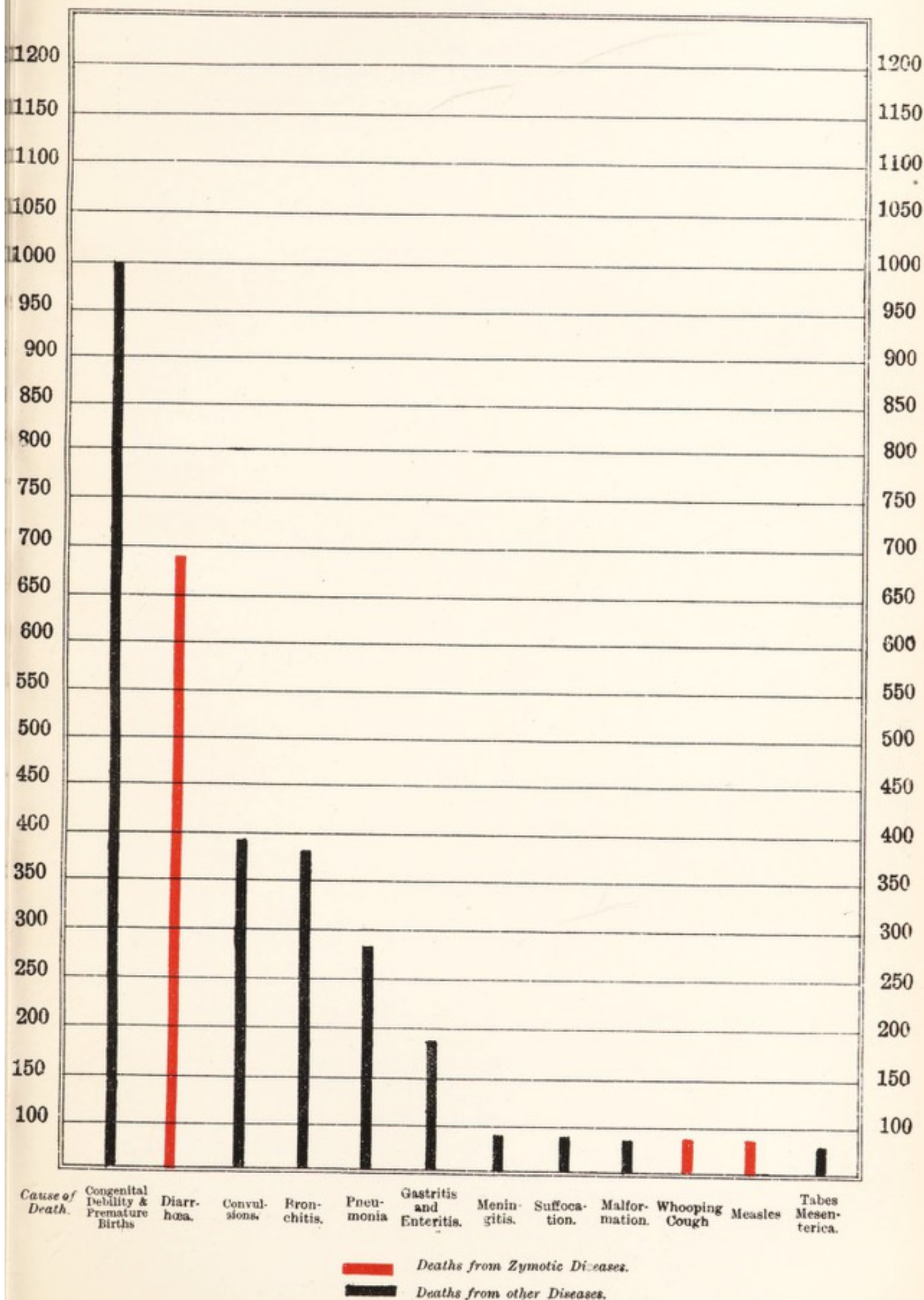
CITY OF LIVERPOOL.

Comparative view of the Infantile Mortality per 1000 Births in the different districts of the City during the year 1905.



CITY OF LIVERPOOL.

Comparative view of twelve of the principal causes of Infantile Mortality
(below 1 year of age) during the year 1905.



1. The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance in the theory of the structure of the atom.

2. In the second part of the paper the author gives a detailed account of the experimental work which has been done on this subject. It is shown that the results of the experiments are in good agreement with the theoretical predictions.

3. The third part of the paper is devoted to a discussion of the results of the experiments. It is shown that the results are in good agreement with the theoretical predictions.

4. In the fourth part of the paper the author gives a detailed account of the theoretical work which has been done on this subject. It is shown that the results of the theoretical work are in good agreement with the experimental results.

5. The fifth part of the paper is devoted to a discussion of the results of the theoretical work. It is shown that the results are in good agreement with the experimental results.

6. In the sixth part of the paper the author gives a detailed account of the results of the theoretical work. It is shown that the results are in good agreement with the experimental results.

7. The seventh part of the paper is devoted to a discussion of the results of the theoretical work. It is shown that the results are in good agreement with the experimental results.

8. In the eighth part of the paper the author gives a detailed account of the results of the theoretical work. It is shown that the results are in good agreement with the experimental results.

The following table indicates the incidence of infantile mortality in the various districts of the City, and during different seasons, also the proportion of deaths under five years to the total deaths:—

DISTRICTS.	Quarters.				Deaths under 5 years of age.	Total Deaths.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.
	March.	J c.	Sept.	Dec.				
Scotland	175	169	312	168	824	1,659	49·6	22·7
Exchange	88	96	168	119	471	1,308	36·0	24·0
Abercromby	71	61	105	83	320	1,006	31·8	12·4
Everton	214	238	392	285	1,129	2,466	45·7	15·9
Kirkdale	134	123	224	132	613	1,377	44·5	17·4
West Derby (West).	154	148	171	164	637	1,563	40·7	14·5
Toxteth	189	150	219	170	728	1,931	37·7	14·8
Walton	73	66	98	112	349	869	40·1	10·5
West Derby (East) .	51	48	81	68	248	749	33·1	11·2
Wavertree	54	37	43	58	192	449	42·7	11·2
Sefton Park	21	16	21	25	83	374	22·2	9·5
(late Toxteth Rural)								
Garston	27	23	29	41	120	299	40·1	11·7
Fazakerley	4	4	5	4	17	53	32·0	8·4
Workhouses & Hospitals (Residences outside City)	24	15	20	22	81	746	10·8	—
City	1,279	1,194	1,888	1,451	5,812	14,849	39·1	15·4

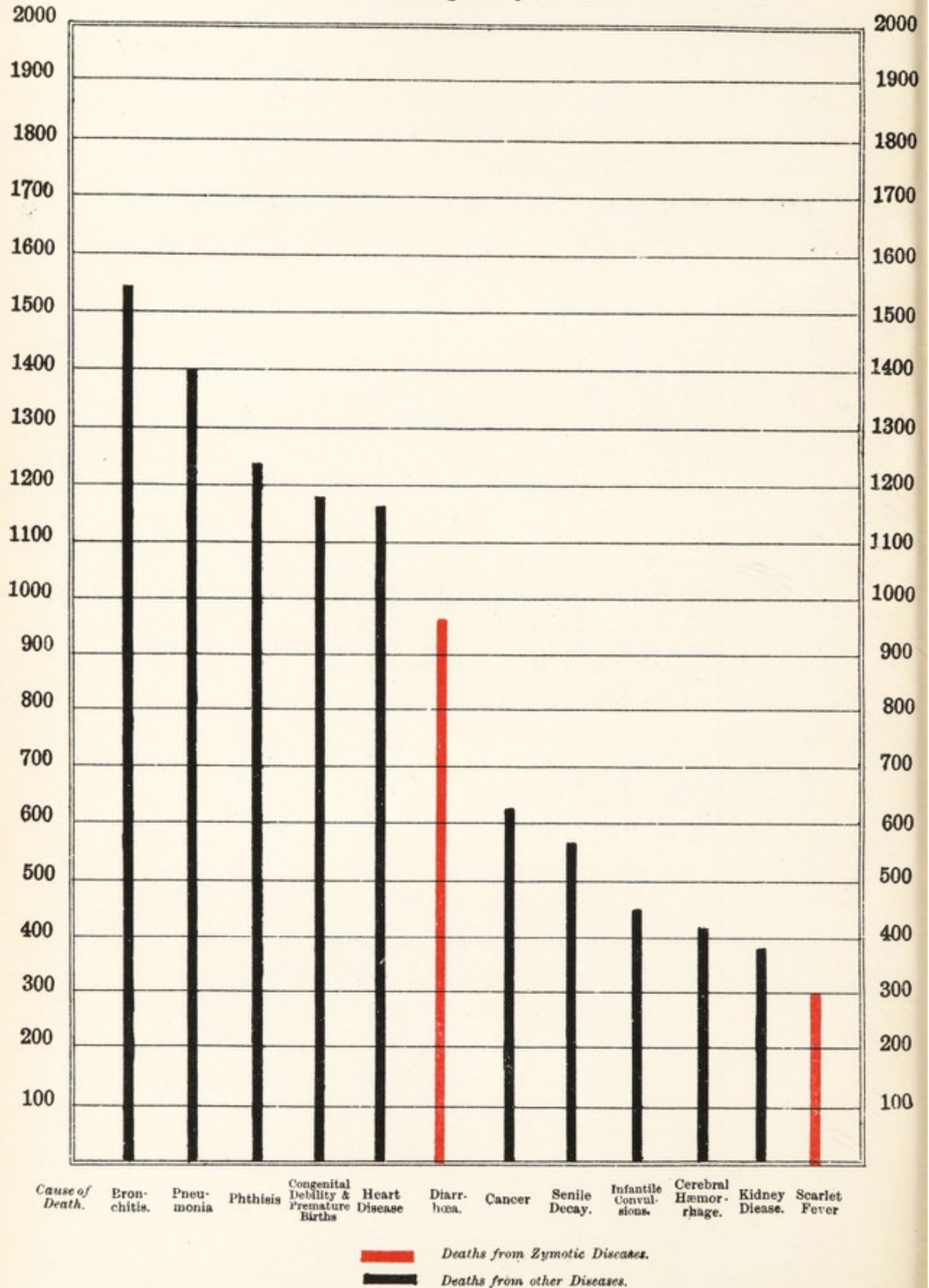
Deaths in Public Institutions are transferred to the Districts from whence the patients came.

The proportion which the deaths of children under five years of age has borne to the total deaths in the various districts of the City during the last five years is shown in the following table, and also the proportion of deaths of infants under one year of age to every hundred births registered:—

DISTRICTS.	1901.		1902.		1903.		1904.		1905.	
	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.
Scotland	45.1	22.2	47.1	22.1	47.5	21.5	57.7	25.8	49.6	22.7
Exchange	36.4	24.1	37.4	24.5	32.8	21.2	43.3	28.1	36.0	24.0
Abercromby	33.7	15.6	31.6	12.5	31.1	13.2	34.5	13.3	31.8	12.4
Everton	48.0	19.4	44.2	15.7	44.5	17.6	55.0	21.3	45.7	15.9
Kirkdale	44.4	19.5	42.7	16.7	40.0	14.3	51.7	21.4	44.5	17.4
West Derby (West)	45.8	17.8	41.4	15.0	41.6	15.4	45.2	18.1	40.7	14.5
Toxteth	41.6	18.8	41.9	17.1	39.9	16.8	51.2	19.1	37.7	14.8
Walton	48.3	15.5	42.6	13.1	39.4	11.9	46.3	15.7	40.1	10.5
West Derby (East)	37.7	16.5	31.5	11.2	36.0	12.4	38.5	14.6	33.1	11.2
Wavertree	46.2	16.5	42.8	12.8	43.9	11.8	46.6	15.1	42.7	11.2
Sefton Park	29.3	12.0	30.4	14.6	27.3	8.8	30.8	13.8	22.2	9.5
(late Toxteth Rural)										
Garston	48.2	18.5	38.6	10.7	43.1	12.0	55.2	18.3	40.1	11.7
Fazakerley	32.1	12.8	32.0	7.9	32.3	14.1	33.3	13.0	32.0	8.4
Workhouse and Hospitals (Residences outside of City)	11.8	...	12.1	...	10.2	...	14.8	...	10.8	...
City	42.0	18.7	39.8	16.2	38.8	15.9	47.3	19.6	39.1	15.4

CITY OF LIVERPOOL.

Comparative view of twelve of the principal causes
of death during the year 1905.



CAUSES OF DEATH.

Full details as to the causes of death are set forth in table *F* in the Appendix; in this table the age at which each death took place and the district in which it occurred will also be found.

The following table gives a classification of the causes of death during the four quarters of the year, grouped under 16 classes:—

CLASSES.	QUARTERS.				YEAR 1905.
	March	June.	Sept.	Dec.	
1. Zymotic and Septic Diseases	360	322	1097	395	2,174
2. Diseases of Uncertain or Variable Seat.....	178	164	148	171	661
3. Constitutional Diseases.....	46	31	38	33	148
4. Tubercular Diseases	454	418	384	398	1,654
5. Diseases of the Nervous System	425	356	341	386	1,508
6. „ „ Circulatory „	339	286	301	328	1,254
7. „ „ Respiratory „	950	788	463	1035	3,236
8. „ „ Digestive „	214	204	220	184	822
9. „ „ Lymphatic „	4	4	4	10	22
10. „ „ Urinary „	126	89	98	118	431
11. „ „ Reproductive „	36	25	24	28	113
12. „ „ Joints, &c.	11	8	4	8	31
13. „ „ Integumentary System	16	13	25	14	68
14. Dietetic Diseases.....	1	1	3	6	11
15. Developmental Diseases	443	414	394	489	1,740
16. Causes investigated at Coroner's Inquests ...	254	235	225	257	971
Causes not specified .....	...	2	...	3	5
All Causes	3,857	3,360	3,769	3,863	14,849

ZYMOTICS.

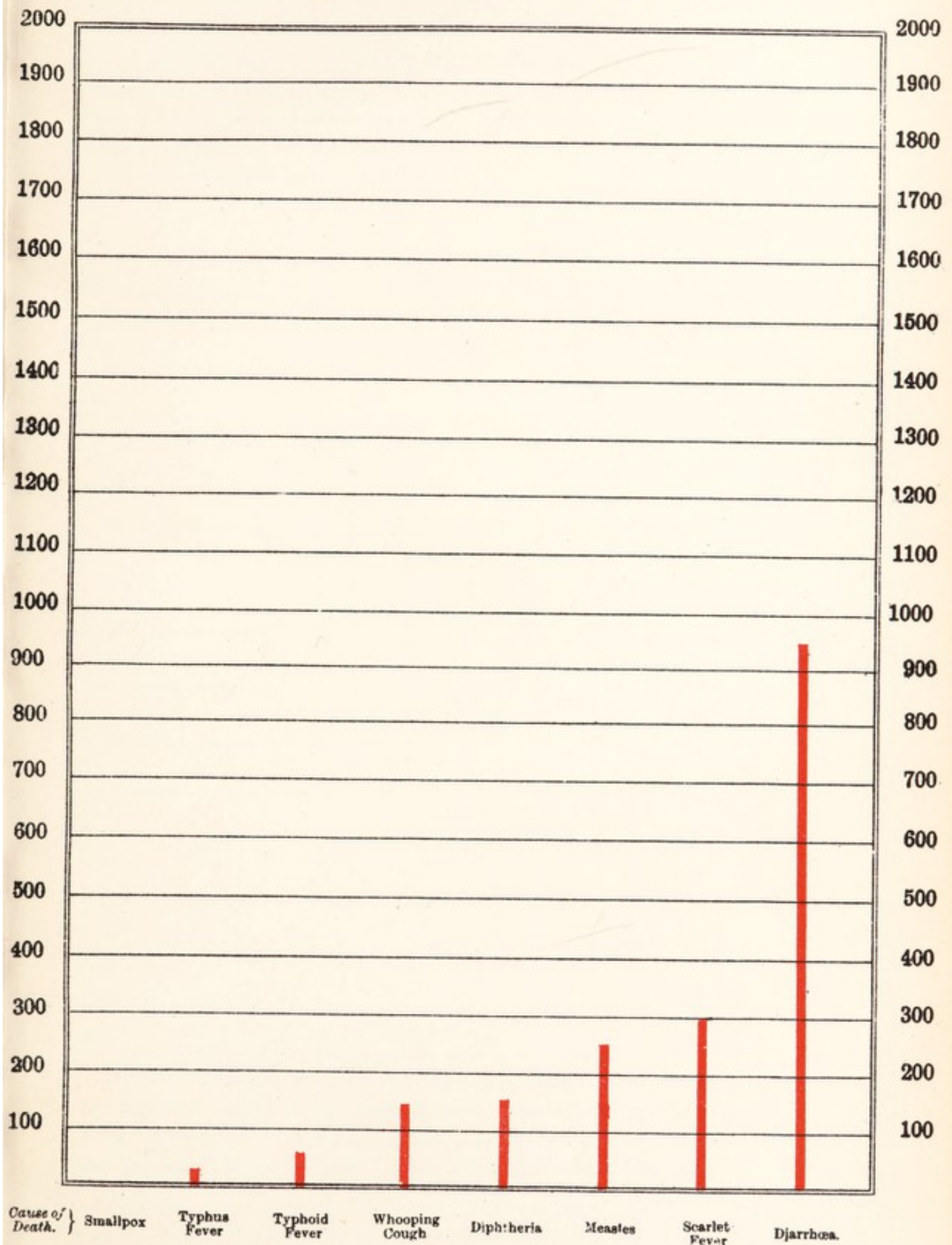
This class of disease is one calling for special attention, and is dealt with in some detail in the following tables, the first of which shows the localities and the periods of the fatal prevalence of zymotic diseases, and the subsequent tables deal specifically with each form of zymotic disease during 1905:—

DISTRICTS.	Deaths from all causes.	ZYMOTICS.				
		Quarters.				Per-centage of Zymotic Deaths to Deaths from all causes.
		March.	June.	Sept.	Dec.	
Scotland.....	1,659	42	50	210	52	21·3
Exchange	1,308	23	28	108	19	13·6
Abercromby	1,006	19	14	51	25	10·8
Everton	2,466	59	74	212	72	16·9
Kirkdale	1,377	31	27	162	28	18·0
West Derby (West).....	1,563	49	46	74	30	12·7
Toxteth	1,931	52	36	128	40	13·2
Walton	869	28	12	64	52	17·9
West Derby (East)	749	21	12	39	26	13·0
Wavertree	449	17	8	17	11	11·8
Sefton Park	374	8	5	9	14	9·6
(late Toxteth Rural)						
Garston	259	3	5	10	5	7·7
Fazakerley	53	1	—	3	3	13·2
Workhouses and Hospitals (Residences outside City)	746	7	5	10	18	5·3
City	14,849	360	322	1,097	395	14·6

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

CITY OF LIVERPOOL.

Comparative view of the total number of Deaths from the principal Zymotic Diseases during the year 1905.



Zymotic diseases occasioned 2,174 deaths during the year 1905, and accounted for 14·6 per cent. of the total mortality within the City during this period. The death-rate from zymotic diseases per 1,000 was 2·9. The average rate for the preceding 5 years (1900-1904) was 3·7. The deaths during 1905 were as follows:—

	QUARTERS.				YEAR 1905.
	March.	June.	Sept.	Dec.	
Total Zymotics	360	322	1,097	395	2,174
Smallpox	—	—	—	—	—
Measles	92	92	34	29	247
Scarlatina	56	49	73	125	303
Diphtheria	52	23	28	35	138
Membranous Croup	8	1	2	5	16
Whooping-cough	16	39	55	41	151
Diarrhoea	31	35	825	69	960
Influenza	39	12	7	16	74
Fever {	Typhus	15	4	7	28
	Typhoid	10	14	11	49
	Simple Continued	—	1	—	1
Other Zymotics.....	41	52	55	59	207

NOTE.—Influenza, Measles, and Whooping-cough appear to have been predisposing causes in the case of many deaths primarily ascribed to Respiratory Disease (page 23), inasmuch as one or other of these Zymotics had preceded the fatal illness. See also notes to succeeding tables.

SMALL-POX.

Small-pox was introduced into the City on six occasions. In five cases the patients were removed direct from ships, the sixth case was that of a travelling showman, and the remainder were removed from their own homes. Subsequent to the removal of the patients to hospital, isolation and re-vaccination of those who had been exposed to infection, disinfection of the infected clothing, houses, &c., were all carried out, and daily visits were made for fourteen days to infected houses to inquire if any sickness of any kind had arisen. (See page 115.)

Including the imported cases, there was a total number of 15 cases notified.

The accompanying table is of interest as showing the greater intervals which are occurring in any considerable prevalence of small-pox.

The numbers of cases were not recorded until 1877, and from then up till the period of the passing of the Infectious Disease (Notification) Act it is probable that the numbers recorded do not represent all the cases which occurred. The deaths, however, may be regarded as a more accurate gauge.

In 1877 there were 200,000 fewer people than there were in 1903, hence the relative incidence in 1903 would be very much less than that of 1877.

It will also be observed that the deaths in 1903 were less than half of those which occurred in 1877.

Interest in the outbreak of 1903 was revived by a Report made to the Local Government Board by Dr. Reece, whose investigations led him to the conclusion that aerial convection from the Hospitals was responsible for the diffusion of small-pox throughout the City. The whole subject was, therefore, very carefully gone into again, and the fact that the incidence of small-pox was larger on centres and on dwellings wholly unconnected with small-pox administration than it was in other parts of the City, was established. Moreover, small-pox had broken out, not once, but repeatedly, in the vicinity of one of the Small-pox Hospitals before that Hospital was used for small-pox, and from these cases there had, unfortunately, been considerable extension by direct or indirect contact.

So far as the Liverpool outbreak of 1903 is concerned, therefore, there was nothing to suggest that aerial convection from the Hospitals had played any part in the diffusion of the disease, the diffusion being conclusively proved to be due to other causes.

SMALL-POX DURING THE LAST FORTY-THREE YEARS.

Years of Increase.	No of Cases.	Deaths.	Years of Subsidence.	No. of Cases.	Deaths.
1863	Unrecorded	100			
1864	"	482			
1865	"	459			
1866	"	102			
			1867	Unrecorded	22
			1868	"	18
			1869	"	20
1870	"	174			
1871	"	1,919			
1872	"	50			
			1873	"	10
			1874	"	30
			1875	"	29
1876	"	386			
1877	1,660	299			
			1878	35	3
			1879	12	...
			1880	14	2
			1881	262	34
			1882	67	6
			1883	126	26
1884	832	106			
			1885	375	46
			1886	234	29
			1887	23	1
			1888	27	1
			1889	9	1
			1890	2	...
			1891	21	2
			1892	177	13
			1893	75	9
			1894	229	20
			1895	130	12
			1896	8	...
			1897	6	...
			1898	17	2
			1899	10	1
			1900	156	23
			1901	37	6
1902	560	20			
1903	1720	141			
			1904	27	2
			1905	15	...

TYPHUS FEVER.

This disease is particularly liable to spread amongst dirty, ill-fed, and intemperate persons, and incessant watchfulness is necessary in order to hold it in check. The disease almost always attacks the children of the family first; in them the symptoms are obscure, and are often unrecognised until adults succumb.

On three separate occasions, numbering six cases, the disease was introduced by Russian and Armenian emigrants.

Of the total number of 98 cases, 28, as the table shows, resulted fatally, the majority of the deaths taking place during adult age, the period when the disease is most fatal.

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
—	—	—	1	—	3	9	6	6	3	—	28

Reports for preceding years sufficiently illustrate the importance of the daily visits which are made to houses which have been infected with typhus fever, as well as the importance of keeping under supervision every person who is known to have been in contact with the patient. It is not necessary to allude to this at present, further than to say that none of the stringent measures which have been adopted against typhus are in any way relaxed. (See page 115.)

The number of deaths during each of the preceding ten years has been as follows:—24, 36, 23, 19, 13, 11, 14, 25, 57 and 25.

List of streets in the city where cases of TYPHUS FEVER occurred
during the year 1905.

STREETS.	Cases.	Deaths.	STREETS.	Cases.	Deaths.
Adlington	2	...	Lamport	1	...
Athol	6	1	Laxey	1	...
Baptist.....	2	...	Lionel	4	1
Baptist Lane	2	...	Luke.....	2	1
*Bispham .....	...	1	New Hedley	1	...
Blundell	2	...	Nightingale Square	4	1
Burlington	2	...	Pennington Place	10	2
Church.....	1	...	Pickop	3	...
Clayton	1	1	Portland	1	1
Cuerden	6	4	Richmond Row	1	...
Duckinfield.....	1	...	Roscommon	1	1
Duke	2	...	Rose Place	2	1
Ebor	3	...	Rose Vale	1	1
Field	2	...	Steamship	1	...
Fitzroy	1	1	St. Stephen.....	1	...
Gerard	2	...	Summerseat	1	1
Gore	1	...	Tavistock.....	1	...
Greig	1	...	Upper Milk.....	2	1
Great Homer	3	2	Upper Stanhope.....	2	1
Great George Square	1	...	Vauxhall Road	2	1
Hankin	1	1	White	1	...
Hopwood	1	1	Williamson	1	...
Hornby	1	1	Worfield	3	...
*Hygeia .....	...	1	Wolfe	1	1
Institutions (Nurses)	6	...			

* Cases notified in 1904 but died in 1905.

TYPHOID FEVER.

There were 325 cases of Typhoid Fever reported during the year, against 434 in the preceding year, and 681 in 1903. The deaths from the disease were 49, being 33 fewer than in the preceding year. These figures—both the total number of cases reported and the total number of deaths—represent the lowest recorded since the extension of the City Boundaries in 1895.

Upwards of 72 per cent. of the total number of cases notified during the year were removed to hospital. (See page 199.)

The following table gives the ages at death of the fatal cases :—

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30 -	40—	50—	60 & up- wards.	All Ages.
—	—	3	4	6	6	11	12	4	3	—	49

The number of deaths during each of the preceding ten years has been as follows :—197, 166, 145, 148, 182, 120, 154, 190, 108 and 82.

Table showing the locality and season of deaths from Typhus Fever and Typhoid Fever, during the year 1905. (See also page 58).

DISTRICTS.	1st Quarter.			2nd Quarter.			3rd Quarter.			4th Quarter.			YEAR 1905.		
	Typhus.	Typhoid.	Simple Continued.	Typhus.	Typhoid.	Simple Continued.	Typhus.	Typhoid.	Simple Continued.	Typhus.	Typhoid.	Simple Continued.	Typhus.	Typhoid.	Total.
Scotland.....	3	—	—	3	—	—	3	1	—	4	1	2	3	10	13
Exchange	7	—	—	7	1	—	2	1	—	2	—	—	9	2	11
Abercromby	—	2	—	2	—	—	2	2	—	2	—	—	4	—	4
Everton	4	2	—	6	—	1	7	3	—	3	1	2	5	13	19
Kirkdale.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
West Derby (West)	1	2	—	3	—	1	1	1	—	1	—	1	1	5	6
Toxteth	—	2	—	2	—	3	3	2	—	2	—	3	2	8	10
Walton	—	—	—	—	—	1	1	1	—	1	—	1	3	—	3
West Derby (East)	—	1	—	1	—	—	—	—	—	—	—	2	3	—	3
Wavertree	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sefton Park	—	—	—	—	—	1	1	2	—	2	—	2	—	5	5
(late Toxteth Rural)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Garston	—	—	—	—	1	—	1	—	—	—	—	—	1	—	1
Fazakerley.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hospitals (Residences out of City) ...	—	1	—	—	—	—	—	1	—	1	—	1	1	2	3
TOTAL FOR WHOLE CITY	15	10	—	25	4	14	1	19	7	11	2	14	28	49	78

In arranging this table, all deaths occurring in hospitals have been transferred to the districts from whence the patients came.

SCARLET FEVER.

There were 4,308 cases reported during the year, against 2,988 in the preceding year and 4,053 in 1903. The public appreciation of the value of isolation is well established, and 73·0 per cent. of the cases were removed to hospital, *i.e.*, 3,147, out of a total of 4,308 cases reported. The percentage of the total number of scarlet fever patients removed to hospital during each of the preceding ten years has been as follows:— 38·3, 44·3, 54·6, 60·5, 63·6, 60·8, 54·8, 53·4, 52·9 and 74·6.

The mortality from the disease reached 7 per cent., the great majority of the deaths being below five years of age. (See table, page 34).

Although this proportion seems high, it has been exceeded on previous occasions, and in bygone years the loss of life from the disease was very much more serious than it is now.

The total number of deaths was 303, against 149 last year, and an average of 198 during the preceding five years.

The following table shows the periods of the year and the localities in which deaths from Scarlet Fever occurred, and also the ages at death.

The number of deaths from Scarlet Fever during each of the preceding ten years, 1895-1904, has been as follows:—169, 217, 209, 145, 164, 113, 195, 318, 201 and 149.

DISTRICTS.	QUARTERS.								YEAR.			
	March.		June.		Sept.		Dec.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
Scotland	4	4	7	4	7	6	3	10	21	24	45	
Exchange .....	...	1	1	3	2	6	1	3	4	13	17
Abercromby	3	...	2	2	...	2	2	3	7	7	14	
Everton	5	9	7	4	7	5	6	8	25	26	51	
Kirkdale	3	...	1	...	7	4	6	8	17	12	29	
West Derby (West)	2	1	1	2	6	1	8	3	17	7	24	
Toxteth	8	4	2	1	3	3	8	8	21	16	37	
Walton	2	2	2	4	3	3	12	14	19	23	42	
West Derby (East)	3	1	...	...	2	1	6	5	11	7	18
Wavertree	2	1	2	...	1	2	...	...	5	3	8
Sefton Park .....	...	...	...	1	...	1	3	3	3	5	8
(late Toxteth Rural)												
Garston .....	...	...	1	...	1	...	1	2	3	2	5
Fazakerley	1	...	...	...	...	...	...	...	1	...	1
Hospitals (Residences outside the City) .....	...	...	2	...	...	...	1	1	3	1	4
City	33	23	28	21	39	34	57	68	157	146	303	
AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
20	39	50	58	32	78	17	5	1	3	303

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

MEASLES.

Measles showed a marked decrease, as compared with the preceding year, the cases reported reaching 3,938, as against 9,453 in 1904, 2,728 in 1903, 7,141 in 1902, 6,766 in 1901 and 2,372 in 1900. There were 247 deaths directly ascribed to it, the great majority of them being of infants below 3 years of age.

The number of deaths does not fully indicate the destruction of life due to measles, since this disease is commonly associated with bronchitis and pneumonia, and it is beyond any question that deaths primarily due to measles are entered in the returns as due to pulmonary disease. The isolation of the infectious sick in hospital is important and necessary. Provision of hospital accommodation, for a limited number of cases, has now been made for measles, but the deaths from measles do not show a decline comparable to that which has taken place in the forms of infectious disease for which hospital accommodation is available. In the great number of homes in which measles occurs isolation in the house is difficult or impossible. In making arrangements for hospital isolation of measles, difficulties of a special kind arise owing to the tender age of the patient, and the peculiarities of the infection in this form of disease.

The following table shows the periods of the year and the localities in which deaths from Measles occurred, and also the ages at death.

The number of deaths from Measles during each of the preceding ten years, 1895-1904, has been as follows:—398, 312, 344, 283, 321, 150, 473, 334, 132 and 696.

DISTRICTS.	QUARTERS.								YEAR.			
	March.		June.		Sept.		Dec.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
Scotland	10	4	3	9	2	2	2	2	17	17	34	
Exchange	4	3	4	7	3	3	2	...	13	13	26	
Abercromby	3	4	1	...	...	1	1	2	5	7	12
Everton	7	6	14	13	8	4	4	4	33	27	60	
Kirkdale	3	6	2	2	2	3	1	1	8	12	20	
West Derby (West)	9	6	13	8	...	1	2	1	24	16	40	
Toxteth	6	4	...	...	2	...	...	...	8	4	12
Walton	2	5	1	1	...	...	...	1	3	7	10
West Derby (East).....	2	...	3	6	2	1	...	2	7	9	16	
Wavertree	4	1	1	2	...	...	...	...	5	3	8
Sefton Park..... (late Toxteth Rural)	...	...	...	...	...	...	...	...	...	...	...
Garston.....	...	...	...	...	...	...	1	...	1	...	1
Fazakerley .....	...	...	...	...	...	...	...	1	...	1	1
Hospitals (Residences outside the City)	2	1	2	...	...	...	1	1	5	2	7
City	52	40	44	48	19	15	14	15	129	118	247	
AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
63	109	37	20	12	6	247

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

WHOOPING-COUGH.

Whooping-cough, which had been prevalent during the preceding year, showed a considerable decline during 1905. This disease is one of the most distressing and painful causes of death in very early life. A large number of deaths certified to be primarily due to diseases of the lungs are found on inquiry to have originated in whooping-cough. The great majority of the deaths occur below two years of age, and nearly one-half below twelve months of age. It is plain from this circumstance that isolation of the infected infant in hospital presents many difficulties. In a large proportion of cases the patient would have to be accompanied by the mother, and the period of detention in hospital would in the majority of cases be protracted. During last year 151 deaths were directly attributed to whooping-cough, but this figure is by no means a complete representation of the mischief caused by it.

Notwithstanding the difficulties in the way, isolation for a limited number of cases has been found, and some lessening of this disease may be expected with confidence. Experience has repeatedly shown that the introduction of a case of whooping-cough into a court has resulted in the infection of practically the whole of the infant population in the court.

The following table shows the periods of the year and the localities in which deaths from Whooping-cough occurred, and also the ages at death.

The number of deaths from Whooping-cough during each of the preceding ten years, 1895-1904, has been as follows:—412, 298, 356, 333, 314, 538, 166, 407, 318 and 426.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	1	1	5	4	9	3	3	4	18	12	30
Exchange .....	...	...	1	1	1	4	2	1	4	6	10
Abercromby	1	...	...	1	2	1	1	1	4	3	7
Everton	1	4	2	6	3	11	3	5	9	26	35
Kirkdale.....	3	1	2	8	6	4	2	1	13	14	27
West Derby (West)	1	1	1	3	2	1	3	...	7	5	12
Toxteth	1	...	1	3	2	...	1	...	5	3	8
Walton .....	...	1	...	...	3	2	4	6	7	9	16
West Derby (East) .....	...	...	...	...	...	...	...	...	...	...	...
Wavertree .....	...	...	...	...	...	...	...	2	...	2	2
Sefton Park .....	...	...	...	1	...	1	...	...	...	2	2
(late Toxteth Rural).											
Garston .....	...	...	...	...	...	...	...	...	...	...	...
Fazakerley.....	...	...	...	...	...	...	1	...	1	...	1
Hospitals (Residences outside the City)	...	...	...	...	...	...	...	1	...	1	1
City	8	8	12	27	28	27	20	21	68	83	151

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
61	47	14	15	7	7	...	...	...	...	...	...	151

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

DIPHTHERIA.

Deaths from Diphtheria attained their maximum during the first quarter of the year. Appended is a table showing the periods of the year and the localities in which the deaths from Diphtheria occurred, and also the ages at death.

The number of deaths during each of the preceding ten years has been as follows:—98, 120, 91, 123, 192, 143, 158, 200, 153 and 181.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	1	2	...	2	5	1	...	5	6	11
Exchange	1	2	...	1	...	3	...	1	1	7	8
Abercromby	1	...	...	2	...	3	...	1	1	6	7
Everton	1	3	3	...	2	...	5	5	11	8	19
Kirkdale	1	6	...	5	...	2	3	...	4	13	17
West Derby (West)	3	6	1	2	1	2	1	1	6	11	17
Toxteth	2	6	3	3	2	...	2	4	9	13	22
Walton	2	2	...	...	...	2	3	1	5	5	10
West Derby (East)	2	1	...	...	...	2	...	1	2	4	6
Wavertree	2	3	1	...	1	...	2	...	6	3	9
Sefton Park .....	...	2	...	...	1	...	1	1	2	3	5
(late Toxteth Rural).											
Garston	1	2	...	...	...	...	...	1	1	3	4
Fazakerley .....	...	...	...	...	...	...	1	...	1	...	1
Hospitals (Residences out- side the City).....	1	1	...	...	...	...	...	...	1	1	2
City	17	35	10	13	9	19	19	16	55	83	138

AGES AT DEATH

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30	40—	50	60—	All Ages.
11	29	17	25	21	25	6	2	2	...	...	...	...	138

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

CROUP.

The following table shows the periods of the year and the localities in which deaths attributed to Croup occurred, and also the ages at death. Sixteen of the deaths were attributed to Membranous Croup, and twenty-one to Croup.

The number of deaths during each of the preceding ten years has been as follows:—72, 82, 58, 41, 50, 40, 51, 41, 24 and 33.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	...	...	...	...	...	...	1	...	1	1
Exchange .....	...	1	...	...	...	...	...	...	...	1	1
Abercromby.....	...	1	1	...	...	...	...	1	1	2	3
Everton	1	3	2	1	...	...	3	1	6	5	11
Kirkdale .....	...	...	...	1	...	...	...	1	...	2	2
West Derby (West)	3	1	1	1	2	1	...	...	6	3	9
Toxteth .....	...	2	1	...	...	...	...	...	1	2	3
Walton.....	...	...	...	...	...	...	...	...	...	...	...
West Derby (East).....	1	2	1	...	...	...	...	1	2	3	5
Wavertree .....	...	...	...	...	...	...	...	...	...	...	...
Sefton Park .....	...	...	...	...	1	...	...	...	1	...	1
(late Toxteth Rural).	...	...	...	...	...	...	...	...	...	...	...
Garston.....	...	...	...	...	...	...	...	1	...	1	1
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Hospitals (Residences outside the City) .....	...	...	...	...	...	...	...	...	...	...	...
City	5	10	6	3	3	1	3	6	17	20	37

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
6	11	5	6	6	3	...	...	...	...	...	...	37

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

ZYMOTIC DIARRHŒA.

As is always the case, the mortality from diarrhœa chiefly affected infants, nearly three-fourths of the total number of deaths being those of infants under twelve months old. It commenced to figure prominently in the mortality returns early in July, and continued until October. Over 800 deaths were registered from it during this brief period, and to these must be added deaths from the closely-allied and identical disease, English cholera.

Investigation proves incontestably that the deaths of infants from this cause are closely associated with the method of feeding, putrefying food being the medium by which the specific poison is commonly introduced. The deaths amongst children under three months of age, either wholly or partially fed on artificial foods, are fifteen times as great as they are amongst an equal number of infants fed upon breast milk; *e.g.*, investigation has tended to prove that, out of every 1,000 infants under three months of age, naturally fed upon breast milk alone, 20 die of autumnal choleraic disease; but if the same number of infants, at the same age, are artificially fed, then, instead of 20 dying, as many as 300 will die from this cause. It is mainly with a view to meet this excessive mortality that sterilized milk depôts have been established, to ensure a supply of food for infants which is bacteria-free, and which can be given without any exposure to sources of contamination.

The connection between the meteorological conditions and the prevalence of zymotic diarrhœa during the third quarter of the year, is well shown in the following diagrams.

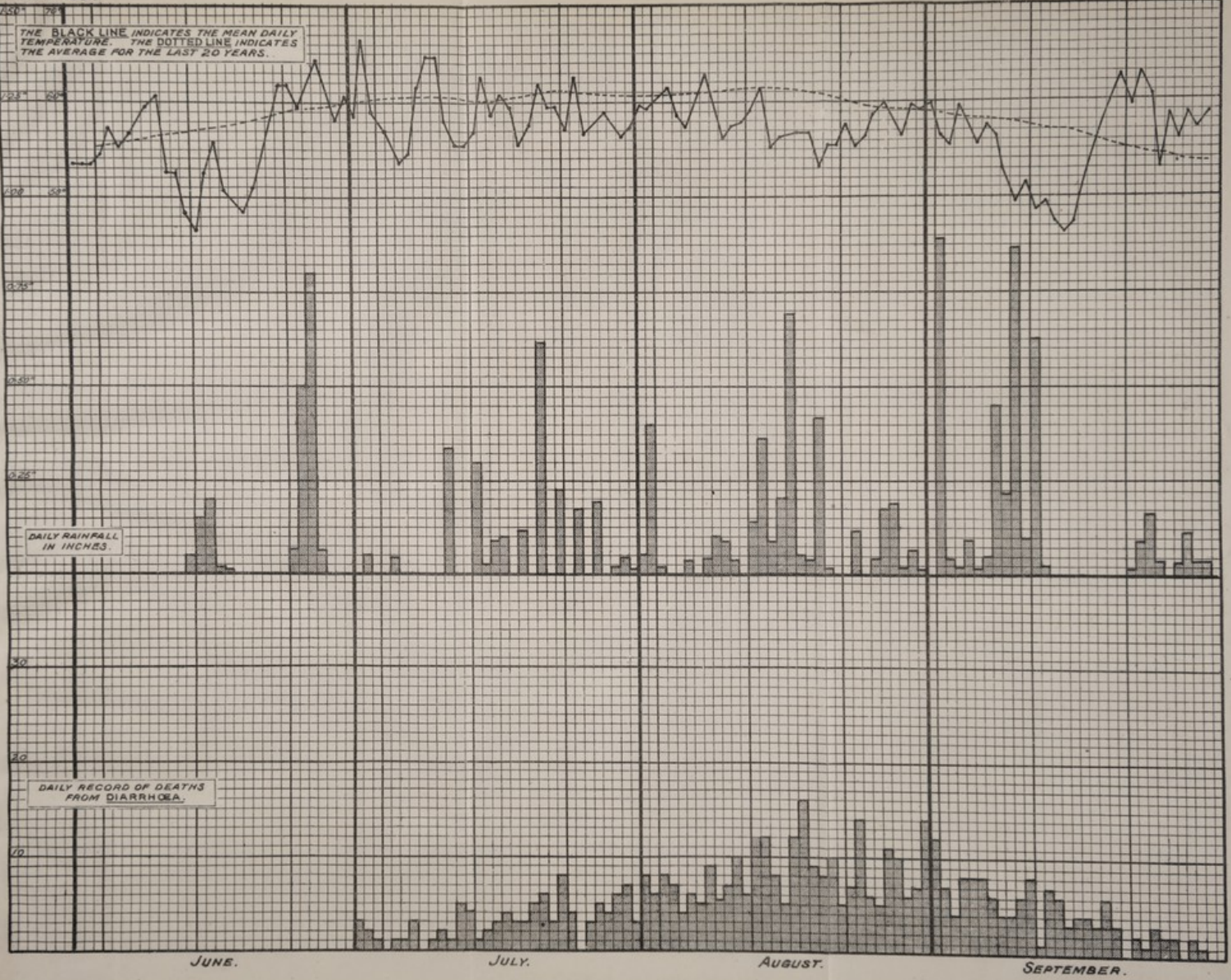
These three diagrams give the daily variations of the rainfall and the mean temperature of the air, during the months of June to September, and the daily deaths from zymotic diarrhœa during July, August, and September, for the years 1903-04-05.

In comparing the years 1903 and 1905 with the year 1904, it will be seen that the mean temperature in the latter frequently rose far above the 20 years' average, and remained so for several days together; it seldom fell below the average. The rainfall during 1904 was scanty. The summer and autumn of this year was characterised by a severe outbreak of diarrhœa. On the other hand, the mean temperature during the years 1903 and 1905 was usually below the average, and rarely rose above it, and then only for short intervals of a day or so. The amount of rain which fell was much greater. These conditions were associated with a death-rate from diarrhœa which was about one-half of that which occurred in 1904.

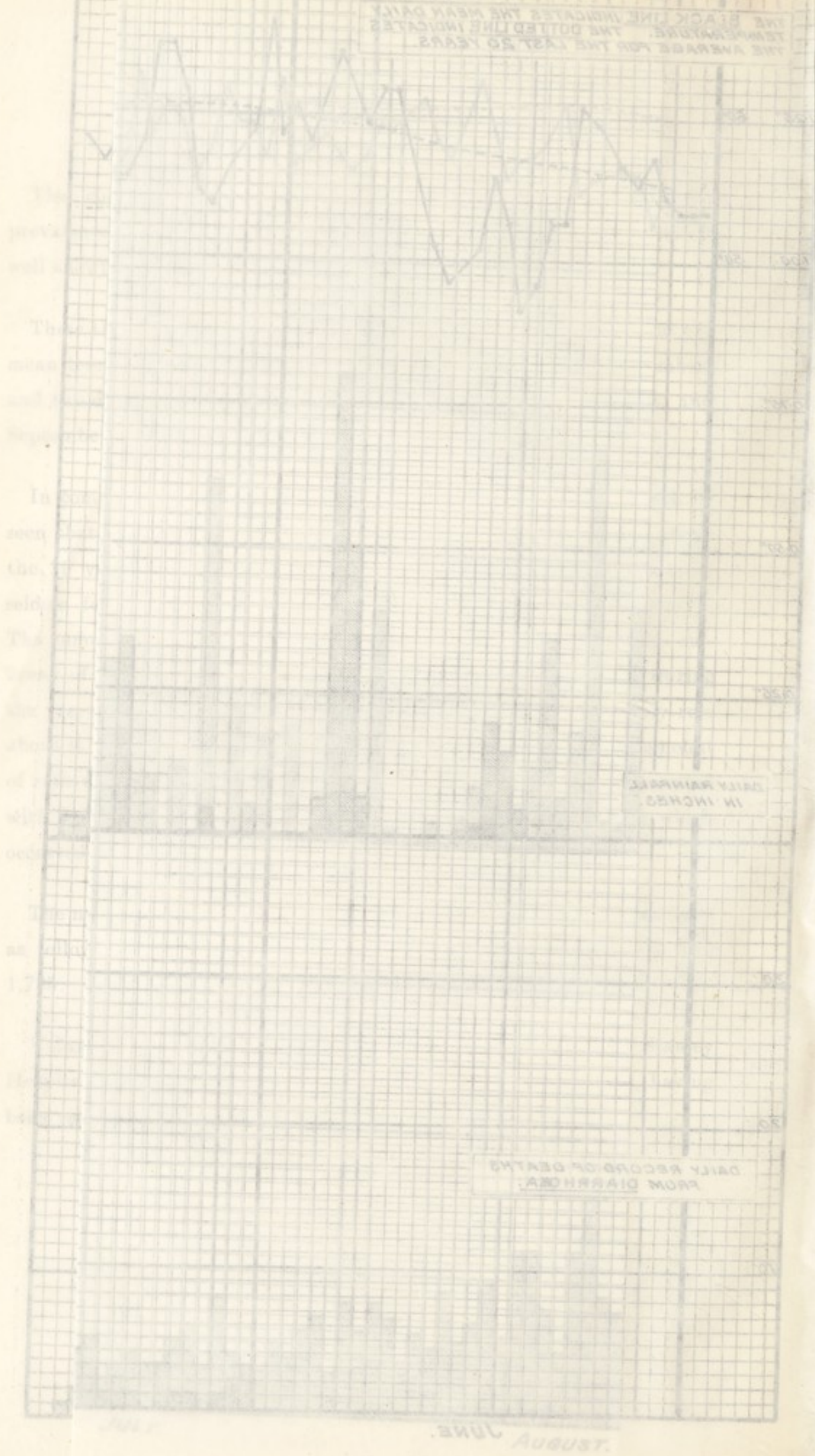
The number of deaths during each of the preceding ten years has been as follows:—1,108, 851, 1,482, 956, 1,158, 900, 1,269, 611, 657 and 1,785.

Valuable service was rendered by the authorities of the Stanley Hospital, a considerable number of patients, all of them infants, having been received into the Hospital during the summer months.

YEAR 1903.

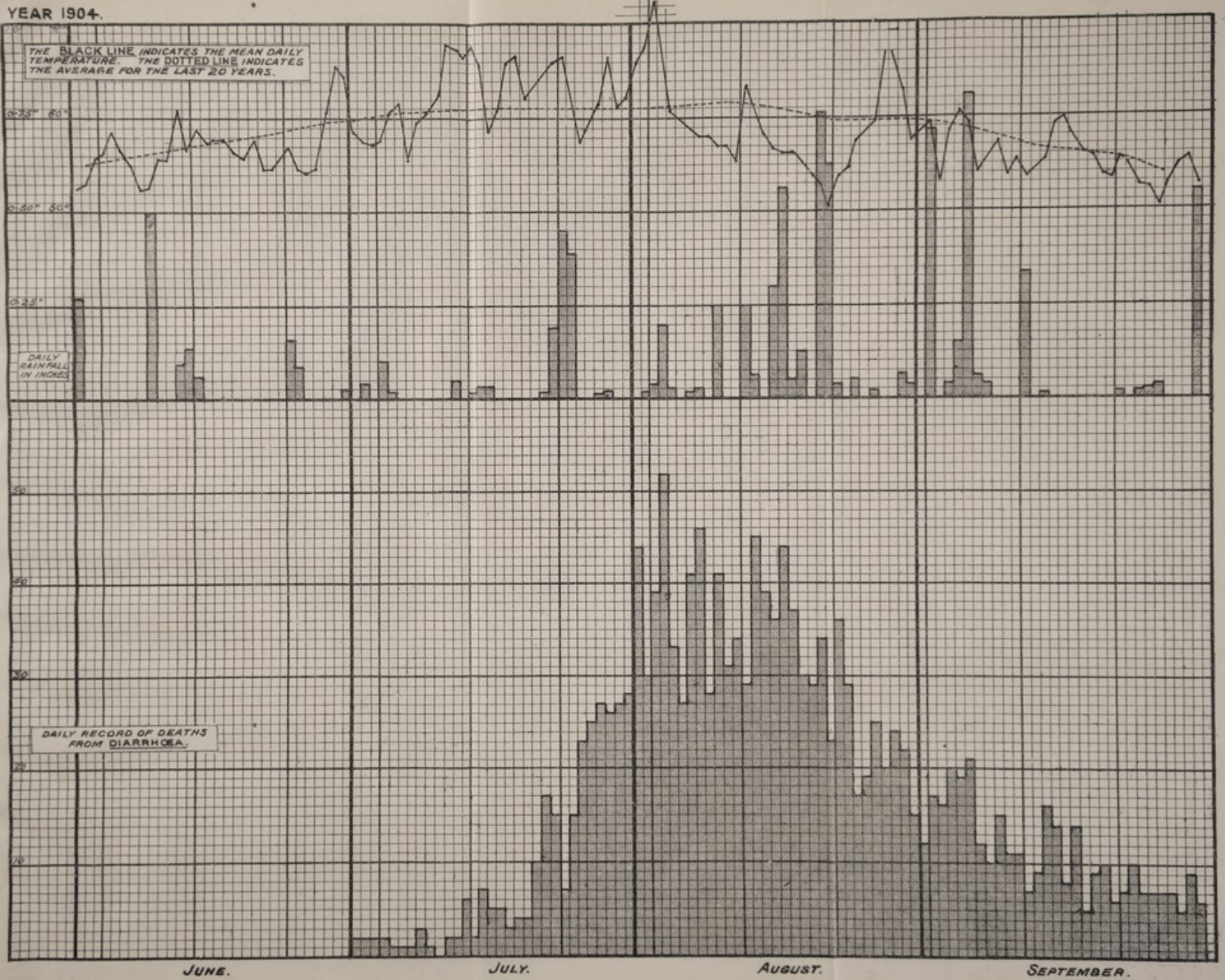


THE BLACK LINE INDICATES THE MEAN DAILY TEMPERATURE. THE DOTTED LINE INDICATES THE AVERAGE FOR THE LAST 20 YEARS.

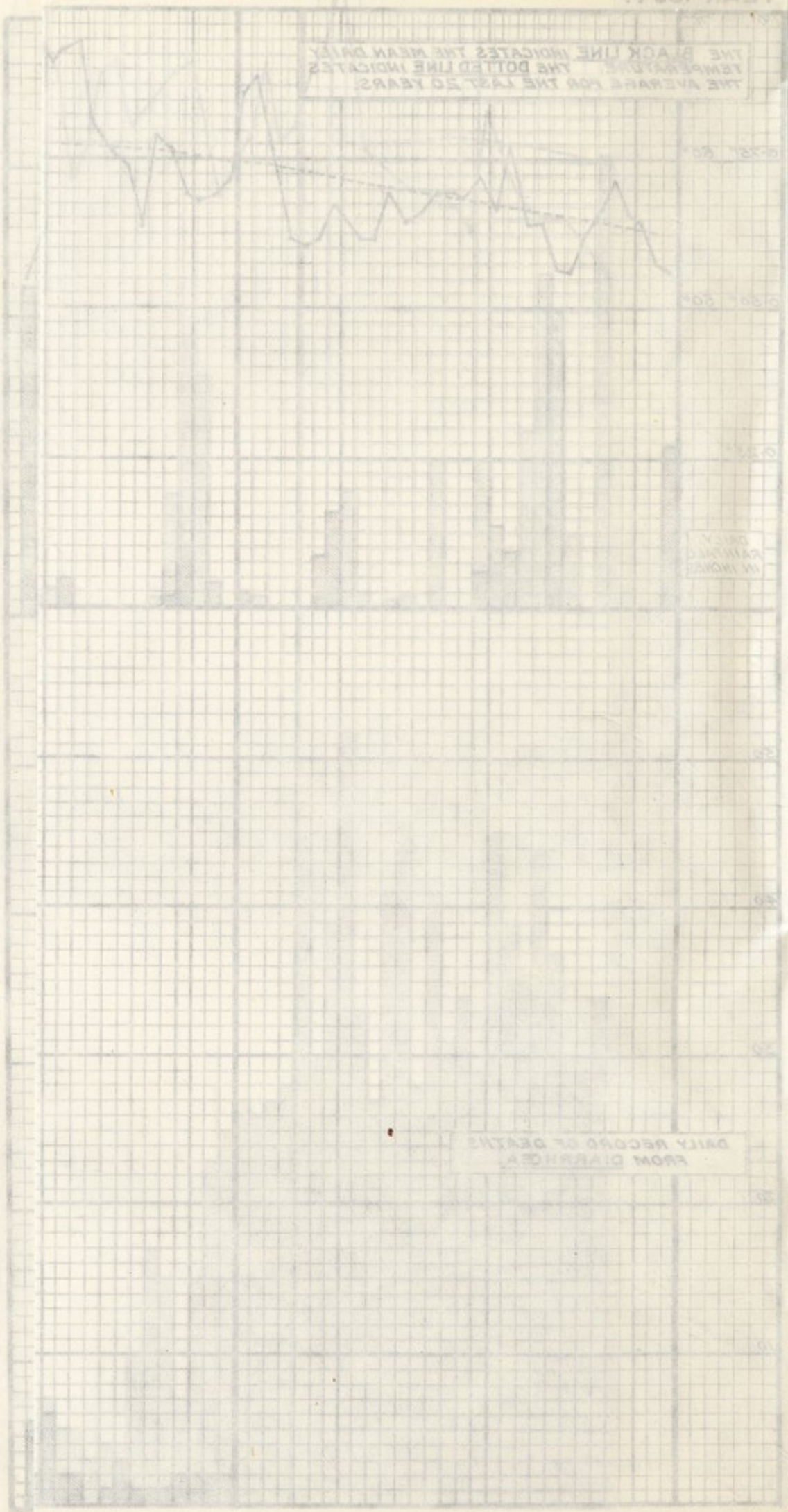


JUNE AUGUST.

YEAR 1904.

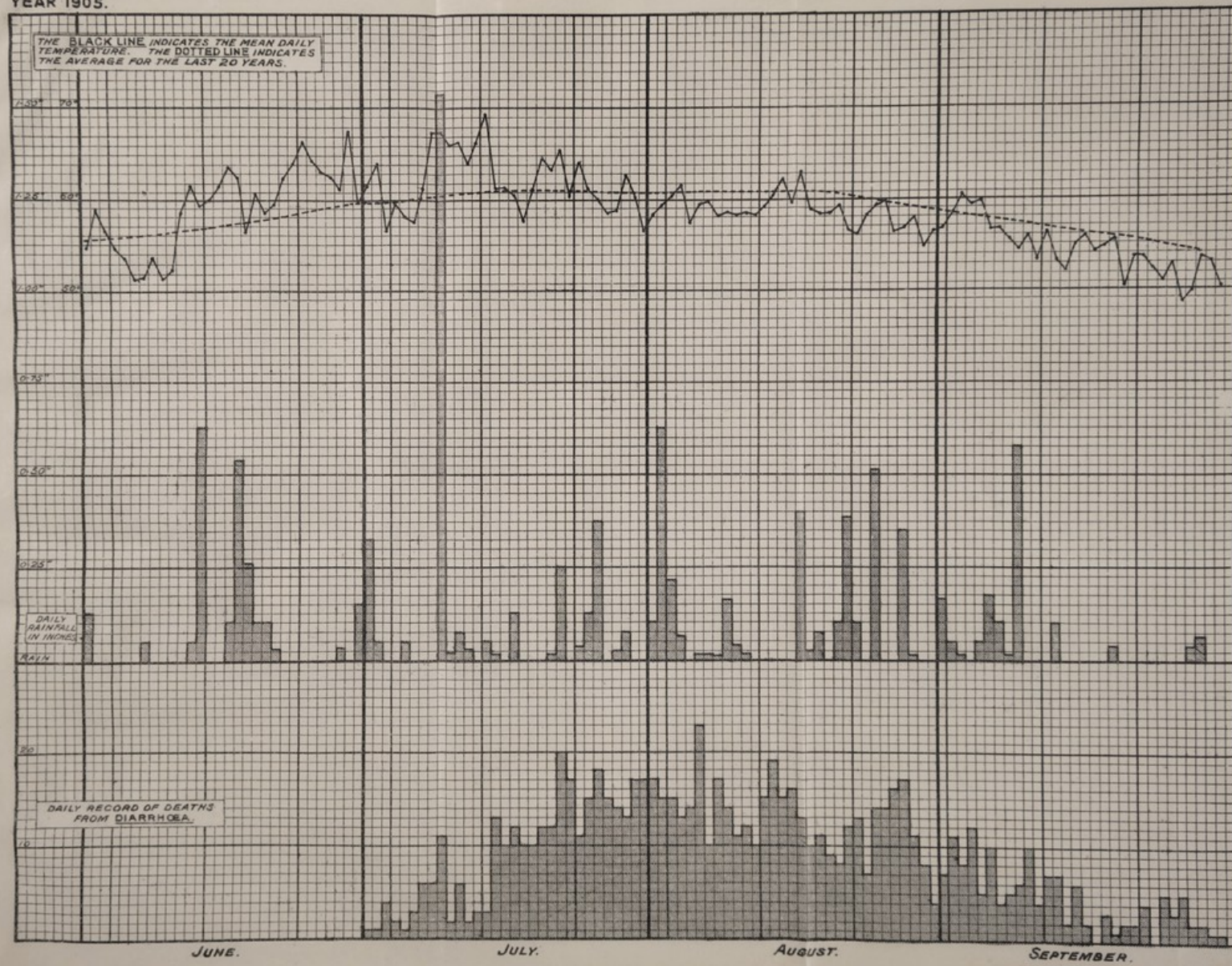


THE BLACK LINE INDICATES THE MEAN DAILY TEMPERATURE. THE DOTTED LINE INDICATES THE AVERAGE FOR THE LAST 50 YEARS.



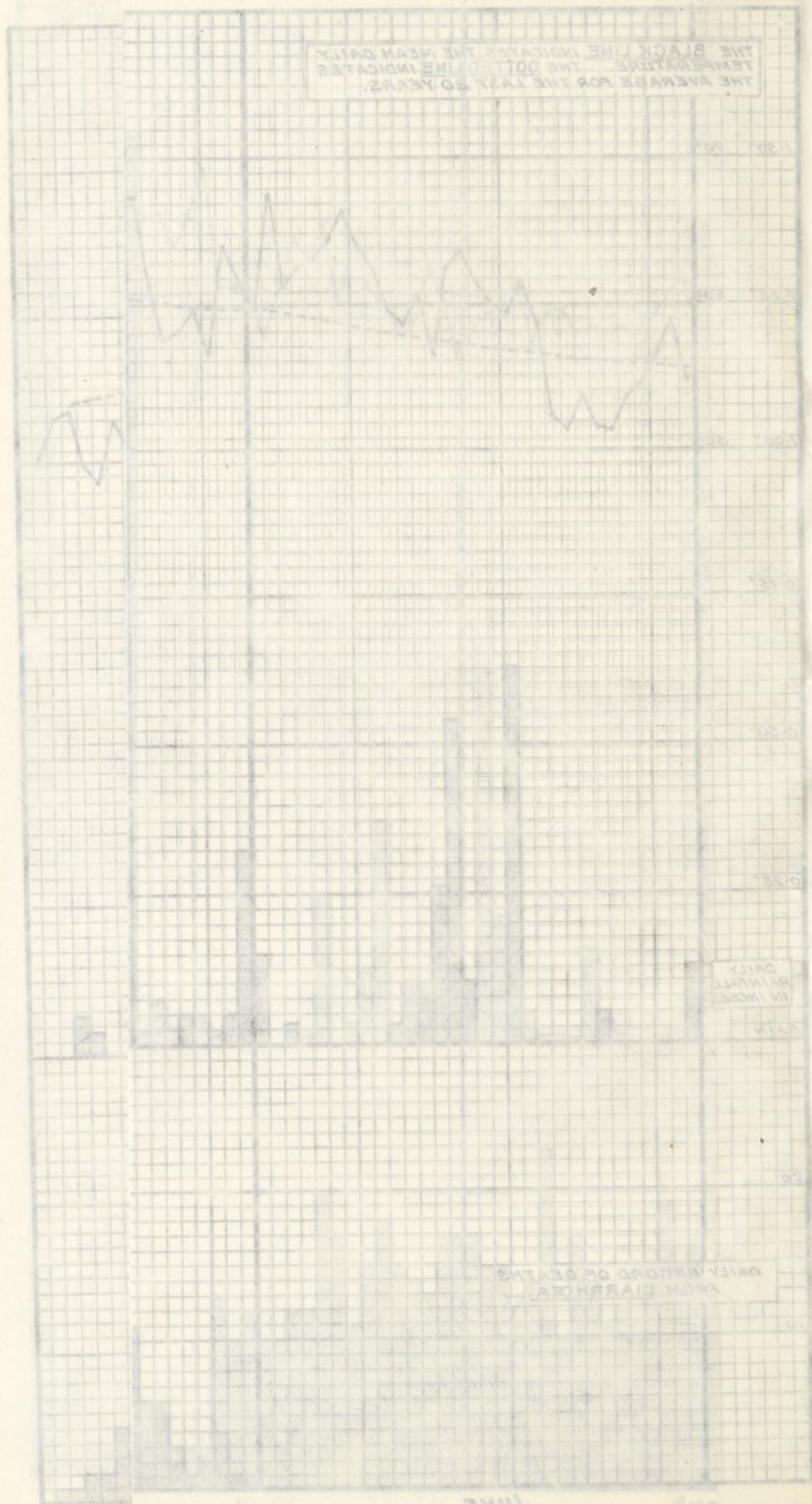
DAILY RECORD OF DEATHS FROM DIARRHOEA

YEAR 1905.



YEAR 1902

THE BLACK LINE INDICATES THE MEAN DAILY TEMPERATURE. THE DOTTED LINE INDICATES THE AVERAGE FOR THE LAST 50 YEARS.



DAILY RAINFALL IN INCHES

DAILY RECORD OF DEATHS FROM DIARRHOEA

DEATHS FROM DIARRHŒA.

DISTRICTS.					QUARTERS.								YEAR.		
					March.		June.		Sept.		Dec.				
					M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland ...	...	...	...	...	7	4	4	79	82	7	10	90	103	193
Exchange ...	...	...	...	...	2	2	...	39	36	3	2	44	40	84
Abercromby ...	...	...	...	1	1	2	...	13	21	2	4	18	26	44
Everton ...	...	...	...	...	3	3	2	77	86	5	4	85	95	180
Kirkdale ...	...	...	...	1	...	1	...	63	67	1	2	66	69	135
West Derby (West) ...	...	...	...	5	3	5	4	29	21	2	4	41	32	73
Toxteth ...	...	...	...	3	2	3	2	54	55	...	6	60	65	125
Walton ...	...	...	...	1	1	...	...	26	18	3	2	30	21	51
West Derby (East) ...	...	...	...	1	...	1	...	16	13	3	1	21	14	35
Wavertree ...	...	...	...	...	...	1	...	9	4	2	2	12	6	18
Sefton Park (late Toxteth Rural)	...	...	...	...	...	...	...	1	1	1	1	2	2	4
Garston .....	...	...	...	...	...	1	6	3	...	...	6	4	10	
Fazakerley .....	...	...	...	...	...	...	...	3	...	...	...	3	3	
Hospitals (Residences outside the City) ...	...	...	...	...	...	...	2	1	1	1	3	2	5	
City ...	...	...	...	...	12	19	22	13	414	411	30	39	478	960

AGES AT DEATH.														
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.	
683	196	34	7	7	5	...	...	1	...	1	4	22	960	

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

List of Streets in the City wherein Three or more Deaths from
Diarrhœa occurred during the year 1905.

STREETS.	No. of Deaths.	STREETS.	No. of Deaths.
Alma	4	Epsom	3
Arkwright	4	Fair View Place	3
Arlington	3	Flinders	3
Ascot	5	Fountains Road... ..	3
Ashfield	7	Gordon	3
Barry	4	Grafton	3
Beacon Lane	3	Greenland	3
Beacon Street	3	Haigh	3
Beau	7	Hampton	3
Beaufort	5	Hankin... ..	3
Ben Jonson	4	Herbert (Walton)	4
Benledi	3	Hogarth Road	3
Blundell	3	Hopwood	6
Bond	5	Hornby... ..	4
Boundary	5	Howe	6
Brisbane	4	Lamb	3
Buckingham	4	Latham	4
Burlington	8	Latimer	7
Byles	3	Limekiln Lane	4
Caryl	3	Mann	3
China	6	Mason	3
City Road	3	Milford	3
Clare	5	Mill	5
Cockerell	3	New Hedley	3
Doncaster	3	Newsham	3
Eldon Place... ..	3		

List of Streets in the City wherein Three or more Deaths from
Diarrhœa occurred during the year 1905—continued.

STREETS.	No. of Deaths.	STREETS.	No. of Deaths.
Nursery	4	Ruskin	4
Orwell Road	4	Sessions Road	4
Pembroke	3	Silvester	3
Penrhyn	5	Slade	3
Portland Place	3	Stanhope	4
Portland Street	8	St. Anne	3
Prince Edwin	3	Taliesin	3
Pugin	5	Tatlock	6
Rathbone	3	Upper Frederick... ..	5
Raymond	5	Vauxhall Road	3
Reading	5	Wellington Road (Toxteth) ...	5
Richmond Row	3	Wentworth	3
Robsart... ..	3	Wykeham	4
Rose Vale	4		

In arranging the foregoing list of streets, all deaths occurring in hospitals have been transferred to the streets from whence the patients were removed.

OTHER ZYMOTICS.

The following table indicates the localities in which deaths from other forms of zymotic disease occurred during the year:—

DISTRICTS.	Influenza.		Erysipelas.		Syphilis.		Rheumatic Fever.		Puerperal Fever.		Other Zymotics.		YEAR. Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Scotland	2	3	...	3	2	4	1	...	...	8	3	1	27
Exchange	4	...	2	...	2	4	1	2	...	2	3	1	21
Abercromby	1	5	2	2	3	1	1	2	...	1	1	...	19
Everton	4	6	4	1	8	2	4	1	...	7	5	5	47
Kirkdale	2	3	...	...	3	2	3	2	...	1	1	3	20
West Derby (West) ..	2	4	2	3	2	...	2	2	...	3	2	2	24
Toxteth	3	5	1	3	1	5	7	2	...	6	4	4	41
Walton	3	7	1	2	2	...	1	2	...	1	2	3	24
West Derby (East)...	5	4	1	...	2	...	2	1	...	2	1	...	18
Wavertree .....	...	3	...	1	...	...	1	...	...	1	...	2	8
Sefton Park..... (late Toxteth Rural)	3	3	...	...	...	1	...	4	...	...	...	1	12
Garston .....	...	1	...	...	...	...	...	1	...	...	...	...	2
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Hospitals(Residences outside the City) ..	...	1	...	...	...	2	1	...	...	3	6	5	18
City	29	45	13	15	25	21	24	19	...	35	28	27	281

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

THE FOLLOWING TABLE SHOWING THE ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES DURING EACH OF THE LAST FOUR DECENNIAL PERIODS, IS INTERESTING AND INSTRUCTIVE. THE DECLINE IN THE MORE FORMIDABLE FORMS OF INFECTIOUS DISEASES IS VERY MARKED.

Years.	Small Pox.	Typhus.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhoea.
1866 to 1875	237.4	652.8	789.4	425.7	496.8	995.3
1876 to 1885	90.8	238.0	421.2	517.8	472.3	658.4
1886 to 1895	8.8	37.1	257.5	399.5	322.4	600.6
*1896 to 1905	19.5	25.1	201.3	329.0	330.4	1,051.9

* Including extended City area.

ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES
DURING EACH OF THE LAST FOUR DECENNIAL PERIODS, DISTINGUISHING THOSE
OF PERSONS ABOVE AND BELOW FIVE YEARS OF AGE.

YEARS.	SMALLPOX.		TYPHUS.		SCARLET FEVER.		MEASLES.		WHOPPING COUGH.		DIARRHŒA.	
	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.
1866 to 1875	141.7	95.7	* ...	* ...	187.7	601.7	14.4	411.3	9.9	486.9	105.7	889.6
1876 to 1885	62.5	28.3	* ...	* ...	137.0	284.2	35.4	482.4	18.6	453.7	61.9	596.5
1886 to 1895	6.2	2.6	† 33.2	† .7	87.6	169.9	28.3	371.2	15.1	307.3	60.2	540.4
**1896 to 1905	14.5	5.0	24.2	0.9	61.7	139.6	17.1	311.9	11.9	318.5	53.6	1,008.3

* During these years the ages at death from Typhus were not differentiated.

† During the eight years, 1888-1895.

** Including extended City Area.

The following table shows the annual average death-rate, per 100,000 of the population, during each of the last four decennial periods, and the death-rate during 1905, from the undermentioned Zymotic Diseases:

DISEASES.	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1905.	1905.
Typhus	132.1	43.0	7.1	3.6	3.8
Small Pox	48.0	16.3	1.5	2.8	...
Scarlet Fever	159.9	76.2	49.6	29.1	41.2
Measles	86.1	93.6	77.0	47.6	33.6
Whooping Cough ...	100.5	85.4	62.1	47.8	20.4

TUBERCULAR DISEASES.

These diseases are associated with insanitary surroundings, and with conditions of life which tend to lower the general health. Improved sanitation is accompanied by a diminished mortality from these forms of disease, as the accompanying table, which relates to the last four decades and the year 1905, indicates:—

	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1905.	1905.
Annual Average Death-rate per 100,000 of the population, at all ages, from all forms of Tuberculosis	430.8	349.8	309.8	247.2	225.4
Annual Average Death-rate per 100,000 of the population above 5 years of age from Phthisis ...	362.8	278.6	244.4	203.8	187.4
Annual Average Death-rate per 100,000 of the population below 5 years of age from : Tabes Mesenterica Hydrocephalus ... Scrofula	637.1	597.3	539.1	339.5	307.6

The Group of Tubercular Diseases includes Phthisis, Scrofula, Tabes Mesenterica, and Hydrocephalus. They occasioned 1,654 deaths in the City of Liverpool during the year 1905.

DEATHS FROM PHTHISIS.

The number of deaths from Phthisis during the year was 1,245. The number of deaths during each of the preceding ten years, 1895-1904, has been as follows:—1,305, 1,198, 1,220, 1,209, 1,313, 1,287, 1,302, 1,347, 1,258 and 1,282.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland...	16	13	14	13	15	6	9	13	54	45	99
Exchange ...	28	12	18	14	26	17	25	14	97	57	154
Abercromby ...	18	8	19	7	13	7	21	6	71	28	99
Everton ...	37	23	31	22	29	21	34	20	131	86	217
Kirkdale...	16	12	16	8	13	9	17	7	62	36	98
West Derby (West) ...	24	10	11	12	14	13	27	15	76	50	126
Toxteth ...	23	16	25	29	21	17	24	16	93	78	171
Walton ...	11	7	5	9	6	5	8	5	30	26	56
West Derby (East) ...	4	9	14	5	9	5	6	8	33	27	60
Wavertree ...	1	8	5	5	4	4	5	3	15	20	35
Sefton Park ... (late Toxteth Rural)	4	4	—	7	4	3	1	5	9	19	28
Garston	6	2	2	3	1	1	3	2	12	8	20
Fazakerley ...	1	1	1	—	1	1	1	—	4	2	6
Hospitals (Residences outside the City) ...	14	5	18	5	17	3	10	4	59	17	76
City ...	203	130	179	139	173	112	191	118	746	499	1,245

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
5	11	22	19	24	60	255	312	275	187	75	1,245

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

DEATHS FROM OTHER TUBERCULAR DISEASES.

Viz.:—Scrofula, Tabes Mesenterica, and Hydrocephalus.

DISTRICTS.					Scrofula.		Tabes Mesenterica.		Hydrocephalus.		YEAR.		
					M.	F.	M.	F.	M.	F.	M.	F.	T
Scotland					8	12	4	4	11	5	23	21	44
Exchange					7	7	3	2	5	4	15	13	28
Abercromby... ..					6	4	3	4	5	5	14	13	27
Everton					17	21	7	7	20	12	44	40	84
Kirkdale					7	7	2	1	9	4	18	12	30
West Derby (West)					14	8	10	11	7	9	31	28	59
Toxteth					11	10	6	10	9	7	26	27	53
Walton					3	7	4	4	3	2	10	13	23
West Derby (East)					5	3	2	1	2	3	9	7	16
Wavertree					2	5	4	2	3	2	9	9	18
Sefton Park (late Toxteth Rural)					...	4	1	...	2	1	3	5	8
Garston ... ..					...	2	...	...	...	1	...	3	3
Fazakerley... ..					...	...	...	...	...	...	...	...	...
Hospitals (Residences outside the City)					5	3	1	2	4	1	10	6	16
City					85	93	47	48	80	56	212	197	409
AGES AT DEATH.													
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & upwards.	All Ages.		
125	67	84	37	22	11	24	10	12	6	11	409		

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

NOTIFICATION OF PHTHISIS.

The system of voluntary notification of those cases of consumption in which the services of the Health Department could be of use came into operation on 14th February, 1901, and has been continued with good results.

A special form upon which the notification can be made has been circulated amongst medical men, and in those cases in which the requirements of the Health Committee have been fulfilled, the usual notification fee has been paid.

A table of statistics relating to the work is set forth below.

PHTHISIS.

During the year 1905, the cases reported	
numbered	1,971
Of this number	110 were duplicates.
<hr style="width: 10%; margin: 5px auto;"/>	
Leaving a total of.....	1,861 Cases.
Deaths from the Disease totalled	1,245
Rooms, Bedding, &c., disinfected in	614 instances.
Bedding, &c., removed for special disin-	
fection in the apparatus in	64 ,,

The age period at which the greatest number of cases were reported is from 25 years upwards, 985 males and 423 females being reported. 237 males and 150 females were reported between the ages of 15 and 25 years.

Total number of Males reported	1,257
Total number of Females reported	604

There were 57 cases of Tuberculosis other than of the lungs reported.

Dirty Houses were reported in 27 cases.

The occupations showing the largest number of cases were as follows:—

Labourers	467 Cases.
Charwomen	61 „
Seamen	55 „
Domestic Servants	48 „
Carters	47 „
Hawkers	44 „
Painters	32 „
Fitters	23 „
Joiners	21 „
Printers	21 „
Bookkeepers	20 „

The following table of information for consumptive people was circulated through appropriate channels:—

1.—Consumption is a preventible disease which is caused by minute living germs, called “tubercle bacilli,” which usually enter the body with the air breathed.

2.—The matter which consumptive people cough or spit up contains the germs of the disease in great numbers. If this matter is spat upon the floors, or the walls of any public or private place, or elsewhere, as

soon as it becomes dry the germs of the disease which it contains are blown about and float in the air, like any other minute particles of dust, and are inhaled by anybody breathing that air: or they may fall upon milk or other food, and gain access to the body with that food. These are the commonest ways in which the seeds of the disease enter the body of a healthy person.

3.—It may, therefore, be dangerous to sleep with or to live in close relationship with a consumptive, unless the patient is careful that what he coughs up is destroyed. A cup containing a little water should be used to spit in, so that the matter may not dry, and it should be emptied in the closet (not into the ashpit, or upon the footwalk or the roadway), and the cup carefully washed afterwards with boiling water. If the consumptive prefers to use linen or calico cloths or handkerchiefs to spit in, they should be thrown upon the fire and burnt forthwith. He should take care that his hands, face, and clothing do not become soiled with the matter coughed up, nor should he swallow it.

4.—It is better for a consumptive to sleep alone, and the bed-clothing and personal clothing should be boiled and washed separately from the clothing of other people.

5.—Tubercle bacilli are not only the cause of ordinary consumption of the lungs, but they may also give rise to consumption of the bowels and other parts of the body, and therefore milk and other uncooked food should be carefully protected from the tubercle bacilli. If such food be kept in a place to which a consumptive patient of careless habits has access and who may spit upon the floor, the dry particles of the matter spat up may blow about with dust and find access to milk or other food, and in this way contaminate it.

6.—Cows suffer from consumption, and the milk from consumptive cows is liable to contain the tubercle bacilli. Milk had better be boiled for a few seconds unless the consumer is sure that it comes from a healthy

cow, and that it has not been exposed to danger of contamination afterwards. These precautions should be specially observed in the case of children.

7.—Consumption is a disease from which large numbers of patients recover if the rooms they occupy are always kept thoroughly well-ventilated, and clean and free from dust.

8.—Sunshine and fresh air destroy tubercle bacilli, and are the principal curative agents; the more sunshine and fresh air the consumptive patient gets, the more likely is he to recover.

9.—Sanitary improvements which have been carried out in the city with a view to admit more pure air and sunshine to dwellings, and to lessen overcrowding, have reduced the mortality from consumption to about one-half of what it was 30 years ago, but, to reduce it still further, the people must help themselves by keeping their rooms clean and well-ventilated, and by maintaining strictly temperate habits.

10.—Rooms that have been occupied by consumptives should be thoroughly disinfected and cleansed before they are again occupied, and the carpets and bedding should be disinfected; in fact, so far as these precautions are concerned, consumption may be regarded in precisely the same light as any other infectious disease.

11.—The Officers of the Health Department are always ready to do the necessary disinfection, both of rooms and of clothing, free of charge.

CANCER.

The following table indicates the number of deaths from Cancer and kindred Diseases during the last five years, and the part of the body affected by the disease:—

DISEASE.	1901.			1902.			1903.			1904.			1905.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Cancer of Stomach and Bowels..	117	106	223	103	93	196	102	108	210	111	96	207	139	115	254
" Liver	21	52	73	32	50	82	33	55	88	21	40	61	26	34	60
" Urinary and Generative Organs	8	116	124	16	116	132	14	119	133	16	96	112	18	107	125
" Breast .....	...	43	43	...	54	54	...	67	67	...	44	44	...	54	54
" Head and Face	24	4	28	29	4	33	27	9	36	19	5	24	21	6	27
" Tongue, Neck, and Throat.....	51	6	57	51	13	64	68	15	83	48	5	53	51	13	64
" Other parts of the Body	16	8	24	16	10	26	17	9	26	16	16	32	15	6	21
" Parts not specified ...	9	12	21	11	15	26	8	10	18	4	9	13	8	7	15
Total	246	347	593	258	355	613	269	392	661	235	311	546	278	342	620

ALCOHOLISM.

It has already been pointed out in previous reports that there are grounds for the belief that intemperance is becoming less frequent. The number of deaths certified by coroners' juries to be the result of excessive drinking during the last few years was 146 in 1905, 143 in 1904, 170 in 1903, 169 in 1902, 155 in 1901, against 236 in 1900.

With regard to the fatal cases during 1905, inquests were held during the year on the bodies of 146 persons (85 of whom had died in Workhouses and Hospitals), viz., 27 men and 17 women, whose deaths were caused by excessive drinking; 62 men and 21 women, whose deaths were accelerated by excessive drinking; 11 men and 8 women who were fatally injured by accident whilst under the influence of drink. In addition to the foregoing, one man was drowned by throwing himself into a dock whilst suffering from the effects of drink; one man died from burns due to throwing himself into a foundry furnace whilst suffering from the after effects of drink; one man hanged himself whilst under the influence of drink, and two women were suffocated whilst in a state of intoxication. But besides these, there are many cases of fatal injury in which the verdict of "Accidental death" omits any reference to the fact that the injured person was intoxicated at the time.

Injuries to infants and young children whilst in the custody of drunken persons are inevitable.

It is a significant fact that in from four to five thousand cases of cruelty and neglect dealt with by the Society for the Prevention of Cruelty to Children during the year, the trouble originated in the drunkenness of the parents or custodians.

In three inquests in which death was found to be the result of violence, the person committing the deed was under the influence of drink at the time.

In addition to the foregoing, "Alcoholism" is given as the cause of death of 1 man and 6 women.

The general effect of intemperance is indicated by the facts, which speak for themselves, that it is in the districts where there is most intemperance that the general death-rate is highest and the proportion of deaths in workhouses is greatest.

Two districts are contrasted in these particulars:—

	Population.	General Death-rate per 1,000.	Proportion of Deaths in Workhouses and Hospitals.	Proportion of Deaths due to Excessive Drinking.
Exchange	41,674	31·3	49·6 per cent.	2·1 per cent.
West Derby (East)	47,428	15·8	17·7 „	0·4 „

FEVER AND DIARRHŒA MORTALITY.

The following table shows the death-rate per 1,000 of the population, and the number of deaths from Fever and Diarrhœa during the last twenty-two years:—

Year.	*Death Rate per 1,000 of Population from all causes.	Deaths from Diarrhœa.	Deaths from Fever.		
			Typhus.	Typhoid.	Continued.
1884	26·6	841	77	112	16
1885	25·6	422	71	95	16
1886	26·1	781	47	140	11
1887	26·4	619	52	130	12
1888	23·1	431	32	125	4
1889	24·9	575	45	167	...
1890	27·5	468	23	99	1
1891	26·8	330	37	92	2
1892	24·4	415	18	111	2
1893	26·7	866	44	221	5
1894	23·1	503	50	248	7
†1895	24·8	1,108	24	197	4
1896	21·4	851	36	166	2
1897	22·8	1,482	23	145	5
1898	22·2	956	19	148	5
1899	24·1	1,158	13	182	4
1900	23·1	900	11	120	4
1901	21·6	1,269	14	154	3
†1902	21·6	611	25	190	2
1903	19·8	657	57	108	...
1904	21·9	1,785	25	82	1
§1905	19·2	960	28	49	1

* Calculated on corrected population as per Census Returns of 1891 and 1901

† City Boundaries extended.

‡ Garston included.

§ Fazakerley included.

Mr. Plummer, M.A., F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, has kindly furnished the following tables relating to Meteorological observations made by him at the Liverpool Observatory, Bidston:—

LIVERPOOL OBSERVATORY, BIDSTON, BIRKENHEAD.

Latitude $53^{\circ} 24' 5''$ N. Longitude $3^{\circ} 4' 20''$ W.

Height above the Mean Level of the Sea 202 feet.

1905.	Barometer. Mean.	Temperature. Mean.	Rainfall. Amount.	No. of days on which 0·01 in. or more rain fell.	Mean Monthly Humidity. (Complete Satur- ation equal 100).
	Inches.	Degrees.	Inches.		
January	30·200	39·7	1·068	15	84
February	30·133	41·3	1·141	16	80
March	29·643	44·8	3·382	19	77
April	29·831	45·3	2·094	17	77
May	30·136	52·0	0·417	10	75
June	29·963	59·1	2·172	12	70
July	30·036	62·1	3·170	17	74
August	29·845	58·7	3·221	19	75
September	29·971	54·5	1·403	17	83
October	30·025	46·4	1·983	16	82
November	29·661	41·7	3·448	21	87
December	30·194	42·2	0·512	13	85

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE
LAST 35 YEARS.

1905.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches.	Degrees.	Degrees.	Inches.	Inches
January	0.263	...	0.5	...	...	1.070
February	0.197	...	1.0	...	...	0.077
March .....	...	0.246	2.7	...	1.629	...
April .....	...	0.063	...	1.7	0.464	...
May	0.167	...	0.0	...	...	1.478
June .....	...	0.026	1.3	...	0.125	...
July	0.095	...	1.4	...	0.441	...
August .....	...	0.068	...	1.4	0.239	...
September	0.038	...	...	1.9	...	1.535
October.....	0.151	...	...	2.9	...	1.574
November .....	...	0.238	...	2.1	0.789	...
December.....	0.321	...	2.1	...	...	2.056

OBSERVATIONS OF VELOCITY OF WIND.

1905.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date of Maximum Velocity.	Minimum Hourly Velocity.	Date of Minimum Velocity.
	Miles.	Miles.		Miles.	
January	23.9	55	Jan. 6, 8	1	January 22.
February....	22.0	53	Feb. 19	1	February 7, 12.
March.....	17.5	44	March 9	1	March 3, 24.
April	16.4	42	April 5	1	April 9.
May	12.1	34	May 1	1	May 4, 7, 9, 31.
June	12.8	32	June 2, 21	1	June 5, 8, 9, 18, 22, 25, 28
July	11.6	30	July 18	1	July 1, 2, 11, 21, 25, 29.
August	11.5	41	August 19	0	August 8, 14.
September..	12.4	35	Sept. 2, 3	0	September 15.
October.....	14.9	49	Oct. 4	1	October 8, 17, 20, 23.
November...	13.4	68	Nov. 26	0	November 20.
December...	16.3	48	Dec. 19	1	December 29.

SANITARY ADMINISTRATION.

SANITARY ADMINISTRATION.

For the purpose of carrying out the requirements of the various Sanitary Acts of Parliament and the Orders, Bye-laws, and Regulations made thereunder, the following staff of the Medical Officer of Health's Department has been employed during the year:—

*Chief Sanitary Inspector	...	...	...	...	1
*Deputy Chief Sanitary Inspector	...	...	...	...	1
*Prosecuting Sanitary Inspectors	...	...	...	...	7
*Inspectors for General Sanitary Purposes	...	...	...	...	33
*Female Inspectors for General Sanitary Purposes	...	...	...	...	9
„ Superintendent of Sterilized Milk Depôts	...	...	...	...	1
§Inspectors of Meat and Animals	...	...	...	...	4
„ under the Diseases of Animals Act	...	...	...	...	2
** „ of Fish and Fruit	...	...	...	...	4
* „ under the Sale of Food and Drugs Act	...	...	...	...	3
* „ „ Workshop and Shop Hours Acts	...	...	...	...	3
† „ , Smoke	...	...	...	...	3
„ , Ambulance	...	...	...	...	4
„ , Disinfecting and removing Bedding, &c.	...	...	...	...	7
† Superintendents of Ambulance and Disinfecting Staff	...	...	...	...	1
„ Disinfecting Apparatus	...	...	...	...	2
„ Wall Paper Stripping Staff	...	...	...	...	1
Men engaged on „ „ „ „	...	...	...	...	18
*Chief Inspector of Common Lodging and Sub-let Houses	...	...	...	...	1
***Inspectors of Common Lodging and Sub-let Houses...	...	...	...	...	13
*Inspector of Canal Boats	...	...	...	...	1
* „ Bakehouses	...	...	...	...	1
*Inspectors of Cowsheds and Milkshops	...	...	...	...	2
Notice Servers	...	...	...	...	3
Permanent Clerical Staff	...	...	...	...	24
Temporary Assistants	...	...	...	...	2

In every case Officers are selected for these positions, whose previous training and occupation have been such as to fit them for the special

duties they are called upon to discharge. Those marked * are required to hold the Certificate of the Sanitary Institute of Great Britain or a Certificate equivalent thereto; those marked † have Marine Engineers' First Class Certificates, and the ‡ Superintendent Ambulance Inspector holds Sanitary Certificate, and also the Certificate of St. John Ambulance Association. ** Fishmongers by trade. § Butchers by trade; candidates are submitted to practical examination upon the lines which have been indicated in the Report of the Royal Commission upon Tuberculosis. ***Several hold the Certificate of the Sanitary Institute, or an equivalent thereto.

The number of occasions upon which the advice and assistance of the Health Department have been sought has decreased during the year. These applications fluctuate slightly year by year; in 1896 they were 7,993, in 1897 they were 8,852, in 1898 they were 9,362, in 1899 they were 9,215, in 1900 they were 11,321, in 1901 9,657, in 1902 9,699, in 1903 10,144, in 1904 9,218, and in 1905 8,365. As in former years, complaint in many cases was made to the Health Department only after repeated requests addressed to the persons causing or allowing the nuisance, or to agents or owners of property, had been ignored. Generally speaking, these complaints arise in connection with jerry-built property. A great deal of the time of the inspectors was taken up by these special examinations.

Requests to examine important public buildings and offices, as well as highly-rented dwelling-houses, have again been very numerous, and the application of the smoke test has in many cases brought to light defects in the drainage system. Requests for the application of the smoke test are frequent, and involve considerable time in carrying out.

A very large number of sanitary notices are served upon owners in respect to what is well known as "insanitary property." Owners would do well to demolish property such as this, and erect suitable habitations in their place. By thus co-operating with the Housing Committee, they would rid themselves of the annoyance of receiving notices, and remove centres of disease and degradation from the city.

The following table shows the number of nuisances found by routine inspection or on complaints, and the character of the proceedings taken to abate the nuisances, and the results:—

					1904.	1905.
Number of Complaints made by Inhabitants	...	...	...	...	9,218	8,365
„ Nuisances discovered on above complaints...					17,156	13,513
„ „ „ „ house to house inspection	...	...	...	...	81,323	84,625
„ Notices issued	...	...	...	{ Owners	42,389	44,557
				{ Occupiers	2,273	1,618
				Total	44,662	46,175
„ Notes to Complainants	...	...	...	...	2,381	1,754
„ „ sent to comply with notices	...	...	...	...	7,237	6,844
„ Re-inspections of Nuisances	...	...	...	...	145,687	165,004
„ Nuisances abated on re-inspection	...	...	...	...	81,867	88,931
„ Drains repaired	...	...	...	...	32,142	37,004
„ Ashpits „	...	...	...	...	3,170	3,212
„ Closets „	...	...	...	...	29,272	31,737
„ Water Closet Conversions	...	...	...	...	60	12
„ Spouts fixed and repaired	...	...	...	...	1,882	1,444
„ Premises from which animals have been removed	...	...	...	...	240	245
„ Premises from which offensive matter has been removed	...	...	...	...	17	18
„ Nuisances caused by stagnant water, abated					541	625
„ „ „ dilapidated houses „					7	2
„ Premises found without water and supplied					7,490	6,886
„ Railway Carriages inspected	...	...	...	...	2,719	1,033
„ Premises under observation	...	...	...	...	1,549	1,461
„ Incidental calls	...	...	...	...	31,715	42,278
„ Informations laid	...	...	...	...	734	544
„ Fined	...	...	...	...	119	139
„ of Magistrates' Orders	...	...	...	...	292	243
„ Acquitted or Withdrawn	...	...	...	...	323	162
Amount of Fines and Costs	..	£126	10	0 |	£141	1 10

IMPROVED SANITARY ASHBINS SUBSTITUTED FOR ASHPITS,
AND ASHPITS REDUCED IN SIZE.

					1904.	1905.
No. of defective Ashpits reported	...	...	...	...	3,853	4,271
„ Notices	...	...	...	...	4,249	4,604
„ Improved Sanitary Ashbins supplied	...	...	...	...	7,046	7,758
„ Ashpits reduced in size and cemented	...	...	...	...	2,349	1,935

REFERENCES FROM OTHER DEPARTMENTS.

	<u>1904.</u>	<u>1905.</u>
Received from the Education Department ...	20,784	16,176
„ City Engineer ...	11,853	10,379
„ Water Engineer ...	3,648	4,017
„ Lodging-house Inspectors..	7,645	7,737

The references from the Education Department relate to school children said to be suffering from measles, whooping cough, ringworm, skin disease, &c.

The reference from the other Departments mainly comprise insanitary conditions discovered by officers belonging to those departments, but with which it is not within their province to deal. The City Engineer's Department continues to report defects in private drains brought to light during the process of systematic flushing.

REFERENCES TO OTHER DEPARTMENTS.

A considerable number of conditions ascertained by the Sanitary Staff to be prejudicial to health were referred to other departments to be dealt with:—

	<u>1904.</u>	<u>1905.</u>
Referred to City Engineer ...	10,086	9,210
„ Building Surveyor...	2,103	2,158
„ Water Engineer ..	7,134	7,387
„ Education Department ...	38,452	26,986

The references to the Water Engineer comprise mainly, defective fittings, resulting in waste of water; also cases in which the supply was insufficient, owing to various causes.

References to the Education Department chiefly relate to children from infected houses who are attending school, or who are suffering from ringworm, ophthalmia, &c. (See page 111.)

HOUSE TO HOUSE VISITATION.

The following table indicates the results of the systematic house-to-house visitation by the District Male Staff:—

	<u>1904.</u>	<u>1905.</u>
Number of Inspections of Street Houses	22,255	47,111
„ Street Houses found Clean... ..	20,150	45,300
„ „ „ „ Dirty... ..	2,105	1,811
„ Apartments in Street Houses Examined .	101,061	218,500
„ Inspections of Court Houses	4,206	3,119
„ Court Houses found Clean... ..	3,877	2,789
„ „ „ „ Dirty... ..	329	330
„ Apartments in Court Houses Examined ...	12,760	9,277
Total Number of Houses Examined	26,461	50,230

DIRTY HOUSES.

	<u>1904.</u>	<u>1905.</u>
Number of Dirty Street Houses Inspected	2,105	1,811
„ „ Court „ „ „ ..	329	330
„ „ Cellars Inspected	542	397
„ „ Houses and Cellars cleansed on Re-inspection	2,317	997
„ Notices to Owners to Cleanse Dirty Houses	2,941	2,312
„ Notices to Occupiers to Whitewash Dirty Houses	175	139
„ Notices to Owners to Whitewash Exteriors of Courts	1,175	1,276
„ Informations	32	20
„ Fined	19	12
„ Acquitted or Withdrawn	13	8
Amount of Fines and Costs	£8 18 0	£7 7 6

INFECTED HOUSES.

	<u>1904.</u>	<u>1905.</u>
Number of Infected Street Houses Inspected (notifiable diseases)	4,067	4,961
„ „ „ „ „ (School cases)	7,822	8,273
„ „ Court „ „ ..	214	254
„ „ Cellars Inspected	49	61
Total number of infected Houses and Cellars Examined	12,152	13,549
Number of Enquiries	23,893	12,380

EXAMINATION OF CELLARS AND CELLAR DWELLINGS.

				1904.	1905.
Number of Inspections of Street Cellars	...	...		11,475	11,478
„ Street Cellars found disused	...	...		133	245
„ „ „ used for Lumber, &c.	...	...		4,626	4,897
„ „ „ used as Kitchens	...	...		4,832	4,580
„ „ „ found illegally occupied	...	...		117	73
„ „ „ „ legally „	...	...		1,767	1,683
„ Notices issued to Owners	...	...		180	150
„ „ „ Occupiers	...	...		108	97
„ Inspections of Court Cellars	...	...		842	739
„ Court Cellars found disused	...	...		36	106
„ „ „ used for Lumber, &c.	...	...		682	489
„ „ „ used as kitchens	...	...		118	106
„ „ „ illegally occupied	...	...		6	38
„ „ and Street Cellars found dirty	...	...		542	397
„ Informations against Court Cellar Owners				0	4
„ Fined	...	...	...	0	4
„ of Informations against Court Cellar Occupiers	...	...	...	3	5
„ Fined	...	...	...	1	4
Amount of Fines and Costs				£0 5 0	£4 7 0

The number of cellars filled in by the Health Committee, free of charge to the owners, during the year is 36 and the total filled in during the last ten years is 510.

Cellars occupied as dwellings must comply with certain requirements under the Liverpool Improvement Act of 1871, and the Public Health Act of 1875. The requirements of the Act specially relating to Liverpool have been summarised in last year's report.

COURT AND ALLEY EXAMINATIONS.

								<u>1904.</u>	<u>1905.</u>
Number of Visits to Courts and Alleys ...	...	...	...	...	...	...	...	51,737	48,200
„ Closets found Dirty, but Cleansed by Officer's Instruction								42,545	43,553
„ Informations ...	...	...	...	...	...	...	...	5	2
„ Fined ...	...	...	...	...	...	...	...	5	1
Amount of Fines and Costs	...	...	...	...	...	...	...	£0 13 0	£0 2 0

Special and systematic visits to courts and alleys are made with the object of ensuring the cleanliness of the domestic offices and the surface of the courts. The aim is to keep the courts and alleys uniformly clean throughout the week, and with this view the district inspectors are instructed that every tenant in each court is in turn to be held responsible for the cleanliness of the water-closets for a period of one week; the inspector records in his visiting book whose turn it is, and duly informs that tenant. Failing compliance with his requirements, an information is laid under the following bye-law, made under the Liverpool Sanitary Act, 1846:—

“First. From and after the day on which these bye-laws shall come into operation, whenever tenants or occupiers of several houses in courts, alleys, streets, and other places within the Borough, have the right to use in common any middenstead or privy, the several persons having such right shall be, and they are hereby required to keep the internal walls, floors, seats, and fittings of such middenstead or privy thoroughly clean, so that the same is not a nuisance or annoyance to any inhabitant of the said Borough.

Second. That if any privy or middenstead so used in common, or the walls, floors, seats, or fittings thereof, or any of them, shall be in such a state or condition as to be a nuisance or annoyance to any inhabitant of the Borough, for want of proper cleansing thereof, as aforesaid, then the persons having the use thereof in common as aforesaid, shall severally be liable to a penalty not exceeding 40s., and a further penalty not exceeding 5s. for every day during which the same shall remain in such state or condition.”

But under the Public Health Acts Amendment Act, 1890, somewhat similar proceedings may be taken.

Section 21 of this Act runs as follows:—

“ With respect to any sanitary conveniences used in common by the occupiers of two or more separate dwelling-houses, or by other persons, the following provisions shall have effect:—

(1) If any person injures or improperly fouls any such sanitary convenience, or anything used in connection therewith, he shall for every such offence be liable to a penalty not exceeding ten shillings:

(2) If any sanitary convenience or the approaches thereto, or the walls, floors, seats, or fittings thereof is, or are, in the opinion of the urban authority or of the inspector of nuisances or medical officer of health of such authority in such a state or condition as to be a nuisance or annoyance to any inhabitant of the district for want of the proper cleansing thereof, such of the persons having the use thereof in common as aforesaid as may be in default, or in the absence of proof satisfactory to the court as to which of the persons having the use thereof in common is in default, each of those persons shall be liable to a penalty not exceeding ten shillings, and to a daily penalty not exceeding five shillings.”

The stipendiary magistrate has rendered great help to the department by imposing a small fine in those cases in which a prosecution became necessary. Improvement results up to a point, but the constant attention of the officer is very necessary, since the filthy habits of the people soon lead to a recurrence of the dirty conditions if the visits are lessened.

The courts and alleys continue to decrease in number, owing to the demolition of low-class property for the extension of business premises, or to the removal of insanitary property by the Housing Committee. The number of courts and alleys scheduled for inspection in 1890 was 2,165, in 1895 it had fallen to 1,660, in 1897 it had further fallen to 1,593, in 1898 the number was 1,466, in 1899 it was 1,432, in 1900 it was 1,195, in 1901 it was 1,159, in 1902 it was 1,074, in 1903 it was 1,042, in 1904 it was 976, and in 1905 it was 927, showing a diminution in fifteen years of 1,238 courts and alleys.

During the year all courts and alleys having covered entrances were specially washed and hosed down by the scavengers. Under the Liverpool Sanitary Act the exteriors of all courts and alleys require to be limewashed as often as may be necessary. The number of courts requiring limewashing in 1905 was 878, representing 5,338 houses.

COMMON LODGING-HOUSES.

The Bye-laws require that every case of infectious sickness in a lodging-house should be at once reported to the Medical Officer of Health. Forty-seven cases of infectious sickness occurred in lodging-houses; 41 of the patients were at once sent to hospital; of the remaining six, two were members of the keepers' families, and four were lodgers who were not removed, the license being suspended until the recovery of the patients. In all cases the bedding was removed to the disinfecting apparatus, and the rooms purified and cleansed. There were 24 deaths from non-infectious diseases in lodging-houses, 16 of the deceased persons belonged to the keepers' families, and 8 were lodgers.

At the end of 1904 there were on the register a total (including emigration houses) of 474 lodging-houses, and at the end of 1905 the total number was 436, which furnished accommodation for 13,158 lodgers, besides 1,165 members of the keepers' families.

During the year 143 houses were given up and removed from the register, and 105 new houses added, leaving the number on the register 436. The diminution in the number of lodging-houses is due to several houses being closed, which were used for the accommodation of navvies, who left the town as the work on which they were engaged was completed.

One application was refused by the Health Committee on the ground that the house was not suitable for the purpose of keeping lodgers.

In some of the better-class houses for men, separate cubicles are provided for each lodger, the price paid for them varying from 6d. to 1s. 6d. per night. These cubicles are much more appreciated than the ordinary accommodation provided.

The number of what are known as "model" lodging-houses, for men only, upon the register is 142, and these are registered to accommodate 6,371 lodgers, as well as 276 members of the keepers' families.

The term "model" appears now to be used as a trade designation to indicate premises used for the accommodation of one sex only.

There are also 26 registered model lodging-houses for the accommodation of women only. These have room for 682 lodgers, in addition to 37 members of the keepers' families.

The visits to lodging-houses are both by day and by night. The night visits are almost restricted to the lower districts and commoner class of house. The lodging and emigration houses of the better class, especially those provided only with single beds for each person, and with no more beds than are equivalent to the number of lodgers allowed, are only occasionally visited at night, unless special circumstances necessitate a closer supervision.

Houses which are not licensed either as lodging or sub-let houses are frequently visited by day when such a course is deemed expedient, in order to ascertain whether any grounds exist for putting these houses on the register.

There were 435 visits paid during the year to such houses, and in one case, where the suspicion was confirmed, a night visit was paid, and the tenant summoned and fined by the magistrate for receiving lodgers without having the premises registered.

Persons harbouring lodgers in unlicensed premises receive a notice to apply to have the rooms measured and licensed. There were 31 such notices issued during the year, but in only one case was it necessary to institute a prosecution.

The number of day visits paid during the year was 20,537, and the night visits 616. During the preceding year the day visits were 21,578, and the night visits 1,154.

Eighty-two informations were laid against keepers of common lodging-houses during the year for the following offences:—

				1904.	1905.
Not sweeping floors	...	...	...	16	29
Not washing floors	...	...	...	11	22
Overcrowding	...	...	...	10	17
Receiving lodgers in unlicensed rooms	...	...	...	1	10
Mixing sexes	...	...	...	—	3
Not applying to register	...	...	...	—	1
Total	...	...	...	38	82

Convictions followed in each case, the total amount of fines amounting to £23 11s. 6d., and ranging from 1s. and 1s. costs to 20s. and costs. During the preceding year there were 38 convictions, and the fines amounted to £5 19s. 6d.

The number of lodging-houses found dirty was 76; in each case notices were served to limewash and cleanse the premises. All the notices were complied with.

SEAMEN'S LICENSED LODGING-HOUSES.

The Corporation have made Bye-laws, with the sanction of the President of the Board of Trade, for the licensing of Seamen's Lodging-houses, under the Merchant Shipping (Fishing Boats) Act, 1883, Section 48.

Applications from the keepers of Registered Common Lodging-houses for licenses authorising the designation of such Registered Common Lodging-houses as Seamen's Licensed Lodging-houses, are infrequent, only seven such licensed lodging-houses now being on the register; these provide accommodation for 117 seamen. One house was given up during the year.

The number of licenses granted since the adoption of the Seamen's Licensed Lodging-house Bye-Laws is 28.

It has not been found necessary to institute proceedings under the bye-laws in question.

Some years ago the holders of licenses to keep Seamen's Lodging-houses were authorised by the Board of Trade to board vessels and seek for lodgers, and while this privilege was granted there was an advantage in holding such a license, but that privilege being now withdrawn, it does not appear that there is any advantage to the keeper of a common lodging-house to have his premises registered as a Seamen's Lodging-house, and hence probably the small number upon the register.

SUB-LET HOUSES.

These are houses, one or more rooms of which are let off in each case by the chief tenant or owner of the house to members of one or more

other families. The Bye-laws provide for registration and inspection, in order to prevent overcrowding, and to ensure attention to cleanliness and sanitary requirements.

The number added to the register during 1905 was 878, the number cancelled owing to their being no longer sub-let was 2,327, and the number demolished 434, making the total on the register on the 31st December, 20,518.

The number of visits paid to sub-let houses during the night was 19,193, and during the day 80,440, with the result of finding 1,698 rooms overcrowded. In addition to overcrowding, 306 cases of indecent occupation came under the notice of the inspectors, as against 329 last year. The character of the indecent occupation may be judged of from the following facts:—In 161 instances one man and two women were found in the same bedroom; in 85 instances two men and one woman; in 24 instances two men and two women; in 15 instances one man and three women; in 11 instances three men and one woman; in 2 instances three men and two women; in 2 instances two men and three women; in 3 instances three men and three women; in 2 instances one man and four women; and in 1 instance two men and four women. These cases appear to be the outcome of ignorance and indifference, and not of immoral intent. Under the Bye-laws a number of persons have been fined for mixing sexes, and a number, who cannot be reached under the Bye-law, cautioned by the Inspectors.

Informations were laid against 2,415 chief tenants and lodgers (room-keepers) for breach of the Bye-Laws, viz.:—

Overcrowding	...	...	...	...	1,329
Floors not washed	...	...	...	...	372
Floors not swept	...	...	...	...	203
Not cleansing stairs, &c.	...	...	...	...	436
Mixing sexes	...	...	...	...	74
Refusing admission	...	...	...	...	1
Total					2,415

Five cases were withdrawn; two cases acquitted; and in one case the defendant was bound over and cautioned by the magistrate.

As the result of proceedings before the Stipendiary Magistrate, fines were inflicted as follows:—1,699 fined 1s. and 1s. costs; 348 fined 1s. 6d. and 1s. 6d. costs; 139 fined 2s. and 2s. costs; 86 fined 2s. 6d. and 2s. 6d. costs; 5 fined 3s. and 3s. costs; 53 fined 5s. and 4s. 6d. costs; 1 fined 6s. and 4s. 6d. costs; 1 fined 7s. and 4s. 6d. costs; 70 fined 10s. and 4s. 6d. costs; 4 fined 20s. and 4s. 6d. costs; 1 fined 40s. and 4s. 6d. costs; making a total of fines levied during the year of £357 1s. 0d. Offences against the Bye-laws have been more than in the preceding year. There were 1,307 more inspections by night than in the preceding year; the day visits were 4,488 more.

Forty-seven cases of overcrowding were in respect of premises in the recently incorporated district of Garston, compared with 33 last year.

Night inspections of sub-let houses are for the purpose of detecting cases of overcrowding, or mixing of sexes. The Inspectors engaged upon this duty proceed in couples for the purpose of corroboration, and for protection in the rougher quarters of the City. The inspections are made during the night, generally between the hours of 11 p.m. and 2 a.m. Some localities are visited between 4 a.m. and 7 a.m. Prior to the night inspection, a careful house-to-house enquiry is made to ascertain particulars as to the number of inmates, the total number of rooms let in lodgings, the character of the probable overcrowding, and other information as prescribed by the Bye-laws. In all cases, a copy of the Bye-laws, and a notice indicating the number of persons who may occupy each room, are served upon the chief tenant, and these notices are renewed in the case of a new tenancy.

The gradual diminution in overcrowding led the Health Committee in 1901 to amend the Bye-laws relating to sub-let houses, and the City Council, with the sanction of the Local Government Board and on the recommendation of the Health Committee adopted amended Bye-laws, which amongst other important provisions contained clauses providing

that every lodger above 10 years of age shall have not less than 400 cubic feet of air space, and every person below 10 years of age shall have not less than 200 cubic feet, but if the room is used as a day-room as well as a bedroom, then every inmate must have at least 400 cubic feet. Under the previous Bye-law a space of 350 feet only was required, and two persons under twelve were regarded as one adult.

The new Bye-laws came into operation on the 30th January, 1901. One result of these Bye-laws—which required so relatively large an addition to the cubic space allowed for each lodger—was to put an entirely new definition upon the offence of overcrowding, and although the great majority of people quickly appreciated the effect of the new Bye-laws, yet there was necessarily a considerable increase in the number of persons proceeded against for overcrowding amongst those who neglected to comply with the altered provisions.

The following table shows the number of sub-let houses on the register, the number of night visits for the detection of overcrowding, the number of convictions for overcrowding, and the percentage of cases to the number of visits for the past five years, *i.e.*, since the application of the new Bye-laws:—

Year.	No. of Sublet Houses.	No. of night visits for detection of overcrowding.	No. of convictions for overcrowding.	Per centage of cases to number of visits.
1901	18,917	17,863	1,351	7.56
1902	19,976	17,274	1,150	6.65
1903	21,719	18,438	1,264	6.85
1904	22,488	17,886	1,148	6.41
1905	20,518	19,193	1,326	6.90

The Bye-laws as to houses let in lodgings, or occupied by members of more than one family, have been inserted in previous reports.

* This includes the added area of Garston.

The Building Surveyor has kindly supplied the following table:—

NUMBER OF HOUSES ERECTED AND TAKEN DOWN DURING THE YEAR ENDING
DECEMBER, 1905.

DISTRICTS.							Number erected.	Number taken down
Scotland	...	...	...	...	...	...	24	275
Exchange	...	...	...	...	...	...	4	180
Abercromby	...	...	...	...	...	...	14	97
Everton...	...	...	...	...	...	...	—	19
Kirkdale	...	...	...	...	...	...	—	6
West Derby (West)	...	...	...	...	...	...	73	18
Toxteth...	...	...	...	...	...	...	96	359
Walton ..	...	...	...	...	...	...	452	2
West Derby (East)	...	...	...	...	...	...	577	16
Wavertree	...	...	...	...	...	...	265	4
Sefton Park	...	...	...	...	...	...	445	1
Garston...	...	...	...	...	...	...	236	3
Total							2,186	980

The City Engineer has kindly supplied the following:—

Number of cellars filled in and bricked up during 1905	...	...	...	36
" " " " the last 10 years	...	...	...	510

SEWER VENTILATION TO END OF 1905.

Number of 9-inch by 6-inch, 9-inch, 6-inch, 6-inch by 4-inch, 4-inch by 4-inch, 4-inch, and 3-inch Iron Pipe Ventilating Shafts	...	...	1,596
Number of Street Ventilating Manhole Covers and Gratings	...	...	6,678

CANAL BOATS.

The number of inspections of canal boats during the year was 5,825, and the condition of the boats and their occupants, as regards matters dealt with in the Acts and Regulations, is indicated by the following information :—

Twenty boats, not registered by their present owners, were found to be used as dwellings. Written notices were sent to the owners in 10 cases, and 10 verbal notices were given. The notices were complied with in all cases.

Twenty-seven boats were found without certificates on board. Notices were sent to the owners in each case, and 25 were complied with; two boats have not been seen in the district since.

Seventeen boats were found without the registered number painted on both sides of the boat. Notices were sent to the owners in each case, and the omission was rectified in 16 cases. One boat has not been re-inspected.

In 10 cases defective second bulkheads were reported. Notices were sent in each case, and all were complied with. In another case, where the boat was found to be carrying offensive cargo without second bulkheads, a notice was served upon the owner to provide second bulkheads. In lieu of this, however, the owner had the boat thoroughly cleansed, and discontinued carrying offensive cargo.

In 14 boats the cabins required repainting. Notices were sent to the owners in each case, and 11 were complied with. Three boats have not been seen in the district since.

Dirty cabins were reported in 13 cases. In 11 cases verbal notice was given to the masters, and in others written notices were sent to the owners. In 9 cases the notices were complied with, and 4 not being complied with, informations were laid against the masters and small fines inflicted. The cabins were subsequently cleaned.

Besides the foregoing, there were 59 instances of infringements of the Acts and Regulations, caused by leaky decks (15), general leaky condition of boats (7), broken doors to lockers (4), broken scuttle covers (5), defective ventilation (5), broken floors (3), no water casks on board (15), defective stoves (4), removal of bilge water (1). In each case notices were sent to the owners. Fifty-eight of the notices were complied with, and one has not been re-inspected.

Informations were laid in 7 cases, viz., dirty cabins (4), leaky deck (1), mixing sexes (2). In all cases fines were inflicted, varying from 1s. and 1s. costs, to 10s. and 4s. 6d. costs. The total amount of fines was £2 18s. 0d.

One case of scarlet fever occurred on a canal boat during the year. The patient, a child of the master, was removed to hospital. The cabin and bedding were disinfected, and the usual certificate of disinfection was given to the master.

The entire number of infringements of the Acts and Regulations referred to in the report occurred on 116 boats, in several instances the offence being repeated on the same boat.

Nineteen notices were sent to the Education Committee of children living on canal boats and not attending any school.

The number of boats on the register is 618. Sixteen boats have been removed from the register, as it was ascertained that 1 had changed ownership and left this district, and 15 boats have ceased to be used as

dwellings. It is probable that other boats have been broken up, or have left the district, but in the absence of definite evidence of this the boats remain on the register. During the year 11 new boats were registered, and 10 re-registered on account of changes of owners, 2 re-registered on account of structural alterations, and 3 re-registered on account of change of owners and name. All boats re-registered on account of change of owners, or the name of the boat being changed, or on account of structural alterations, retain their original numbers. Copies of the registration certificate were issued to the owners of 9 boats, owing to the original ones being worn out. There were 77 changes of masters reported, and the fact duly recorded on the register.

In 1898 the Canal Boat Inspectors were appointed as Port Sanitary Inspectors, an appointment which authorised them to inspect all classes of boats, as a difficulty arose in regard to certain boats plying upon the canal, which were not registered under the Canal Boats Acts, but which had been registered by the Board of Trade under the Merchant Shipping Act. Thirteen visits were made to boats of this class, and all were found correct.

In 1903 the Port Sanitary Inspectors were appointed as Canal Boat Inspectors. This appointment authorised them to inspect canal boats which ply to and from the docks and on the river. During last year these Inspectors made 458 visits, which are included in the foregoing report. The number of contraventions found was 7 on 5 boats.

							<u>1904.</u>	<u>1905.</u>
Fined, Manufactories	...	...	...	...	...	...	307	303
„ Steamers	...	...	...	...	...	...	295	265
							<hr/>	<hr/>
Total	...	...	...	...	...	...	602	568
							<hr/>	<hr/>

							<u>1904.</u>	<u>1905.</u>
Amount of Fines, Manufactories	...	£631	6	0	£635	16	0	
„ „ Steamers	...	570	16	11	539	8	9	
							<hr/>	
Total	...	£1,202	2	11	£1,175	4	9	
							<hr/>	

Nuisances arising from the firing of domestic chimneys are controlled by the Police.

SMOKE INSPECTION.

The falling off in the number of reports relating to excessive smoke still continues. This is accounted for chiefly by the greater care exercised by the owners of furnaces, as well as by the heavier fines which are now imposed.

It is also owing to the fact, that the system of concentrating the work in one large building, with all the newest appliances for smoke prevention, instead of having it carried on in a number of small factories scattered over the City, has been further adopted by manufacturers during the year.

Out of 273 cases of excessive smoke from Steamers in the river which were observed, 27 vessels were bound for foreign ports, the owners of 2 Steamers could not be traced, and 1 was towing another vessel in emergency, and consequently no proceedings were taken.

Notices were sent under Section 91 of the Public Health Act, to the owners of 15 steamers which permitted the emission of black smoke on the river whilst plying to and from foreign ports.

Complaints received of smoke from defective house flues, and from low chimneys	1904.	1905
	107	152
Visits relating thereto	680	798
	<hr/>	<hr/>
Chimneys raised in consequence of complaints	26	50
Flues altered and repaired	21	27
Attention promised	49	69
Referred to other departments	4	2
Frivolous complaints	7	4
	<hr/>	<hr/>
Total complaints dealt with...	107	152
	<hr/>	<hr/>

The smoke in our atmosphere is entirely produced by the combustion of coal in—

- (1) Domestic fire-grates;
- (2) Steam boiler furnaces; and
- (3) Other furnaces used for manufacturing processes.

It is a common error to lay the blame of the pollution of the atmosphere by smoke entirely upon the factory chimney, and this is no doubt due to the fact that it is more easily noticeable than the individually small quantities of smoke which are emitted from the chimneys of dwelling-houses, and which reach a very large amount in the aggregate.

Much of the smoke from domestic chimneys is caused by the wasteful method of burning coal and is further intensified by the unscientific construction of the flues, which allows the cooled products of combustion to gather in large masses on the rough brickwork, in the form of soot,

and thus to stop the draught by choking the outlet. This gives rise to the endeavour to clear the choked flue cheaply, and so make the "fire draw" by means of the filthy habit of "firing" the chimney, which is practised by a large number of householders, to the great discomfort of the rest of the community.

From careful observations during the course of inspections, it has been found that the nuisance caused by the emission of excessive smoke from factory chimneys is due to the following causes:—

1. Improper construction of the furnaces, and the want of sufficient boiler room.
2. Inferior quality of the fuel used.
3. Improper firing and want of attention on the part of the stokers.

These causes are usually associated; even an improperly constructed furnace, if fed with a good quality of fuel and attended to by a careful and skilful man, can be so used as to avoid making unnecessary smoke, and, at the same time, the utmost amount of work of which it is capable can be obtained from it. A furnace of the best construction and fitted with the most approved appliances for preventing smoke, may, on the other hand, give rise to the greatest nuisance owing to improper attention and the use of poor fuel.

Mechanical stokers, many forms of which are now used by manufacturers, when properly used, effect a saving of 11 to 20 per cent. in the cost of the coal used, together with a considerable diminution of the quantity of smoke emitted from the chimney. It should be clearly understood that furnaces of this class must not be worked by hand if it is desired that they should be effective smoke preventers.

OFFENSIVE TRADES.

Applications for permission to carry on the following offensive trades were made during the year, and a report by the Medical Officer of Health on each application was submitted to the Health Committee:—

Premises.	Business.	Granted.	Refused.	Date, 1905.
141, Vauxhall Road.....	Soap Manufacture	1	—	23rd Feb.
Fulton Street	Blood Manure Manufacture and Bone Grinding	1	—	9th Mar.
28 to 32, Mile End	Sweet Fat Melting	1	—	23rd „
107/111, Rathbone St.	Dry Soap Manufacture	1	—	„
100, Walton Village.....	Soap Boiling	1	—	25th May
141, Vauxhall Road.....	Gut Scraping.....	1	—	„
164, Boundary Street ...	Tripe Boiling.....	1	—	29th June
141, Vauxhall Road.....	Soap Boiling	1	—	3rd August
31, Blackstock Street ...	Tannery	1	—	21st Sept.
Carlton Street	Bone Boiling and Tallow Melting	—	1	19th Oct.
4, Dansie Street	Ham Boiling.....	—	1	16th Nov.
1, Elm Street	Soap Manufacture	—	1	„ „
48, Durning Road	Ham Boiling.....	1	—	23rd „
70, Gloucester Street ...	Gut Scraping.....	1	—	14th Dec.
	Total.....	11	3	

In cases in which permission is granted, conditions are imposed requiring that the premises be put in proper order to the satisfaction of the City Engineer, Building Surveyor and Medical Officer of Health, that no public or private nuisance be caused, and that the business be discontinued whenever the Council shall so require.

The number of inspections of premises where offensive trades are carried on was 1,438, as against 1,407 in 1904.

					<u>1904.</u>	<u>1905.</u>
Total No. of Visits to Bone Boilers ...	...	...	...	...	125	151
„ Fell Mongers ...	...	...	...	...	46	44
„ Soap Boilers ...	...	...	...	...	235	247
„ Fat and Tallow Melters ...	...	...	...	...	282	275
„ Tripe Boilers ..	...	...	...	...	197	195
„ Gut Scrapers ...	...	...	...	...	90	113
„ Ham Cooking and Potted Meat Works ...	...	...	...	...	24	58
„ Manure Manufacturers ...	...	...	...	...	0	10
„ Tanneries ...	...	...	...	...	75	83
„ Knackers' Yards ...	...	...	...	...	257	157
„ Paint and Resin Works ...	...	...	...	...	21	18
„ Palm Oil Works ...	...	...	...	...	21	25
„ Cotton Seed Oil Works ...	...	...	...	...	34	37
„ Sulphuric Acid Works ...	...	...	...	...	0	24
„ Liver Boilers ...	...	...	...	...	0	1
					—	—
Total...	...	...	...	...	1,407	1,438
					==	==

KNACKERS' YARD, CARRUTHERS STREET.

THE ANIMAL SLAUGHTERING CO.

The Company has provided special tanks, and made arrangements with the Local Authority to destroy carcasses of animals affected with contagious disease in accordance with the Orders of the Board of Agriculture and Fisheries.

The carcasses are placed in tanks intact, sulphuric acid added, steam pressure applied, and an effectual destruction takes place.

Four carcasses of cattle affected with anthrax, and two carcasses of horses affected with glanders were destroyed during the year 1905.

The following are the Returns for 1905:—

Horses Destroyed.	Horses taken in Dead.	Asses Destroyed.	Cows Destroyed.	Other Beasts.
159	1,404	16	67	1

MARINE STORES

						<u>1904.</u>	<u>1905.</u>
Number of Visits...	...	...	...	...	...	522	706

STABLES.

						<u>1904.</u>	<u>1905.</u>
Number of Visits...	...	...	...	...	...	4,712	5,512

FEMALE SANITARY STAFF.

As will be seen by the statistics given, the character of the work performed by the Female Sanitary Staff has undergone some change. House to house visitation has not occupied so much of the time of the Inspectors as formerly, a great improvement being noticeable in the conditions of the homes of the poorer classes. Still, 15,000 visits have been paid to houses in the most thickly populated parts of the City, and in some 4,000 cases, in which the results of the inspection were not satisfactory, a re-visit was deemed necessary.

A good deal of the time of the Inspectors has been occupied in visiting houses where births have occurred, the total number of such visits being no less than 23,391.

The addresses where births have occurred are obtained from the Registrar's Returns supplied to the Education Department. This means that when the information is received, the infant is on the average about six weeks old. It is a matter of great importance that the particulars regarding births should be obtained as early as possible, as improper feeding or want of care during the first few weeks of the life of the infant may lead to serious results before the Inspector has had an opportunity of interviewing the mother and advising the best methods to be adopted.

No difficulty is experienced in carrying out this work, the visits of the Inspectors being welcomed by the parents, and in almost every case the advice given is carefully followed. This is especially the case where long tube bottles are found to be in use; on revisiting it is invariably reported that they have been discontinued.

When instances of improper feeding are found, careful advice is given to the mothers, and a card of instructions, drawn up by the Medical Officer of Health, is left at the house. Frequently the Inspectors are

stopped in the streets and asked for information respecting any little difficulty that may have arisen in connection with the rearing of infants.

Another important branch of work is the visitation of school children suffering from ringworm, sore eyes, sore heads, skin diseases, and such-like ailments. Notifications regarding these children are usually received from the teachers or school visitors, sometimes also from parents or the general public; many others are met with in the course of the day's duty. The Inspector calls at the house and sees the child, and gives such advice as may appear to be necessary, and in most cases tries to induce the parent to obtain medical assistance when necessary. The parents of children with verminous heads are always willing to cut the child's hair and adopt measures of cleanliness. The school authorities are duly informed of the nature of the disease from which the child is suffering. In the case of measles and whooping cough, the parents are advised what to do, and are urged to get the doctor; many parents do not realise the gravity of the illness, nor the necessity for this. There is no doubt that this action tends to materially lessen the risk of the spread of infection from one child to another, and also hastens the recovery of the sufferer, thus enabling the child to return to school at a much earlier date than would have been possible if the ailment had been neglected. At the request of the Head Master or Mistress, schools have been visited, and sometimes a few words spoken to the children of each class upon habits of personal cleanliness. The worst cases have also been visited at their homes. The teachers of the schools in the poorer neighbourhoods have expressed their pleasure at the general improvement in the condition of the children owing to these visits.

Infantile deaths from epidemic diarrhoea have been regularly inquired into as in previous years. From time to time medical practitioners have reported children to be suffering from diarrhoea who did not appear to be receiving proper attention at home, or where the advice given was

not being carried out. Such cases were visited, and the majority removed to Stanley Hospital.

During the summer months the Open Air Baths were visited, and valuable information obtained regarding the physical condition of the girls attending at the Baths. The homes of these children were afterwards inspected, and the conditions under which they lived recorded.

As in other years, inquiries have been made and families visited and reported upon on behalf of the Police Aided Clothing Association.

Considerable time and attention is devoted to cases of poverty and sickness. Deserving or destitute families are reported to the Central Relief and Charity Organisation Society or to the Relieving Officer; where children are found to be neglected or ill-treated, notice is at once sent to the Society for the Prevention of Cruelty to Children. The names and addresses of children recovering from illness or needing a holiday are forwarded to the Superintendents of the Convalescent Homes or the Summer Camps.

Very valuable help is rendered in many cases by the staff of the Queen Victoria District Nursing Association. When the Inspectors meet with persons who are ill, and who are not in a position to obtain proper nursing and attention, a reference is sent to the District Nursing Home, and much benefit is derived from the visits of the district nurses to such cases.

From time to time the Inspectors have brought to their notice cases of old and decrepit persons living under dirty and insanitary conditions, and totally uncared for. Some difficulty exists in dealing satisfactorily with these persons, but the usual practice is to obtain their removal to the Workhouse if possible; in other cases their friends are induced to take steps to provide medical treatment and more comfortable surroundings.

In the course of their duties the Inspectors find many sanitary defects, such as choked drains, defective water supply, defective roofs, dirty walls, ceilings, floors, &c. These are at once reported and referred to the District Sanitary Staff to deal with.

Statistics relating to the work performed by the Female Sanitary Staff during the year will be found appended.

STATISTICS OF WORK DONE BY FEMALE SANITARY STAFF.

					1904.	1905.
Number of Street Houses visited	...	...	...		17,104	8,992
" Court	"	"	...	...	5,242	3,000
" Cellars	...	...	...	...	7,451	3,208
" Families found dirty	...	...	..		1,188	552
" Re-visits to Families	...	...	...		10,809	4,214
" Houses found dirty...	...	...	...		6,108	4,054
" Cellars	"	"	...	..	1,496	949
" Notices issued to cleanse dirty premises...					65	9
"	"	"	floors and woodwork	}	112	28
" References to District Sanitary Inspectors					3,007	1,626
"	"	"	Lodging-house Inspectors...		85	69
"	"	"	Workshop Inspectors	...	23	—
"	"	"	City Engineer	...	251	30
"	"	"	Water Engineer	...	316	158
"	"	"	Education Committee	...	730	7,222
"	"	"	The Shelter, Islington	...	79	66
" Sterilised Milk Depôt Visits	..	...			733	225
" Visits to Workshops	...	...	...		181	—
" Workshops found incorrect	...	...			52	—
" Visits to School Cases	...	...	...		3,491	9,068
"	"	Schools	...	...	154	63
"	"	Tents and Vans	...	...	4	—
" Found incorrect	...	...	...		2	—
" of Police Aided Association Visits	...	...			160	123
" Visits in Diarrhœa Cases	...	...	...		1,821	934
"	"	Whooping Cough Cases	...		294	—
" Enquiries in	"	"	"	...	185	—
"	"	Pneumonia	"	...	12	—
" Deaths from other causes than Diarrhœa					345	—
" Visits relative to Births registered	...				1,869	23,391

BATHS AND WASH-HOUSES.

As in the preceding year, the Report of the Superintendent Engineer of the Corporation Baths and Wash-houses furnishes ample evidence of the extent to which the advantages offered by these establishments are availed of by the public, more especially perhaps by those sections of it who have not washing facilities in their homes.

As regards the washing-baths, arrangements have been made by which free tickets are distributed by the Female Sanitary Staff, to be made use of by the poorer classes, both for themselves and for their children. Cases in which the practice has been resorted to have been very successful, the washing-bath being far more effectual than anything which can be adapted in the poorer classes of dwelling.

It would appear that there is a wide scope for the use of baths of this character by women and children in the lower districts of the City.

FACTORY AND WORKSHOP ACT, 1901.

BAKEHOUSES.

The sanitary control of Bakehouses is dealt with under the Factory and Workshop Act and Public Health Acts; the regulations prescribed were set out in the last Annual Report.

By Section 133 of the Workshop Act, 1901, if any child, young person, or woman is employed in a bakehouse, the Medical Officer shall, on becoming aware thereof, give a written notice to His Majesty's Inspector of Factories.

Where any room or place used as a bakehouse is in such a state as to be, on sanitary grounds, unfit for use as a bakehouse, the occupier is liable on summary conviction to a fine not exceeding forty shillings.

During the year 9 underground and 68 ground-floor bakehouses have ceased to be used for baking purposes, and the premises are now used for other purposes.

Fifty-one bakehouses were added to the Register during 1905; 12 are new ground-floor bakehouses for bread-bakers and confectioners, of which 5 are in lieu of underground bakehouses; the remaining 39 are confectioners only.

Number of Bakehouses on Register, 31st December, 1905...	...	915
„ Bakehouses added to Register during 1905	...	51
„ Bakehouses struck off Register during 1905	...	77
„ Visits paid to bakehouses	...	4,557
„ Bakehouses found dirty (walls and ceilings)	...	476
„ Notices issued for lime-washing	...	337
„ Bakehouses lime-washed without notice	...	139
„ Notices issued to remove drains from within bakehouse		2
„ „ „ to repair defective floors and walls	...	8
„ „ „ to cleanse floors, windows, areas, tables and troughs	...	10

Number of Notices issued to discontinue using bedroom opening				
			directly into bakehouse	1
„	„	„	for deficient ventilation	1
„	„	„	to cease to use as bakehouses places	
			underground not in conformity with	
			Act, 1901	13
Number of References to Government Factory Inspector...				28

In one case an information was laid against the occupier for using an uncertified underground bakehouse. On certain structural alterations being completed, which were necessary to obtain a certificate of suitability, the information was withdrawn on payment of costs. With this exception, all the above notices were complied with by the owners or occupiers.

UNDERGROUND BAKEHOUSES.

At the beginning of 1903 the following notice was served upon the occupiers of all the underground bakehouses in the City, in order that they might be made aware of the provisions of the Factory and Workshop Act, 1901, respecting the underground bakehouses, which came into force on 1st January, 1904:—

Notice is hereby given that by the Factory and Workshop Act, 1901, it is enacted as follows:—

Section 101.—(1) An underground bakehouse shall not be used as a bakehouse unless it was so used at the passing of this Act.

(2) Subject to the foregoing provision, after the first day of January one thousand nine hundred and four an underground bakehouse shall not

be used unless certified by the district council to be suitable for that purpose.

(3) For the purpose of this section an underground bakehouse shall mean a bakehouse, any baking room of which is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street, or of the ground adjoining or nearest to the room. The expression "baking room" means any room used for baking, or for any process incidental thereto.

(4) An underground bakehouse shall not be certified as suitable unless the district council is satisfied that it is suitable as regards construction, light, ventilation, and in all other respects.

(5) This section shall have effect as if it were included among the provisions relating to bakehouses which are referred to in section twenty-six of the Public Health (London) Act, 1891.

(6) If any place is used in contravention of this section it shall be deemed to be a workshop not kept in conformity with this Act.

(7) In the event of the refusal of a certificate by the district council, the occupier of the bakehouse may, within twenty-one days from the refusal, by complaint apply to a court of summary jurisdiction, and if it appears to the satisfaction of the court that the bakehouse is suitable for use as regards construction, light, ventilation and in all other respects, the court shall thereupon grant a certificate of suitability of the bakehouse, which shall have effect as if granted by the district council.

(8) Where any place has been let as a bakehouse, and the certificate required by this section cannot be obtained unless structural alterations are made, and the occupier alleges that the whole or part of the expenses

of the alterations ought to be borne by the owner, he may by complaint apply to a court of summary jurisdiction, and that court may make such order concerning the expenses or their apportionment as appears to the court to be just and equitable, under the circumstances of the case, regard being had to the terms of any contract between the parties, or in the alternative the court may, at the request of the occupier, determine the lease.

Section 102.—As respects every retail bakehouse, the provisions of this Part of this Act shall be enforced by the district council of the district in which the retail bakehouse is situate, and not by an inspector; and for the purposes of this section the medical officer of health of the district council shall have and may exercise all the powers of entry, inspection, taking legal proceedings and otherwise of an inspector.

In this section the expression "retail bakehouse" means any bakehouse or place, not being a factory, the bread, biscuits, or confectionery baked in which are sold, not wholesale, but by retail, in some shop or place occupied with the bakehouse.

And notice is hereby further given that the foregoing provisions will come into operation on the 1st January, 1904.

The number of underground bakehouses on the register at the end of the year was 187. Since the passing of the Act in 1901, two hundred and thirty-eight underground bakehouses have ceased to be used for baking purposes.

During the year one application was received by the Health Committee for a certificate of suitability.

Three plans have been submitted during the year, showing proposed alterations, and have been approved of. The total number of plans dealt with by the Sub-Committee during 1903-1905 was 282. Of this number 216 were approved and 66 declined. These plans refer to 250 premises.

The number of certificates granted during the past year was 17, and the number granted during 1904 was 168, making the total number issued 185.

SHOP HOURS ACTS, 1892—5.

The object of these Acts is to prevent the employment of young persons for such an excessive number of hours as will prejudice the health of these employés.

During 1905, under the above Acts there have been 6,492 visits paid to shops during the day, and 2,376 re-visits made after six o'clock; in 382 instances the hours were found to be incorrect, and in 949 instances a copy of the Act was not exhibited.

The persons concerned have generally evinced readiness to comply with the requirements of the Acts, and have thus lessened the difficulties in its administration. The number of occasions in which it was necessary to take police proceedings during the last two years is small.

	<u>1904.</u>	<u>1905.</u>
Number of day visits to Shops	4,872	6,492
„ Shops found without copy of Act exhibited	724	949
„ re-visits to Shops after 6 p.m.	2,462	2,376
„ Shops found incorrect	326	382
„ copies of Act supplied	476	511
„ Informations for excessive hours	4	10
„ Convictions	4	4
„ Informations for not exhibiting Notice of Acts and Requirements as to hours of work	4	2
„ Convictions	4	2
Total number of Informations	8	12
„ „ Convictions	8	6
Total Amount of Fines and Costs	£10 16 0	£8 7 0

SEATS FOR SHOP ASSISTANTS ACT, 1899.

The object of the Act is to provide seats for female assistants.

	<u>1904.</u>	<u>1905.</u>
Visits for the purposes of the Act	281	310
Found correct	266	273

In administering the Shop Hours Act notice is also taken of the provision of seats for female shop assistants.

FACTORY AND WORKSHOP ACT, 1901.

The Inspectors appointed under the above Act for sanitary purposes have visited a large number of Workshops, the summary of which is appended :—

SUMMARY OF VISITS PAID TO WORKSHOPS AND WORKPLACES.

	1904.	1905.		1904.	1905.
Bamboo Workers	5	15	Marine Stores	565	663
Basket Makers	32	25	Mattress and Bed Makers...	25	30
Block Makers	5	12	Metal Polish Makers	7	9
Boot Makers	159	213	Milliners	135	213
Bottlers	49	24	Mineral Water Manu- facturers	5	1
Bottle Washers	5	2	Musical Instrument Makers	7	9
Box Makers.....	6	5	Paint and Varnish Manu- facturers	9	8
Brass Founders	3	5	Paper Cutters, &c.....	43	43
Brush Makers	22	24	Perfume Manufacturers ...	2	5
Cabinet Makers and Joiners	411	351	Photographers	12	9
Canned Goods	41	43	Pickle and Sauce Manu- facturers	27	31
Cap Makers	25	17	Picture Framers	19	18
Card Gilders	6	4	Pipe Mounters	6	13
Carvers and Gilders	56	67	Plumbers	32	42
Chair Makers	39	53	Preserve Manufacturers ...	6	5
Chemists' Sundries' Manufacturers	8	12	Relief Stampers	23	7
Coach Builders	24	25	Restaurants	623	1,129
Confectioners	50	97	Rubber Goods Manufacturers	25	39
Coopers	41	33	Sack and Bag Makers	67	72
Cork Cutters	13	11	Saddlers	27	40
Cotton Sorters	44	87	Sailmakers	9	10
Cycle and Bassinette Makers	37	38	Sign Writers	14	26
Dressmakers	459	685	Smiths	149	143
Drysalts	30	38	Tailors	2,353	2,855
Electricians.....	16	5	Tarpaulin Makers	42	48
Engravers	45	56	Trunk and Portmanteau Makers	42	61
Firewood Manufacturers ...	13	38	Umbrella Makers	49	47
Fish Curers	7	13	Underclothing Makers	150	165
Flag Makers	10	6	Upholsterers	78	69
French Polishers	117	74	Watchmakers and Jewellers	55	90
Furriers	26	23	Wheelwrights	25	11
Galvanisers	10	7	Wig Makers	16	11
Hairdressers	—	93	Various	346	51
Image Makers	5	18			
Knitters	23	14			
Laundries	598	843			
Leather Goods Manufacturers	4	5			
Marble Masons	32	25	Total	7,469	9,045

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—Inspection.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (Including Factory Laundries.)	59	58	—
Workshops (Including Workshop Laundries.)	12,381	1,673	35
Workplaces	1,222	229	—
Homeworkers' Premises	1,306	252	1
Total	14,968	2,212	36

2.—Defects Found.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness	732	705	—	—
Want of ventilation	43	19	—	—
Overcrowding	10	14	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	1,935	1,443	—	—
Sanitary accommodations {	insufficient	31	20	—
	unsuitable or defective	116	114	—
	not separate for sexes..	29	24	—
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bakehouse (S. 101)	13	11	—	1
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	479	479	—	—
Failure as regards lists of outworkers (S. 107)..	—	—	—	16
Giving out work to be done in premises which are infected (S. 108)..	—	—	—	—
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109)	—	—	—	—
Other offences	—	—	—	—
Total	3,388	2,829	—	17

* Including those specified in Sections 2, 3, 7 and 8, of the Factory Act as remediable under the Public Health Acts.

3.—Other Matters.

Class.	Number.
Matters notified to H.M. Inspectors of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	28
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) {	
Notified by H.M. Inspector ...	34
Reports (of action taken) sent to H.M. Inspectors	34
Other	68
Underground Bakehouses (S. 101)	187
Certificates granted in 1905	17
In use at the end of 1905	185
Homework :—	
Number of	
	Lists. Outworkers.
<i>List of Outworkers</i> (S. 107) :—	
Lists received	330 2,434
Addresses of outworkers {	
forwarded to other Authorities ...	65
received from other Authorities ...	21
<i>Homework in unwholesome or infected premises</i> :—	
Notices prohibiting homework in unwholesome premises (S. 108)	— —
Cases of infectious disease notified in homeworkers' premises	6 —
Orders prohibiting homework in infected premises (S. 110)	6 —
Workshops on the Register (S. 131) at the end of 1905 ...	1,850
Workplaces	312
Bakehouses	915
Total number on Register ...	3,077

FACTORY AND WORKSHOP ACT, 1901.

FACTORIES.

The 59 Factories referred to in the foregoing tables were inspected by the District Sanitary Inspectors, as a result of complaints being received, principally from the Government Inspectors. The duties of the Health Department in connection with Factories is the enforcement of the provision of suitable and sufficient sanitary conveniences.

WORKSHOPS.

The Workshop and Shop Hours' Inspectors made 7,824 inspections of Workshops, and on 2,300 occasions the premises were found to be incorrect. The number of inspections in 1904 was 6,846. This does not include bakehouse workshops visited by the Bakehouse Inspector.

WORKPLACES.

The cooking kitchens of Restaurants now come under the head of Workplaces, and 1,129 visits were paid during the year by the Workshop Inspectors; on 546 occasions the premises were incorrect. The number of visits in 1904 was 248. Attention is being particularly paid to the nuisance arising from the removal of swill, and the Inspectors make a practice of visiting the premises early in the day when the swill is generally removed.

The nuisances found were in most instances remedied on notices being served, but in several cases it was necessary to take further proceedings, with the result that fines amounting to £22 8s. 6d. were inflicted. The fines in the previous year amounted to £4 17s. 6d.

A large number of new workshops were discovered by the Inspectors and added to the Register. This has necessitated 719 rooms being measured, as compared with 248 in 1904.

Several defects were found which could not be dealt with by this Department, and they were referred to the City Engineer, Water Engineer and the Building Surveyor.

HOME WORK.

In accordance with Section 107 of the Factory and Workshop Act, 330 lists of outworkers were received (156 in February and 174 in August) giving the names and addresses of 2,434 employees. The number of lists received in 1904 was 228, containing the names of 1,996 employees.

On examination of the lists they were found to contain 1,066 Workshops or Domestic Workshops already on the Register (550 in February and 516 in August). The other addresses, excepting those situated outside the City, were visited by the District Sanitary Staff, and in several instances the premises were found to be new workshops, and a number were found to be Domestic Workshops where the work done constituted the sole or principal means of living of the family. These were placed on the Workshop Register, to be visited periodically by the Workshop Inspectors. The home work in the other cases was found to be an additional source of income only.

A number of firms omitted to send in their lists at the times stated in the Act, *i.e.*, on or before the 1st February and 1st August, and although 200 comply notes were sent (94 in February and 106 in August) reminding the firms of their omission, it was necessary to take proceedings in several cases, and fines amounting to £8 19s. 0d. were inflicted.

MIDWIVES ACT, 1902.

This Act, the object of which is to secure the better training of midwives, and to regulate their practice, came into force on April 1st, 1903. The following clauses contain the more important provisions which relate to the Local Administration of the Act, viz. :—

1.—(1) From and after the first day of April one thousand nine hundred and five, any woman who not being certified under this Act shall take or use the name or title of midwife (either alone or in combination with any other word or words), or any name, title, addition, or description implying that she is certified under this Act, or is a person specially qualified to practice midwifery, or is recognised by law as a midwife, shall be liable on summary conviction to a fine not exceeding five pounds.

(2) From and after the first day of April one thousand nine hundred and ten, no woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner unless she be certified under this Act; any woman so acting without being certified under this Act shall be liable on summary conviction to a fine not exceeding ten pounds, provided this section shall not apply to legally qualified medical practitioners, or to anyone rendering assistance in a case of emergency.

8.—Every council of a county or county borough throughout England and Wales shall, on the commencement of this Act, be the local supervising authority over midwives within the area of the said county or county borough. It shall be the duty of the local supervising authority—

- (1) To exercise general supervision over all midwives practising within their area in accordance with the rules to be laid down under this Act.
- (2) To investigate charges of malpractice, negligence, or misconduct, on the part of any midwife practising within their area, and should a *prima facie* case be established, to report the same to the Central Midwives Board.
- (3) To suspend any midwife from practice, in accordance with the rules under this Act, if such suspension appears necessary in order to prevent the spread of infection.
- (4) To report at once to the said Board the name of any midwife practising in their area convicted of an offence.
- (5) During the month of January of each year to supply the secretary of the Central Midwives Board with the names and addresses of all midwives who, during the preceding year, have notified their intention to practice within their area, and to keep a current copy of the roll of midwives, accessible at all reasonable times for public inspection.
- (6) To report at once to the Central Midwives Board the death of any midwife or any change in the name or address of any midwife in their area, so that the necessary alteration may be made in the roll.
- (7) To give due notice of the effect of the Act, so far as practicable, to persons at present using the title of midwife.

The local supervising authority may delegate, with or without any restrictions or conditions as they may think fit, any powers or duties conferred or imposed upon them by or in pursuance of this Act, to a committee appointed by them, and consisting either wholly or partly of members of the council, and the provisions of sub-sections one and two of section eighty-two of the Local Govern-

ment Act, 1888, shall apply to every committee appointed under this section and to every council appointing the same, and women shall be eligible to serve on any such committees.

Section 10 requires every woman certified under this Act to give notice in writing to the Local Supervising Authority of her intention to practice, and renew that notice in the month of January of each year.

Provision is also made for the formation of a Central Midwives Board, whose duties and powers are to act as the Central Authority, and to frame rules for the general training and supervision of Certified Midwives.

These Rules were issued in August, 1903. They were subsequently approved by the Privy Council, and will remain in force until August, 1906, when they will be revised.

They deal with the general conduct of the midwives' practice, including such matters as the appliances she shall provide herself with, her duties towards the mother and the infant, and the abnormal conditions and circumstances of difficulty under which she must decline to attend the patient alone without the aid of a medical practitioner. They require her to notify to the Local Supervising Authority the occurrence in her practice of a death, a still-birth, or a case of puerperal fever, and to keep a record of her cases and the occasions in which she has had to send for medical assistance.

The Local Supervising Authority is required by them to make arrangements to secure proper supervision over the midwives practising in the district.

Since 1895 the Medical Officer of Health has kept a Register of the midwives who have been connected with cases of puerperal fever, and in this and other ways has become aware of the qualifications and status of the midwives employed in the City.

Every opportunity was taken to make known to those interested the requirements of the Act, and, as a result, a large proportion of these women became certified.

The following table shows the qualifications of those who have been certified up to the end of 1905 in the City of Liverpool.

QUALIFICATIONS OF MIDWIVES ENROLLED IN LIVERPOOL,
UP TO THE END OF 1905.

Liverpool Ladies' Charity and Lying-in Hospital...	...	153
London Obstetrical Society ... ..	...	124
Rotunda Hospital, Dublin ... ..	...	8
Glasgow Maternity Hospital ... ..	...	5
Queen Charlotte's Lying-in Hospital ... ..	...	4
Manchester Maternity Hospital ... ..	...	3
National Maternity Hospital, Dublin ... ..	...	3
Coombe Lying-in Hospital, Dublin ... ..	...	2
Dundee Maternity Hospital ... ..	...	1
Royal Maternity Hospital, Edinburgh ... ..	...	1
St. Mary's Hospital, Manchester ... ..	...	1
		<hr/>
		305
In <i>bona-fide</i> practice previous to July, 1901 ... ..	...	56
		<hr/>
Total ... ..	...	361

Of the total number certified, 166 are in active practice. The remaining midwives either act as monthly nurses under the directions of a medical practitioner, or have left Liverpool, or cannot be traced.

The general character of the practice of the former class, and the amount of work performed by these midwives, can be seen from the following figures, which have been compiled after visits and inquiries by officers of this Department, viz.:—

CLASSIFICATION.	No. of Midwives.	No. of Confinements attended during last year 1905.
Good	15	4,080
Satisfactory	55	5,780
Fair	64	4,210
Unsatisfactory	24	690
Bad	8	320
Total	166	15,080

From the foregoing table it will be observed that approximately over 15,000 births out of the 24,000 that took place in Liverpool that year were attended by midwives. It is, however, satisfactory, to note that more births are attended by the better class of midwives, owing, no doubt, to the fact that they give up their time completely to the work, whereas the unsatisfactory midwives make midwifery merely a supplementary source of income.

The following notifications have been received from midwives during the year, viz.:—

Deaths	1
Still Births	168
Puerperal Fever Cases	3

The small number of Puerperal Fever cases notified is probably explained by the fact that the midwives attending considered that the doctors' notifications were sufficient, or in some cases the midwife had ceased to attend when the disease was diagnosed.

The number of cases of Puerperal Fever coming to the knowledge of the Medical Officer during the year 1905 was 67, with 35 deaths. Of these 67 cases, 15 occurred in women attended by midwives. All of these have been investigated, the midwife interviewed, and every precaution taken to prevent the spread of infection, by disinfection of house and clothing, and by instruction given to the midwives in the requirements of modern midwifery practice.

A large number of still-births have been investigated, with interesting results.

Under the rules of the Central Midwives' Board midwives are required, in cases where difficulties arise, to advise the patients' friends to send for medical aid.

As many of these women are so poor as to be unable to pay a doctor's fee, although not actually paupers, it is unfortunate that no provision is made in the Act for the payment of doctors called in during such emergencies.

In order to supply this omission, the Health Committee, on the recommendation of the Medical Officer of Health, advised that the payment of one guinea should be made to any medical man for giving assistance in suitable emergency cases. The Council confirmed this recommendation in the following resolution:—

“That it be recommended that in cases of urgency in which
“Medical Practitioners have been called in by Certified Midwives,

“ as contemplated by Rule 17 of the Rules issued by the Central
 “ Midwives’ Board, pursuant to Section 3, Sub-section 1, of the
 “ Midwives’ Act, 1902, a fee of not exceeding One Guinea be paid
 “ on the certificate of the Medical Officer of Health to each such
 “ Medical Practitioner in the event of his failing to obtain payment
 “ of his fee from the patient or from the Poor Law Authorities.”

Although it cannot be said to have fully met all requirements, yet practically this action of the Council has been of great benefit, both to the midwives who are able to obtain prompt assistance in cases of difficulty, and also in a much greater degree to women of the poorer classes, who can rely on obtaining skilled attention during a sudden emergency without the necessity of having to apply for it through the cumbersome and sometimes ineffectual channel provided by the Poor Law Authorities.

During the year, 363 records of sending for medical assistance were received by the Medical Officer.

The chief complications to which these records refer are as follows:—

RECORD OF SENDING FOR MEDICAL HELP, 1905.

Obstructed or prolonged labour, Uterine Inertia	...	101
Hæmorrhage	... ..	38
Retained Placenta or Membranes	... ..	36
Deformed Pelvis	... ..	24
Breech or Foot Presentation	... ..	27
Abnormal Vertex Presentation	... ..	25
		<hr/>
Carried forward	...	251

	Brought forward ...	251
Transverse Presentation ...	...	15
Fever, Rigor, &c. ...	...	12
Ruptured Perinæum ...	...	11
Abortion or Premature Birth ...	...	9
Deformity of Child ...	...	8
Placenta Previa ...	...	5
Cord Presentation ...	...	4
Twins ...	...	2
Prolapse of Uterus ...	...	1
Puerperal Mania ...	...	1
Eclampsia ...	...	1
Puerperal Septicæmia ...	...	1
General Illness of Mother ...	...	21
Still-born Child ...	...	4
Illness of Infant ...	...	5
Other Causes ...	...	12
		<hr/> 363
Charged to Corporation by 36 Doctors ...	...	<hr/>104

Out of a total of 363, it will be seen that 104 cases were charged to the Corporation, and were paid for under the resolution of the City Council, previously alluded to.

During the year arrangements were made for the efficient inspection of the conditions under which the midwives carried on their work. Their homes are visited periodically, and they are instructed how to keep their case books, how to fill up their various forms, and in general how to comply with the Rules of the Central Midwives' Board. These visits are much appreciated by the midwives, and have resulted in considerable improvement in their practice, and also a more serious recognition of their responsibilities in relation to puerperal sickness.

INFECTIOUS DISEASE IN SCHOOLS.

In only ten instances during the year was it found necessary to close schools on account of the prevalence of infectious disease, and in seven of these the Infants' Departments only were closed.

The manner in which the spread of infection in schools is guarded against has been fully dealt with in former Annual Reports, but the subject is of sufficient importance to be again referred to.

In order to prevent the extension of infectious disease in schools, the earliest possible information must be given to the Head Master, the Head Mistress, or Principal, when sickness exists at the homes of the scholars.

Usually the first intimation of such sickness is received by the Medical Officer of Health, under the terms of the Notification Act, which, however, does not include measles and whooping-cough, both of which are liable to spread extensively amongst children of school age; these cases are notified by the school attendance officers, by inspectors, by parents, by doctors, and others. It is part of the duty of the district inspector to forthwith warn the parents, or those in charge, that the children must be kept from school until fourteen days after the necessary disinfection has been carried out.

The information obtained is also sent by postcard the same day to the head master or principal of the school the children attend.

When the source of infection is removed (either by removal of the patient to hospital, or by the recovery or death of the patient), the house and bedding are disinfected by the officers of the Public Health Department. At the expiration of a fortnight from the date of disinfection, the school visitor is notified to visit the house, and if no sickness of any kind has occurred in the interval, intimation is sent to the head teacher of the school to re-admit the children.

In the case of measles and chicken-pox, disinfection is carried out with the consent of the occupier of the house; the children are not allowed to return to school until a fortnight after the sickness has ceased to exist.

In cases of whooping-cough, ringworm, &c., only the affected child is kept from school. Ringworm, scabies, and ophthalmia may last indefinitely unless properly dealt with, and no child with any trace of these diseases should be admitted to school.

The notices sent to the schools for the purpose of notifying the existence of infectious disease at the home of a pupil are accepted by the Education Department as a valid reason for the non-attendance of the children at school, and qualify them to receive any benefits which regular attendance would have entitled them to.

When necessary, a certificate is furnished to the school authorities, stating that the pupil was absent on account of infectious sickness at home.

It must be borne in mind that although the child may be free from infection, and, so far as the risk of infection is concerned, may with perfect safety return to school, yet the child may not be sufficiently recovered physically to undertake at once the full work and discipline which attendance at school entails.

The permission of the Health Department to return to school, therefore, implies nothing further than freedom from infection.

It may be regarded as a rule, that all children suffering from an infectious disorder should be excluded from school so long as they are likely to retain any infection; this condition is one which may involve exclusion for some time after the patient is apparently convalescent.

It is equally necessary that children coming from houses, any inmate of which is suffering from infectious sickness, should also be excluded, because in the great majority of instances, if not in all of them, it is impossible to effectually isolate a case of infectious sickness in an ordinary household, especially within the homes of children of the class who attend the public elementary schools.

Hardship really is minimised by a careful application of the powers to exclude individual scholars, because unless this is attended to it is quite possible that disease may rapidly spread to an extent which would render it necessary to close the school altogether.

NOTICES TO MASTERS OF SCHOOLS.

The arrangements have been continued with the Education Committee that notice shall be sent to the Committee and postcards to the Head Masters of the various schools informing them when children from infected houses attend their schools. 12,712 cards were sent last year, as against 12,881 in the preceding year.

PUBLIC ELEMENTARY SCHOOLS.

In pursuance of the resolution of the Elementary Schools Management Sub-Committee, dated 13th July, 1903, and approved by the Education Committee on the 19th August, 1903, instructing the Medical Officer of Health to report upon the sanitary equipment, &c., of schools, a further large number of schools have been fully examined and reported upon during the year. The work, it is unnecessary to point out, involved an immense amount of additional labour to the Department.

The total number of schools fully examined and reported upon during the year was 58.

Full Reports have been printed by the Education Committee, and circulated to those interested.

Ordinary visits made by Sanitary Inspectors, apart from special visits for the purposes of the Education Committee:—

	<u>1904.</u>	<u>1905.</u>
No. of Visits to Schools	3,265	3,350
„ found incorrect	84	91
„ Water-closets and Latrines found dirty or defective	93	100
„ Notices issued for defects	36	60
„ „ „ dirty closets	5	16

THE AMBULANCE AND DISINFECTING STAFF.

The following table shows the number of patients removed by Officers of the Ambulance Staff, and the Hospitals to which they were taken :—

City Hospital North, Netherfield Road.	City Hospital South, Grafton Street, City Hospital, Park Hill.	Brownlow Hill.	City Hospital East, Mill Lane.	City Hospital, Priory Road.	David Lewis Northern Hospital.	Royal Infirmary.	Smithdown Road.	Southern Hospital.	City Hospital, Fazakerley.	Port Sanitary Hospital.	Hahnemann Hospital.	Garston Hospital.	Total.	
891	680	1789	86	816	1	10	6	9	3	111	11	1	93	4,507

PRECEDING YEAR.

995	542	1462	107	692	—	3	2	10	1	67	2	3	37	3,923
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For the removal of patients to hospital, and for the removal of infected bedding, and its return after disinfection, an adequate ambulance staff is maintained. There are eight ambulances provided for the removal of infectious patients to hospital, and as far as possible one ambulance is reserved for each form of disease. In every case the ambulance is cleansed and disinfected in the following way each time it is used :—

The rugs in which the patient is wrapped, also the stretcher canvas, are left at the hospital to which the patient is taken for disinfection at the hospital. The interior of the ambulance (which is of smooth varnished wood) is sponged down with a strong solution of formaline. A clean disinfected rug and clean stretcher canvas are supplied before another patient is removed.

The ambulance attendants and disinfecting staff are provided with sufficient suits of overalls for their purposes.

Bedding and clothing, after disinfection, are returned home by a staff and conveyance entirely distinct from that which removed them in the infected state. In all cases where it is found desirable to destroy infected articles full compensation is paid.

All cases of Smallpox and all cases of Typhus Fever, with very rare exceptions, are removed to hospital, and a special inspector revisits the house from whence the patient was removed to ascertain whether any further sickness has developed. These inquiries are made daily for 14 days and at intervals of a day or two during the following fortnight, and any case of sickness, however trifling it may appear to be, is at once reported and visited by a medical man. Friends of the patient, and others who are known to have been directly or indirectly in contact with him are also visited at their homes. By these inquiries, persons who may be incubating the disease are discovered and removed to the hospital at the earliest possible stage, and often before any serious risk of infection has arisen. Without these inquiries, which have occasioned no inconvenience to anyone, the patients would have remained at home for a longer period, constituting centres of infection to the neighbourhood, and it is largely owing to systematic inquiry and supervision, and the promptness of action taken upon available information, that the continued immunity of the City from formidable kinds of infectious disease is due. The absence of friction indicates the care and intelligence exercised by the inspectors in carrying out this system.

The collection, removal, disinfection and return of infected bedding has been carried on as hitherto by the ambulance staff.

It has been found that in many instances in which compensation for clothing had been given in money to the poorer classes of people, that the money was spent in drink, and the people left without clothing. As a consequence of this, an arrangement was made with a firm of repute, to supply articles equivalent in value to those which had been destroyed, thus preventing an improper use of the money. There were difficulties incidental to this method, and the present plan is to keep at the dépôt a stock of mattresses, bedding, &c., and to give it out to suitable applicants, whose clothing or bedding have been destroyed on account of infection, under the Public Health Act.

Owing to the delays and difficulties which arose from time to time in causing compliance with notices served upon owners to strip the wall-paper from the walls of infected rooms, this work has been undertaken by the disinfecting staff.

As soon as the infected wall-paper has been stripped, and the house is ready for re-papering or other work, an intimation of the fact is sent to the owner.

In all cases of infectious disease the houses were disinfected by a trained staff, free of cost, with sulphurous gas; but whenever there was sickness in any room of the house, disinfectants were given to the tenants for use in the sick room until the sulphurous gas could be used safely. No house is considered properly disinfected until sulphurous gas has been used, and the wall-paper, previously sprayed with solution of perchloride of mercury, stripped. The wall-paper is conveyed in sacks, specially provided for the purpose, to the refuse-destroyer and burnt. The existence of infectious sickness necessitates many visits by the persons in charge of disinfection, as the householder frequently omits to send information when the premises are ready. The number of rooms completely disinfected with sulphurous gas in 1905 was 7,787. There were in all 10,717 visits paid during the year to houses for the purpose of making enquiries respecting disinfection.

In 1905 there were 876 Library books taken from infected houses and disinfected, afterwards being returned to the Library from which they were originally borrowed, excepting those books which were in such a dirty and dilapidated condition that it was thought necessary to destroy them. Compensation was paid for all books destroyed.

INFECTED PREMISES STRIPPED AND DISINFECTED BY

<u>STRIPPING STAFF.</u>								<u>1904.</u>	<u>1905.</u>
Houses	...	...	...	...	...	...	...	6,678	7,837
Rooms	...	...	...	...	...	...	...	19,520	21,746
Number of Notes to Owners after stripping and cleansing								3,135	3,525
„	Visits by Superintendent of Staff						...	1,972	2,012

THE DISINFECTING APPARATUS.

The number of articles disinfected at the various Apparatus during the year amounted to 122,132.

DATE. 1905.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding.	No. of Pieces of Wearing Apparel.	Total Number of Articles.
January	454	159	3,041	906	4,560
February	537	261	3,615	1,421	5,834
March	452	213	3,270	1,451	5,386
April	565	245	3,708	2,658	7,176
May	467	213	3,374	1,819	5,873
June	519	227	4,034	3,839	8,619
July	612	166	4,232	4,177	9,187
August	368	181	2,147	1,359	4,055
September	662	211	4,411	1,961	7,245
October	604	174	4,108	1,764	6,650
November	616	159	4,675	3,042	8,492
December	1,052	231	30,650	17,122	49,055
Totals	6,908	2,440	71,265	41,519	122,132

The number of articles destroyed at the various Apparatus during the year amounted to 708, compensation being paid in conformity with the provisions of the Public Health Act.

DATE. 1905.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding.	No. of Pieces of Wearing Apparel.	Total Number of Articles.
January	11	14	18	41	84
February	16	22	15	3	57
March	6	13	8	—	27
April	28	24	48	7	107
May	12	16	14	2	44
June	9	16	7	1	33
July	5	13	13	10	41
August	18	18	19	—	55
September	18	22	35	—	75
October	11	30	19	1	61
November	11	10	26	40	87
December	10	20	7	—	37
Totals	155	219	229	105	708

* Including a large number of articles removed from shipboard.

PRINCE'S DOCK MORTUARY.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed, &c., and upon which the Coroner desires to hold inquests. Bodies are taken to this Mortuary by the police, and when it may be necessary to make post-mortem examinations, any medical gentleman may have the assistance of an inspector on sending a communication to the Ambulance Superintendent, 54, Gascoyne Street.

BODIES REMOVED TO THE PRINCE'S DOCK MORTUARY.		
Number from River.	Number from City.	Total.
12	229	241

FORD STREET MORTUARY AND DISTRICT MORTUARIES.

BODIES REMOVED TO MORTUARIES.						
Green Lane.	Lark Lane.	Wavertree.	Ford Street.	Park Hill.	Smithdown Road.	TOTAL.
—	—	6	205	—	—	211

The Mortuary in Ford Street is provided for the reception of bodies, which cannot be kept at the homes in which death had taken place, without injury to the health of the inmates. The address of the caretaker is 6, Pickering Street.

The District Mortuaries, it will be seen, are seldom used. For the convenience of juries, as well as for other reasons, it is preferable that bodies should be conveyed to the Central Mortuaries.

The method of transport of the bodies of persons killed, or found dead in the street, has been more adequately provided for.

Two alternative plans suggested themselves, one being that a hearse should be provided by the Health Committee, to be kept at some suitable dépôt where it could be obtained upon receipt of a telephone message from the Police; the other, and better arrangement, was to authorise the Head Constable to make arrangements with certain firms of undertakers in suitable parts of the City, to supply a hearse on short notice, together with a shell coffin, for these purposes.

This latter plan is expeditious, inasmuch as shorter distances would have to be travelled by the hearse to the place where the body was lying; it is working well.

CREMATORIUM.

The Crematorium in Anfield Cemetery is availed of by an increasing number of persons as a means of reverent disposal of the dead by cremation, but the system has not yet found the favour which it does in many important centres of population throughout Europe. The building is of attractive appearance, and the surroundings are appropriate.

PROCEEDINGS UNDER THE DISEASES OF ANIMALS ACTS, 1894 TO 1903.

The duties of the Inspectors under the Diseases of Animals Acts, 1894 to 1903, are to visit cattle steamers, both foreign and cross-channel, for the purpose of seeing that the provisions of the Foreign Animals Order, 1895, and the Animals (Transit and General) Amendment Order, 1904, are carried out.

Cattle steamers are examined as to fittings, ventilation, &c., and supervision is exercised in regard to cleansing and disinfection after animals are landed. Overcrowding or injury to animals is reported.

Cattle trucks and horse boxes are examined at railway stations, as to fittings, cleansing and disinfection, and the railway pens supervised.

Lairages and sale yards are visited to ascertain that they are cleansed and disinfected in accordance with the regulations of the City Council.

The Diseases of Animals Act relates in the main to certain diseases communicable amongst cattle, sheep and swine, and provides for the separation of diseased animals from healthy ones, for the disinfection and cleansing of vessels, trucks, &c., in which animals have been carried, and it defines the action to be taken to limit and prevent the extension of disease. It also deals with certain forms of disease communicable by animals to man.

The Board of Agriculture, under the powers of this Act, issue orders from time to time dealing with diseases of animals, or with their protection during transit. The Board also prescribes the manner under which animals may be imported or moved from place to place.

The Swine Fever Order, 1901, makes provision for the cleansing and disinfection of pig dealers' premises, and vehicles used by pig dealers for the conveyance of swine from steamers through the City to pig dealers' premises.

The Swine Fever (Movement from Ireland) Order, dated 22nd November, 1904, provides that all pigs coming from Ireland must be marked on the loins with a red +, and must be accompanied by a license. These pigs must only be moved for the purpose of slaughter. This Order came into force on the 23rd January, 1905, and due notice was given of the date on which the Order would take effect.

The accompanying table gives the statistics of the proceedings taken under the Acts or under the Orders of the Board of Agriculture:—

	<u>1904.</u>	<u>1905.</u>
Number of Visits to Railway Stations, including inspections made on Sundays	2,990	3,080
„ Inspections of Pens	104,948	104,746
„ found clean	75,019	75,445
„ „ dirty and cleansed before being used...	29,929	29,301
„ Inspections of Trucks... ..	48,477	47,813
„ found clean	39,027	40,937
„ „ dirty and cleansed before being used...	9,449	6,852
„ „ leaving the City before being cleansed	1	24
„ Inspections of Horse Boxes	359	286
„ found clean	165	103
„ „ dirty and cleansed before being used	194	183
„ Inspections of Vessels	9,135	8,845
„ found clean	3,930	3,533
„ „ dirty and cleansed before being used	5,115	5,231
„ „ going to Sea before being cleansed without cattle or cargo	90	81
„ Inspections of Gangways	9,744	9,317
„ found clean	8,318	7,988
„ „ dirty and cleansed before being used...	1,426	1,329
„ Inspections of Lairage and Sale Yards ...	5,168	5,200
„ found clean	3,120	3,048
„ „ dirty and cleansed before being used...	2,048	2,152
„ Carts used to convey Pigs, inspected ...	2,197	2,500
„ found clean	1,641	2,030
„ dirty and cleansed before being used..	555	470
„ of visits to Manure yards and wharves ...	541	515

INSPECTION OF SLAUGHTER-HOUSES, &c. 1904. 1905.

Number of Visits to Slaughter-houses made by Meat Inspectors	7,375	7,333
Number of Visits to Butchers' Shops made by Meat Inspectors	56,742	63,390
Number of Visits to Fish and Fruit Shops made by Fish Inspectors	57,753	61,117
Number of Visits to Fruit Shops made by Fruit Inspector	15,497	16,830

FISH PLATFORMS.

	<u>1904.</u>	<u>1905.</u>
Number of Visits made by District Sanitary Inspectors...	83	22

POULTRY DEPOTS.

Number of Visits made by District Sanitary Inspectors...	337	422
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RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER-HOUSES,
AND OF MEAT IMPORTED FOR SALE.

The decrease in cattle slaughtered in the City is probably due to the increased importation of States cattle, and also to the importation of frozen meat from the River Plate district.

There is a slight decrease in the number of sheep slaughtered, and a large decrease in the number imported, as compared with the year 1904.

With regard to pigs, it will be noticed that there is a large decrease in the number killed in the City, and a slight increase in the number imported.

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves.
Abattoir.	2796	171288	—	15511	40032	55876	336832	39102	1493
Allerton Road, Wavertree ...	543	4847	81	70	118	...	...	...	...
Back Butler Street ...	192	1133	309	15	2	...	...	...	...
Back Castle Street ...	452	110	...	650	...	...	...	...	...
Back Commutation Row.....	...	939	273	...	56	...	...	...	...
Back Mount Vernon Green...	206	2302	365	3	...	...	...	...	...
Bevington Hill ...	655	266	...	102	2	...	...	...	...
Copperas Hill.....	...	...	...	...	8889	...	...	...	...
Corlett Street ...	13	2360	910	...	105	...	...	...	...
Cotter Street ...	1	1	...	3	...	...	...	...	...
Carried forward ...	2102	11958	1938	823	9172	55876	336832	39102	1493

RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER HOUSES

AND OF MEAT IMPORTED FOR SALE—Continued.

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves.
Brought forward ...	2102	11958	1938	823	9172	55876	336832	39102	1493
Derby Lane, Old Swan.....	...	640	211	1	1	...	...	...	...
Foley Street ... ..	...	...	...	...	9730	...	...	...	...
Frederick Street.....	30	264	170	2	152	...	...	...	...
101, High Street, Wavertree..	222	724	401	...	...	...	...	...	...
105, High Street, Wavertree.	43	214	160	5	33	...	...	...	...
Norman Street .....	...	...	...	...	1273	...	...	...	...
Peel Street	78	981	323	...	39	...	...	...	...
Prescot Road, Knotty Ash ...	8	694	182	19	13	...	...	...	...
Sandown Lane, Wavertree ...	24	426	22	2	7	...	...	...	...
Sidwell Street, Garston	124	...	1	5	92	...	...	...	...
Soho Street.....	...	...	...	...	1638	...	...	...	...
St. Mary's Road, Garston ...	19	...	...	2	21	...	...	...	...
Upper Milk Street.....	...	...	...	...	7420	...	...	...	...
West Derby Road, Tue Brook	72	1497	513	24	69	...	...	...	...
Total in Private Slaughter-houses	2722	17398	3921	883	29660	...	...	...	...
Total in the City	5518	188686	3921	16394	69692	55876	336832	39102	1493

PRECEDING YEAR.

Total in Private Slaughter-houses	2421	17569	3008	597	34850	...	...	...	...
Total in the City	5521	189807	3008	16374	85568	52788	350258	36841	1074

UNWHOLESOME MEAT, FISH, FRUIT, &c., SEIZED AND DESTROYED.

DATE.—1905.		Beef.	Veal	Mutton and Lamb.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell fish	Fruit.	Miscellaneous.
		Lbs.	Lbs.	Lbs.	Lbs.	Head	Head	Lbs.	Bags	Lbs.	
MARKETS.	St. John's	3275	60	122	1079	2533	2352	93921	134	1632	146 Eggs. 28 lb. Venison. 37,400 Oysters.
	St. Martin's .....	...	...	...	147	...	...	...	...	...	...
	North Haymarket ...	...	...	...	...	...	31	...	...	71547	...
SLAUGHTER-HOUSES.	Abattoir.....	110347	5397	20987	18421	12	350	...	...	...	...
	Allerton Road	120	...	4	...	...	...	...	...	...	...
	Back Butler Street ...	592	...	...	...	...	...	...	...	...	...
	Back Castle Street ...	26400	1524	407	...	...	...	...	...	...	...
	Bevington Hill	15062	863	60	...	...	...	...	...	...	...
	Copperas Hill .....	...	...	...	775	...	...	...	...	...	...
	Corlett Street.....	...	...	34	...	...	...	...	...	...	...
	Cotter Street.....	10	...	...	...	...	...	...	...	...	...
	Foley Street .....	...	...	...	29	...	...	...	...	...	...
	Norman Street .....	...	...	...	702	...	...	...	...	...	...
	St. Mary's Road, Garston	25	...	...	...	...	...	...	...	...	...
	Sidwell St., Garston..	202	...	...	...	...	...	...	...	...	...
	Soho Street	314	...	207	20	...	...	...	...	...	...
	Aigburth Road .....	...	...	31	...	...	...	...	...	...	...
	Athol Street .....	...	...	4	...	...	...	...	...	...	...
	Birkett Street	200	...	...	...	...	...	...	...	...	...
	Bramley-Moore Dock.	380	...	...	...	...	...	...	...	...	...
	Brownlow Hill .....	...	...	...	...	...	...	...	...	...	4,000 Eggs.
	Bronte Street	2388	...	...	...	...	...	...	...	...	...
	Celt Street.....	242	...	...	202	...	...	...	...	...	...
	Cherry Lane .....	...	...	...	110	...	...	...	...	...	...
	Church Street .....	...	...	...	...	...	...	136	...	...	...
Carried forward...		159557	7844	21856	21485	2545	2733	94057	134	73179	

UNWHOLESOME MEAT, FISH, FRUIT, &c., SEIZED AND DESTROYED.—*Contd.*

DATE.—1905.	Beef.	Veal.	Mutton and Lamb.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Fruit.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head	Head	Lbs.	Bags	Lbs.	
Brought forward...	159557	7844	21856	21485	1545	2733	94057	134	73179	
Crown Street .....	...	...	...	...	...	77	...	...	...	...
Cumberland Street .....	...	...	...	...	...	...	...	...	3460	...
Daulby Street.....	315	...	114	...	...	...	...	...	...	...
Devon Street .....	...	...	...	...	...	...	...	...	30	...
Duke's Dock .....	...	...	...	...	...	...	...	...	3360	...
Edge Hill Station	394	...	...	896	...	...	93	1	5369	...
Elliot Street .....	...	...	...	...	...	...	...	...	128	...
Eustace Street	220	...	30	...	...	...	...	...	...	...
Faireclough Lane.....	...	...	...	...	...	...	200	...	...	...
Georges Road	24	...	...	10	...	...	...	...	...	...
Gildart Street.....	224	...	...	...	...	...	...	...	...	...
Gill Street	49	...	...	...	...	...	...	...	...	...
Gloucester Street .....	...	...	...	...	...	...	1344	...	...	...
Gt. Charlotte Street .....	...	...	...	...	128	35	2938	...	39648	...
Gt. George Place	160	...	...	...	...	...	...	...	...	...
Gt. Homer Street	2596	...	140	10	...	...	560	1	...	...
Gt. Howard Street.....	10	...	...	...	...	...	...	...	...	...
Gt. Nelson Street .....	...	...	...	...	...	...	...	...	3360	...
Harper Street .....	...	37	...	...	...	...	...	...	...	...
Highfield Street .....	...	...	...	...	...	...	...	...	...	1000 Eggs.
Houghton Street .....	...	...	...	...	200	...	...	...	...	...
King Street, City .....	...	...	...	...	...	...	10	...	...	...
Langsdale Street	30	...	...	...	...	...	...	...	...	...
Carried forward...	163579	7881	22140	22401	2873	2845	99202	136	128534	

UNWHOLESOME MEAT, FISH, FRUIT, &c., SEIZED AND DESTROYED.—*Contd.*

DATE.—1905.	Beef.	Veal.	Mutton and Lamb.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Fruit.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head	Head	Lbs.	Bags.	Lbs.	
Brought forward...	163579	7881	22140	22401	2873	2845	99202	136	128534	
Lime Street Station .....	...	...	...	...	...	...	1756	...	...	...
Liffey Street .....	...	...	...	...	2	...	...	...	...	...
London Road	50	...	...	...	7	...	...	...	...	...
Low Hill	40	...	457	3	...	...	...	...	...	...
Market Street .....	...	...	...	...	11	...	...	...	...	...
Mill Street	305	...	50	...	...	...	20	...	...	...
Naylor Street .....	...	...	...	...	...	...	448	...	...	...
Netherfield Road	20	...	...	...	...	...	...	...	...	...
North Hill Street .....	...	...	...	224	...	...	...	...	...	...
Park Road	20	...	...	...	...	...	...	...	485	...
Pitt Street	400	...	332	...	50	...	84	...	...	...
Pownall Square	40	...	...	672	...	...	...	...	...	100 Eggs.
Preesons Row .....	...	...	75	...	...	...	...	...	...	...
Prescot Street.....	14	...	...	10	...	...	...	...	...	...
Princes Dock .....	...	...	...	...	...	...	352	...	...	...
Queen Square .....	...	...	...	...	...	...	...	...	25650	...
Rainford Gardens .....	...	...	...	...	...	...	...	...	720	...
Rathbone Street.....	...	...	...	120	...	...	...	...	...	...
Regent Road	330	...	2674	...	...	...	...	...	...	...
(Cold Storage)										
Roe Street .....	...	...	...	...	...	...	1972	5	250	...
Rose Street .....	...	...	...	...	157	237	16537	9	248	18,300 Oysters.
Sandon Dock .....	...	...	...	2852	...	...	...	...	...	17 bags Yeast.
Scotland Place	588	...	...	59	...	...	...	...	...	...
Carried forward...	165386	7881	25728	26341	3100	3083	120371	150	155887	

UNWHOLESOME MEAT, FISH, FRUIT, &c., SEIZED AND DESTROYED.—*Contd.*

DATE.—1905.	Beef.	Veal.	Mutton and Lamb.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Fruit.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head	Head	Lbs.	Bags.	Lbs.	
Brought forward...	165386	7881	25728	26341	3100	3082	120371	150	155887	...
Scotland Road	4202	...	1081	...	...	...	...	...	...	...
Sir Thomas Street .....	...	...	...	...	15	...	...	...	...	...
Smithdown Lane	43	...	...	...	...	...	...	...	...	...
St. James Place	89	...	...	...	...	...	...	...	...	...
„ Street	8	...	...	...	...	...	...	...	...	...
Stanley Road	9	...	...	...	...	...	560	...	...	...
„ Street .....	...	...	...	...	...	...	...	...	68430	...
Tryon Street .....	...	...	...	...	99	...	...	...	...	644 lbs. Venison.
Upper Frederick Street...	...	...	...	158	...	...	...	...	...	...
Upper Milk Street .....	...	...	...	8	...	...	...	...	...	...
Walton Road .....	...	88	...	80	...	...	...	...	...	...
Waterloo Station	108	...	...	...	...	...	...	...	...	...
West Derby Road	460	...	...	...	...	...	...	...	...	...
William Henry Street ...	30	...	...	16	...	...	...	...	...	...
Total	170335	7969	26809	26603	3214	3082	120931	150	224317	55,700 Oysters. 6,146 Eggs. 672lbs. Venison. 17 bags Yeast.

As in former years, considerable difficulty was occasioned in dealing with the uncared-for children who swarm into Cazneau Street Market, attracted by the putrescent fruit which has been thrown into the receptacles intended for it in the process of sorting.

The nuisance has been more efficiently dealt with by the Market constables and the staff of the Health Committee than in preceding years, but great strictness is necessary in excluding the little children in question from the Market.

The total amount of Meat, Fish and Fruit, &c., found to be unfit for human food is equivalent to—

				Tons.	Cwts.	Qrs.	Lbs.
Meat	...	...		103	14	3	16
Fish	...	...		53	19	2	27
Fruit	...	...		100	2	3	9

and this does not include Fish removed as refuse by Officers of the Cleansing and Scavenging Department under the City Engineer.

The great bulk of this meat was not exposed for sale, and did not require a Justices' order for its destruction.

The quantity of fish seized includes both fresh fish and salt fish which had become tainted during transit or storage, a regrettable waste of food.

ANIMALS SMOTHERED AND INJURED IN TRANSIT ON BOARD SHIP.

Beasts.	Sheep.	Pigs.	Number found good.	Number found bad.	Weight of bad in pounds.
8	47	76	102	29	3,409

The Animals (Transit and General) Order compels the master of the vessel to slaughter all seriously-injured animals forthwith. Such animals are slaughtered on board the vessel, and the carcasses removed to the abattoirs.

Police proceedings in respect to meat, poultry and fruit were as follows:—

	1904.	1905.
Number of informations in respect of diseased poultry ...	1	—
„ „ „ „ meat ...	6	5
„ „ „ „ unsound fruit ...	1	1
„ „ „ „ fish ...	—	1
„ Fined... ..	5	5
„ Sent to Prison ...	—	—
„ Withdrawn or Dismissed ...	3	2
Amount of Fines and Costs	£69 1 8	£18 8 0

	1904.	1905.
Number of carcasses seized during the year by Medical Officer of Health and Inspectors under section 116 of the Public Health Act, 1875 ...	160 Cattle 92 Calves 516 Sheep 220 Pigs. 3 Goats	169 Cattle 117 Calves 274 Sheep 83 Pigs 54 Goats
	991	697
* Number of such carcasses condemned by Justices under section 117 of the Public Health Act, 1875	2	1
Number of carcasses so seized in consequence of the animal having suffered from Tuberculosis	120	106

* The remainder were dealt with under a Local Act, which does not require a Justices' Order.

GLANDERS AND FARCY.

By powers granted under the Diseases of Animals Act, particularly the Glanders and Farcy Order of 1896, the Health Committee have made regulations which have been circulated amongst the horse-owners in the city. Accompanying these regulations were notices indicating the means of combating the disease and the necessary precautions to be taken, with the gratifying result that the disease had declined from 40 cases in 1896 to 2 in 1905.

It must, however, be understood that the regulations laid down and the precautions adopted should be in no way relaxed, as one infected animal is capable of transmitting the disease to a large number, therefore, any cases of suspected disease should be immediately notified. The following table indicates the number of affected animals since and including the year 1896:—

Year.		No. of Cases.		No. of Cases brought from outside City boundary.
1896	...	40	...	5
1897	...	18	...	2
1898	...	9	...	1
1899	...	20	...	4
1900	...	5	...	1
1901	...	5	...	—
1902	...	9	...	3
1903	...	21	...	1
1904	...	7	...	1
1905	...	2	...	—

The method of procedure adopted in carrying out the requirements of the Act is as follows:—

Immediate notification of actual or suspected cases, either from the owner, police, or the Veterinary Surgeon who may be called in to the case, or from the Horse Slaughterer's yard (there is only one in the city).

The premises where the disease is said to exist are at once visited on receipt of the information, and the requirements of the Act put into force.

In consequence of the large number of cases of Glanders existing in the country, particularly in large towns, the Local Authority was requested by the Board of Agriculture in 1896 to cause all horses imported into the city or the Port of Liverpool from the North American Continent to be submitted to Veterinary examination, thus ensuring that all animals are free from Glanders. This is also practically a certificate of their freedom from other contagious disease.

In 1896, and for several years after, a very large number of horses was imported from the North American Continent, but for the past few years this number has been greatly diminished, although their examination still continues.

In 1905, 480 horses were inspected by Mr. Eaton Jones, Chief Veterinary Surgeon of the Corporation, at various yards throughout the city, but chiefly at the American Horse Repositories, Stanley.

In addition to the above, 1,217 imported horses were examined, in the first instance immediately upon arrival at the various yards in the city (some of these horses were landed outside the boundary and brought into the city by rail), and again re-examined at the Sale-yards on the morning of sale.

There was no evidence of contagious disease in any of the imported horses, and their condition on the whole was very good.

By this examination, infectious disease of any kind is prevented from spreading, and the general health of other horses further safeguarded.

It may be added, that the two cases of Glanders is the lowest number recorded since 1896, which goes to show that, although the disease is not yet exterminated, it is yearly becoming a less source of danger to the horse-owning community of Liverpool.

Total Number of Animals in Stables, &c., where the Disease occurred.	SLAUGHTERED.		Died.
	By Order of Owner.	By Order of Local Authority.	
2	—	1	1

LUNGS OF HORSES EXAMINED AT KNACKER'S YARD,

CARRUTHERS STREET.

In further reference to Glanders and Farcy, it may be mentioned that the Veterinary Superintendent has caused the lungs of all horses sent to the above yard to be submitted to examination, and he is able to report that no case of contagious disease has been found to exist.

This precaution is taken to ensure owners being immediately notified of the existence of the disease, which may be in a latent state, and also to protect the public from unscrupulous persons who may not conform to the requirements of the Act.

If suspicious indications are found the owner is notified, and the necessary precautions taken to have his stud submitted to Veterinary examination, with disinfection of premises and all articles associated with the suspected outbreak.

Lungs Examined.	Glandered.	Not Affected.
1,576	—	1,576

A case of Anthrax was found during the examinations at the Horse Slaughterer's Yard, and dealt with as the Act directs.

At the Liverpool Cattle Market during 1905, the following numbers of animals were inspected by Veterinary Surgeons of the Corporation:—

Cattle	...	...	...	...	...	49,620
Sheep	...	...	...	...	...	340,357
Pigs	...	...	...	...	...	28

No cases of infectious disease were found.

LIVERPOOL PARASITIC MANGE ORDER, 1905.

Under this Order, which came into force on the 18th January, Veterinary examinations are made of all animals suspected of being affected with Parasitic Mange, and in the case of affected animals they are immediately isolated and kept under observation until the disease has entirely disappeared. Thorough disinfection of the premises, harness, utensils, feeding troughs, &c., is carried out under the supervision of Inspectors of the Medical Officer of Health.

The following table gives the number of examinations made and animals affected, &c. :—

Number of Animals and Carcases examined.	Affected.	Died or Slaughtered.	Recovered.
55	51	31	20

ANTHRAX.

There were 5 cases of anthrax reported during the year. In 2 of the cases the carcases were found at the Abattoir, 1 at the Knacker's Yard, and 2 in shippens in different parts of the City.

A portion of the carcase was in each case submitted to Professor Boyce, who certified that the animals from which they were taken were affected with anthrax.

The shippens and stables attached where cases occurred were immediately cleansed and disinfected, all the manure burned, and samples of foodstuffs were in each case submitted for bacteriological examination, with the result that no Anthracis Bacillus were found present.

Date. 1905.	Total number of Animals on premises where disease occurred.	Died.	Killed by order of owner.	Locality.	Remarks.
Mar. 8th...	7	1	—	Sedley Street	
Aug. 2nd...	12	1	—	Threlfall Street	
„ 8th...	32	—	1	Dunbabin Road	
Sep. 13th..	—	—	—	Waterloo	Fined £1 and £1 16s. 0d. costs for removing carcase in contra- vention of the Anthrax Order.
Dec. 11th..	33	1	—	Dunbabin Road	

SWINE FEVER.

The following table shows the number of animals affected with swine fever and the number in the herds slaughtered under the Swine Fever Order.

Total Number in Herds.	HEALTHY.		DISEASED.		Died.	Locality.	Remarks.
	Slaughtered.		Slaughtered.				
	By Order of Owner	By Order of Board of Agriculture.	By Order of Owner.	By Order of Board of Agriculture			
4	1	Rathbone Road	3 remaining healthy when ultimately declared free.
4	1	Prescot Road	3 remaining healthy when ultimately declared free.
9	3	—	Woolton Road.....	6 remaining healthy when ultimately declared free.

RABIES.

In conformity with the requirements of the Board of Agriculture, reports were sent to the Board in respect of nine suspected cases of rabies. Bacteriological examination was made in all the cases, and *post mortem* examinations were made by the Veterinary Inspectors. There were no signs that any of the animals had been affected with rabies. Two live dogs, reported by the Police Authorities to the Board of Agriculture as being suspected cases of rabies, were examined on 6th November and 9th December by the Veterinary Inspector, who certified that the animals were not affected with rabies.

PIGGERIES.

	1904.	1905.
Number of applications to keep pigs	7	29
„ „ granted	5	14
„ „ refused	2	2
„ „ in abeyance	—	13
„ Pigs applied for on above applications	124	600
„ „ granted	92	156
Total number of licensed piggeries...	72	77
„ pigs	1,074	1,112
Number of visits to piggeries	418	402
„ Informations	1	1
„ Fined	1	1
Amount of Fines and Costs	£0 4 6	£5 4 6

COWSHED INSPECTION.

					<u>1904.</u>	<u>1905.</u>
Number of Inspections of Cowsheds	...	...	...	...	4,188	4,160
„ found Incorrect	.	...	...	..	120	*152
„ of Informations	...	...	...	...	7	5
„ Fined	...	...	...	...	5	5
„ Withdrawn	...	...	...	...	2	—
Amount of Fines and Costs	...	...	...	...	£10 4 6	£4 17 6

One hundred and ten notices have been issued to occupiers directing their attention to contraventions of the regulations.

Number of cowsheds in the city during the years 1896 to 1905 inclusive, together with the number of cows licensed to be kept, and the number of applications for new cowsheds:—

		Cowsheds.		Cows.		Applications.	
1896	...	404	...	5,393	...	129	
1897	...	453	...	5,650	...	33	
1898	...	435	...	5,695	...	13	
1899	...	434	...	5,851	..	2	
1900	...	437	...	5,905	...	5	
1901	...	443	..	5,909	..	6	
1902	...	442	...	6,068	...	16	Incorporation of Garston
1903	...	447	...	6,214	...	12	
1904	...	449	...	6,359	...	7	
1905	...	456	...	6,426	...	17	Incorporation of Fazakerley

* The large number of inspections found incorrect is due to visits made to various premises undergoing alterations in Fazakerley.

MILKSHOPS.

Number of Applications for registration	...	...	...	...	130
of which transfers were	.	...	...	..	90
,, above Applications granted	...	...	...	...	115
,, ,, in abeyance	...	...	...	..	12
,, ,, refused	.	...	...	..	1
,, ,, withdrawn	..	..	...	...	2

One application standing over from 1904 has now been granted.

Number of Milkshops on the register at the end of 1901	...	...	898
,, ,, ,, ,, 1902	..	...	802
,, ,, ,, ,, 1903	...	...	812
,, ,, ,, ,, 1904	...	...	790
,, ,, ,, ,, 1905	...	...	789

DAIRIES AND MILKSHOPS INSPECTION.

	<u>1904.</u>	<u>1905.</u>
Number of Inspections of Dairies and Milkshops	6,549	6,708
,, found incorrect	25	69
,, of Informations	11	17
,, Fined	9	16
,, Withdrawn	2	1
Amount of Fines and Costs	£19 4 0	£27 11 0

Sixty-three caution notices have been issued to occupiers of milkshops for contravention of the Regulations.

LEAVELOOKERS' VISITS TO SHIPPONS FOR THE PURPOSE OF

EXAMINING COWS.

No. of Visits.	No. of Examinations of Cows.	No. found Healthy.	No. found ill.	No. referred to the Veterinary Surgeon.
1,770	22,645	22,431	214	206

ICE CREAM MAKERS AND VENDORS.

The usual inspections have been made of the premises utilised by the street traders solely for manufacturing ice cream.

The dwellings which these street traders occupy have also been kept under observation, and in no instance during the past year have they been found to make or store ice cream in or about their dwellings.

A systematic inspection has also been made of shopkeepers' premises which are used for the manufacture and sale of ice cream.

					<u>1904.</u>	<u>1905.</u>
Number of premises under Inspection	...	...	...	...	548	707
„ visits made	...	...	...	...	2,182	2,413
„ caution notices issued	...	...	...	...	22	32
„ Informations	...	...	...	...	—	1
„ Fined	...	...	...	...	—	1
Amount of Fines and Costs	...	...	...	...	—	£0 14 6

LIVERPOOL CORPORATION ACT, 1900.

MILK SUPPLY AND TUBERCULOSIS.

It is very satisfactory to notice that under the above Act the number of actual and suspected cases of tuberculosis in cattle shows a very considerable diminution on the previous year, thus bearing out the fact that by a thorough examination and constant supervision the ravages of this disease amongst cattle may be successfully combatted.

The examination of cows and cowsheds within the city has been duly carried out throughout the year, and all cases of sickness amongst the cattle are reported by the Leave-lookers. In cases where the cows are reported to be suffering from any disease of the udder, or any other disease likely to be inimical to the public health, the Medical Officer of Health directs that the animal be submitted to Veterinary examination and reported upon. Should clinical symptoms of tuberculosis of the udder be in evidence, the cow is either removed from the shippoon for slaughter or kept strictly isolated pending a definite conclusion of the case, the milk, of course, being either thrown away or boiled and used only as food for swine.

The following is a table showing the number of visits made by the Veterinary Superintendent to shippoons within the City boundary:—

	1904	1905
Visits to Town Shippons	305	239
Cows examined	665	298
Not affected	595	241
Cows found to be suspicious of Tuberculosis of the Udder ...	70	57
Convictions for Offences under the Act	12	1

MILK SUPPLIED FROM OUTSIDE THE CITY BOUNDARIES.

Under the Liverpool Corporation Act, 1900, Inspectors periodically visit the various places to which milk is sent from the country, including the railway stations and hospitals, and there take samples. These samples are then submitted to bacteriological examination. Should they be found to contain tubercle bacilli (or the germs of consumption), the Veterinary Superintendent accompanied by the Medical Officer of Health or his representative, and furnished with an Order signed by a magistrate resident within the county from which the milk is consigned (as prescribed by the Act), visits the farm or dairy and examines the stock therein. The cowsheds from which the affected supplies are derived are situated mainly in the counties of Cheshire and Shropshire, and in North Wales, the first named being the largest dairy district in the United Kingdom. Only rarely are contaminated supplies received from Lancashire, Yorkshire and adjacent counties, but it may be added that dairying and the production of milk are not carried on to such a great extent in these counties.

The shippens generally are found to be much inferior (from a sanitary point of view) to those within the City of Liverpool, and cannot be said to be in a satisfactory condition, although since the passing of the Act they have been greatly improved. In a number of cases farmers have expressed their approval of the beneficial results of the inspections made by the Liverpool Authorities owing to the consequent improvements made in the premises by the landlords.

The cattle also are neither so good, nor are they kept in the same cleanly condition, as those of the City.

In cases of suspected tuberculosis of the udder, the necessary proceedings are taken as prescribed by the Act, being practically similar to those adopted within the City. Samples of milk are also taken from suspected animals, and submitted to a further bacteriological test to verify the diagnosis of the case. In the meantime the animals are isolated, and the milk dealt with as in the City.

It is not possible in all cases to find any evidence of disease of the udder in the herd, the explanation usually being that the animals have been sold on their condition being noticed by the owner.

Affected animals are usually disposed of for slaughter, but, it is to be regretted, they have occasionally been found to be sold as milking cows, and, as a natural consequence, upon going into other herds would be likely to further disseminate the disease.

The following table gives statistical details:—

	1904	1905
Number of Visits to Farms	18	10
Number of Shippons examined	39	20
Number of Cows examined	604	266
Number of Cows found to be suspicious of Tuberculosis of the Udder	19	9
Number of convictions for offences under the Act	1	3
Number of Orders prohibiting the sale of contaminated Milk within the City	5	1

Although the application of the Act involves a considerable amount of time and expense on the part of the Liverpool Corporation and its officials, the result is that the City is protected to a great extent from the evils which follow an impure milk supply. The Local Authorities of surrounding districts have also become alive to the necessity of insisting upon better sanitation of farms and cowsheds, and the farmers themselves are beginning to show a willingness to be advised as to the best methods to adopt to keep their cattle and shippons in the most healthy and sanitary condition.

Finally, the inclusion *mutatis mutandis* of the requirements of the Act of 1900 into a general Act which would be applicable to the whole country would be most beneficial.

THE MILK DEPÔTS.

From the date of the initiation of this scheme, viz., early in 1901, until 31st December, 1905, 10,391 infants have been fed upon this milk, supplied either at the depôts or through dairies, the average age at the commencement of the feeding being 4 months, very few (615) were from one cause or another, admitted after twelve months of age. In the great majority of instances the infants thrived, increasing in weight and remaining perfectly healthy.

It was possible to keep a much closer supervision over cases supplied from the depôts than over those supplied by the dairies. Of the former, viz., 6,797 in number, there were 635 cases in which the infant died, but of these 158 had been irregularly fed on the milk; 448 were ill, some of them hopelessly ill, when the milk was first supplied. Each death formed the subject of a careful inquiry, and it was found that out of the total number of infants who died, only 117 were fairly healthy at the time of admission, and had been properly fed since. In these 117 cases the registered causes of death were as follows:—

Convulsions	20
Diarrhœa	23
Bronchitis	9
Pneumonia	12
Phthisis	1
Wasting	5
Teething	4
Inflammation of Stomach and Bowels	4
Whooping Cough	1
Blood Poisoning	1
Disease of Throat	2
Disease of Leg	1
Croup	1
Meningitis	3
Anæmia	1
Various other causes	29
	<hr/>
	117

As in preceding years, a study of the case-books, in which the particulars of each case are entered, and in which the progress of the child, so far as can be ascertained, is recorded, reveals many interesting facts. The first thing that strikes one is the very large number of children who are described as suffering from some form of sickness on admission; in fact, over 50 per cent. of those entered are stated by the mothers to be ill. A history that is frequently given is that almost everything in the way of infants' food has been tried without any satisfactory result, and they have come to the *depôt* as a last resource. A large number of these infants are recommended to try the milk by the medical attendants, both in hospital and private practice, and they report excellent results in cases where it is used. The committee are especially indebted to the members of the staff of the Children's Infirmary for their hearty co-operation and many valuable suggestions that they have made from time to time. The distributing *depôts* are made known at the out-patients' department of the Children's Infirmary, so as to bring the two institutions into closer contact with each other, and to be a source of mutual assistance.

When the mother, or the person in charge, brings the infant with her, it is weighed, if the person in charge will consent.

Every effort is made to induce the mothers to bring their children to be weighed at least once a fortnight. It is difficult, however, for some to do so, owing to the distance at which they live from the *depôt*, and some are indifferent. A considerable number, however, take a keen interest in their children's progress, and bring them more or less regularly to be weighed.

Trouble is occasionally experienced with the very ignorant class, who will persist in decanting the milk out of the sterilized bottle into one with a long tube. For the purpose, therefore, of seeing that the milk

is properly used, the female inspectors visit from time to time the houses where it is likely that the milk is misused. Also in cases where the mother says the child does not like the milk, or does not appear to be thriving on it, a visit is paid, and if a doctor is not in attendance the mother is advised to call one in.

The following are the regulations which control the sale of the milk:—

1. The milk is supplied in baskets of nine, seven or six bottles, each bottle containing sufficient milk for one feed, according to the age of the child.
2. When all the milk in one bottle is not used, the remainder must not be warmed up again for the infant, but a fresh bottle opened for its next meal.
3. The person using the milk must guarantee to continue its use regularly during the needs of the child, and to send for it at the stated hours.
4. Should the milk not be agreeing with the child, the matter should be reported at once.
5. Every person using the milk will be supplied with two teats, which must be kept clean, and brought to the *Depôt* for inspection at least once a week. Extra teats will be charged for at the rate of 3d. each.
6. Just before using, each bottle should be placed unopened in a jug or basin of hot water, and warmed to the proper temperature. The bottle should then be opened and the teat inserted. It is recommended that infants under three months should be fed every two hours, from three to five months every $2\frac{1}{2}$ hours, and from five to eight months every three hours, and that they be fed once or twice during the night.

7. After using, the bottle should be thoroughly rinsed in cold water.

8. The child should be brought once a fortnight to be weighed.

9. If children are sent for the milk, they must be warned not to tamper with the stoppers of the bottles.

10. All bottles, stoppers, baskets and rubber rings not returned to the Dépôt, will be charged full value.

11. The cost of the full weekly supply is 1s. 6d., payable in advance. If a day's supply only is taken, the charge is 3d.

NOTE.—The Dépôts are open daily (Sundays and Bank Holidays excepted) from 11 a.m. till 6 p.m.

Sundays and Bank Holidays, 11 a.m. to 1 p.m.

Depôts for the sale of the milk are situated at—

No. 251, Netherfield Road North.

No. 47, Cazneau Street.

No. 52, Earle Road.

No. 37b, Park Road.

No. 53a, Hornby Street.

No. 107, Boaler Street.

And the milk is also supplied on special terms to a number of dairies in various parts of the city.

SALE OF FOOD AND DRUGS ACT.

The Sale of Food and Drugs Act of 1875, is designed to make better provision for the sale of food and drugs in a pure state. As the outcome of experience of the provisions of the Act, various amendments have from time to time been made to it, with a view to facilitate the attainment of these objects.

Apart from the addition to food or drugs, of ingredients, or of colouring matters injurious in themselves, with a view to conceal the inferior quality of the article, the offence is dealt with of adding materials, in themselves harmless, but which fraudulently increase the bulk or lower the quality. The main object of the Act is expressed in Section 6 of the original Act, which is as follows:—

“No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded by such purchaser. . . .”

Most of the routine action taken in regard to the analysis of food and drugs is to prevent infringements of this clause.

Details are provided under the principal Act, and under its various amendments, to safeguard the honest trader from fraudulent competition, and to safeguard the public from fraud, imposition and danger, in regard to food and drugs.

It is obvious that some amongst the many articles used for food are of very much greater consequence than others, not necessarily because greater quantities of them are consumed, but because some of them are peculiarly liable either to adulteration or contamination. One article in particular, namely, milk, constitutes the chief and perhaps the only food for very large numbers of infants, and of sick persons; it is not unreasonable, therefore, that exceptional attention should be given to it.

Analyses under the Sale of Food and Drugs Act are of two kinds, namely, chemical and bacteriological. These two forms of analyses are entirely separate and distinct in their objects, and in their methods; the method of chemical analysis is applicable to the ordinary articles of food comprised under the term of "groceries," and also to milk, butter, preserved fruits, tinned meats, cheese, &c.

The bacteriological method is applicable chiefly, and most usefully, to milk. It is also adopted in regard to other food stuffs of animal origin, a list of them being given in the table of articles examined (page 159).

The examination of drugs is almost wholly chemical. The importance of the examination of drugs is obvious; they do not, however, afford the same scope for fraud as articles of food.

Great care is necessary in procuring samples, and in submitting them for analysis.

All samples of food or drugs are taken either by, or under the superintendence of, Inspectors of the Health Department. It is of the greatest consequence that trained and practised persons should be employed for this purpose. It is necessary from time to time to employ women or young lads as agents, to go into the shop to ask for the articles, and as soon as the agent receives them, the Inspector enters the shop and completes the formalities which the Act requires, viz., to give notice to the vendor, and to divide the article purchased into three parts, sealing each with the official seal in the presence of the vendor, leaving one with the vendor.

In order to minimise the cost of proceedings under the Act, care must be exercised in the class of article purchased. Only a few purchases are made of those articles which are not likely to be adulterated, and which, experience shows, when they are taken for analysis, are almost invariably found to be genuine. On the other hand, when enterprising firms, seeking new fields for adulteration and profit, place suspicious articles on the market, it becomes necessary, sometimes, to take a considerable number of the articles before the fraud can be detected and checked.

The use of preservatives in food is a matter of importance to the consumer; such preservatives as boracic acid and salicylic acid are apt to

stop the processes of digestion, and to do injury to young children and delicate people. The Departmental Committee appointed in 1899 to consider the question of the use of colouring matters and preservatives in food, came to the following conclusions, but these conclusions have no force beyond that of recommendation, as they have never been incorporated in any Act of Parliament.

The conclusions of the Committee may be summarised as follows:—

(a) That the use of formalin or formaldehyde be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food, and that in all cases its presence be declared.

(b) That the use of any preservative or colouring matter whatever in milk be constituted an offence under the Sale of Food and Drugs Act.

(c) That the only preservatives to be allowed in cream be boric acid or borax, in amount not exceeding $\frac{1}{4}$ of a grain per cent. expressed as boric acid, the amount to be notified by a label upon the vessel.

(d) The only preservative to be used in butter and margarine to be the same as in the preceding, in proportions not exceeding $\frac{1}{2}$ per cent.

(e) That in the case of dietetic preparations intended for the use of invalids or infants, chemical preservatives of all kinds be prohibited.

(f) That the use of copper salts in the so-called "greening" of preserved foods be prohibited.

(g) The Commission also recommend that means be provided for more direct supervision over the use of preservatives and colouring matters in foods.

It has been a matter of comment that more samples of intoxicants are not procured; and adverse comparison has been made of the fact that 885 samples of milk have been analysed chemically, and 560 bacteriologically, during the year, whilst only 252 samples of intoxicants have been examined, notwithstanding the circumstances that whilst the quantity

of milk consumed is approximately 30,000 gallons per day, and valued at about £1,062, the amount of intoxicants consumed is vastly in excess of this both in quantity and cost. But the explanation is found in the fact that the intoxicants sold are genuine intoxicants; there is no question about that.

Primâ facie the fact that the working classes spend a million and a half sterling a year upon intoxicants in Liverpool, suggests necessity for a constant supervision of the article, but the mischief is caused by the excessive quantities consumed, and by the abuse of the article.

A comparison may be instituted, say, with opium, or with carbolic acid. By both of these drugs, the latter one especially, life is destroyed, either by accident or by design, but the quality of the opium, and the quality of the carbolic acid, is perfectly genuine, and no offence is committed under the Sale of Food and Drugs Act.

During the current year, for example, 17 lives were destroyed, either intentionally, or by accident, by carbolic acid poisoning, but it is not the Sale of Food and Drugs Act which will check this misuse of the article, which, in itself, is perfectly genuine.

Alcohol is in no sense a food, and is, indeed, extremely harmful when given to infants and young children, whilst the mischief which it causes to adults is due to the poisonous effects of the excessive quantities in which it is taken.

Further references to milk analyses will be found on page 161.

The work under the Sale of Food and Drugs Act is very similar to that under a Police Act, and samples are taken, as already stated, with a view to detect adulteration and fraud, and to prevent its recurrence.

Any member of the public is entitled, under the Act, to have samples analysed upon payment of a fee of 10s. 6d.

PROCEEDINGS UNDER THE FOOD AND DRUGS

AND MARGARINE ACTS.

SAMPLES TAKEN FOR CHEMICAL ANALYSIS.

No. of Samples Purchased.	Description of Samples.	Adulterated.	Informations.
8	Arrowroot	1	1
5	Almonds (Ground) ... ..	...	...
2	Ammoniated Quinine (Capsules) ...	2	1
8	Baking Powder ... ..	...	...
23	Barley... ..	12	...
1	Beef, Potted ... ..	...	...
1	„ Suet ... ..	...	...
108	Beer ... ..	...	...
10	Beer, Bitter ... ..	...	...
3	„ Lager ... ..	...	...
1	Bismuth Lozenges ... ..	...	...
2	Bi-carbonate of Soda ... ..	...	...
1	Boracic Ointment ... ..	...	...
12	Brandy	3	...
23	Bread ... ..	...	...
253	Butter... ..	24	8
5	Buttermilk ... ..	...	...
2	Calves Foot Jelly ... ..	...	...
18	Cheese... ..	...	...
1	Chocolate Powder ... ..	...	...
2	Cinnamon ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Information.
1	Citrate of Magnesia ... ..	...	...
14	Cocoa ... ..	...	...
3	Cocoa and Milk	1	...
22	Coffee ... ..	...	...
2	Coffee and Chicory ... ..	...	...
15	Compound Liquorice Powder ...	5	5
1	Cornflour ... ..	...	...
15	Cream	2	...
13	Cream of Tartar ... ..	...	...
1	Curd ... ..	...	...
1	Currie Powder ... ..	...	...
2	Custard Powder ... ..	...	...
4	Dripping ... ..	...	...
1	Epsom Salts ... ..	...	...
5	Flour ... ..	...	...
4	„ Self Raising ... ..	...	...
2	„ Bananine ... ..	...	...
1	Flowers of Sulphur ... ..	...	...
12	Gin ... ..	...	...
15	Ginger (Ground and Whole) ...	...	...
1	„ Wine Essence ... ..	...	...
2	Glycerine ... ..	...	...
5	Ground Gentian Root	2	2
4	„ Liquorice Root	4	1
1	„ Rhubarb ... ..	...	...
2	Gregory Powder ... ..	...	...
1	Groats... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
7	Honey... ..	...	...
1	Horse Radish ... ..	...	...
6	Ice Cream ... ..	...	...
1	Infants' Food ... ..	...	...
19	Jams ... ..	...	...
26	Lard	2	1
1	Linseed Meal... ..	...	...
1	Lobster (Tinned) ... ..	...	...
1	„ (Potted) ... ..	...	...
1	Macaroni ... ..	...	...
1	Mace (Ground) ... ..	...	...
27	Margarine	8	6
6	Marmalade ... ..	...	...
1	Marrow ... ..	...	...
3	Meat Extract ... ..	...	...
6	Meat Pies ... ..	...	...
6	Medicine Prescriptions	1	...
4	Medicated Wines	1	...
825	Milk (new)	97	51
41	„ (skimmed)	4	3
10	„ (Machine Skimmed)	1	...
1	„ (Humanised) ... ..	...	...
2	„ (Sterilized)	1	1
15	„ (condensed) ... ..	...	...
1	„ (dry) ... ..	...	...
21	Mineral Waters	3	...
25	Mixed Spice	3	3

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No of Samples purchased.	Description of Samples.	Adulterated.	Information.
6	Mustard	1	...
3	Nutmegs (ground and whole) ...	...	...
5	Oatmeal ... ..	...	...
1	Oil, Arachis ... ..	...	...
3	„ Camphorated	1	1
3	„ Cod Liver ... ..	...	...
1	„ Cotton Seed ... ..	...	...
5	„ Olive ... ..	...	...
2	„ Eucalyptus ... ..	...	...
1	„ Aniseed ... ..	...	...
3	„ Cocoa-nut ... ..	...	...
1	Olives ... ..	...	...
2	Oleo ... ..	...	...
1	Paregoric ... ..	...	...
2	Pepper ... ..	...	...
2	„ (black) ... ..	...	...
5	„ (cayenne) ... ..	...	...
18	„ (white) ... ..	...	...
2	Piccalilli ... ..	...	...
6	Pickles ... ..	...	...
12	Port Wine ... ..	...	...
3	Preserved Apricots ... ..	...	...
2	„ Beans ... ..	...	...
2	„ Black Currants ... ..	...	...
1	„ Ginger ... ..	...	...
1	„ Gooseberries ... ..	...	...
11	„ Peas	6	3
1	„ Peaches ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
2	Preserved Pears ... ..	...	...
5	„ Pineapple	2	...
1	„ Plums ... ..	...	...
1	„ Raspberries ... ..	...	...
2	„ Spinach	2	1
1	„ Tomatoes ... ..	...	...
1	Rabbit (Tinned) ... ..	...	...
17	Rice ... ..	...	...
1	Roast Beef ... ..	...	...
28	Rum	4	1
1	Sago ... ..	...	...
1	Salmon ... ..	...	...
1	Salt ... ..	...	...
1	Sardines ... ..	...	...
3	Sausage ... ..	...	...
1	Seidlitz Powder ... ..	...	..
1	Semolina ... ..	...	...
3	Sherry... ..	...	...
4	Shrimps (Potted)	1	1
1	Split Peas ... ..	...	...
5	Sugar ... ..	...	...
3	„ Demerara ... ..	...	...
1	Stearine ... ..	...	...
6	Stout ... ..	...	...
2	Sweet Cake ... ..	...	...
49	Sweetmeats	1	...
2	Sweet Spirit of Nitre ... ..	...	...
6	Syrups (Golden) ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Information.
1	Tannic Acid Lozenges ... ..	...	...
9	Tapioca ... ..	...	...
10	Tartaric Acid... ..	2	...
37	Tea ... ..	...	...
24	Temperance Wine	5	1
1	Vaseline ... ..	...	...
9	Vinegar ... ..	...	...
22	Whisky (Irish ... ..	...	...
36	„ (Scotch)	1	...
5	Yeast ... ..	...	...
<hr/>			
Total 2107	1905	Total ... 203 Adulterated	91
2007	preceding year.	„ ... 187 preceding	year ... 79

	1904.	1905.
Number of Informations for Adulterated Food and Drugs ...	79	91
„ „ for giving a False Warranty ...	2	2
„ „ for selling milk with no name and address on can	—	1
„ „ for refusing to sell	—	1
Total Number of Informations—Food and Drugs Acts ...	81	95
Number Fined	55	71
Acquitted or Withdrawn	26	24
<hr/>		
Amount of Fines and Costs	£178 3 6	£278 0 0

The amount of fines for offences under the Sale of Food and Drugs Act have increased during the past twelve months as compared with the preceding twelve months. The increase in amount of penalties is due to the fact that the number of offences are greater and the number of convictions are 16 above that for the year 1904. The average amount imposed per case during the year is £3 18s. 3d., against £3 4s. 9d. for the previous year.

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

	<u>1904.</u>	<u>1905.</u>
Number of Samples purchased on Week-days in Town..	365	371
„ Informations	28	28
„ Samples taken at Railway Stations on		
Week-days	198	139
„ Informations	6	8
„ Samples purchased on Sundays in Town ...	142	150
„ Informations	15	19
„ Samples taken at Railway Stations on Sundays	122	112
„ Informations	3	—
„ Samples taken at City Hospitals	86	87
„ Informations	1	—
„ Samples taken at Corporation Milk Depôts...	35	26
„ Informations	1	—

MARGARINE ACT.

	<u>1904.</u>	<u>1905</u>
Number of Visits to Wholesale Dealers in Margarine	994	893
„ Visits to Shops	8209	9674
„ Informations	—	2
„ Fined	—	1
Amount of Fines and Costs ...	— £1 19s. 6d.	

BACTERIOLOGICAL EXAMINATIONS AND ANALYSES.

The work of the Bacteriologist comprises :—

- (a) Examination of food stuffs of various kinds.
- (b) Regular examination of water supplied to the City.
- (c) Examinations into suspected cases of rabies, anthrax, tuberculosis, &c.
- (d) Examination for diagnostic purposes in suspected cases of diphtheria, typhoid fever, tubercular sputum, &c.
- (e) Special investigations.

Every food-stuff and every sample of water is analysed for the presence of (1) *Bacillus coli* ; (2) *Bacillus enteritidis sporogenes*.

Every sample of milk is, in addition, examined for the presence of the *Bacillus tuberculosis* by inoculation.

In every sample of water the number of bacteria present in the cubic centimetre is also noted.

To facilitate these operations special apparatus has been constructed in the laboratory, and many of the operations have been simplified by their use.

The total number of samples of food-stuffs taken for bacteriological examinations during the year 1905 was as follows :—

SUMMARY.

SAMPLE.	No.	SAMPLE.	No.
Beans, Baked... ..	1	Ham, Loaf	1
Beef Suet	2	„ and Tongue	3
„ Tinned	11	Honey	3
Black Puddings	1	Ice	7
Brawn	2	„ Cream	13
Bread	16	Jams	23
Browning	1	Jellies	18
Butter	11	Kohl Rabi	1
Cabbage	1	Lamb's Tongue	1
Camp Pie	1	Lard	1
Cheese	9	Lemon Cheese	5
Chicken and Ham	6	„ Crystals	1
„ Tongue... ..	1	Mangolds	2
„ Veal	1	Margarine	9
Cockles	24	Marmalade	11
Coffee and Milk	1	Meat Pies	10
Condensed Milk	40	Milks... ..	560
Cow Heel	1	Mince Pies	8
Cove Oysters	1	Minced Meat	1
Cream	16	„ Steak	1
„ Cheese	8	Mussels	31
Fish Pastes	10	Mutton, Roast	3
„ Tinned	74	Olives	1
Flour	4	Oysters	33
Fluid Beef	14	Periwinkles	20

SUMMARY—Continued.

SAMPLE.	No.	SAMPLE.	No.
Piccalilli	1	Sausage	4
Pickles	2	Shrimps	2
Pickled Walnut	1	Soda Water	2
Polony	3	Soups	3
Potatoes	2	Sterilized Milks	22
Potted Ham	4	Sweetmeats	3
„ Ham and Beef	3	Syrup	3
„ Ham and Tongue	1	Tinned Rabbit	3
„ Lobster	3	„ Tomatoes	2
„ Meat	3	„ Tripe	1
„ Shrimps	3	Tongue	2
„ Tongue	4	Turkey (Boneless)	1
Preserved Fruits	16	Veal Loaf	1
„ Peas	1	Watercress	1
„ Spinach	1	Waters	11
Rhubarb	1		
Sauces... ..	16	TOTAL	1,147

SUMMARY.

Foods	1,147
Waters	64
Typhoid	163
Diphtheria	300
Rats	6,437
Miscellaneous	105
	<u>8,216</u>

A very large number of bacteriological examinations were made of suspected Tubercular, Typhoid and Diphtheria cases for the Medical practitioners of the district. The total number of examinations made amounted to 1,511.

MILK ANALYSES FOR THE YEAR.

The total number of milks examined was 560. These were examined for the presence of—

1. The *Bacillus tuberculosis*.
2. The *Bacillus coli communis*.
3. The *Bacillus enteritidis sporogenes*.
4. Other bacteria.

The *Bacillus tuberculosis* indicates that the animal from which the milk was taken was tubercular, or that the pails into which the milk was received, or the hands of the milker were infected from previous contact with a diseased cow.

The *Bacillus coli* indicates contamination with dirt, of an intestinal origin, or possibly that the cow was suffering from inflammation of the udder.

The *Bacillus enteritidis sporogenes* indicates dust or intestinal contamination.

Presence of the Tubercular Bacillus.

Of the 560 samples examined for tubercle, 52 guinea pigs died from septicæmia before the tubercular test was completed, leaving 508 samples for the completion of the investigation. Of this number 14 proved tubercular. 9 were found in railway borne milks, 1 in town milks, and 4 in hospital milks (railway borne).

1905. Month.	RAILWAY.			TOWN.			HOSPITAL.			STERILIZED MILK DEPOT.			Total No. Received each Month.	TUBERCULAR.				NEGATIVE.						
	No.	B. Coli Com.	B. Ent. Spor.	No.	B. Coli Com.	B. Ent. Spor.	No.	B. Coli Com.	B. Ent. Spor.	No.	B. Coli Com.	B. Ent. Spor.		Rail.	Town.	Hospital.	Depot.	Total No.	Rail.	Town.	Hospital.	Depot.	Total No.	
January	19	7	—	25	1	—	8	5	—	2	2	—	54	3	—	—	—	3	3	1	2	—	—	6
February	20	14	2	15	3	—	6	3	—	—	—	—	41	—	—	1	—	1	1	1	—	—	—	2
March	12	6	—	25	—	—	13	8	2	2	2	2	52	—	—	—	—	—	1	1	1	2	—	5
April	6	5	—	21	4	2	9	1	—	4	2	—	40	1	—	1	—	2	—	1	5	2	—	8
May.....	33	9	—	21	3	—	8	1	—	3	—	—	65	—	—	—	—	—	1	1	—	—	—	2
June	18	3	—	12	—	—	2	1	—	—	—	—	32	—	1	—	—	1	—	—	2	—	—	2
July.....	31	27	—	10	—	—	8	7	—	—	—	—	49	3	—	—	—	3	—	—	3	—	—	3
August	10	4	—	21	4	—	7	3	1	—	—	—	38	—	—	—	—	—	—	—	—	—	—	—
September ...	30	11	—	10	3	—	10	5	—	—	—	—	50	—	—	—	—	—	5	—	3	—	—	8
October	17	11	—	22	5	—	4	—	—	—	—	—	43	—	—	—	—	—	5	—	—	—	—	5
November ...	32	19	3	20	2	—	8	1	—	3	1	—	63	2	—	1	—	3	9	2	—	—	—	11
December	10	10	—	10	10	—	8	—	—	5	—	—	33	—	—	1	—	1	3	1	1	—	—	5
Total.....	238	126	5	212	35	2	91	35	3	19	7	2	560	9	1	4	—	14	28	8	17	4	—	57

The greater frequency of tubercle in railway borne milks has been noted in previous years. The percentage this year is $3\frac{1}{2}$ per cent., as compared with .4 per cent. in town milks. It is a very serious matter that tubercle is still so wide spread in milk. When it is remembered that one tubercular cow may be the means of infecting the milking utensils, the hands of the milker, and, in consequence, even the teats of the other healthy animals, regulations to deal with infected animals cannot be too stringent.

Presence of the *Bacillus Enteritidis Sporogenes* and the *Bacillus Coli*.

The *Bacillus enteritidis sporogenes* was found 10 times in a total of 348 railway borne samples of milk, and twice in a total of 212 samples of town milk.

The *Bacillus coli* was present 168 times in 348 railway borne milks, and 35 times in 212 town milks.

This is an exceedingly interesting and important result, for it shows that less care is taken in handling the country milk, and therefore that contamination much more frequently occurs.

With regard to the relationship of the *Bacillus coli* to the *Bacillus enteritidis sporogenes*, it has been found that very frequently the two organisms do not occur together. The significance of this is important as throwing light upon the significance of the *Bacillus enteritidis sporogenes* as an index of pollution. Where the *Bacillus coli* and *Bacillus enteritidis sporogenes* occur together this would be strong evidence that the *Bacillus enteritidis sporogenes* was of recent intestinal origin.

Table showing the number of milks examined Bacteriologically for Tubercle Bacilli from August, 1896, to 31st December, 1905.

Year.	Total Number of Samples Taken.	Town Samples.		Country Samples.	
		No. taken.	Tubercular.	No. taken.	Tubercular.
1896	119	83	4	36	5
1897	150	63	4	87	5
1898	112	84	7	28	5
1899	352	167	1	185	15
1900	560	255	4	305	5
1901	566	254	2	312	20
1902	595	213	1	382	32
1903	582	231	2	351	19
1904	571	201	4	370	37
1905	560	212	1	348	14
Totals.....	4,167	1,763	30	2,404	157

RESULTS OF ANALYSES OF BUTTER, CREAM, STERILIZED MILKS,
CHEESE, MARGARINE, ICE CREAM, &c.

Butter.—Eleven samples were submitted for analysis. *Bacillus coli communis* was present in two samples, and *Bacillus enteritidis sporogenes* was absent in all the samples.

Cream.—Sixteen samples of cream were analysed, *Bacillus enteritidis sporogenes* being absent in all cases, and *Bacillus coli communis* was present in nine.

Condensed Milk.—Forty samples were examined, only two being sterile. There is no doubt that condensed milk is a most unsatisfactory product. Bacteria are usually present, and the milk, which was originally condensed, might have contained various products of the decomposition of bacteria. These products are masked subsequently by the large quantity of sugar present, but their irritant properties are not destroyed. Three of the samples contained *Staphylococci*.

Cheese.—Nine samples were examined. *Bacillus coli* was present in six samples, and *Bacillus enteritidis sporogenes* was absent in all.

Margarine.—*Bacillus coli* was present in two of the nine samples of Margarine analysed. *Bacillus enteritidis* was, however, absent in all.

Jams.—These have shown a freedom from dangerous or danger indicating bacteria, 22 out of the 23 samples analysed being sterile.

Ice Creams.—Thirteen samples were submitted for analysis, all of which contained *Bacillus coli communis*.

Tinned Meats and Pastes.—Fifty-four samples were examined, the majority of which were sterile.

Jellies.—Seven out of the 18 samples examined were proved to be not sterile.

Shell Fish.—As in the case of milk and milk products, some kinds of shell fish are eaten for the most part uncooked; they are, in consequence, liable to convey infection if they become contaminated with pathogenic bacteria. Contamination may occur in the transit and storing of the shell-fish, but more especially in the collecting grounds. It is not uncommon to find that sewage has access to oyster, mussel and cockle beds. 109 samples were examined for evidence of *Bacillus coli communis* and *Bacillus enteritidis sporogenes*. The *Bacillus coli* was present 43 times, and *Bacillus enteritidis* 11 times. The *Bacillus coli* was more frequently present in oysters and mussels, the *Bacillus enteritidis sporogenes* in periwinkles and cockles.

Meat Pies.—During the year 10 samples of Pork Pie were examined, *Bacillus coli* and *Bacillus enteritidis* were, however, absent in all the samples.

The total number of Foodstuffs examined bacteriologically up to 1905 are as follows:—

1896	...	...	...	...	...	...	122
1897	...	...	...	...	...	...	162
1898	...	...	...	...	...	...	311
1899	...	...	...	...	...	...	505
1900	...	...	...	...	...	...	1,067
1901	...	...	...	...	...	...	1,055
1902	...	...	...	...	...	...	1,097
1903	...	...	...	...	...	...	1,061
1904	...	...	...	...	...	...	1,107
1905	...	...	...	...	...	...	1,147

Plague Observations and Rats.—During the year a careful watch has been kept over the rats in the ships entering the Port, and over those found in warehouses, stables, dwellings, &c. This has been done because of the well known fact that rats suffer from Plague, and that they very probably assist to spread the disease. By the systematic examination of these rats we may be put in a position to forestall cases of plague.

The total number of rats which were examined during the year was—

Town	...	...	...	...	...	1,186
Port	...	...	...	...	...	5,251
						—
Total	...	...	...	...	...	6,437

In no case was any rat found to be infected with Plague.

The total number of Special Examinations made during the year was—

Rabies	...	...	...	...	...	9
Anthrax	...	...	...	...	...	31
Tubercle	...	...	...	...	...	46
Actinomycosis	...	...	...	...	...	2
Miscellaneous	...	...	...	...	...	17
						—
Total	...	...	...	...	...	105

RABIES.

During the year nine dogs were examined for Rabies, but, fortunately, in no case was Rabies shown to be present.

ANTHRAX.

The following specimens were examined for Anthrax:—

Nature of Specimen.	Total Number Received.	B. Anthracis.	
		Present in.	Absent in.
Cake	2	—	2
Grains	2	—	2
Ox Hide	3	—	3
Hay	3	—	3
Meal	9	—	9
Spleens	11	5	6
Dust	1	—	1
Total.....		5	26

The following specimens were examined for Actinomycosis:—

Nature of Specimen.	Total No. Received.	Result of Examination.
Udder	1	Actinomycosis.
Cooked Ox Tongue	1	Not „

The following Miscellaneous samples have been examined:—

Nature of Specimen.	Result of Examination.
Skin of Mutton	Black spots due to intracuticular growth of fungus.
Lamb	Old Hæmorrhages.
Lamb's Liver	Multiple abscess.
Beef	Fibroid.
„	Old Hæmorrhages.
„	Intramuscular fat.
Cooked Ox Tongue	Old Hæmorrhage.
Lung (nodule)	Necrosis.
„	Muscular Hæmorrhage.
Skin from Duck's Breast	Mottled spots due to intracuticular growth of fungus.
Fowl	Very dropsical, contained many fibrous nodules under wing and leg. Non parasitic.
Fish	Dark patch, probably a bruise.
Pork Bone	Discoloration, due to putrefaction.
Chopped Pork	No Boric Acid present. No Salicylic Acid present. Much salt.
Pork	Intramuscular hæmorrhage.
Chopped Pork	No evidence of Boric Acid.
Pork	No Trichinas Spirales found.

The following specimens were examined for Tubercle :—

Nature of Specimen.	Total No. Received.	Tubercule Bacilli.	
		Present in.	Absent in.
Udder	43	13	30
Cow's Jaw	1	1	—
Mutton Bone	1	—	1
Pig's Gland	1	—	1
TOTAL	46	14	32

Bacteriological Analyses of cases of Typhoid and Diphtheria in the City Fever Hospitals.

During the year 1905 the Fever Hospitals have availed themselves of the facilities of the Municipal Bacteriological Department, and specimens have been submitted for examination.

The following is a summary of the results :—

Cases of Diphtheria	300
„ Typhoid	163
Total	463

DIPHTHERIA.

Positive	26
Negative	136
No growth	6
Staphylococci present in	83
Streptococci present in	49
	300

TYPHOID.

Positive	90
Negative	66
Indefinite	1
Suspicious	6
	163

The quality of the water supplied to Liverpool, as indicated by the following examinations, shows that its very great bacterial purity is well maintained for the year 1905. The samples analysed have been divided into Daily and Monthly.

1. DAILY ANALYSES.—The average number of bacteria per c.c. for the 365 daily samples is 27. The samples were taken from the tap in Ashton Hall, and on a few occasions from the "main" tap of the Johnston Laboratories. *Bacillus coli communis*, *Bacillus enteritidis sporogenes* and other specific organisms were not present on any occasion.

The samples were taken with the usual strict precautions, and were plated within a few minutes after being collected. The results are highly satisfactory, and show that the water as delivered finally to the householder maintains a very high degree of purity.

2. MONTHLY ANALYSES.—These analyses comprise examination of the filtered Vyrnwy and Rivington Water and Mixed Water at Prescott, and examinations of the Well Water Supply of Liverpool.

A.—PRESCOT SAMPLES OF FILTERED WATER.

	Average No. of Bacteria.	No. of Exami- nations made.
VYRNWY WATER... ..	22	8
RIVINGTON WATER	21	8
MIXING WELL	32	9
NEW RESERVOIR... ..	35	9

Here the results, as one would expect, correspond to the figures obtained from the daily analyses of the water as distributed to the householder. There is no contamination at Prescott.

B.—SAMPLES OF WELL WATER.

A very careful watch has, as in the preceding year, been kept upon the quantity of the water derived from the wells. During 1905 no opportunity offered of going down and taking samples from the various

fissures in the headings, but from analyses of the water as delivered at the surface the quality remains very good. No indication of contamination has been observed.

	Average No. of Bacteria, per c.c.	No. of Exami- nations made.
DUDLOW LANE WELL	27	7
GEORGE HOLT WELL, Green Lane	28	8
JOHN HOLMES WELL	25	9
WINDSOR WELL	29	6

Bacillus Coli communis and *Bacillus enteritidis sporogenes* were absent in all the samples.

Methods of Analyses.—As in previous years, the same standard has been maintained, namely, one cubic centimetre of water is examined for the total number of bacteria and for the *Bacillus coli communis*. For the estimation of the total number of bacteria, gelatine plates are made, and the incubation is carried on at 20° C. The plates are first counted 72 hours after being poured, and then again after 96 hours. To ascertain the presence or absence of *Bacillus coli communis*, one cubic centimetre to be analysed is mixed with Bile Salt Lactose Neutral Red Agar and with Bile Salt Glucose Broth. For the further investigation of *Bacillus coli* numerous secondary tests are employed, and their reaction on the following sugars is systematically tested on every occasion:—Lactose, Glucose, Mannite, Sacharose, and Milk.

CLEANSING AND SCAVENGING.

ORIGINAL OF THE

CLEANSING AND SCAVENGING.

The extension of the practice of washing streets, courts, back passages, &c., and the improvement in scavenging, prove markedly beneficial. During the hot weather of last year, the extended street washing was continued; 184 streets were washed once a week, 205 streets twice a week, 71 streets three times a week, 53 streets periodically, and all passages and tunnel entrances to courts are also regularly washed. The substitution of electric cars for horse cars and omnibuses has removed one of the greatest causes of street contamination. Improvements in the details of the methods of cleansing and scavenging the streets have been effected with corresponding advantages to the health and comfort of the inhabitants.

Owing to the difficulties arising from bad planning of many of the streets of smaller houses, and the absence of adequate back passages, many obstacles have yet to be overcome before the collection and removal of domestic refuse can be regarded as satisfactory; but a most important advance was made when the Health Committee decided to give facilities for the substitution of sanitary ashbins for the old insanitary ashpits.

Down to the end of 1905, 15,659 Improved Sanitary Ashbins have been fixed in properties assessed at £10 per year and under, and 15,880 in premises assessed at over £10 per year. The number of brick ashpits in the city has been reduced from 65,000 to 50,000 approximately. The bye-laws which apply to newly-constructed houses will avert any extension of the mischief resulting from defective ashpits.

All private, domestic, and office drains are flushed by the City Engineer's staff twice a year, and there can be no question that a more frequent and very thorough flushing would be attended with great advantage.

The City Engineer has kindly supplied the following tables, which indicate the operations carried out by that portion of the staff under his control;—

TABLE No. 2.

SERVICE FOR THE COLLECTION AND REMOVAL OF DRY ASPHIT REFUSE.

It will be observed that the number of notices received to empty ashpits is only .22 per cent. of the total collections. The number of brick ashpits within the Old City and Added Areas is approximately 50,000. From the year 1898 to the 31st December, 1905, 15,659 Improved Sanitary Ashbins have been fixed in properties of £10 assessment and under, 15,880 in properties of over £10 assessment, and in premises, unsuitable for fixture bins, 7,603 loose bins have been provided. During this period the number of brick ashpits has been reduced from approximately, 65,000 to 50,000. Each ashpit in the City (day and night service) was emptied on the average during the twelve months 10.3 times. From the existing 50,000 Ashpits a total of 89,326 loads were removed, or from each pit at one time of emptying .17 of a load.

Notices Received.	Total Number of Collections from Ashpits.	Loads of Dry Ashes.										Average Daily Working Staff.			Analysis of Work.		Average quantity removed from each Ashpit at each Collection Loads.
		Total Number of Loads Removed.	Depots at which Refuse was Deposited.								Ashpit Men.	Carts and Wagons.	Horses.	Loads per Man per day.	Loads per Cart per Day.		
			Chisenhale Street.	Rathbone Road.	Smithdown Road.	St. Domingo Destructor.	Lavrock Bank Destructor.	Garston Destructor.	Sandhills.	Various Tips, &c.							
1,162	513,139	87,885	8,534	8,694	11,525	14,963	16,144	3,325	2,836	21,864	147.21	41.40	41.40	1.92	6.84	.17	

TABLE No. 3.

SERVICE FOR THE COLLECTION AND REMOVAL OF BELL-CART ASHES.

The Bell-cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses where no permanent receptacles exist for the storage of this description of refuse. This service has to be conducted within certain limited hours of the morning to suit the convenience of occupiers, and the exigencies of business.

[illegible]

TABLE No. 4.

SERVICE FOR FLUSHING AND CLEANSING TROUGH WATER-CLOSETS, &c.

The frequent flushing of trough water-closets is essentially a sanitary measure, this form of closet being provided principally in the more densely-populated portions of the City.

A large number of the public urinals and trough water-closets are cleansed and disinfected twice daily in the Summer months, and once daily during the remaining part of the year.

Underground Urinals.	Overground Urinals	Trough Water-Closets.	Average Working Staff per day.	
			Trough W. C. Men.	Urinal Men.
No. and Stalls. 26—214	No. and Stalls. 153—460	No. 1,459	No. 25·75	No. 16·25

TABLE No. 5.

SERVICE FOR THE CLEANSING OF STREETS, COURTS, AND PASSAGES, AND THE COLLECTION OF REFUSE

THEREFROM.

Total Quantity of Refuse Removed.	Depôts at which Refuse was Deposited.					Average Daily Staff.				Average Number of Loads Removed Daily per Cart.
	Chisnahu Street.	Sandhills.	Waverlee.	Destructors.	Tips.	Sweeping Machines per day.	Average Number of Men Employed per day.	Carts.	Horses.	
Loads. 69,555	Loads. 36,725	Loads. 6,130	Loads. 4,685	Loads. 6,299	Loads. 15,716	6-32	536	68-75	75-07	3-25

TABLE No. 7.

SERVICE FOR STREET WATERING.

In connection with Street Watering approximately 40 million gallons of Water were distributed during the season, in addition to which a large quantity was used for street washing under certain conditions of the weather.

Number of Days on which Carts were out during year.	Quantity of Water Distributed.		Average Daily Staff employed during the Season.		Average No. of Loads distributed Daily per cart.
	Large Loads.	Small Loads.	Watermen.	Carts and Horses.	
	Day.	Day.			
203	149,593	22,287	21.35	26.03	32.5

In addition to the figures in the above table 5,918 loads of water were distributed on the drives of Newsham and Sefton Parks.

TABLE No. 8.

REMOVAL OF GARBAGE FROM ABATTOIR.

Loads Removed during year.	Where Deposited.		
	Chisenhale Street.	Sandhills.	Collingwood Dock.
1,127	1,127	—	—

TABLE No. 9.
RETURN OF HORSE MANURE COLLECTED FROM FIRE STATIONS AND CORPORATION STABLES,
AND DELIVERIES TO CHISENHALE STREET DEPÔT.

TOTAL QUANTITY DEALT WITH DURING THE YEAR.	DEPÔTS AT WHICH MANURE WAS DEPOSITED.		
	CHISENHALE STREET.	SANDHILLS.	WAVERTREE.
Loads, 1,623	Loads, 1,328	Loads, 87	Loads, 208

Of the above loads 608 were collected by the Department from Fire Stations.

TABLE No. 10.

DESPATCHES OF MANURE AND REFUSE.

DEPÔTS.	Quantity of Saleable Refuse.				Quantity of Unsaleable Refuse.						Grand Total in Tons.	Average Daily Staff.	
	Street Sweepings	Mixture.	Total.	Con-tractors	Farmers.	Depôts.	Sea.	Des-tractors.	Sundry Tips.	Total.		Foreman.	Labourers
Chisenhale St., by Flats...	Tons. 3,962	Tons. 10,400	Tons. 14,362	Tons. ...	Tons. 33,537	Tons. ...	Tons. ...	Tons. ...	Tons. ...	Tons. 33,537	47,899	1	22-0
Sandhills by Rail ...	403	...	403	...	8,854	...	...	...	...	8,854	9,257	...	2-0
Wavertree do. ...	5,109	...	5,109	...	...	...	...	...	...	...	5,109	...	1-4
Chisenhale Street and Sandhills, <i>via</i> Collingwood Dock per Hopper Barges	...	...	...	...	...	...	31,966	...	...	...	...	...	...
Clinker per "Beta" .....	...	...	...	...	...	...	10,318	...	...	42,284	42,284	...	2-2
Charters Street Destructor.	...	...	...	...	...	...	...	49,323	...	...	...	...	...
Rathbone Road " .....	...	...	...	...	...	...	...	14,041	...	...	...	...	...
Smithdown Road " .....	...	...	...	...	...	...	...	21,426	...	164,215	164,215	...	...
St. Domingo " .....	...	...	...	...	...	...	...	39,043	...	...	...	...	...
Garston " .....	...	...	...	...	...	...	...	7,873	...	...	...	...	...
Lavrock Bank " .....	...	...	...	...	...	...	...	32,509	...	...	...	...	...
Sundry Tips.....	...	...	...	...	...	...	...	...	50,629	50,629	50,629	...	8-0
Clinker to Tips .....	...	...	...	...	...	...	...	...	20,521	20,521	20,521	...	...
	9,474	10,400	19,874	...	42,391	...	42,284	164,215	71,150	320,040	339,914	1	35-6

The foregoing Table shows that not less than 339,914 tons of Town's refuse have been disposed of, and this large total does not represent the actual quantity collected and carted to the Wharves, as during the Winter months a proportion of the street sweepings is in a liquefied condition, and drains away before despatch of the refuse from the Wharves.

TABLE No. 11.

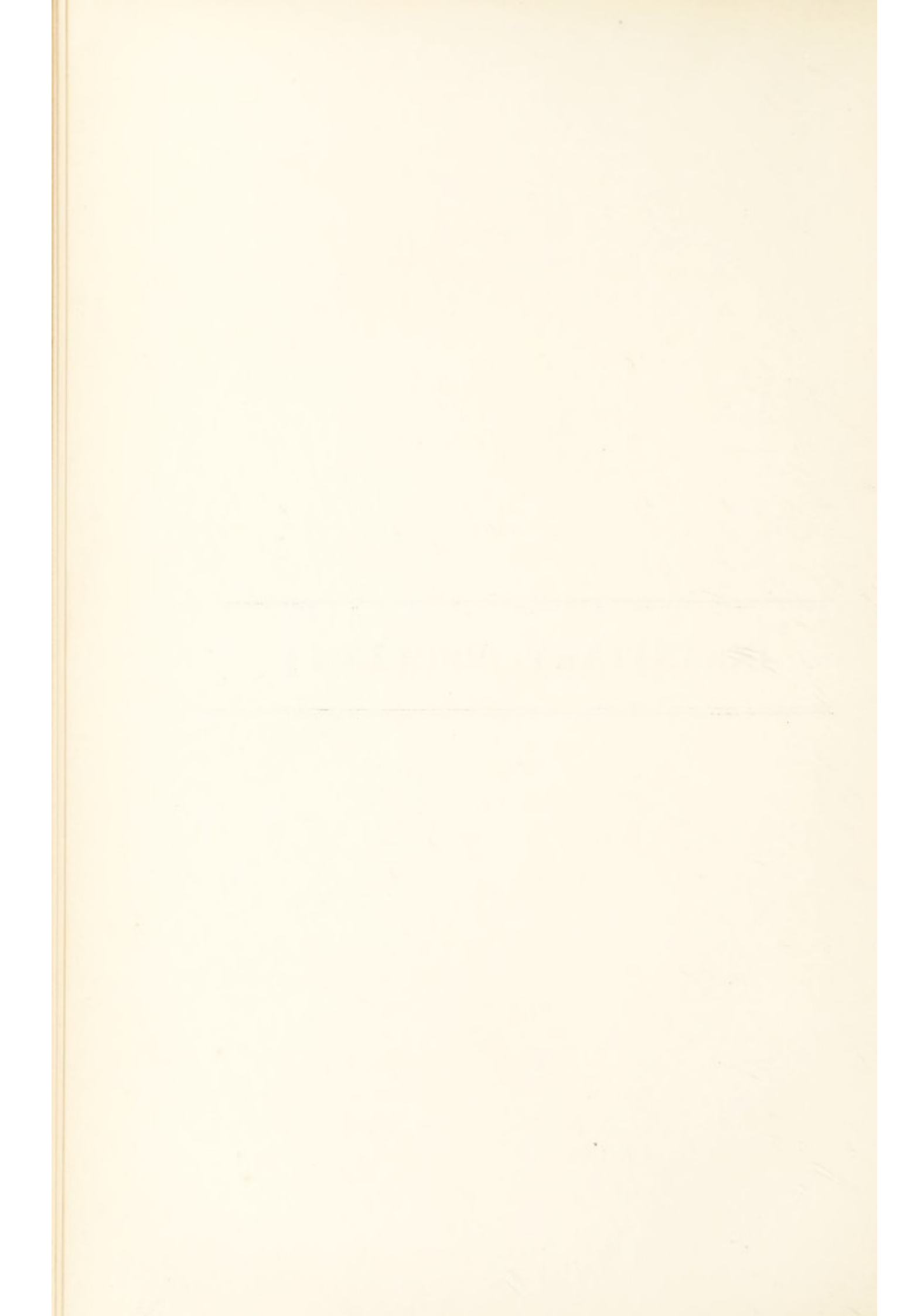
HORSES.

DAILY AVERAGE NUMBER EMPLOYED ON THE WORK OF THE CLEANSING DEPARTMENT.

Night Ashes.	1-01	Dry Ashes.	41-40	Bell Ashes.	48-93	Street Cleansing.	69-17	Sweeping Machines.	5-85	Wharves.	—	Markets.	1-29	Watering.	15-21	Abattoir.	1-44	Canals.	2-06	Destructors.	6-7	Various.	2-22	Total Daily Average.	195-28
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INSANITARY PROPERTY.



INSANITARY PROPERTY.

Good progress has been made with the erection of Workmen's Dwellings, the Corporation at the end of the year having erected some 1,820 dwellings, suitable for the labouring classes, and in a short time 340 more will be ready for occupation.

In considering the question of further accommodation for the labouring classes and for those dispossessed by any action of the Corporation, the extreme importance of taking areas in the suburbs has not been overlooked, and the Housing Committee have themselves approved of this principle.

A high rate of mortality is inseparably connected with density of population, and the erection of tenements for the labouring classes in the congested and built up parts of the City will not be attended with the same benefit as regards the diminution of sickness and mortality as would attend the erection of similar buildings in the outskirts.

Some of the outlying districts are eminently suitable for dwellings of the kind proposed, being within easy reach of shops, churches, chapels and schools. Facility of access to the place of work is, of course, a matter of importance to the workingman, as well as to everybody else, but in this particular case it is not only the dispossessed worker who must be considered, but the family of the dispossessed.

It appears, upon very good evidence, that one peculiarity amongst the class known as the dispossessed is the excessively high birth-rate, and a heavy mortality amongst the newly-born will continue until the surroundings are in all respects sanitary.

It must be remembered that the dispossessed, as a class, have for two, perhaps three, generations been dwellers in cellars or other class of dwellings unfit for human habitation, and a class in the community with antecedents such as these will not give as rapid evidence of improvement as a class otherwise circumstanced.

There was no further Presentment of Insanitary Property during the year, but the Medical Officer certified that the following premises were unfit for human habitation, and ought to be demolished:—

The court known as No. 2 court in LOWER MILK STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 2 court.

The dwelling-house and premises numbered 20 and 22 in COMBERMERE STREET, in the City of Liverpool.

The court known as No. 2 court in JORDAN STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, 9, 10, 11, 12 and 13 in the said No. 2 court.

The court known as No. 12 court in KITCHEN STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6 and 7 in the said No. 12 court.

The dwelling-houses numbered 46 and 48 in KITCHEN STREET aforesaid, contiguous to No. 12 court in the said street.

The dwelling-houses numbered 2, 4 and 6, in SPEKE ROAD, Garston, in the City of Liverpool.

The court known as No. 16 court in UPPER MILK STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 16 court.

The dwelling-houses numbered 38, 40 and 42 in UPPER MILK STREET, aforesaid, contiguous to No. 16 court in the said street.

The court known as No. 2 court in TITCHFIELD STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 3, 4 and 6 in the said No. 2 court.

The court known as No. 2 court in BEVINGTON STREET, in the City of Liverpool.

The dwelling-house numbered 2 in the said No. 2 court.

The court known as No. 8 court in SALTNEY STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7 and 8 in the said No. 8 court.

The dwelling-houses numbered 14 and 15 in SALTNEY STREET aforesaid, contiguous to No. 8 court in the said street.

The court known as No. 9 court in SALTNEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7 and 8 in the said No. 9 court.

The dwelling-houses numbered 16 and 17 in SALTNEY STREET aforesaid, contiguous to No. 9 court in the said street.

The court known as No. 11 court in SALTNEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7 and 8 in the said No. 11 court.

The dwelling-houses numbered 20 and 21 in SALTNEY STREET, in the City of Liverpool, contiguous to No. 11 court in the said street.

The court known as No. 12 court in SALTNEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7 and 8 in the said No. 12 court.

The dwelling-houses numbered 22 and 23 in SALTNEY STREET aforesaid contiguous to No. 12 court in the said street.

The court known as No. 15 court in SALTNEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6 and 7 in the said No. 15 court.

The dwelling-houses numbered 28 and 29 in SALTNEY STREET aforesaid, contiguous to No. 15 court in the said street.

The court known as No. 16 court in SALTNEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6 and 8 in the said No. 16 court.

The dwelling-houses numbered 30 and 31 in SALTNEY STREET aforesaid, contiguous to No. 16 court in the said street.

The court known as No. 2 court in UPPER HARRINGTON STREET, in the City of Liverpool.

The dwelling-houses numbered 2, 3, 4, 5, 6, 7 and 8 in the said No. 2 court.

The court known as No. 1 court in BRASSEY STREET, in the City of Liverpool.

The dwelling-houses numbered 3, 5, 7, 9 and 11 in the said No. 1 court.

APPLICATIONS FOR CORPORATION TENEMENTS. 1905.

During the year the number of applications for tenements in these dwellings has increased considerably, there being now about 1,820 tenements completed, with 340 more approaching completion or in contemplation, all under the control of the Corporation.

These tenements, and those in course of erection, are reserved for persons dispossessed by any action of the Corporation.

Owing to a great number of the applicants stating that they were living in overcrowded houses, or insanitary cellars, the Manager of the Artizans' and Labourers' Dwellings referred the applications to the Medical Officer of Health for investigation. These applications were dealt with by the Lodging House Inspectors, and in the event of there being any evidence of overcrowding, or illegal occupation of cellars, the application was marked accordingly, and returned to the Manager.

As the statements of many of the applicants were found to be incorrect, it was deemed necessary to make a closer investigation, and for this purpose night visits were paid in many cases.

The number of applications received and dealt with during the year was 837. In dealing with these applications, it was found that in 562 instances the applications were spurious. Of this number 225 applicants gave false addresses, and in 337 cases there was no evidence that the alleged overcrowding existed. Of the remaining 275 cases investigated, 70 were found to be cases of one family overcrowding a house or cellar, or illegal occupation of a cellar. These were dealt with under the Public Health Act. Two hundred and five were claims on account of alleged overcrowding occurring in sub-let houses, of which, in 98 cases, it was found that there was no overcrowding, or the alleged overcrowding was easily remedied by some of the occupants leaving the premises, or by re-arranging the sleeping apartments.

There were 107 cases of overcrowding, in 56 of which the applicants were allowed to rent a Corporation house, and in 106 of these instances informations were laid against the chief tenants, and convictions followed.

In a considerable number of cases the overcrowding was of very recent date and the offence had evidently been committed with the intention of qualifying for a Corporation house.

The total number of day visits paid during the year was 947, and 177 night visits were made, the total for the year being 1,124, from which it will be seen that a considerable amount of the Inspectors' time was taken up by investigating these applications.

The Corporation Surveyor has kindly supplied the following table:—

LIVERPOOL SANITARY AMENDMENT ACT, 1864.
INSANITARY PROPERTY.

INSANITARY PROPERTY PURCHASED, 1905—

Number of houses purchased by Housing Committee included in Reports referred by Council to Committee	166
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INSANITARY PROPERTY DEMOLISHED, 1905—

Number of houses included in 18th Presentment	363
Number of houses in respect of which Compensation for demolition was paid by Housing Committee included in Reports referred by Council to Committee	54

HOUSING OF THE WORKING CLASSES ACT, 1890.

Number of houses purchased under Liverpool (Hornby Street and Upper Mann Street) Improvement Scheme, 1902, during 1905	84
Number of houses demolished under Liverpool (Hornby Street and Upper Mann Street) Improvement Scheme, 1902, during 1905	188

HOUSING OF THE WORKING CLASSES ACT, 1890 AND 1903.

Number of insanitary houses closed during the year	127
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CITY HOSPITALS.



HOSPITAL ACCOMMODATION.

Previous Reports contain a brief history of the steps taken to provide hospital accommodation for the city, and the subject need not be again referred to here.

The scheme of hospital accommodation for infectious diseases is making rapid strides towards completion. The progress of the work at Fazakerley gives promise that the new hospital will be in all particulars one of the best-arranged institutions of the kind in this country. At the present time the number of beds available is as follows:—

City Hospital North	...	...	...	147	beds
„ South	...	...	...	88	„
„ East	...	...	...	140	„
„ Parkhill	...	...	...	350	„
„ Priory Road	...	...	...	40	„
„ Fazakerley	...	...	...	160	„
„ Garston	...	...	...	13	„
				938	„

The approximate apportionment of beds is as follows, but the arrangement is modified as circumstances necessitate:—

Smallpox	...	...	...	...	160	beds
Typhus Fever	...	...	...	...	40	„
Typhoid Fever	...	...	...	...	140	„
Scarlet Fever	...	...	...	...	476	„
Diphtheria	...	...	...	...	62	„
Isolation	...	...	...	...	60	„
					<hr/>	
					938	„
					<hr/>	

The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 4,472 patients were treated within their walls, the great majority of these being cases of scarlet fever.

The tables which follow will show in detail a great deal of information relating to all of these cases, but it is of special interest to point out the

much greater demands made by the public upon these institutions at the present time than formerly. The advantages of the hospitals are now so fully recognised by the public that the removal to hospital of their sick dependents is insisted upon, and claimed as a right. A few years ago, in cases similarly circumstanced, removal would never have been sought, and would even have been resisted.

The claims resulting from this enlightenment of the public cannot be met without expense, but it would be difficult to point to any example of necessary municipal expenditure in which the direct benefits, alike to the recipients and to the community, are so strongly marked.

The average duration of stay in hospital of patients whose treatment was completed during the year 1905 was as follows:—

Scarlet Fever Patients from	...	...	...	8 to 9 weeks
Typhoid	„	„	„	6 „ 7 „
Typhus	„	„	„	4 „ 5 „
Diphtheria	„	„	„	5 „ 6 „

In many instances detention in hospital is very prolonged owing to the severity of the original illness, and the consequent slow convalescence of the patient.

Arrangements have been continued throughout the year with Allerton, Bootle, Childwall, Great Crosby, Litherland and Waterloo-with-Seaforth to deal with any case of plague, or suspected plague, which might arise within the districts of those Authorities, and which the Authorities in question have no means of dealing with.

INFECTIOUS DISEASE.

The following table shows the number and nature of cases of Infectious Disease coming under the notice of the Medical Officer of Health during 1905, including those reported under the Notification Act.

YEAR—1905.	FEVER.				Smallpox.	Scarlet Fever.	Measles.	Diphtheria.	Membranous Croup.	Puerperal Fever.	Erysipelas.	Chicken-pox.	Total.
	Typhus.	Typhoid.	Simple.	Relapsing.									
January	23	19	...	...	1	233	669	83	5	2	83	172	1,290
February ...	12	22	...	...	...	243	373	103	3	2	72	131	961
March.....	14	27	...	...	1	294	481	97	6	8	69	177	1,174
April	13	20	...	...	...	263	346	55	2	3	89	178	969
May.....	4	24	1	1	1	356	581	66	...	10	86	254	1,384
June	3	27	...	...	...	294	534	75	3	6	85	329	1,356
July	14	23	1	...	...	250	110	62	3	4	108	191	766
August	4	21	...	...	1	280	99	64	...	5	79	108	661
September...	...	37	...	...	1	448	140	90	1	4	115	101	937
October .....	...	40	...	...	9	573	226	78	1	7	110	216	1,260
November ...	6	44	...	...	1	578	221	110	4	6	107	210	1,287
December ...	5	21	1	...	...	496	158	89	3	10	94	193	1,070
TOTAL.....	98	325	3	1	15	4,308	3,938	972	31	67	1,097	2,260	13,115
Removed to hospital	95	235	1	...	14	3,147	322	601	5	24	346	115	4,905

The number of patients removed to hospital includes those taken to general hospitals as well as those taken to the City Hospitals. (See page 114.)

THE INFECTIOUS DISEASE (NOTIFICATION) ACT

The number of notifications received by the Medical Officer under the above Act, during the past five years, were as follows:—

	1901.	1902.	1903.	1904.	1905.
January ...	482	828	1,288	576	632
February ...	355	707	1,115	624	592
March ...	360	690	1,221	573	712
April ...	304	813	1,072	556	633
May ...	435	837	1,128	609	827
June ...	477	791	1,082	679	862
July ...	459	727	940	491	643
August ...	507	779	632	487	606
September ...	713	1,016	743	629	810
October ...	905	1,210	884	839	1,068
November ...	820	1,093	691	846	1,101
December ...	841	1,220	561	704	938
	<u>6,658</u>	<u>10,711</u>	<u>11,357</u>	<u>7,613</u>	<u>9,424</u>

The diseases were specified as follows:—

	1901.	1902.	1903.	1904.	1905.
Smallpox ...	26	429	1,548	27	11
Chickenpox ...	—	883	2,631	1,792	2,254
Scarlet Fever ...	3,376	5,885	4,110	2,995	4,299
Typhoid Fever ...	1,016	1,069	740	496	378
Typhus Fever ...	66	104	177	82	84
Continued Fever ...	33	52	56	36	19
Remittent Fever..	1	—	—	1	—
Relapsing Fever .	—	2	7	1	2
Fever ...	1	2	2	2	2
Puerperal Fever..	73	79	62	67	79
Diphtheria ...	872	1,052	876	1,015	1,021
Membranous Croup.	61	65	39	67	48
Erysipelas ...	1,132	1,086	1,107	1,030	1,225
Anthrax ...	—	2	2	2	2
Choleraic Diarrhœa	—	1	—	—	—
	<u>6,658</u>	<u>10,711</u>	<u>11,357</u>	<u>7,613</u>	<u>9,424</u>

NUMBER OF CASES REPORTED AND NUMBER REMOVED TO HOSPITALS, 1889-1905.

	SMALLPOX.		SCARLET FEVER.		TYPHOID.		TYPHUS.		MEASLES.	
	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.
1889 ..	9	8	1,832	533	670	302	158	124	3,175	104
1890 ...	2	2	3,520	938	506	296	103	87	4,013	152
1891 ..	21	21	1,176	448	588	350	175	156	2,262	160
1892 ...	177	177	1,554	603	699	345	73	70	3,376	150
1893 ...	75	73	3,538	1,380	1,396	728	183	168	2,316	94
1894 ...	229	226	3,963	1,415	1,350	745	325	312	2,494	122
1895 ...	130	127	2,710	1,039	1,306	662	162	158	3,462	93
1896 ...	8	8	3,584	1,589	1,063	539	305	298	2,930	138
1897 ..	6	6	3,001	1,641	991	559	158	156	4,389	94
1898 ..	17	16	2,424	1,467	863	585	92	84	2,458	105
1899 ...	10	10	2,416	1,537	988	668	70	64	5,107	140
1900 ...	156	154	1,968	1,198	731	450	42	41	2,372	108
1901 ...	37	37	3,310	1,814	864	567	55	54	6,766	185
1902 ...	560	559	5,914	2,994	1,026	670	155	155	7,141	177
1903 ...	1,720	1,719	4,053	2,145	681	462	272	266	2,728	114
1904 ...	27	27	2,988	2,214	434	296	97	97	9,453	428
1905	15	14	4,308	3,147	325	235	98	95	3,938	322

The following tables, prepared by the Medical Staff of each Hospital, show the number of patients, the nature of the illness, and the results, at each of the seven City Hospitals during the year 1905:—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

Visiting Physician, Dr. R. I. RICHARDSON.

Resident Physician, Dr. E. F. COGHLAN.

DISEASES.	Remaining Dec. 31st, 1904.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.	59	606	11	676	355	—	184	83	12	54	8·9
Enteric Fever.	10	85	—	95	—	—	73	14	—	8	9·4
Typhus Fever.	24	84	14	122	14	—	78	6	—	24	28·5
Other Diseases	6	53	—	59	—	—	44	—	—	15	28·3
Isolation and Observation Cases.	6	10	—	16	—	—	11	5	—	1	10·0
Totals..	105	838	25	968	369	—	390	108	12	102	12·1

ENTERIC FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases	6	19	24	19	12	5	—	85
No. of Deaths	1	2	2	1	2	—	—	8
Percentage of Deaths	16·	10·5	8·3	5·2	16·	—	—	9·4

TYPHUS FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases.....	6	18	21	21	17	5	2	84
No. of Deaths.....	—	1	5	2	14	2	—	24
Percentage of Deaths	—	5.5	29.4	10.5	82.3	40.0	—	28.5

SCARLET FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases	214	297	73	13	9	—	—	606
No. of Deaths.....	37	12	5	—	—	—	—	54
Percentage of Deaths	17.3	4.0	6.8	—	—	—	—	8.9

OTHER DISEASES.

Disease.	Admitted.	Died.
Gastro Enteritis	4	—
Acute Lobar Pneumonia.....	14	3
Hysteria	1	—
Chronic Bronchitis	1	—
Tubercular Peritonitis.....	1	1
Broncho Pneumonia	4	3
Cystitis and Nephritis.....	1	1
Measles	2	1
Tubercular Meningitis.....	6	6
Acute Bronchitis	1	—
Erythema	1	—
Typhus Contacts	17	—
	<u>53</u>	<u>15</u>

Mortality=28.3%.

CITY HOSPITAL SOUTH, GRAFTON STREET.

Visiting Physician, Dr. N. E. ROBERTS.

Resident Physician, Dr. H. L. HAMILTON.

DISEASES.	Remaining Dec. 31st, 1904.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment, the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.....	49	519	1	569	350	—	115	74	4	30	5.78
Enteric Fever.....	15	69	—	84	—	—	71	7	—	6	8.69
Typhus Fever	—	2	—	2	—	1	1	—	—	—	—
Measles	15	29	—	44	13	—	28	—	—	3	10.34
Other Diseases.....	—	39	—	39	—	—	29	1	3	9	23.07
Isolation & Obser- vation Cases	—	8	—	8	—	—	8	—	—	—	—
Totals	79	666	1	746	363	1	252	82	7	48	7.20

SCARLET FEVER.

	AGE PERIODS							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases	257	173	71	16	2	—	—	519
No. of Deaths	27	2	1	—	—	—	—	30
Percentage of Deaths	10.50	1.15	1.40	—	—	—	—	5.78

ENTERIC FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 up- wards.	
No. of Cases	7	16	20	19	3	4	—	69
No. of Deaths.....	—	—	3	1	1	1	—	6
Percentage of Deaths..	—	—	15·	5·26	3·3	25·	—	8·69

TYPHUS FEVER.

	AGE PERIODS.							Total.
	Under5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases.....	1	—	—	—	1	—	—	2
No. of Deaths.....	—	—	—	—	—	—	—	—

MEASLES.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 up- wards.	
No. of Cases	20	6	3	—	—	—	—	29
No. of Deaths	2	1	—	—	—	—	—	3
Percentage of Deaths..	10·	16·6	—	—	—	—	—	10·34

OTHER DISEASES.

Disease.	Admitted.	Died.
Pneumonia	13	4
Malaise	9	—
Meningitis	2	2
Influenza	1	—
Peritonitis and Intussusception of Bowel	1	1
Malaise and Unsound Mind	1	—
Phthisis	1	—
Poisoning by Food or Water	4	—
Erysipelas	1	—
Miliary Tuberculosis.....	1	1
Varicella.....	1	—
Empyema and Tubercle	1	—
Septicæmia.....	1	1
Psoas Abscess	1	—
Abdominal Tumour	1	—
	<u>39</u>	<u>9</u>
	Mortality=23·07 %.	

CITY HOSPITAL, PARK HILL.

Visiting Physician, Dr. N. E. ROBERTS.

Resident Physicians, { Dr. P. GRAY-MARSHALL,
 { Dr. F. E. TAYLER.

DISEASES.	Remaining Dec. 31st, 1904.	Admitted during the year.	Transferred from other City Hospitals	Total under Treat- ment during the year.	Transferred to other City Hospitals	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever	165	1355	232	1752	149	1257	255	11	91	6·7
Typhus Fever	—	1	—	1	1	—	—	—	—	—
Diphtheria.....	33	248	—	281	—	209	25	16	47	18·9
Measles	33	153	8	194	36	138	6	...	14	9·1
Other Diseases	—	9	—	9	1	6	—	1	2	22·2
Isolation and Obser- vation Cases.....	14	73	—	87	1	80	6	—	—	—
Totals	245	1839	240	2324	188	1690	292	28	154	8·4

SCARLET FEVER.

	AGE PERIODS.							Total.
	Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards	
No. of cases.....	450	564	275	47	18	1	—	1355
No. of deaths	59	24	7	—	1	—	—	91
Percentage of deaths.....	13.1	4.2	2.5	—	5.5	—	—	6.7

DIPHTHERIA.

	AGE PERIODS.							Total.
	Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards	
No. of cases	103	78	40	23	1	3	—	248
No. of deaths	33	10	3	1	—	—	—	47
Percentage of deaths.....	32.0	12.6	7.5	4.3	—	—	—	18.9

OTHER DISEASES.

Disease	Admitted	Died
Measles	153	14
Varicella	2	—
Syphilis	2	—
Influenza.....	1	—
Tetanus	1	1 (within 12 hours)
Erythema Nodosum.....	1	—
Tonsillitis	1	—
Isolation and Observation Cases	73	—
	<u>234</u>	<u>15</u>

Mortality=6.4 %.

CITY HOSPITAL EAST, MILL LANE.

Visiting Physician, DR. H. A. CLARKE.

Resident Physician, DR. J. M. CLEMENTS.

DISEASES.	Remaining Dec. 31st, 1904.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.....	64	461	8	533	125	287	84	8	37	8.0
Enteric Fever.....	1	4	—	5	—	5	—	—	—	—
Diphtheria	27	285	—	312	—	263	20	6	29	10.1
Measles	—	24	—	24	7	16	—	—	1	4.1
Other Diseases.....	—	66	—	66	—	59	—	6	7	10.6
Isolation and Obser- vation Cases.....	7	9	—	16	—	16	—	—	—	—
Totals.....	99	849	8	956	132	646	104	20	74	8.7

SCARLET FEVER.

	AGE PERIODS.							Total.
	Under 5	5 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 upwards.	
No. of Cases.....	140	196	95	20	10	—	—	461
No. of Deaths.....	31	5	1	—	—	—	—	37
Percentage of deaths	22.1	2.5	1.0	—	—	—	—	8.0

ENTERIC FEVER.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up-wards	
No. of Cases.....	—	—	1	2	1	—	—	4
No. of Deaths.....	—	—	—	—	—	—	—	—

DIPHThERIA.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards	
*No. of Cases	115	94	44	25	6	1	—	285
No. of Deaths.....	21	7	1	—	—	—	—	29
Percentage of Deaths	18.2	7.4	2.2	—	—	—	—	10.1

* Those cases notified as Diphtheria but where repeated bacteriological examination was negative, are classed under the heading "Tonsillitis."

OTHER DISEASES.

Disease.	Admitted.	Died.
Tubercular Meningitis	1	1
General Tuberculosis	1	1
Pneumonia	5	—
Bronchitis	1	—
Zymotic Enteritis.....	1	1
Papilloma Vocal Cords.....	1	1
Pharyngitis, Œdema of Glottis	1	1
Abscess, Deep Cervical Glands	1	—
Puerperal Fever	1	1
Erysipelas	1	—
Erythema	1	—
Laryngitis.....	1	—
Angina Ludovici	1	1
Tonsillitis	46	—
Influenza	1	—
Appendicitis	1	—
Chicken-pox	1	—
Isolation and Observation	9	—
	75	7

Mortality= 9.3 %.

CITY HOSPITAL EAST, MILL LANE.

Antitoxin Treatment of Diphtheria.

The following table shows the results of the serum treatment of Diphtheria during the year 1905, classified according to age and day of disease on which serum treatment commenced:—

AGES.	DAY OF DISEASE ON WHICH SERUM TREATMENT BEGAN.												TOTAL.		Percentage Mortality.
	1st.		2nd.		3rd.		4th.		5th.		6th & up.				
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Under 1 ...	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—
1—2 ...	1	—	4	—	5	1	3	—	6	3	4	3	23	7	30.4
2—3 ...	—	—	10	1*	4	—	1	—	—	—	7	1	22	2	9.0
3—4 ...	2	—	4	—	3	1	8	3	7	—	7	1	31	5	16.1
4—5 ...	2	—	5	—	5	1	7	1	5	1	8	1	32	4	12.5
5—10 ...	2	—	18	—	21	1	17	3	15	3	24	1	97	8	8.2
10—15 ...	1	—	10	—	8	—	5	—	3	—	12	3	39	3	7.6
15—20 ...	1	—	5	—	3	—	2	—	1	—	2	—	14	—	—
20 and up.	1	—	13	—	8	—	5	—	1	—	5	—	33	—	—
Total.....	10	—	69	1*	57	4	49	7	38	7	69	10	292	29	9.9
Percentage Mortality	—		1.4		7.0		14.2		18.4		14.4		9.9		—

*Tracheotomy was performed on this patient outside, and he was subsequently removed to Hospital.

The above figures show the great importance of giving serum early in the disease, and the large number of lives that would be saved if all cases could be put under antitoxin treatment on the 1st or 2nd day of illness.

This table is added for the purpose of comparison. It shows the mortality from Diphtheria during 1903, 1904 and 1905, classified according to the day of disease on which serum treatment began.

	DAY OF DISEASE ON WHICH SERUM TREATMENT BEGAN.														Percentage Mortality.
	1st.		2nd.		3rd.		4th.		5th.		6th & up		Total.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
1903	7	1*	47	1	45	3	42	5	44	12	70	19	255	41	16.0
Percentage Mortality ...	14.2		2.1		6.6		11.9		27.2		27.1		16.0		
1904	6	0	16	0	35	4	42	9	29	3	36	13	164	29	17.6
Percentage Mortality ...	—		—		11.4		21.4		10.3		36.1		17.6		
1905	10	0	69	1	57	4	49	7	38	7	69	10	292	29	9.9
Percentage Mortality ...	—		1.4		7.0		14.2		18.4		14.4		9.9		
Total.....	23	1*	132	2	137	11	133	21	111	22	175	42	711	99	13.9
Percentage Mortality ...	4.3		1.5		8.0		15.7		19.8		24.0		13.9		

* This patient was in an advanced stage of Phthisis when admitted with Diphtheria.

CITY HOSPITAL EAST.

Tracheotomy Statistics.

The following table shows the number and deaths at different ages of all cases of Tracheotomy performed for Diphtheria during 1905, with special reference to the day of disease on which serum treatment commenced:—

AGE.		DAY OF DISEASE ON WHICH SERUM TREATMENT BEGAN.												TOTAL.		Percentage Mortality.	
		1st.		2nd.		3rd.		4th.		5th.		6th & up.					
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		
Under 1	...	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—
1—2	...	—	—	1	—	1	—	—	—	1	1	2	2	5	3	60·0	
2—3	...	—	—	2	—	—	—	—	—	—	—	1	—	3	—	—	
3—4	...	—	—	1	—	1	—	4	2	2	—	3	—	11	2	18·1	
4—5	...	—	—	1	—	—	—	2	1	2	1	1	—	6	2	33·3	
5—10	...	—	—	2	—	2	—	1	—	1	—	4	1	10	1	10·0	
Total.....		—	—	7	—	4	—	8	3	6	2	11	3	36	8		
Percentage Mortality		—		—		—		37·5		33·3		27·2		22·2		22·2	

CITY HOSPITAL, PRIORY ROAD.

Visiting Physician, DR. R. S. ARCHER.

DISEASES.	Remaining Dec. 31st, 1904.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment, during the year.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent of Admissions.
Scarlet Fever.....	38	3	412	453	—	403	48	—	2	—

* Deaths were due to Sloughing Throat and Meningitis, and occurred amongst cases transferred from other Hospitals.

SCARLET FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 up- wards.	
No. of Cases	1	—	1	1	—	—	—	3
No. of Deaths.....	—	—	—	—	—	—	—	—

CITY HOSPITAL, FAZAKERLEY.

Visiting Physician, DR. N. E. ROBERTS.

Resident Physician, DR. D. B. MANDHLE.

Diseases.	Remaining Dec. 31st, 1904	Admitted during the year.	Transferred from other City Hospitals	Total under Treatment during the year.	Transferred to other City Hospitals	Discharged Cured	Remaining at end of year 1905.	Died within 48 hours of Admission	Total Deaths	Total Mortality per cent. of Admissions.
Scarlet Fever	—	62	442	504	6	319	168	3*	11	17.7
Typhus Fever	—	2	28	30	—	30	—	—	—	—
Smallpox	—	1	—	1	1	—	—	—	—	—
Measles	—	—	45	45	—	45	—	—	—	—
Other Diseases	—	63	—	63	—	61	—	—	2	3.1
Isolation and Observation Cases	—	51	—	51	—	51	—	—	—	—
Totals	—	179	515	694	7	506	168	3*	13	7.2

* One died within 24 hours.

SCARLET FEVER.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up- wards	
No. of Cases.....	20	26	15	1	—	—	—	62
No. of Deaths.....	7	4	—	—	—	—	—	11
Percentage of Deaths	35.0	15.3	—	—	—	—	—	17.7

OTHER DISEASES.

Disease.	Admitted.	Died.
Chickenpox	61	2
Rheumatism	1	—
Septic Tonsillitis	1	—
Isolation Cases	51	—
	—	—
	114	2
	<hr/>	<hr/>

Mortality = 1·7 %.

CITY HOSPITAL, GARSTON.*Visiting Physician, DR. ED. MOLYNEUX.*

Diseases.	Remaining Dec. 31st., 1904.	Admitted during the year.	Total under Treat- ment during the year.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever	1	98	99	35	55	8	—	1	1·02

SCARLET FEVER.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up- wards	
No. of Cases	31	23	44	—	—	—	—	98
No. of Deaths.....	—	1	—	—	—	—	—	1
Percentage of Deaths	—	4·34	—	—	—	—	—	1·02

APPENDIX.

The following tables I, II, III, IV, V, and marked also A, B, C, D, E, are prepared pursuant to an instruction of the Local Government Board.

TABLE I.

YEAR.	Population estimated to Middle of each year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of non-residents registered in Public Institutions in the District.	Deaths of residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age.		At all ages.					Number.	*Rate.
				Number.	Rate per 1000 Births regist'd.	Number.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
†1895.....	652523	22006	33.7	4441	202	16624	25.5	3441	409	...	16215	24.8
1896.....	658050	21943	33.3	3833	175	14476	22.0	3457	416	...	14060	21.4
1897.....	663633	22280	33.6	4488	201	15590	23.5	3604	473	...	15117	22.8
1898.....	669243	22227	33.2	4111	184	15380	23.0	3812	527	...	14853	22.2
1899.....	674912	22488	33.3	4481	199	16861	25.0	4278	592	7	16276	24.1
1900.....	680628	22762	33.4	4247	186	16393	24.0	4257	616	8	15785	23.1
1901.....	686332	21980	32.0	4138	188	15493	22.5	4231	618	4	14879	21.6
†1902.....	710337	24283	34.2	3936	162	15994	22.5	4564	602	4	15396	21.6
1903.....	716810	23910	33.3	3815	159	14848	20.7	4549	685	77	14240	19.8
1904.....	723430	24278	33.5	4780	196	16524	22.8	4587	673	35	15886	21.9
Averages for years 1895-1904.	683589	22815	33.3	4227	185	15818	23.1	4078	561	13	15270	22.3
1905.....	733714	24350	33.2	3762	154	14849	20.2	4908	746	28	14131	19.2

* Rates in Columns 4, 8, and 13 calculated per 1000 of estimated population. † City Boundaries extended. ‡ City Boundaries extended.

NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums.

Area of District in acres (exclusive of area covered by water).
 Total population at all ages.....704,134
 Number of inhabited houses126,835
 Average number of persons per house5.5

A—Continued.

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions outside the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
Parish Workhouse, Brownlow Hill. Royal Infirmary. Children's Infirmary. Lying-in Hospital. Consumption Hospital. David Lewis Northern Hospital. Stanley Hospital. Royal Southern Hospital. Mill Road Infirmary. Hospital for Women. City Hospital North. ,, Parkhill. ,, East. Walton Workhouse. Belmont Road Workhouse. Toxteth Workhouse. Turner Memorial Home. St. Augustine's Home. Kirkdale Home. House of Providence. St. Joseph's Home. Eye and Ear Infirmary. Cancer Hospital. Home for Destitute Infants. Vergmont Sanatorium.		City Hospital, Fazakerley. ,, Priory Road. ,, South. Hahnemann Hospital. Home for Incurables. Epileptic Hospital. Leyfield Poor Law Schools. Tuebrook Villa Asylum. Grove Mount Home. Infectious Diseases Hospital, Garston. Accident Hospital, Garston. St. George's Industrial Schools. Branch Workhouse, Luton Street. Richmond Lodge. Schofield Home.

The three Union Workhouses are situated within the District.

TABLE II.

NAMES OF LOCALITIES.	1.—Scotland District.				2.—Exchange District.				3.—Abercromby District.				4.—Everton District.			
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1895.....	53409	2144	1836	506	45209	1325	1670	314	54186	1676	1381	251	114074	4287	3059	858
1896.....	53336	2053	1609	417	44634	1433	1451	291	53874	1740	1127	203	114964	4335	2697	778
1897.....	53264	2122	1711	475	44065	1381	1495	348	53564	1711	1216	233	116534	4441	2875	902
1898.....	53192	2111	1825	460	43505	1310	1557	316	53256	1633	1242	245	117647	4304	2729	807
1899.....	53121	2125	1865	509	42951	1278	1634	314	52950	1695	1258	229	118940	4328	3143	880
1900.....	53049	2166	1830	521	42405	1332	1549	347	52645	1633	1303	252	120904	4442	2896	846
1901.....	52934	2044	1694	455	41831	1180	1299	285	52301	1565	1099	245	121953	4216	2902	819
1902.....	52876	2225	1745	492	41332	1216	1432	298	52004	1757	1155	220	122964	4627	2735	731
1903.....	52834	2267	1578	489	41332	1230	1244	261	51742	1713	1141	227	123521	4342	2656	768
1904.....	52763	2237	1732	577	41780	1275	1456	369	51445	1652	1065	220	123549	4444	2947	949
Averages of Years 1895 to 1904.	53077	2149	1742	490	42904	1296	1478	314	52796	1677	1198	232	119505	4376	2864	833
1905.....	52692	2170	1661	493	41674	1234	1311	297	51149	1715	1008	214	123741	4413	2471	705

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

TABLE II.—continued.

NAMES OF LOCALITIES.	5.—Kirkdale District.				6.—West Derby (West) District.				7.—Toxteth District.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1895	67493	2411	1657	487	80207	2858	1918	536	106786	3746	2652	746
1896	67818	2359	1333	400	81311	2950	1698	486	106655	3522	2231	550
1897	68144	2423	1509	457	82434	3040	1827	557	106525	3527	2456	712
1898	68472	2377	1368	408	83670	3039	1783	538	106396	3493	2308	626
1899	68801	2361	1578	434	84907	3086	1841	566	106268	3545	2678	711
1900	69132	2408	1552	470	85924	3019	1836	507	106393	3429	2496	681
1901	69410	2292	1438	448	86882	2921	1736	522	105922	3356	2349	632
1902	69798	2396	1494	402	87751	2986	1729	450	105696	3671	2421	630
1903	69984	2352	1301	338	88295	2996	1640	463	105532	3405	2141	573
1904	70271	2468	1573	528	89111	2902	1712	526	105399	3586	2380	685
Averages of Years 1895 to 1904.	68932	2384	1480	437	85049	2985	1772	515	106151	3528	2411	654
1905	70310	2324	1381	405	89689	2891	1566	419	105290	3436	1935	509

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

B—Continued.

TABLE II.—continued.

NAMES OF LOCALITIES.	8.—Walton District.				9.—West Derby (East) District.				10.—Wavertree District.				11.—Sefton Park District (late Toxteth Rural).			
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1895.....	45856	1439	821	258	39431	1099	681	141	17830	405	245	63	24532	616	295	83
1896.....	47270	1542	704	200	40166	951	685	162	18949	460	226	63	25433	598	299	60
1897.....	48728	1552	756	230	40914	991	677	180	20138	451	259	77	26367	641	336	91
1898.....	50230	1639	736	200	41677	1024	684	139	21402	588	297	97	27336	649	324	79
1899.....	51779	1686	873	273	42454	1035	697	169	22746	704	372	114	28340	645	330	87
1900.....	53376	1754	855	245	43245	1161	749	155	24174	820	396	115	29381	598	315	63
1901.....	54977	1742	824	270	44016	1162	763	192	25670	888	411	147	30436	614	364	74
1902.....	56379	1897	887	250	44872	1302	721	146	27304	962	399	118	31579	603	397	93
1903.....	58032	1912	812	228	45736	1426	718	177	29018	980	414	116	32489	630	296	56
1904.....	59501	1898	986	298	46568	1479	791	216	30840	997	486	151	33441	664	389	92
Averages of Years 1895 to 1904.	52612	1706	825	245	42907	1163	716	167	23807	725	350	106	28933	625	334	77
1905.....	61127	2075	870	218	47428	1503	749	169	32774	1101	453	124	34530	654	374	62

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

B—Continued.

TABLE II.—**B**—Continued.

NAMES OF LOCALITIES.	12.—Garston District.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.
	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>
1895.....	Statistics not available			
1896.....				
1897.....				
1898.....				
1899.....				
1900.....				
1901.....				
1902.....				
1903.....	15733	494	247	82
1904.....	16133	485	280	91
Averages of Years 1897 to 1904...	16544	530	268	92
1905.....	16966	544	268	91
1906.....	17398	562	340	104
1907.....	17842	641	277	69
1908.....	18295	657	290	79
1909.....	18762	676	369	124
Averages of Years 1897 to 1904...	17209	573	292	91
1910.....	19739	716	299	84

NAMES OF LOCALITIES.	13.—Fazakerley District.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.
	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>
1895—1899.....	Statistics not available			
1900.....				
1901.....				
1902.....				
1903.....				
1904.....				
1905.....	1753	36	14	4
1906.....	1887	39	14	5
1907.....	2085	63	24	4
1908.....	2919	85	34	11
1909.....	3292	100	33	13
Averages of Years 1900 to 1904...	2387	64	24	7
1910.....	3571	118	53	10

NOTE.—Population corrected as per Census Returns of 1891 and 1901.

C

TABLE III.
Cases of Infectious Disease notified during the Year 1905.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.																	NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.																
	At all Ages.	At Ages—Years.						Scotland.	Exchange.	Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Rural).	Garston.	Pankhurst.	Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.	Scotland.	Exchange.	Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Rural).	Garston.	Pankhurst.	Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.				
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.																																		
Small-pox	15	3	12	...	1	...	(w) 1	(w) 3	4	1	5	1	...	1	3	3	1	5			
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	973	33	443	343	84	69	1	59	42	50	155	78	140	148	84	58	55	72	11	1	19	1	47	38	33	89	55	89	103	46	24	27	35	5	...	9	1				
Membranous croup	31	5	22	4	...	...	...	1	2	5	7	4	5	3	...	4	...	...	...	...	...	...	...	1	1	1	1	...	...	...	1	...	...	...	...	...	...
Erysipelas	1099	40	67	100	102	707	83	151	90	67	243	101	108	117	65	47	15	17	7	3	64	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet fever	4338	128	1920	2040	171	79	...	281	197	148	730	280	517	668	427	403	166	139	223	41	113	5	246	159	119	546	192	356	481	277	290	114	73	193	22	91	5				
Typhus fever.....	98	...	3	25	31	39	...	30	33	6	11	...	1	10	...	...	...	...	...	...	6	1	29	33	6	9	...	1	10	...	...	...	...	...	6	1	
Enteric fever.....	325	2	27	103	75	115	3	42	18	18	78	18	31	32	14	23	8	12	4	...	5	22	21	9	8	34	11	19	18	3	8	1	2	1	...	3	18				
Relapsing fever.....	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever ...	3	...	1	2	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Puerperal fever.....	67	...	...	...	32	35	...	15	4	2	12	7	5	11	6	3	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
*Chicken-pox.....	2360	379	1246	601	20	14	...	215	121	139	441	183	206	308	185	139	99	64	66	...	79	15	5	3	11	6	...	2	4	4	...	1	...	...	3	14			
†Tuberculosis.....	1861	7	34	124	365	1313	18	234	384	181	377	97	206	219	73	39	24	13	9	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	11071	594	3763	3343	883	2383	105	1029	891	618	2060	768	1219	1520	854	716	369	317	320	46	286	58	349	243	179	689	259	467	619	330	323	144	110	199	22	112	44				

(w) The localities in which the Isolation Hospitals are situated.

(w) The localities in which Workhouses are situated.

* Notification compulsory since April, 1902.

† Notification voluntary since February, 1901.

TABLE IV.

Causes of, and ages at, Death during Year 1905.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.							DEATHS AT ALL AGES OF "RESIDENTS" BELONGING TO LOCALITIES, WHETHER OCCURRING IN OR BEYOND THE DISTRICT,														Total Deaths whether occurring in or beyond the District.
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and up-wards.	Scotland	Ex-change.	Aber-cromby	Ever-ton.	Kirkdale	West Derby. (West).	Toxteth.	Walton.	West Derby. (East).	Waver-tree.	Sefton Park.	Garston.	Fazaker-ley.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Small-pox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	240	59	175	6	...	...	...	34	26	12	60	20	40	12	10	16	8	...	1	1	50
Scarlet fever	299	19	178	93	6	3	...	45	17	14	51	29	24	37	42	18	8	5	1	1	224	
Whooping-cough	150	60	83	7	...	...	...	30	10	7	35	27	12	8	16	...	2	2	...	1	17
Diphtheria and membranous croup	152	14	103	31	4	...	...	12	9	9	25	17	20	23	10	8	9	5	4	1	85
Croup	21	3	15	3	...	...	...	...	...	1	5	2	6	2	...	3	...	1	1	...	...
Typhus	27	...	...	1	5	21	...	10	9	...	5	...	1	2	...	...	...	...	...	...	26
Enteric	47	...	3	10	14	20	...	3	2	4	13	...	5	8	3	3	...	5	1	...	27	
Other continued	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Epidemic influenza	73	7	1	1	7	38	19	5	4	6	10	5	6	8	10	9	3	6	1	...	1	
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
*Diarrhoea	967	688	244	6	...	12	17	194	85	44	181	137	76	125	55	35	18	4	10	3	98	
*Enteritis	197	128	32	1	3	25	8	16	10	22	40	26	19	29	6	13	6	2	8	...	25	
*Puerperal fever.....	32	...	...	...	13	19	...	8	2	1	7	1	3	6	1	2	1	...	...	...	14
Erysipelas	28	6	1	...	...	15	6	3	2	4	5	...	5	4	3	1	1	...	...	...	16
Other septic diseases	74	7	9	10	8	37	3	4	6	4	13	8	5	17	4	4	3	5	1	...	28	
Phthisis (Pulmonary Tuberculosis)	1171	5	32	41	167	894	32	99	154	99	219	98	126	171	56	60	35	28	20	6	602	
Other tubercular diseases	394	123	148	57	22	40	4	44	29	27	84	30	59	53	23	16	18	8	3	...	118	
*Cancer, malignant disease	551	1	1	...	5	386	157	39	38	45	79	45	62	79	50	45	29	22	16	2	264	
Bronchitis	1532	374	158	15	15	504	466	221	132	99	281	154	187	234	71	69	37	23	19	5	383	
Pneumonia	1375	276	374	68	69	483	105	224	138	96	220	147	166	160	78	57	41	23	21	4	352	
Pleurisy	49	2	8	4	5	25	5	10	6	2	6	7	6	3	5	1	1	1	1	...	21	
Other diseases of Respiratory organs	163	22	23	14	5	56	43	15	12	7	41	21	15	21	10	3	6	4	6	2	21	
Alcoholism and Cirrhosis of liver	208	...	...	1	...	195	12	24	38	19	28	19	24	24	8	8	4	6	5	1	104
Veneral diseases	44	39	2	...	...	3	...	6	6	4	10	5	2	6	2	2	...	1	...	...	18
Premature birth	462	462	...	...	...	...	...	35	26	21	100	59	70	57	32	26	16	12	6	2	40
Diseases and accidents of parturition	73	...	...	...	11	62	...	13	5	2	11	7	10	6	5	2	2	3	5	2	16
Heart diseases	996	...	4	54	60	571	307	75	86	108	167	91	100	140	68	62	29	42	23	5	411	
Accidents	525	87	69	58	36	218	57	73	70	46	75	52	51	61	26	25	15	15	15	1	306	
Suicides	58	...	...	1	6	48	3	11	4	5	5	2	8	13	4	3	1	1	1	...	30
All other causes	4222	1328	360	153	112	1222	1047	408	385	300	694	372	458	626	272	258	160	147	126	16	1711	
All causes	14,131	3710	2023	637	573	4897	2291	1661	1311	1008	2471	1381	1566	1935	870	749	453	374	299	53	4908	

* See notes at back.

NOTES.—(a) In this Table all deaths of "Residents" occurring in public institutions, whether within or without the district, are *included* with the other deaths in the columns for the several age groups (columns 2-8). They are also, in columns 9-21, *included* among the deaths in their respective "Localities" according to the previous addresses of the deceased as given by the Registrars. Deaths of "Non-residents" occurring in public institutions in the district are in like manner *excluded* from columns 2-8 and 9-21 of this Table.

(b) See notes on Table I. as to the meaning of "Residents" and "Non-residents," and as to the "Public Institutions" to be taken into account for the purposes of these Tables. The "Localities" are the same as those in Tables II. and III.

(c) All deaths occurring in public institutions situated within the district, whether of "Residents" or of "Non-residents," are, in addition to being dealt with as in note (a), entered in the last column of this Table. The total number in this column should equal the figures for the year in column 9, Table I.

(d) The total deaths in the several "Localities" in columns 9-21 of this Table should equal those for the year in the same localities in Table II., sub-columns c. The total deaths at all ages in column 2 of this Table should equal the gross total of columns 9-21, and the figures for the year in column 12 of Table I.

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

Epidemic enteritis;

Zymotic enteritis;

Epidemic diarrhœa. Summer diarrhœa;

Dysentery and dysenteric diarrhœa;

Choleraic diarrhœa, cholera, cholera nostras

(in the absence of Asiatic cholera).

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

Under the headings of "Cancer" and "Puerperal fever" are included all registered deaths from causes comprised within these general terms.

TABLE V.
CITY OF LIVERPOOL.

INFANTILE MORTALITY DURING THE YEAR 1905.

Deaths from stated Causes in weeks and Months under One Year of Age.

CAUSE OF DEATH.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.																	
{ Certified	467	156	148	104	875	384	342	304	228	230	214	201	234	169	151	178	3510
{ Uncertified	52	6	7	8	73	26	23	22	7	8	10	8	8	7	7	1	200
Common Infectious Diseases.																	
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chicken-pox	—	—	—	—	—	—	—	—	1	—	1	—	—	1	—	1	4
Measles	—	—	—	—	—	—	2	1	1	1	4	10	8	9	6	17	59
Scarlet Fever	—	—	—	—	—	1	—	—	—	1	1	—	5	3	3	5	19
Diphtheria : Croup	—	—	—	—	—	—	—	—	—	2	3	2	1	2	1	6	17
Whooping Cough	—	—	—	—	—	2	3	5	6	2	3	6	8	6	6	7	60
Diarrhoea, all forms	1	4	10	11	26	61	80	76	62	65	66	71	72	37	29	42	687
Enteritis (not Tuberculous)	—	2	2	1	5	12	10	12	8	10	6	5	2	9	2	7	88
Gastritis, Gastro-intestinal Catarrh	2	1	2	5	10	15	29	14	6	8	5	4	8	3	5	3	101
Wasting Diseases.																	
Premature Birth	292	58	37	19	406	37	10	3	3	1	2	—	—	—	—	—	462
Congenital Defects	28	9	5	4	46	5	3	5	—	2	2	—	1	3	2	1	70
Injury at Birth	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
Want of Breast-Milk	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	2
Atrophy, Debility, Marasmus	108	28	37	20	193	77	73	62	29	22	21	11	15	7	8	10	528
Tuberculous Meningitis	1	—	—	—	1	3	2	—	2	5	6	2	5	6	5	4	41
Tuberculous Peritonitis : Tabes Mesenterica	—	—	—	2	2	1	5	7	5	7	4	2	7	3	3	3	49
Other Tuberculous Diseases...	—	—	—	—	—	5	6	4	2	2	4	3	3	1	3	5	38
Erysipelas	1	—	—	—	1	3	—	—	—	1	—	—	—	—	—	1	6
Syphilis	1	2	—	1	4	8	7	5	4	4	3	1	1	1	1	—	39
Rickets	—	1	—	—	1	—	—	—	1	—	—	1	2	2	—	—	7
Meningitis (not Tuberculous)	1	—	1	—	2	7	4	8	11	12	11	8	6	6	9	4	88
Convulsions	58	33	21	18	130	66	46	44	19	13	17	13	14	14	10	3	389
Bronchitis	1	4	24	11	40	47	42	28	39	30	29	23	31	25	19	21	374
Laryngitis	—	—	—	—	—	1	2	—	—	—	—	—	1	1	—	—	5
Pneumonia	1	3	4	8	16	15	15	19	21	23	17	26	34	30	36	24	276
Suffocation, overlaying	6	3	4	4	17	23	11	14	3	2	5	1	—	—	1	—	77
Other Causes	16	14	8	6	44	19	21	18	16	21	14	20	18	7	9	15	222
	519	162	155	112	948	410	365	326	235	238	224	209	242	176	158	179	3710

Population, Estimated to middle of 1905, 733,714. Births in the year 24,350.

Deaths from all Causes at all Ages 14,103.



SCOTLAND DISTRICT.
INFANTILE MORTALITY DURING THE YEAR 1905.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified	45	19	15	18	97	39	61	33	30	34	30	35	28	23	30	29	469
	Uncertified	4	—	1	1	6	6	2	2	1	1	1	2	1	2	—	—	24
Common Infectious Diseases.	Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chicken-pox	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Measles	—	—	—	—	—	—	—	—	—	—	—	2	3	1	2	2	10
	Scarlet Fever	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	3	5
	Diphtheria: Croup	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
	Whooping Cough	—	—	—	—	—	1	2	1	—	2	1	1	1	—	2	1	13
Diarrhoeal Diseases.	Diarrhoea, all forms	1	—	—	3	4	10	18	8	10	11	12	16	9	5	5	10	118
	Enteritis (<i>not Tuberculous</i>)	—	—	—	1	1	1	1	—	—	1	—	—	—	—	—	—	4
	Gastritis, Gastro-intestinal Catarrh	—	—	—	1	1	1	4	1	—	—	1	2	1	1	1	1	14
	Premature Birth	21	7	3	1	32	3	1	—	—	—	—	—	—	—	—	—	36
Wasting Diseases.	Congenital Defects	2	1	—	—	3	1	—	1	—	—	—	—	—	—	1	—	6
	Injury at Birth	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Want of Breast-milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Atrophy, Debility, Marasmus	14	7	3	2	26	7	9	5	5	3	3	2	5	1	2	—	68
Tuberculous Diseases.	Tuberculous Meningitis	—	—	—	—	—	1	1	—	1	1	1	—	—	2	—	—	7
	Tuberculous Peritonitis: Tubes Mesenterica	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
	Other Tuberculous Diseases... ..	—	—	—	—	—	—	—	2	—	—	—	—	1	—	—	1	4
	Erysipelas	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	Syphilis	—	—	—	1	1	1	1	1	—	—	—	—	—	—	1	—	5
	Rickets	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
	Meningitis (<i>not Tuberculous</i>)	—	—	—	—	—	1	1	—	1	1	—	—	2	—	1	1	8
	Convulsions	7	2	5	3	17	5	6	6	—	3	—	3	2	2	1	—	45
	Bronchitis	—	—	2	3	5	7	13	1	6	1	4	3	—	6	4	2	52
	Laryngitis	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Suffocation, overlaying	Pneumonia	—	—	—	1	1	2	2	5	4	9	7	5	2	7	8	5	57
	Suffocation, overlaying	2	—	1	1	4	2	3	4	1	1	2	—	—	—	—	—	17
	Other Causes	1	2	2	1	6	—	1	—	2	2	1	1	2	—	—	2	17
	Other Causes	49	19	16	19	103	45	63	35	31	35	32	36	29	25	30	29	493

Population, Estimated to middle of 1905, 52,692. Births in the year 2,170.

Deaths from all Causes at all Ages 1,659.

WEST DERBY (EAST) DISTRICT

INFANTILE MORTALITY DURING THE YEAR 1905.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Totals Deaths under One Year.
All Causes.	Certified	15	12	8	3	38	15	22	16	15	3	7	8	10	13	5	8	160
	Uncertified	3	1	—	1	5	—	1	1	—	—	1	—	—	—	1	—	9
Common Infectious Diseases.	Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chicken-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
	Measles	—	—	—	—	—	—	—	—	—	—	—	1	2	1	—	2	6
	Scarlet Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2
	Diphtheria : Croup	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	2
	Whooping Cough	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diarrhoeal Diseases.	Diarrhoea, all forms	—	1	—	—	1	3	3	3	4	2	2	1	1	3	1	3	27
	Enteritis (<i>not Tuberculous</i>)	—	—	—	—	—	—	1	2	1	—	—	—	—	1	—	—	5
	Gastritis, Gastro-intestinal Catarrh	—	—	—	—	—	1	2	1	—	—	1	—	—	—	—	—	5
	Premature Birth	12	7	4	—	23	1	1	—	—	—	—	—	—	—	—	—	25
Wasting Diseases.	Congenital Defects	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Injury at Birth	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
	Want of Breast-milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculous Diseases.	Atrophy, Debility, Marasmus	2	1	2	1	6	5	9	4	3	—	1	—	—	—	—	—	28
	Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tuberculous Peritonitis : Tabes Mesenterica	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	2
	Other Tuberculous Diseases... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Erysipelas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Syphilis	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	Rickets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Meningitis (<i>not Tuberculous</i>)	1	—	—	—	1	—	—	—	1	—	—	2	—	—	—	—	6
	Convulsions	2	2	1	1	6	1	2	1	2	—	1	—	—	—	2	—	15
	Bronchitis	—	—	1	2	3	—	—	1	1	—	—	—	2	4	1	—	12
Other Causes.	Laryngitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Pneumonia	—	—	—	—	—	1	1	—	—	—	1	3	3	2	1	—	12
	Suffocation, overlaying	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	2
	Other Causes	1	1	—	—	2	2	2	5	2	—	1	1	—	—	1	1	17
		18	13	8	4	43	15	23	17	15	3	8	8	10	13	6	8	169

Population, Estimated to middle of 1905, 47,428. Births in the year 1,503.

Deaths from all Causes at all Ages 749.

Diagram showing Birth Rate (blue) | Per 1000 of the
 " " Death Rate (black) | estimated Population
 " " Number of Deaths of Infants under one | in each of
 " " year out of every 1000 born (green) | the Districts
 " " estimated Population per acre, | of the City
 " " excluding Docks, Quays (red) | during 1905

FAZAKERLEY

33.0
14.8
84
2.1

WEST DERBY-EAST

31.7
15.8
112
15.8

WAVERTREE

33.6
13.7
112
17.8

WALTON

33.9
14.2
105
32.1

GARSTON

36.2
15.1
117
12.3

WEST DERBY-WEST

32.2
17.4
145
133.0

EVERTON

35.6
19.9
159
178.5

SEFTON PARK
(late TOXTETH-RURAL)

18.9
10.8
95
26.6

KIRKDALE

33.0
19.6
154
19.6

TOXTETH

32.6
18.3
148
121.6

ABERCROMBY

33.5
19.6
124
75.9

SCOTLAND

41.2
31.4
227
134.7

EXCHANGE

29.6
31.3
240
88.3

CITY OF LIVERPOOL.

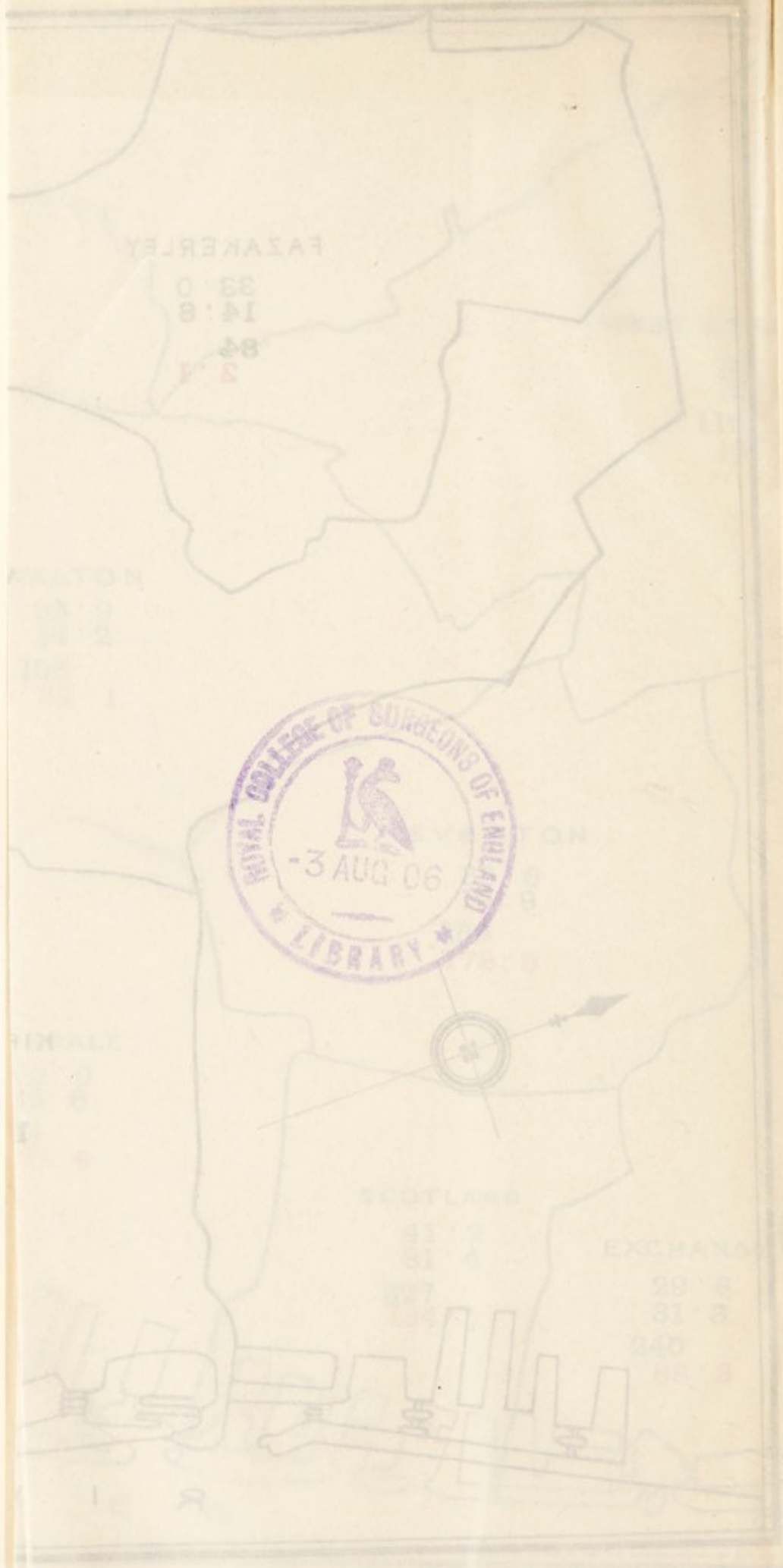
POPULATION 733,714.

1905.

Birth Rate for whole City ... 33.2
 Death Rate ... 19.2
 Infantile Death Rate per 1000 Births 15.4

RIVER

MERSEY



SCOTLAND

EXCHANGE

41.2
31.4

29.8
31.8
240
88.3

DEATHS REGISTERED IN THE CITY OF LIVERPOOL.

DURING THE YEAR ENDING SATURDAY, 30TH DECEMBER, 1905.

CAUSE OF DEATH.	SEX.	AGE—BELOW.												DEATHS.												PUBLIC INSTITUTIONS.														Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
ALL CAUSES.		1000	1138	1279	1416	1547	1680	1811	1942	2073	2204	2335	2466	2597	2728	2859	2990	3121	3252	3383	3514	3645	3776	3907	4038	4169	4300	4431	4562	4693	4824	4955	5086	5217	5348	5479	5610	5741	5872	6003	6134	6265	6396	6527	6658	6789	6920	7051	7182	7313	7444	7575	7706	7837	7968	8099	8230	8361	8492	8623	8754	8885	9016	9147	9278	9409	9540	9671	9802	9933	10064	10195	10326	10457	10588	10719	10850	10981	11112	11243	11374	11505	11636	11767	11898	12029	12160	12291	12422	12553	12684	12815	12946	13077	13208	13339	13470	13601	13732	13863	13994	14125	14256	14387	14518	14649	14780	14911	15042	15173	15304	15435	15566	15697	15828	15959	16090	16221	16352	16483	16614	16745	16876	17007	17138	17269	17400	17531	17662	17793	17924	18055	18186	18317	18448	18579	18710	18841	18972	19103	19234	19365	19496	19627	19758	19889	20020	20151	20282	20413	20544	20675	20806	20937	21068	21199	21330	21461	21592	21723	21854	21985	22116	22247	22378	22509	22640	22771	22902	23033	23164	23295	23426	23557	23688	23819	23950	24081	24212	24343	24474	24605	24736	24867	24998	25129	25260	25391	25522	25653	25784	25915	26046	26177	26308	26439	26570	26701	26832	26963	27094	27225	27356	27487	27618	27749	27880	28011	28142	28273	28404	28535	28666	28797	28928	29059	29190	29321	29452	29583	29714	29845	29976	30107	30238	30369	30500	30631	30762	30893	31024	31155	31286	31417	31548	31679	31810	31941	32072	32203	32334	32465	32596	32727	32858	32989	33120	33251	33382	33513	33644	33775	33906	34037	34168	34299	34430	34561	34692	34823	34954	35085	35216	35347	35478	35609	35740	35871	36002	36133	36264	36395	36526	36657	36788	36919	37050	37181	37312	37443	37574	37705	37836	37967	38098	38229	38360	38491	38622	38753	38884	39015	39146	39277	39408	39539	39670	39801	39932	40063	40194	40325	40456	40587	40718	40849	40980	41111	41242	41373	41504	41635	41766	41897	42028	42159	42290	42421	42552	42683	42814	42945	43076	43207	43338	43469	43600	43731	43862	43993	44124	44255	44386	44517	44648	44779	44910	45041	45172	45303	45434	45565	45696	45827	45958	46089	46220	46351	46482	46613	46744	46875	47006	47137	47268	47399	47530	47661	47792	47923	48054	48185	48316	48447	48578	48709	48840	48971	49102	49233	49364	49495	49626	49757	49888	50019	50150	50281	50412	50543	50674	50805	50936	51067	51198	51329	51460	51591	51722	51853	51984	52115	52246	52377	52508	52639	52770	52901	53032	53163	53294	53425	53556	53687	53818	53949	54080	54211	54342	54473	54604	54735	54866	54997	55128	55259	55390	55521	55652	55783	55914	56045	56176	56307	56438	56569	56700	56831	56962	57093	57224	57355	57486	57617	57748	57879	58010	58141	58272	58403	58534	58665	58796	58927	59058	59189	59320	59451	59582	59713	59844	59975	60106	60237	60368	60499	60630	60761	60892	61023	61154	61285	61416	61547	61678	61810	61941	62072	62203	62334	62465	62596	62727	62858	62989	63120	63251	63382	63513	63644	63775	63906	64037	64168	64299	64430	64561	64692	64823	64954	65085	65216	65347	65478	65609	65740	65871	66002	66133	66264	66395	66526	66657	66788	66919	67050	67181	67312	67443	67574	67705	67836	67967	68098	68229	68360	68491	68622	68753	68884	69015	69146	69277	69408	69539	69670	69801	69932	70063	70194	70325	70456	70587	70718	70849	70980	71111	71242	71373	71504	71635	71766	71897	72028	72159	72290	72421	72552	72683	72814	72945	73076	73207	73338	73469	73600	73731	73862	73993	74124	74255	74386	74517	74648	74779	74910	75041	75172	75303	75434	75565	75696	75827	75958	76089	76220	76351	76482	76613	76744	76875	77006	77137	77268	77399	77530	77661	77792	77923	78054	78185	78316	78447	78578	78709	78840	78971	79102	79233	79364	79495	79626	79757	79888	80019	80150	80281	80412	80543	80674	80805	80936	81067	81198	81329	81460	81591	81722	81853	81984	82115	82246	82377	82508	82639	82770	82901	83032	83163	83294	83425	83556	83687	83818	83949	84080	84211	84342	84473	84604	84735	84866	84997	85128	85259	85390	85521	85652	85783	85914	86045	86176	86307	86438	86569	86690	86821	86952	87083	87214	87345	87476	87607	87738	87869	88000	88131	88262	88393	88524	88655	88786	88917	89048	89179	89310	89441	89572	89703	89834	89965	90096	90227	90358	90489	90620	90751	90882	91013	91144	91275	91406	91537	91668	91799	91930	92061	92192	92323	92454	92585	92716	92847	92978	93109	93240	93371	93502	93633	93764	93895	94026	94157	94288	94419	94550	94681	94812	94943	95074	95205	95336	95467	95598	95729	95860	95991	96122	96253	96384	96515	96646	96777	96908	97039	97170	97301	97432	97563	97694	97825	97956	98087	98218	98349	98480	98611	98742	98873	99004	99135	99266	99397	99528	99659	99790	99921	100052	100183	100314	100445	100576	100707	100838	100969	101100	101231	101362	101493	101624	101755	101886	102017	102148	102279	102410	102541	102672	102803	102934	103065	103196	103327	103458	103589	103720	103851	103982	104113	104244	104375	104506	104637	104768	104899	105030	105161	105292	105423	105554	105685	105816	105947	106078	106209	106340	106471	106602	106733	106864	106995	107126	107257	107388	107519	107650	107781	107912	108043	108174	108305	108436	108567	108698	108829	108960	109091	109222	109353	109484	109615	109746	109877	110008	110139	110270	110401	110532	110663	110794	110925	111056	111187	111318	111449	111580	111711	111842	111973	112104	112235	112366	112497	112628	112759	112890	113021	113152	113283	113414	113545	113676	113807	113938	114069	114200	114331	114462	114593	114724	114855	114986	115117	115248	115379	115510	115641	115772	115903	116034	116165	116296	116427	116558	116689	116820	116951	117082	117213	117344	117475	117606	117737	117868	118000	118131	118262	118393	118524	118655	11878



DEATHS REGISTERED IN THE DISTRICT OF FAZAKERLEY,

DURING THE YEAR ENDING SATURDAY, 30th DECEMBER, 1905.

CAUSE OF DEATH.	SEX.		AGE—BELOW.																			Total Deaths.
	Male.	Female.	1	2	3	4	5	10	15	20	25	30	40	50	60	65	70	80	90			
ALL CAUSES	35	23	10	4	1	1	...	...	2	1	...	1	6	4	3	...	5	5	3	2	48
I.—Zymotic and Septic Diseases	12	4	3	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	6
II.—Diseases of Uncertain or Variable Seat...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
III.—Tubercular Diseases	4	2	...	...	...	...	...	...	...	...	...	3	1	...	...	...	1	1	...	...	6
IV.—Constitutional Diseases	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	3
V.—Diseases of the Nervous System	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	3
VI.—Diseases of the Circulatory System	1	1	...	...	...	...	...	...	...	...	...	1	1	2	1	...	1	...	...	...	6
VII.—Diseases of the Respiratory System	3	2	3	1	1	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	10
VIII.—Diseases of the Digestive System	3	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	3
IX.—Diseases of the Lymphatic System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
X.—Diseases of the Urinary System	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2
XI.—Diseases of the Reproductive System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XII.—Diseases of the Joints, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XIII.—Dietetic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XIV.—Developmental Diseases	4	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	6
XV.—Diseases of the Integumentary System	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
XVI.—Violence	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Causes ill defined or not specified.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 1.—Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-Cough	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Membranous Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 2.—Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cancer	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2
Class 3.—Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberc. Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis	4	2	...	...	...	...	...	...	...	...	...	3	1	...	...	...	1	1	...	...	6
Hydrocephalus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 4.—Rheumatism	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diabetes	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Anæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 5.—Inflammation of Brain, &c.	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Apoplexy	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Paralysis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epilepsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Convulsions	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Other Diseases of Brain	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 6.—Disease of Heart	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2
Valvular Disease	3	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	3
Anæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Embolism	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Class 7.—Bronchitis	3	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4
Pneumonia	3	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Asthma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Lungs, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Congestion of Lungs	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pleurisy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Emphysema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Laryngitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Class 8.—Dentition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Inflammation of Stomach	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Inflammation of Bowels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peritonitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Stomach, etc.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Jaundice	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gastro-Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hernia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bleat	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 9.—Lymphadenoma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 10.—Disease of Kidneys, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Bladder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calculus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 11.—Childbirth	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2
Disease of Uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 12.—Disease of Bones and Joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 13.—Want of Breast Milk.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alcoholism	...	...	...	...	...	...										



