

[Report 1890] / Medical Officer of Health, Leeds Borough.

Contributors

Leeds (England). City Council.

Publication/Creation

1890

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ANNUAL REPORT

MADE TO THE

URBAN SANITARY AUTHORITY

OF THE

BOROUGH OF LEEDS,

FOR THE YEAR 1890,

BY

J. SPOTTISWOODE CAMERON,

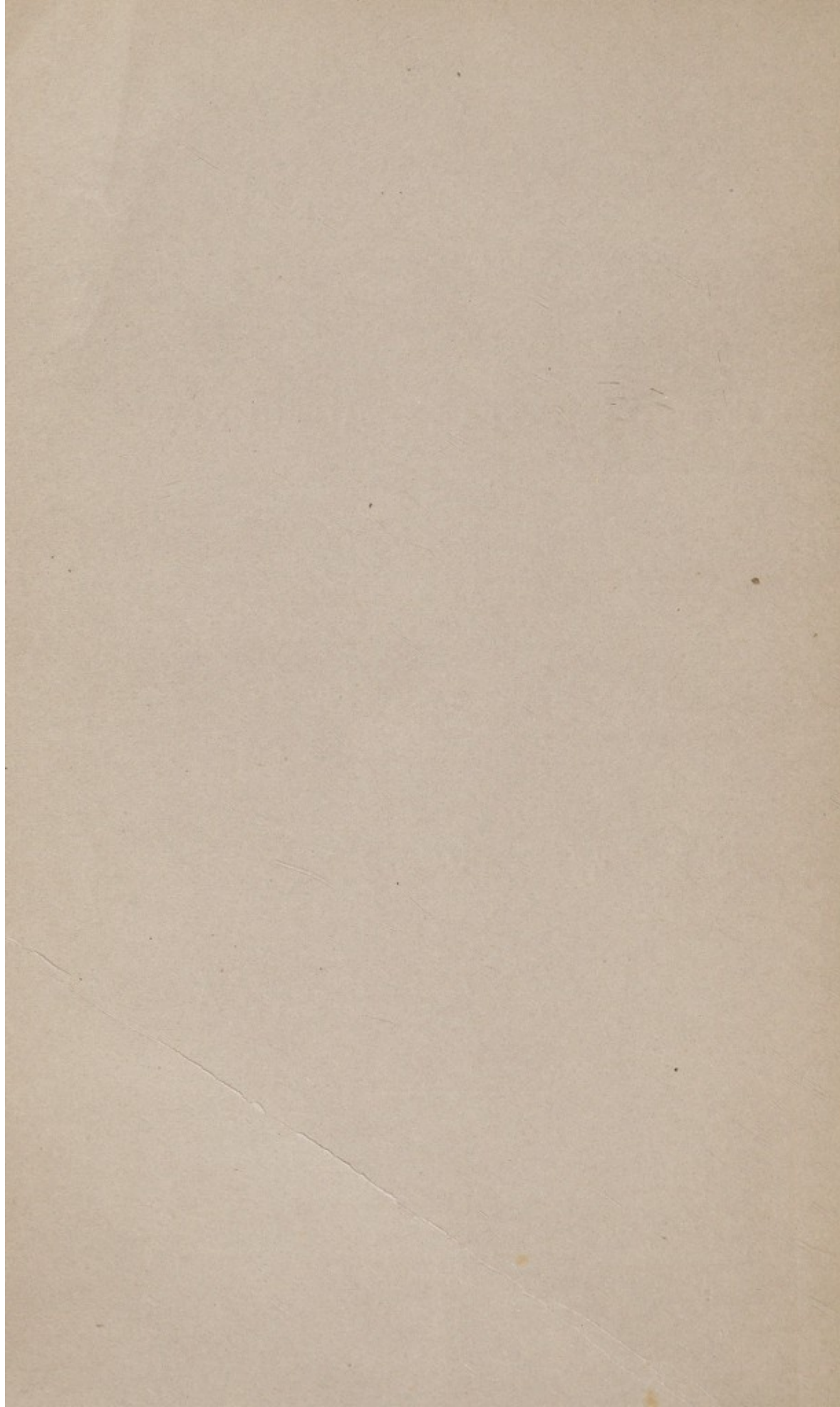
M.D., B.Sc., &c.,

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Borough of Leeds.

REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

For the Fifty-three weeks ended January 4th, 1891.

To the Chairman of the Sanitary Committee,

SIR,

In presenting you with my first Annual Report on the health of the Borough of Leeds, I do not propose to go at any great length into all the factors making for or against the healthiness of the community. On some of these I have already reported to you.

I have endeavoured, as far as practicable, to inform myself respecting all influences affecting or threatening to affect the public health within the town. For this purpose I have availed myself largely of the great local knowledge and the long acquaintanceship with the Borough of my friend Mr. Newhouse, our chief sanitary inspector, and I take this opportunity of expressing how much I regret that the condition of his health has made him feel it necessary to terminate the long and honourable career which he has had as the superintendent of your sanitary department.

CONDITIONS AFFECTING HEALTH.

It is always pleasant to deal first with the favourable conditions, and I find many of these in Leeds.

It is a matter for congratulation that work during the year has, on the whole, been plentiful, and that the wages earned by the industrial classes have been high.

Your town has the immense advantage of an ample supply of pure water. Pure ordinarily, but during the past year less clear than might have been wished, and containing an amount of vegetable organic matter in excess of what is desirable, but still compared with the water, for instance, from the River Tees, used by Darlington, Middlesbrough, Stockton, and other places, practically a pure supply, containing no traces of sewage pollution and having no deleterious action on lead pipes.

In many parts of the town the streets are wide and in most of them well paved, and what is of very great importance, the Borough is largely provided with open spaces. Holbeck Moor, Hunslet Moor, and Woodhouse Moor, for example, afford great "lungs" for these parts of Leeds, and there are in many parts of the town smaller spaces, such as the playground at the back of the Board Schools, St. Peter's Square, the old Cattle Market, between North Street and Camp Road, in the town itself, not to mention various recreation grounds and parks more or less in the outskirts. Valuable as these latter are from a health point of view, the open spaces in the centre of the town are, perhaps, of the greater importance.

In no part can Leeds be called a densely populated town. Taking the Borough as a whole the proportion is about 17 persons to an acre. The Borough as a whole, however, includes large districts of meadow land, so that this estimate considerably understates the actual density of the population.

A house-to-house examination of the nearly triangular area of which the apex is at the bottom of York Road, and of which the three sides are Quarry Hill, York Street, and the Lady

Beck (a district to which I shall have specially to allude in another part of this Report) has been recently made. It was found that the total population of this area was 7,761. The area taken from the ordnance plans is approximately 38 acres. The density of the population was thus about 203 persons to an acre. But even within this district it differed considerably.

In a nearly quadrilateral area, for instance, between Prospect Row and York Street on the north and south, Plane Street and Lemon Street on the east and west, there were 217 persons to the acre. In another plot, somewhat triangular in shape, south of Charles Street, east of Lemon Street, and north-west of the curved portion of High Street, the number of persons was 274 per acre, while in the plot of ground east of St. Peter's Street, south of Quarry Hill, north of Charles Street, and west of Globe Yard, the density was 314 to the acre.

These, however, are small bits of Leeds, very small indeed when compared with many districts of London, the healthiest of large towns. In the Parish of Shoreditch, for instance, are three wards, the Church, the Whitmore, and the Hoxton Wards, with areas of 106, 80, and 80 acres. The density of population per acre in 1881 was 220, 250, and 264 in these wards respectively. Again, in the Parish of St. George's, Southwark, the density of the population in the 97 acres of the St. Michael's Ward was 279 to an acre. In the North Ward of St. George's-in-the-East, measuring 107 acres, the population was 291 per acre; and in the 73 acres of Spitalfields, 292; while in the Parish of St. Luke's, the Ward of the City Road East, measuring 40 acres, had a population of 309 per acre; and the five acres of the Old Artillery Ground, in Whitechapel, had a population at the Census of 1881 of 2,515, or 503 to the acre.

But though taken as a whole the population of Leeds is not very dense, notwithstanding that in some parts, as we have seen, the people are very thick upon the ground, there are certain conditions in regard to the density of the population affecting the health of the town which call for remark.

Though many of the main streets in the Borough are broad, many of the streets in thickly populated districts are narrow, and frequently small court yards are so completely surrounded by houses that the people may be said to live at the bottom of wells. Take, for instance, the easternmost block of the three groups of houses included in the triangle mentioned as containing a population of 274 to the acre. This block is bounded by Lemon Street the west, Hound Street on the east, High Street on the south, and Charles Street on the north, and contains 41 houses. The northern part of the block is divided by Hound Court into two rows of back-to-back houses, separated by a *cul-de-sac* passage, about eight yards wide. This opening extends from Charles Street, about 28 yards to the south; the lower end of it is nearly obliterated by the conveniences for the 26 back-to-back houses surrounding it. But the southern half of the block has not even this amount of ventilation, for along the middle line, with the exception of a few feet at one place, is a continuous row of obstructive buildings, and the High Street end is made up with houses.

Entering, for instance, through the narrow covered passage between numbers 62 and 64, Lemon Street, into Dalby's Court, we find two houses facing eastward, whose only ventilation is into the court, about 4 yards by 10, part of which is occupied by conveniences, reducing the area of the court to some 36 sq. yards. The buildings on the east side nearly obliterate the corresponding court belonging to the two back-to-back houses facing west, and which are reached by a narrow passage from Hound Street; so that the living rooms of Nos. 4 and 5, Dalby's Court, Lemon Street, ventilate into a well 36 yards in area and 11 feet deep, the only openings into which are, one, $6\frac{1}{2}$ ft. wide, between No. 4 and a warehouse in the yard below (which, however, does not come within 4 ft. of the level of the yard), the narrow passage already mentioned, and the sky.

Dalby's Court is also the name of another small yard south of the one just described. It measures 15 yds. in length, 4 yds. in breadth, and would have an area of 60 sq. yds. were it not that

the outbuildings occupy about 21. The distance from the house No. 3, Dalby's Court, to the wall of the outbuilding is just over 2 yds., and the latter building extends the whole length of the house, so that both the door and the window open into a yard 13 ft. 3 in. by 6 ft. 6 in. The house immediately south of this (No. 2, Dalby's Court) is a little better off. Opposite the window the width of the court is 13 ft. 3 in., and instead of the outbuilding opposite No. 3, there is the partition wall between Dalby's Court and Hound's Yard, extending to a height of 8 ft. Opposite the door of No. 2, however, the width is only 10 ft. 3 in., as there is a space occupied by a privy, whilst the house in the corner of the yard (No. 1), the farthest south of all, is in pretty much the same condition as the first named, having opposite to it outhouses which leave only 7 ft. of space in front of the house. None of these three houses have any other means of ventilation than into this narrow court yard. The back door of one the houses in High Street also opens into this yard, in fact it is the scullery of this house which forms the chief obstruction to the ventilation of No. 1. Were these all through houses with only their back doors opening into this back yard, the space would still be too confined, but when we remember that, as I have just said, all the air to these houses enters from this confined yard, we can scarcely wonder that notwithstanding the comparatively small number of persons per acre our death rate still remains above that of the large towns.

Dalby's Court is a bad case, but by no means an exceptional one. The circumstances are a little different, for instance, in Topham's Court, a little further east than the block last named, and on the other side of High Street. The court is about 7 yds. square and supplies the entire ventilation for three houses, besides accommodating the necessaries for these and another. This yard is completely shut in on two sides, and part of a third, by houses. On that third side there is a length of 12 ft. 3 in. between two houses, but this is closed in by a wall 7 ft. high. On the other side of this wall is a yard at that part 12 ft. 3 in. broad. The fourth side of the square contains the necessaries which stand against the boundary wall for a distance of 10 ft. 10 in. at a height (to the eaves) of 7 ft. 4 in. The remaining portions of the wall,

3 ft. 4 in. and 7 ft. 7 in. respectively, are, the former upwards of 7 ft. 4 in. and the latter 5 ft. 2 in. high. The whole remaining entrance for air is through a passage 31 ft. 5 in. long, 2 ft. 10 in. in breadth, and varying in height from 7 ft. 5 in. to 8 ft. 2 in.

Though this yard is not so absolutely close as part of Dalby's Court, these are not the conditions most favourable for the health of the twelve persons living there, the whole ventilation of whose houses is into this yard.

But the narrow courts and close yards of the town are not confined to the area east of St. Peter's Street. Coming further west, towards the Parish Church, on the right hand side of York Street, just close to the beck is Shore's Yard, in which is a row of houses whose only ventilation is into a narrow court four yards wide, completely shut in on every side. This row of houses faces the backs of the houses in York Street, about four yards away.

On the opposite side of York Street is Smithie's Yard, about 5 yards by 9, surrounded on all sides but one by high buildings, part of the fourth side having the advantage of opening over the Lady Beck, and a space utilized as an ashpit. The only dwelling house with a door into this yard has also the problematic advantage of a window over the beck.

A great clearance of houses was made some years ago in the centre of the town, to the great advantage of the neighbourhood, but it is to be regretted that some of the places left at that time were not also swept away.

Chambers' Yard, entered by a narrow passage from George Street, is bounded on the north by the back of a two-storey house facing into that street, and on the south by the back of a high building facing into the Market. On the east are three houses, and on the west are three facing into the yard. Making no allowance for the necessities, the yard would consist of a well with an area of about 80 square yards, and the walls varying from 15 ft. 6 in. to 27 ft. The necessities cover an area in one end of the yard of about 12 square yards, diminishing the available air space to that extent to the height of about 8 feet.

The next yard, west, belongs to a public house, but further on is a double yard entered by two small passages side by side. The court is divided into two by a low wooden partition. This double yard is irregularly four-sided, the north side, about 27 feet long, is formed by the fronts of two back-to-back houses; the south side by the backs of high buildings in the Market. The east side, which is 18 feet long, opens into the yard of the public house last mentioned, but is separated from this yard by a wall 9 feet high. This corner of the yard is diminished in area by the necessities. The west boundary of the further and adjacent yard is interrupted. It is partly filled up by the scullery of one of the back-to-back houses, and partly by necessities. The whole area of the two yards might be roughly estimated at 49 square yards.

The next yard west is also divided by a partition, in this case a brick wall about 5 feet high, and entered by two passages. Four houses open into this double yard. The breadth from house to house is 12 feet, and the length from the backs of the houses in the front street to the outbuildings which fill up the end of the yard, 23 feet 4 inches. Four sides of the well are high, the height of two-storey buildings.

The next yard west is called Dawson's Court, and is entered by a single passage. It contains also four houses. These depend for their air upon this court, which is bounded on the north by the back of a house facing George Street, the back door opening into this yard. On the south the boundary is the back of shops in the Market, and the cottages facing into the yard are on the east and west. The area of the court, less the space covered by the necessities, is some 76 square yards, and the yard is surrounded on all sides by two-storey buildings.

The furthest yard west is entered by a long passage and contains two houses, one entirely dependent for air upon the yard, the other dependent upon the yard for air on the ground floor, but having a bed-room over the shop facing into the street. This yard, deducting the space covered by the closets, has an area of about 19 square yards, and is surrounded by two-storey

buildings on two sides, by a high wall, on the east side only a few feet away from another high building, and on the south side by a wall 11 feet high, the boundary of the lavatory in the Market place.

I might extend descriptions of such yards. I have directed the attention of the Visiting Committee to Camp Field, but as I shall have a special report to make upon that and upon the triangular area east of Lady Beck, I need go no further into details of this kind. My object is to show that although our town, as we have seen, cannot as a whole be called thickly populated, many of the inhabitants of Leeds have very little fresh air at their command.

BACK-TO-BACK HOUSES.

But perhaps the most regrettable feature about the buildings in Leeds is to find that at the present day new houses, well built and in airy situations, are being put up at the rate of some 1,200 per annum without any provision whatever for a through draught. That the new back-to-back houses are not for a moment to be compared with some of those in the close alleys that I have described every one will of course admit. Most of them are now built in blocks of not more than eight, each block being separated by a space of 5 yards from its neighbour, but this space is largely filled up by arrangements for the accumulation of filth, and a complete sweep of the air between the blocks of houses is interrupted in most cases for some six or seven feet from the ground.

Superior as these new houses are to the old hovels in some of the yards described, they are very far from meeting the requirements of modern sanitary science, and it is to be regretted that sixty-nine per cent. of new houses erected during the year ended August 31st, 1890, should have been permitted to be built upon this unhealthy type.

Some information on this matter, contained in the report made to the Local Government Board by Dr. Barry and Mr. P. Gordon Smith, was laid before the Joint-Committee of the Sanitary and Building Clauses Committees, and statistics in regard to this matter,

deduced from the information furnished to Dr. Barry by Dr. Tatham, of Manchester, then of Salford, were cited. Further statistical information it is doubtless desirable to obtain in regard to our own town. This I hope to be able to set about when the results of the census of 1891 are at my command.

I find that after the last census the Committee obtained information as to the population of each enumeration district. I hope that the Committee will enable me to get the same information in regard to the present census. I shall then propose to inspect each enumeration district in regard to the number of through and back-to-back houses it contains, the condition as to closet arrangement, and certain other sanitary matters, to compare the number of deaths during several past years with the enumerated population of each of these areas, and then to group areas similarly situated in regard to class of population and situation, and ascertain how far the inferences drawn from Salford are applicable to Leeds.

VITAL STATISTICS.

With many of the matters directly and indirectly affecting the health of the town, I have made you from time to time acquainted in my monthly reports, and into some of these I have gone even more fully in the printed quarterly reports, to which I shall presently have to refer. The attention of the Medical Officer of Health is naturally to a very large extent directed in the first instance to the distribution of diseases within his district. It struck me very early in my examination of the death returns for Leeds that there were certain parts of the town in which disease of an infectious nature was more common than in others.

I have found some difficulty, however, in comparing the present with the past in this matter, in that the death returns, which furnish the chief information at our disposal in regard to this class of diseases, had not been for some years arranged in such a manner as to show in which districts the persons who died from infectious diseases in the public institutions had been taken ill. Since November, 1889, I have endeavoured to some extent to rectify this omission, and when the returns of the next census are available, shall be able to give you a pretty accurate idea, so far as

the death rates show it, of where the incidence, at any rate of infectious disease, has been greatest, so far, at least, as this is reflected in the death returns.

MORTALITY IN BOROUGH FROM CERTAIN GROUPS OF CAUSES IN 1890, AND FIVE PRECEDING YEARS.

Before dealing with the mortality of 1890 in detail, it might be well to compare our death rate from all causes, and from certain groups of diseases in the Borough as a whole with that which prevailed during the five immediately preceding years.

During the 261 weeks ended on the 28th December, 1889, 36,462 deaths were registered in the Borough. Taking the population as estimated by the Registrar-General for the middle of 1887,—the middle period of these five years,—these figures are equivalent to the death per 1,000 persons living at that date of 21·1 persons per annum. During the 53 weeks of 1890, 8,370 deaths were registered in Leeds, corresponding to an annual death rate per 1,000 of the population, as estimated by the Registrar-General to the middle of 1890, of 22·7.

Our deaths from all causes during the 53 weeks of 1890, assuming these populations to be approximately correct, were 1·53 per thousand of the population in excess of our five years' average.

Glancing now over some of the groups of diseases it will be found, studying the table annexed, that from the seven common infective diseases the deaths during the five years amounted to 4,797, and during the past year to 884. On the population already indicated, these figures correspond to death rates of 2·78 for the five years, and 2·39 for the year we are specially considering. It is not therefore amongst the common zymotic diseases, the most preventable of all the groups, that we have especially to look for the cause of our increased death rate during the past year.

TABLE 1.

Annual Death Rate per 1,000 of the estimated population.

	All Causes.	Seven Zymotics.	Consumption.	Bronchitis, Pneumonia, Pleurisy.	Other Lung Diseases.
Five years, 1885-9... 261 weeks	21·12	2·78	1·70	3·92	0·27
Year 1890 ... 53 weeks	22·65	2·39	1·66	5·32	0·30
Increase ...	1·53	...	...	1·40	0·03
Decrease ...	...	0·39	0·04	...	...

Tuberculosis is always an important element in our mortality. It is the most fatal of all the infectious diseases. Last year it accounted for eleven per cent. of all the deaths in Leeds. Confining ourselves to that form of it which affects the lungs, it will be found that we had last year 612 deaths in the 53 weeks of 1890, against 3,547 in the 261 weeks which preceded them. These figures again correspond to a death rate of 1·70 for the five years 1885 to 1889, and 1·66 for the year 1890. It is not therefore to this infectious disease that we have to look for our increased death rate.

With diseases of the lungs, however, other than consumption, the case is quite different. Confining our attention to the diseases known as bronchitis, pneumonia, and pleurisy, and the several combinations of these diseases, it will be found that during the five years there occurred only 6,766 deaths, whilst in the 53 weeks of the year past there were no fewer than 1,965. The annual death rate estimated on the whole population for the five years was therefore 3·92, while for 1890 it was 5·32. From this group we had thus an increase of 1·4 deaths per 1,000 of the population, an increase which in great part accounted for the increase in the death rate from all causes.

INFLUENZA AND PNEUMONIA.

It will be remembered that during the first quarter of the year the epidemic of influenza which had been sweeping over the island, and which had caused some amount of illness in Leeds towards the close of 1889, attacked our town with very considerable force. Our death rate from all causes rose from the average for the quarter during the five preceding years of 22.1 to 27.8.

In my report dealing with the mortality and the work of the department during the first quarter of last year, a rough estimate was given of what I imagined to be the amount of prevalence of the disease. It seemed to me not improbable that some 50,000 cases of influenza had occurred in Leeds during the period. The greatest number of cases heard of, occurred during the third week of February, and I gave you the figures upon which this estimate was based.* Many of the deaths due to this disease were ascribed to pneumonia, and it was thought desirable for this and other reasons, to have the houses, in which deaths from pneumonia happened, visited by the inspectors and examined as to their sanitary condition; many of the deaths from this disease took place in the public institutions, especially the workhouses, but we were able to examine nearly 75 per cent. of the houses in which fatal cases were known to have occurred.

THE DWELLINGS OF THOSE WHO DIED OF PNEUMONIA.

To show the attempt made by the inspectors to cover this ground as completely as possible, it may be mentioned that whereas during the first quarter of the year, houses in which only 62 per cent. of the fatal cases had taken place were completely examined, during the second quarter the figures rose to 74 per cent., and in the third quarter reached upwards of 92 per cent., which, considering the number of persons without homes who die in the workhouses of large towns, may be regarded as a pretty fair result. In this manner houses in which 445 patients had died of pneumonia and one house in which a case not fatal had occurred, were examined by the district inspectors. Confining myself, as I have usually done in

* Report for first quarter of 1890, pages 8 to 11.

my quarterly reports, to an estimate of what I may call "case-houses," by which is meant that any house examined on account of two cases of death occurring in it would be counted statistically as two houses, the following results are brought out by an analysis of the inspectors' work. Further details in regard to them will be found to be stated in the several quarterly reports.

The percentage of the 446 "case-houses" in which the drainage arrangements were found satisfactory was 27·35; the percentage varying in different quarters from 24·66 in the third quarter to 30·08 in the second. The remaining 72·64 per cent. were reported as in an imperfect condition sanitarily so far as drainage arrangements were concerned. In regard to the question of excreta removal the proportion of houses was as follows:—Of 445 "case-houses," 258, or 57·98 per cent., had some form of water carriage, 187, or 42·02 per cent., trusted to the midden system, whilst the remaining "case-house" rejoiced in the advantages or disadvantages of both.

In making any important deductions from these figures in regard to the influence of drainage and the particular form of refuse removal upon the incidence of this disease, it would be necessary to know what proportion of houses in the borough are defective in their drainage arrangements and what proportions have respectively the water carriage and the accumulation method of excreta removal. At the present time I am not able to furnish you with these details, but these are inquiries which I think it is desirable that we should make in regard to the whole town at an early period.

It is, however, not a very comforting consideration that if pneumonia does not specially attack insanitary houses, and if the proportions of such houses found where deaths from pneumonia had occurred are to be taken as a criterion of the state of affairs generally in the borough, we should have to lay our account with the serious consideration that 73 per cent. of houses in the town, or nearly three out of four, would be condemned as imperfect sanitarily by any modern expert in such matters.

In regard to the closet question, some information was obtained for me at the end of 1889 by the inspectors, in regard to the number of closets of various kinds in existence in the borough. I am not sufficiently satisfied with these returns to think it worth while to incorporate them in my report. The information, for instance, referred not to the number of houses supplied with different kinds of closets, but to the number of closets existing, and as the occupants of frequently two, and occasionally more than two houses, join in the use of one of these necessities, the figures, even if accurate, would not be those required to render the percentages just quoted available. Read without any explanation, it would appear that 58 per cent. of the cases of pneumonia occurred in houses with the water carriage system, and 42 per cent. with the dry system only, and the inference would not unnaturally be, if these figures stood alone, that the latter system was, in regard to pneumonia, more favourable to health than the former. This inference, however, would be an inaccurate one, for it has to be remembered that in many of the lowest parts of the town—the districts in which the poorest people dwell in the most overcrowded conditions—trough water closets have been largely introduced to replace the former privy middens, and that the advantage is great would be at once confessed by any impartial person visiting these crowded courts and yards, and comparing them with similar yards in which this improvement has not been carried out. On the outskirts of the town, however, large numbers of new rows of houses are being rapidly put up, in which the old fashioned system of privy midden has been reproduced. Notwithstanding the disadvantage of this arrangement, contrasted with an efficient water carriage system, it would not be expected that the death-rate from such diseases as pneumonia, diseases largely due to overcrowding, foul air, and intemperate habits, would be as high in these comparative thinly peopled districts, with recently constructed middens, as in the ramshackle buildings of the densely populated courts and alleys.

There is also another element to be taken into account in considering the advisability of pressing forward the water carriage system in the town. In some of the streets, for instance, in the

West Ward, I found on examining houses in which fever had occurred that water closets had been introduced into the very centre of the basements of houses, without any provision for the proper ventilation either of the arrangement itself or the soil pipe connected with it. To compare houses of this kind with houses in which the improved form of midden closet exists several yards away from houses would be obviously unfair.

Where the water carriage system is applied to a cottage, it is naturally far better in the immense majority of cases that the closet should be outside the house, and strong as is the feeling of sanitarians against the accumulation of these offensive matters even in small quantities in crowded neighbourhoods, the introduction of an imperfectly fitted, imperfectly ventilated, water closet into a small house is probably the greater evil of the two.

I am glad to find that the feeling of the Sanitary Committee is in favour of the judicious introduction of water closets into crowded neighbourhoods, but the friends of this sanitary improvement can scarcely too strongly insist upon the necessity of the greatest care in the construction of these conveniences, and on the careful selection of the situations in which they are to be placed.

MORTALITY AND SICKNESS DURING 1890.

From the seven diseases as a whole the rate, as we have seen, was favourable, being 2·39 against 2·78 in the five previous years. It was in lung diseases that we were specially unfortunate; 1,965 deaths were ascribed to bronchitis, pneumonia, and pleurisy in the 53 weeks of 1890, the average yearly total for the five preceding years having been 1,353. Directing our attention to some of these groups in detail, we find that of small pox we had no case during the year. The average number of deaths in the five preceding years was 4·4.

From measles and scarlet fever our death rate during 1890 was less than that of the five preceding years. From diphtheria and whooping cough it was in excess. From diarrhœa the rate was almost the same.

Continued fever had been somewhat unusually prevalent in Leeds during the year 1889, no fewer than 126 deaths having occurred from this disease in the Borough during that year, the average for the four preceding years having been 82. The average was thus brought up for the five years, 1885 to 1889, to 90·4. Although our 111 deaths from this cause during the 53 weeks of 1890 show a diminution on the record of the 52 weeks of the preceding year, the number is still above the average of the five years. The greater number of these cases were cases of typhoid, enteric, gastric, or, as it is frequently called in Leeds, low or slow fever.

An outbreak of typhus, however, occurred in the second quarter, due apparently to an unreported case. When the matter came to our knowledge it was promptly dealt with, and the disease did not practically spread after we heard of the first case. But as you had a special report on this outbreak presented to you on the 5th June, 1890, I need not repeat the details which will be found there.

In regard to typhoid fever and "case houses," using this term in the same way as has been already done when speaking of pneumonia (page 13), out of 314 "case houses," the drainage was found good in 75 and unsatisfactory in 239. In 156 the excreta removal was on the water carriage and in 157 on the dry system; one of the houses examined had both systems. The remarks made in regard to the water carriage system under the head of pneumonia on a previous page apply equally to the disease under consideration. The condition of drainage which was found to be unsatisfactory in 73 per cent. of the pneumonia case houses was unsatisfactory in 76 per cent. of the typhoid "case houses." The details from which these figures are given for each quarter will be found in Table I. of the several quarterly reports, but in the fourth quarter, in addition to the information contained in Table I., I gave in Table E. statistics in much further detail as to the "case houses" visited on account of this disease in the fourteen weeks ended January 3rd, 1891. The fourth quarter is the quarter in which this disease is usually most fatal, and the analysis given in Table E. for that quarter was somewhat complete. As the report may not be at hand, and as the subject is rather important, I think it well to repeat the table here.

TABLE 2.
Typhoid Fever and Drainage, Fourteen Weeks ended January 3rd, 1891.

DISTRICT.	AGES OF CASES.						SEX.		NO. OF DAYS ILL WHEN VISITED.			HOUSES.		DENSITY OF POPULA- 'TION.		DRAINAGE.								CLOSETS.																
	0-1 1-2 3-15 15-25 25-60 60+						M. F.		REMOVED.	ILL.	DEAD.*	AT SCHOOL.		BACK TO BACK.	THROUGH.	"SALT PILE."	INMATES.	ROOMS.	INSIDE.				OUTSIDE.				W. C.		T.W.C.	M.	PAIL.									
																			SINK.				OTHER.									FALL PIPE.		OTHER.						
																		T.	C.	T.C.	D.	T.	C.	T.C.	D.	D.	C.	T.	D.	F.V.	Not F.V.	INSIDE.	OUTSIDE.							
NORTH	3	20	8	7	18	20	9-9	...	137	13	33	5	...	203	104	31	1	3	7	27	7	10	19	9	...	
WEST	2	14	21	17	...	...	21	33	8-7	27-9	20-6	11	42	12	...	244	185	43	...	9	2	2	2	2	2	1	...	41	8	3	1	1	5	13	6	30	1	...
SOUTH-EAST	8	5	2	9	6	8-9	37-5	24-0	7	12	2	1	84	51	12	2	1	1	...	12	1	1	1	1	1	5	4	3	...
HUNSLET	2	5	3	6	1	...	5	12	18-6	37-0	19-5	5	15	1	1	95	51	14	2	1	...	...	2	1	...	...	11	2	1	...	...	...	...	1	3	13	...	...
HOLBECK ... ..	...	...	3	1	...	...	3	1	...	18-6	30-0	...	4	...	...	28	14	...	...	2	2	...	...	...	...	...	3	...	...	...	...	1	...	...	1	2	...	...
WORTLEY	2	6	5	7	...	...	7	13	9-7	72-0	29-0	4	17	3	...	73	46	19	1	...	...	...	...	...	...	...	18	1	...	...	...	1	...	1	12	6	...	...
KIRKSTALL ... ..	...	2	2	6	...	...	3	7	17-0	21-0	8-0	1	5	5	...	53	61	5	...	5	...	...	...	...	...	...	7	3	3	...	...	1	2	3	...	6	...	...
BRAMLEY ... ..	...	...	1	...	...	...	1	...	...	...	26-0	...	1	...	...	8	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
CHAPELTOWN ... ..	...	...	...	1	...	...	1	...	...	...	21-0	...	1	...	...	5	5	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
TOTALS	9	55	48	47	1	...	68	92	9-9	29-5	19-2	41	130	28	2	793	519	126	6	21	4	11	5	3	...	121	22	7	1	5	8	29	46	72	4	...				

T.—Trapped and then going directly into drain. C.—Cut off over an outside gully. T.C.—Same, plus an inside trap. D.—Directly connected with sewer.
F.V.—Soil pipe continued full size above the eaves. T.W.C.—Trough water closet. M.—Midden. See text.
* In the fatal cases the duration of illness is counted to the day of death. In the other cases till the date of the Inspector's visit, usually the day after the cases came to our knowledge.

In this table not only was a general statement made as to the drainage, but the cases visited were analysed as to age, sex, length of illness before they were heard of, and those separated who were in attendance at school. The house, whether back-to-back or through, and the relation of number of inmates to rooms and houses were also given. In regard to the drainage, inside drainage was classified under the several methods in which the sink or other drainage was dealt with, especially in regard to the question of separation or disconnection—the question of drain pipes outside the house was also taken into account, and the analysis of closet arrangements was carried much further than in table No. 1.* The houses supplied with ordinary water closets, for instance, were divided according as these conveniences were inside and outside the house, and when the former they were further sub-divided as to whether the ventilation of the soil pipe was complete or otherwise. The houses in which the trough water-closet system existed were also separated, as were also those where the midden and the pail system prevailed. All of this information was given for each of the sub-registration districts as well as for the borough as a whole. All this information is in the zymotic book in regard to every house visited on account of this and other important infectious diseases.

I went somewhat fully into the analysis of the conditions found on pages 8, 10, and 11 of that report, and I summed up the drainage conditions in the following words (p. 11): "Of the 138 houses, in which the 160 patients were taken ill, 26 were through houses and 112 not. The sink drainage was structurally defective in 109 of the 135 houses with sinks; the waste pipe was properly disconnected in 26, but two of these 26 houses were otherwise faultily connected to the drains, reducing the number to 24, and increasing the number of defective ones to 111."

I mentioned tuberculosis in an early part of this report, but I am not able to give you any complete statistics in regard to this disease for earlier years. Even for 1890, there is a considerable amount of difficulty in getting the deaths due to tuberculosis of the brain separated from ordinary inflammatory diseases of that

* Table No. 1 in the Quarterly Reports for 1890.

organ. The disease called "acute hydrocephalus" and "tubercular meningitis" has, for the purposes of this report, been separated from other diseases of the brain, but this could only be done for earlier years by an amount of labour which would involve the leaving undone of some other perhaps more urgent work.

I give you, in the form of a table, the number of deaths from the various tubercular diseases occurring in each quarter of the year of 1890.

TABLE 3.

Showing the deaths from Tuberculosis in its different forms in the three periods of 13 weeks ended respectively March 29th, June 28th, and September 27th, 1890, and the 14 and 53 weeks ended 3rd January, 1891.

1890.	General Tuber- culosis.	Phthisis.	Hydro- cephalus.	Tubercular Meningitis.	Tubercular Peritonitis.	Tabes Mesen- terica.	Scrofula.	TOTAL.
I. Quarter ..	22	189	3	24	4	14	1	257
II. do. ..	23	154	2	30	4	15	3	231
III. do. ..	18	115	9	15	5	37	1	200
IV. do. ..	29	154	6	23	1	26	1	240
Year (53 weeks) ..	92	612	20	92	14	92	6	928
Annual death rate, 53 weeks of 1890 ..	0.25	1.66	0.05	0.25	0.04	0.25	0.02	2.51

It will be seen from this table that no fewer than 928 deaths were ascribed to tuberculosis or scrofula. Omitting the six deaths from scrofula, it would leave 922 from tuberculosis, which is probably an under-statement from this disorder, for amongst the diseases of the brain will probably be included many cases of meningitis of a tubercular nature not stated as such. The total deaths in the Borough were 8,370. The 922 deaths certified from tuberculosis, excluding the six from scrofula, formed, therefore, 11 per cent.

The disease was most fatal in the first, and least in the third, quarter. It is probable that a few patients, dying of consumption, may have had their end hastened by the conditions promoting influenza already spoken of, for I find that 189 deaths occurred from phthisis in the first quarter, the average of the four quarters being 153. Phthisis also is generally less fatal in the dry months of autumn, so that the diminution in the third, and the increase in the first and fourth quarters is probably a seasonal variation slightly accentuated in the first quarter by the prevalence of influenza. Excluding phthisis, the deaths in the four quarters were respectively 68, 77, 85, and 86.

The death rate from tuberculosis in the year 1889, in the whole of England and Wales, formed about 13 per cent. of the total mortality. The statistics of 1890 are not yet published.

The two following tables, 4 and 5, give respectively the number of deaths over and under five years of age in each quarter of the year, and for the year from certain of the more important causes, and the death rates for the same groups in the same quarters at all ages :—

TABLE 5.

Showing death rates per 1,000 of the estimated population from certain causes and groups of causes, and for the same periods of time dealt with in the preceding table.

MORTALITY FROM SUBJOINED CAUSES.																								
1890.		Smallpox.	Measles.	Scarlatina.	Diphtheria.	Croup (not "spasmodic.")	Whooping Cough.	CONTINUED FEVERS.				Diarrhea and Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All Other Diseases.	TOTALS.
								Typhus.	Enteric or Typhoid.	Other or Doubtful.														
I. Quarter	0.06	0.51	0.07	0.06	0.78	...	0.25	...	0.22	...	0.03	0.14	0.07	0.03	...	...	2.09	8.26	1.71	0.67	12.85	27.81
II. do.	0.04	0.30	...	0.08	0.60	0.03	0.14	0.03	0.31	...	0.02	0.06	0.07	0.04	...	...	1.70	5.17	1.26	0.58	10.76	21.19
III. do.	0.17	0.12	0.06	0.08	0.31	...	0.20	0.01	2.42	...	...	0.02	0.09	0.01	...	...	1.27	3.29	0.79	0.66	10.32	19.80
IV. do.	0.78	0.19	0.13	0.14	0.32	...	0.50	0.01	0.97	...	...	0.10	0.03	0.04	...	...	1.58	4.60	0.79	0.66	11.01	21.86
53 Weeks	0.27	0.28	0.06	0.09	0.50	0.01	0.28	0.01	0.98	...	0.01	0.08	0.06	0.03	...	...	1.66	5.32	1.13	0.64	11.23	22.65

AGE MORTALITY IN BOROUGH.

We have seen that the mortality from all causes was at a rate of 22·7 per 1,000 of the estimated population, and in my quarterly reports I have repeatedly drawn attention to the fact that this estimated population is a purely imaginary thing, that it is based upon a "dead reckoning" extending over nine years since the period of the last census, upon the somewhat wild hypothesis that the population has gone on increasing in the borough during the whole of these nine years at the rate at which it had been found to have increased during the ten years between the censuses of 1871 and 1881. I quite hoped, before laying this report before you, to have had the corrected population at least for the whole borough, but that I have up to the present time not been able to get. Should I receive it before the report is finally printed, I will add an addendum containing the necessary corrections for the figures.

Assuming, therefore, that our population was 363,799 in the middle of last year, our death rate was 22·7, and it varied in the several quarters of the year from 27·8 in the first to 19·8 in the third quarter of the year.

I give you in the two annexed tables first of all the total number of births and deaths during each quarter of 1890, and for the whole 53 weeks. In the same table I give also, for the same periods, the number of deaths at each of certain groups of ages, while in the second table I give the birth rate per 1,000 of the population, and the rate of mortality at all ages for each quarter and the whole year, calculated both of them upon the whole estimated population. The rates of mortality at the several groups of ages are calculated, however, not upon the whole estimated population, but upon the population estimated as living at these ages in the middle of the year. I have said that the whole population was a hypothetical one. The population at any group of ages is still more so, the figures from which these numbers have been taken are obtained by supposing that the numbers of persons living at these several groups of ages at the time of the census, 1881, and the numbers of persons living at these several groups of ages in the middle of last year bore the same proportion to the total population.

It will be seen that of those under one year of age, that is, chiefly children at the breast, the second quarter had the lowest, and the third the highest death rate, that in children between the ages of one and five, that is, children largely fed on cows' milk, the third quarter, somewhat unexpectedly, had the lowest, and the first the highest rate of mortality; that between the ages of five and fifteen, practically the school-going ages, the third quarter had the lowest, and the fourth the highest mortality, viz.: 3.2 and 5.1. At the ages of fifteen to twenty-five, the age of apprenticeship and early manhood, the mortality was lowest in the third, and highest in the first or influenza period;

TABLE 6.

Showing the births and deaths registered in the Borough of Leeds in the three periods of thirteen weeks ended March 29th, June 28th, and September 27th, 1890, and the fourteen and fifty-three weeks ended January 3rd, 1891; showing also the deaths registered in the same periods at certain groups of ages.

1	2	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.						
		3	4	5	6	7	8	9
1890.	Regis- tered Births.	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.
I. Quarter..	3,072	2,520	467	356	101	121	812	663
II. do. ..	3,089	1,921	441	260	90	92	589	419
III. do. ..	3,077	1,795	668	241	66	82	400	338
IV. do. ..	3,098	2,134	552	353	112	103	578	436
53 weeks ..	12,336	8,370	2,128	1,210	369	398	2,379	1,886

TABLE 7.

Showing the rates per 1,000 on the estimated population of 363,799 of the births and the deaths at all ages, and the mortality per 1,000 living at the several groups of ages. (*See text.*)

1	2	DEATH RATES.						
		3	4	5	6	7	8	9
1890.	Birth-rate.	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwds.
I. Quarter..	33.9	27.8	164	35.4	4.9	7.1	23.0	136.8
II. do. ..	34.1	21.2	155	25.9	4.4	5.4	16.7	92.6
III. do. ..	33.9	19.8	234	24.0	3.2	4.8	11.3	69.7
IV. do. ..	31.7	21.9	180	32.6	5.1	5.6	15.2	83.5
53 weeks ..	33.4	22.7	183	29.5	4.4	5.7	16.5	95.4

while in the longer group of years, from twenty-five to sixty, of adult and mature life, the same quarters had the lowest and highest rates respectively. This was again true of the life period beyond sixty, that of advancing age, when the first and influenza quarter had the highest death rate, 137 per 1,000 of the estimated population, nearly double the rate attained in the third quarter of the same year.

The first or influenza quarter had therefore the highest death rate at the ages between one and five and from fifteen upwards.

The difference between the rates of the first and fourth quarters of children between five and fifteen was so slight as not to justify any inferences. On the other hand, the third quarter, as we have seen, was most fatal in children under one. As has been hinted, these numbers dealing with hypothetical populations must be received with a good many grains of salt.

CHILDREN UNDER ONE.

In regard to the last mentioned age group, however, that of children dying during their first year, it is usual to make a comparison between the number of deaths and the number of births during the period. In the year 1890, the highest mortality per 1,000 births, 217, occurred in the third quarter, the lowest, 143, in the second quarter, so that in fact all the four quarters occupied nearly the same comparative positions in regard to one another as in the computation by the other method.

Even the comparison between deaths and births in so short a period as three months is not a completely satisfactory one, because the births of children dying under one might have been registered in one of the four previous quarters. A nearer approximation would be obtained by taking the average births in five quarters. I give, however, in a tabular form, the estimated annual mortality under one year of age obtained in three different ways.

TABLE 7a.

Mortality in Children under one year of age during the 53 weeks of 1890.

	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	YEAR.
Calculated per 1,000 of the population under one, estimated to the middle of 1890 on the supposition that the whole population of the borough had increased at G.P. at the rate of 1.78 per cent. per annum, which was the rate of increase between 1871 and 1881, and that children at this age bear the same proportion to the population as in 1881... ..	164	155	234	180	183
Deaths under one per 1,000 births registered in same period	152	143	217	178	173
Deaths per 1,000 registered births averaged during the same period, and the four similar periods preceding it	158	147	223	171	175

The quarters except the fourth are all periods of thirteen weeks, and in calculating the rates for the fourth and the year allowance has been made for the fourteen and fifty-three weeks dealt with respectively.

PERSONS OVER SIXTY.

At this age atmospheric and other conditions are specially liable to affect the death rate. We have already seen that out of 1,886 deaths of persons over 60 occurring in the fifty-three weeks of the year, 663 occurred in the first thirteen. Had the total deaths remained the same, and been distributed over the quarters proportionately, the number should have been 463. On the other hand, had the mortality at this age in the first quarter been the same as in the remaining part of the year, the whole number of deaths in the year should have been 1,620.

During the five preceding years the deaths at this age had been respectively 1,422, 1,495, 1,354, 1,639, and 1,644, an average for the 261 weeks of 1,511, and equivalent to a rate at this age of 81·8. The death rate, on the other hand, during 1890, has been 95·4, an increase for the year of 13·6 deaths for every 1,000 persons living over 60.

DISEASES IN DISTRICTS.

I have already spoken of some of the causes of death which have been at work in the town, and have roughly compared some groups of these causes with corresponding groups in the five preceding years. I had proposed to myself to go somewhat fully into the comparative mortality of the different sub-districts into which the Borough for registration purposes has been divided. I find, however, that in the absence of the correct returns of the census, this would be, to a very great extent, useless labour. In the report for the third quarter of 1890, at page 6, I went into this matter of district populations in some detail. I showed that there were different ways of estimating the district populations and that a considerable discrepancy occurred between these methods. Taking, for instance, the returns, probably semi-official, of the population of the sub-registration districts, published in the

Leeds newspapers in the beginning of the year, and estimating the population of the same districts by dividing the estimated increase in the whole Borough proportionately, according to the excess of births over deaths in each of these districts, disregarding, of course, births and deaths in the public institutions, it was found that the populations obtained by these two methods differed very considerably and "the discrepancy in some instances was so "tremendous as to show how very little value should be placed "upon death rates for small areas nine-and-a-half years after the "census. The discrepancy amounted in the north district to nearly "4,000; in the west district to more than 4,000; and in nearly "every district was so great as to show that any comparison of "mortality between district and district had very little value "indeed."

It struck me, however, and I reported to you on the 10th of February, 1890 (in a report which you printed, and which dealt with the fourth quarter of 1889), that the district on the right bank of the Aire, consisting of that portion of the South-east Registration district which lies south of the river, and of some part of the Township of Hunslet, had been specially obnoxious to enteric fever.

While the death rate of the whole Borough in the fourth quarter of 1889 was 0.61, the death rate in Hunslet* was 1.14, while in South-east Leeds it was 1.15. In the absence of any exact records of the population, I made for the purpose of that report from the Burgess Returns a rough estimate of population in the several polling districts of the South and Hunslet Municipal Wards. For this purpose I assumed that the proportion of people living in the districts I have mentioned had a similar ratio to the numbers in the Burgess Rolls for those districts that those living in the town as a whole, as estimated by the Registrar-General, had to the general Burgess List. I pointed out that while the South-east district of Leeds had a death rate from fever

* Quarterly Report, page 9.

as I have just said of 1·15 per 1,000 of the population per annum, the portion of that district north of the river had a rate of only 0·64, while the death rate in the similar portion on the south of the river was as high as 3·17. Taking into account an adjacent part of the East Hunslet Ward I pointed out that “the death rate in this “portion of the Borough, which includes the streets south of Leeds “Bridge, and the New Station, and the portion of Dewsbury “Road nearest the town, had been 2·29 from this single disease, “no district of the Borough, so far as my figures enable me to “judge, having had a death rate so high as 1 per 1,000.”*

In the first quarter of 1890, the death rate from pneumonia was highest in the South-East district, as was indeed the whole death rate from influenza and other diseases of the air passages other than consumption, this rate amounting to no less than 13·5 per 1,000 of the entire population. During the same quarter the death rate from fever was again high in Hunslet and in Holbeck, whilst during the second quarter of 1890 the incidence of fever was principally felt in Wortley. Next to Wortley the South-East district figured in the death returns.

In the third quarter Kirkstall shewed the highest rate from fever, but Hunslet again figured largely, having a rate of 0·42, just double that of the Borough as a whole. The South-East Ward had a rate from this disease of 0·25.

In the concluding quarter of the year the death rate in the South-East district was 0·71, and in Hunslet 0·52, these two, with the exception of Kirkstall, having the highest death rates from continued fever. The death rate of the whole Borough from this group was 0·51.

But it was not only continued fever that shewed a special prevalence in Hunslet and the South-East Ward. In the 13 weeks ended December 28th, 1889, the infantile mortality, excluding a small district in which one death occurred, stood highest in Holbeck, after which came the South-East district, Hunslet as a

* Report for Fourth Quarter, 1889, page 10.

whole being below the Borough as a whole. In the first quarter, with a mortality amongst children under one year of age in the whole Borough, of 152 per 1,000 births, Wortley stood highest, followed by Hunslet (167). The South-East district had a rate below that of the Borough. In the second quarter of 1890 the Borough rate was 143 per 1,000 births. Holbeck again stood first (184), the South-East and Hunslet districts being both above the average of the Borough. In the third quarter the whole Borough averaged 217; the South-East district, 317; Holbeck, 298; Hunslet, 222; while in the fourth quarter, with the Borough at 178, Hunslet stood at 222 and the South-East district at 180. This matter has been under the consideration of the Committee, and on my mentioning to them that it was difficult altogether with a high mortality in this district to forget that something like three-fifths of the sewage of the Borough flows on its way to Knostrop through the district, which I first pointed out, a small committee has been appointed to consider this matter further, and if necessary, to institute any experiment in regard to the purification of the sewage that may be considered necessary.

In Table A, at the end, will be found the details as to the total deaths, the deaths at certain groups of ages, and the deaths from certain causes under and over five years of age in each district of the borough, public institutions being considered as districts. The two following tables deal with certain groups of causes, after the deaths in public institutions have been referred to the districts to which the patients belonged. Table 8 gives deaths, Table 9 death rates.

TABLE 8.

Showing the number of deaths from certain specific causes and groups of causes, in the 53 weeks of 1890, in the sub-registration districts of the Borough of Leeds. All Deaths of persons belonging to the Borough, in Public Institutions, have been referred to the sub-districts to which they belonged.

	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	"Fever."	Diarrhoea.	All Seven.	Croup.	Phthisis.	Influenza and Diseases of the Air Passages other than Consumption.	
Leeds, North	...	12	8	3	35	12	66	136	6	129	421	Leeds, North
,, West	...	12	20	7	29	22	59	149	9	142	432	,, West.
,, South	...	4	12	...	24	10	39	89	...	74	274	,, South.
Hunslet	...	26	18	2	47	20	90	203	5	63	324	Hunslet.
Holbeck	...	5	12	...	15	10	26	68	4	44	141	Holbeck.
Wortley	...	11	24	...	11	20	31	97	4	73	224	Wortley.
Kirkstall	...	7	6	7	17	12	36	85	1	28	107	Kirkstall.
Bramley	...	3	2	4	3	3	13	48	2	32	83	Bramley.
Chapeltown	1	3	2	1	7	1	19	40	Chapeltown.
Whitkirk	1	1	...	1	2	Whitkirk.
*Bor. of Leeds	...	100	102	24	184	111	362	883	32	605	2,048	Bor. of Leeds.

* In the above table 1 death from "scarlatina," 7 from "phthisis," and 20 from "influenza and diseases of the air passages other than consumption," occurred in public institutions within the boundary of the Borough in persons not belonging to any Township of the Borough. These deaths are included in Table A, and also in the previous tables of this report dealing with the whole Borough, but they are excluded in this and the following table where deaths have been allocated to the Registration Districts to which the patients belonged.

TABLE 9.

Similar to the last. The mortality stated in deaths per 1,000 of the estimated populations of the sub-districts. These figures will probably require correction when the results of the census are known.

	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	"Fever."	Diarrhoea.	All Seven.	Croup.	Phthisis.	Influenza and Diseases of the Air Passages other than Consumption.	
Leeds, North	...	0.19	0.13	0.05	0.55	0.19	1.04	2.15	0.09	2.04	6.66	Leeds, North
„ West	...	0.13	0.22	0.08	0.32	0.25	0.66	1.66	0.10	1.58	4.82	„ West.
„ South	...	0.12	0.37	...	0.75	0.31	1.22	2.78	...	2.31	8.56	„ South.
Hunslet	...	0.45	0.31	0.03	0.81	0.34	1.54	3.48	0.09	1.08	5.55	Hunslet.
Holbeck	...	0.20	0.49	...	0.61	0.41	1.06	2.76	0.16	1.79	5.73	Holbeck.
Wortley	...	0.22	0.47	...	0.22	0.39	0.61	1.91	0.08	1.44	4.40	Wortley.
Kirkstall	...	0.27	0.23	0.27	0.66	0.47	1.41	3.32	0.04	0.09	4.18	Kirkstall.
Bramley	...	1.85	0.16	0.32	0.24	0.24	1.05	3.86	0.16	2.57	6.67	Bramley.
Chapelton	0.08	0.17	0.17	0.08	0.58	0.08	1.57	3.30	Chapelton.
Whitkirk	1.67	1.67	...	1.67	3.34	Whitkirk.
Bor. of Leeds	...	0.27	0.28	0.07	0.50	0.30	0.98	2.39	0.09	1.64	5.54	Bor. of Leeds.

INSPECTION OF THE BOROUGH.

The inspection of the borough has been carried out during the year in the following manner. The whole borough is divided into nineteen districts, each of which is under the special charge of a district inspector, who acts under the superintendence and direction of the sanitary inspector. When any case of infectious disease is known to have occurred in his district, such inspector makes a special inquiry at the infected house, to ascertain the nature and the origin of the disease, the amount of accommodation provided, and the school or workplace of the patient and of the other members of the family. He has a little note book, 6 in. by 4 in., ruled with 21 lines. At the beginning of this note book is pasted a small slip containing headings of matters to be inquired into. This slip contains twenty-one lines, corresponding to the lines in the note book, and is so arranged that it can be opened out opposite any page, so that the lines on the slip shall correspond with those in the book. The instructions of the district inspector, are, that he shall obtain in each case and enter on the corresponding line of his book, the information required under these headings. He has thus only to write the results of his enquiries, and not to re-write the headings themselves. This is a considerable saving of time on the old method. He is also instructed to enter on the blank line at the bottom, any facts coming to his knowledge of importance in regard to the case, for which there is no appropriate heading, and to make any further remarks, for which there is not sufficient room in the folio for the case, in one of the blank pages, at the end of the book, referring from its own folio to the page containing such remarks by number.

There is also on the back of the slip a list of contractions to save the inspector from much writing, and to make the book easier to read. I print a copy of the the slip and of the contractions.

Each Inspector has two of these books, one for use on Mondays, Wednesdays, and Fridays (marked A), the other on Tuesdays, Thursdays, and Saturdays (marked B). Each morning he leaves with the clerk (who has charge of the "zymotic book") the note-

Address :	1
Occupier's Name	2
Owner's do.	2
Patient's Name :	3
Age :	3
Sex :	3
Workplace or School	4
(standard)	4
Whether removed.	5
Date of removal.	5
Earliest symptoms and dates.	6
Disease Certified : Date of Certificate : Date of receipt of do.	7
By whom certified. Name of Med. Man and date of his first visit	8
Rest of Family { Names and Ages.	9
{ Workplaces and Schools.	10
Milkman : Name : Address :	11
Source of Water supply. Overflow and condition of Cistern	12
No. of inmates : of rooms, Condition, Size, Ventilation, &c.	13
(whether back-to-back).	13
Drainage. { Sinks and Washbasins.	14
{ Basement drains : Bathrooms.	15
{ Other drains (fall spouts, yard drains).	16
{ W.C. : Main Sewers.	17
Privy : { kind, state, distance, No. houses using it	18
{ Ashplaces do.	18
Nuisances.	19
Sources of Infection.	20
	21

book used on the previous day. The latter enters the information received into the zymotic book, the columns being arranged in this book to correspond in order with the information detailed in the Inspector's note-book. This checking of the book by the clerk immediately, I have found exceedingly useful, as the District Inspectors are thereby induced to be more exact in their obtaining of information than if the books are left until the information in them accumulates. In the course of the year I have noticed a great improvement in regard to the accuracy and carefulness with which this information has been obtained.

The first line is intended to contain the exact address, the situation in the street, the ward, registration area, and sanitary district of the house examined. The occupier's name in full

is placed on the second line of the left hand page, the owner's on the right. In the third line are the patient's name, age, and sex, and on the fourth line, the full address of place of work or school, with the standard in which the patient is, if a child. In the column of the large zymotic book corresponding to this line there are printed in the space allotted to the particular case, the words "flushed—inst., disinfected, ashes, privy," so that where, as in many cases, it is deemed advisable to flush the drains, empty the ashpits, or disinfect the premises where the patient was at work, the dates on which these things have been done are inserted by the clerk, opposite the printed reminder. When also it is noticed that the same workplace or school occurs several times in the same column, the clerk is instructed to inform the inspector in whose district that school or workplace is, and he is requested to make a report on the sanitary condition on the premises. The fifth line states whether the patient was removed, and gives the date of the removal, and there is space in the zymotic book to enter in the result, recovery or death, with the date of the latter should it have occurred. The sixth line is one about which I have experienced a good deal of difficulty in getting exact information, but in this respect also, I am happy to say that the later reports of the inspectors show a marked improvement on their early ones. The information thus obtained is important in tracing the sources of infection. I have instructed the inspectors to be as exact as possible in their statement of the earliest symptoms, not to content themselves with giving name and date of any one symptom, but to inquire whether there was any previous condition earlier than the one to which the relatives of the patient attached most importance, and to give me, if possible, the dates of the commencement of this. The seventh column gives the disease certified when there has been a certificate, the date of that certificate, and the date of our receiving it. The name of the medical man comes in the next line, and we have a special mark in the zymotic book, by which we know whether or not the information in regard to the case comes from the medical man, or whether the case was reported by the relatives, or its existence ascertained by the inspector in visiting other cases. The two following lines give places for the names and ages of each member of the family and the places where they are employed. The latter is often of very great value and importance in our

attempt to limit the spread of a zymotic disease. The eleventh line tells its own tale. In the twelfth line, which deals with the source of water supply, there is a subsidiary memorandum; the inspector may here note the position of any over-flow and the position of any cistern. The number of inmates and the number of rooms is then stated, and the inspector describes the rooms in such a manner as will enable me to know whether any apartment should be considered in counting the available accommodation. He also gives accurate measurements in regard to the sick room, and he notes whether or not the house is a through or a back-to-back one. The following lines refer to drainage, and are intended, as far as possible, to remind the inspector that he has to inquire into the disconnection, or otherwise of each individual drain, and that he must in every case ascertain whether or not there is a drain in the basement and whether it is disconnected from or communicates directly with the sewer. In this column, the table of contractions given below, assists

CONTRACTIONS.

- D. means drain of house (as sink pipe, cellar drain, &c.), connected *directly* to street drain or sewer.
- B. means that a box trap is interposed.
- T. means that an S or syphon *trap* is interposed.
- T. B. means a syphon or S trap below the sink, &c., and a box trap in basement.
- C. means that the house drain is *cut off*, and opens over a trapped gulley or grid outside the house.
- T. C. same with syphon trap inside.
- T. V. means that the trap is efficiently *ventilated*.
- S. means that the fall-pipes or *down-spouts* go directly into the drains.
- S. C. that the spouts are disconnected from the drains.
- F. V. means that the W.C. soil pipe goes *full* size above the eaves.
- V. 1½ means that a ventilating pipe of 1½ inches diameter goes from the trap of soil pipe above the eaves, and similarly for other sizes.

him to state succinctly the conditions found. He is also required in the sixteenth line to give information in regard to other drains not sinks, bath, basement, or water-closets.

The eighteenth line contains information on the left hand side in regard to the privy, the kind, its condition as to cleanliness, its distance from the house, and the number of families who have have to use it. On the right hand side the same information is given in regard to the ashes-place, and the Inspector is instructed to state whether he found it in a wholesome or an offensive state at the time of his visit. The following lines give him opportunities of entering nuisances, source of infection, or other matters which may seem of importance, and for which there is no space above, and in the zymotic book, in the last column, are certain memoranda for the clerk, which he fills up when the work is done. They refer to the date of flushing the drains, the date of disinfection, with a reference to the disinfection book, so that we may refer to that book at any time if necessary, to ascertain the number of articles rooms, persons, &c., disinfected. The emptying of the privy and ashpit come next, a thing which is insisted upon in every case of zymotic disease, followed by notices served for remedying defects and references.

During the year 1,762 houses were examined in this manner by the district inspectors, and the information obtained with more or less completeness. In addition to houses thus examined on account of infectious disease, the inspectors have been instructed to make, where possible, a complete examination of every house to which they are sent on account of an alleged nuisance. They are also instructed, each in his own district, to take a little plot and examine the houses in detail in regard to their sanitary condition. For this purpose each inspector has another book in which there is also a little fly leaf, which will open to any page, containing the queries required for filling up the house-to-house book of his district. The lines are arranged as in the previous case, so that they are opposite the lines in the note book, but instead of being numbered from one to twenty-one it was thought advisable in drawing up this fly-leaf to make the numbers correspond

to the number of the columns in the house-to-house book itself. The abbreviations employed are of course the same. The information obtained is to a large extent similar to that obtained for the zymotic book, but most of the details in regard to the family and the workplaces are omitted, a little more space is allowed for the conditions as to drainage, but practically in regard to the house the information is the same in both cases. I am exceedingly anxious that each inspector should in his own district carry out a small portion of systematic house-to-house examination.

It is far better that each man should acquaint himself with the conditions in his district requiring remedy rather than wait until his attention is directed to these conditions by the outbreak of disease. This work was, however, to some extent interrupted last year by the necessity of taking some of the inspectors away from their own districts in order to make a complete examination of the district alluded to as a triangular area east of Lady Beck. This district, which covers about 38 acres, is the district in which I reported to you in June last year that there had been repeated outbreaks of typhus fever. It is entirely contained in No. 9 District, but it was quite impossible for the inspector of that district to accomplish the whole of the necessary work within a reasonable time; and the inspectors of districts 5, 6, 10, and 15 assisted him in completing the house-to-house examination of the district. These five inspectors spent the greater part of their time for a period of four or five months in examining the houses in this district and entering them up in the house-to-house book. The process was rather slow with some of them, but with all of them it was a valuable training. Though the whole of the district was examined, and every insanitary condition noted, it was not thought desirable to serve notices for any except very urgent alterations, as the question of the demolition of some parts and of a rearrangement of the area had to come before the Sanitary Committee.

In addition to the work done by these inspectors in the special district, the inspectors of Numbers I., III., IV., VI., XI., XII., XIII., XIV., XV., XVI., XVII., have entered up respectively in their own districts, 8, 1, 176, 1, 12, 26, 51, 15, 25, 21 cases.

Some of the inspectors have made notes for house-to-house work in their note books, but have not found time to carry their house-to-house inspection so far as to make it worth while entering it up.

The foregoing refers entirely to houses completely examined. As I pointed out to you, however, in my report for the third quarter, a large number of houses were formerly visited by some of the district inspectors and returned as houses inspected, in which the inspection had been anything but complete, and I found so much diversity of method in the manner of reporting that, after consulting with Mr. Newhouse, I drew up a new form of daily report sheet for the district inspectors, with the object, as far as possible, of giving credit to each inspector for all the work he did in his district, but at the same time not entering houses to which a mere visit had been paid as houses inspected. For this purpose three separate lines were given to houses completely examined according as they were examined for alleged nuisances, infectious diseases, and house-to-house work; but there were obviously a great number of houses about which it was desirable to know a good deal, and yet which pressure of work would not allow the inspectors completely to examine. Accordingly in this return three lines were allowed for partial inspections, one where the inspection referred only to the occupants, as, for instance, in cases of overcrowding; another where it only applied to buildings and offices, as in cases, for instance, of dilapidation and insufficient closet accommodation; and the third where the information to be obtained referred only to drainage. While deprecating the method of half inspecting houses, it seems better to adopt a system by which the inspector should make his inspection, so far at least as he goes, as complete as possible, than to run on the old lines of putting down every visit, however cursory, as a house examined.

I went somewhat fully into the reasons for altering the table of work done by the district inspectors in my report for the third quarter of the year, and I do not think it necessary to trouble you again with these details. In the report for the fourth quarter I inserted a new table in which the work of each inspector during



the fourteen weeks was tabulated with the district in which that work was done. Even that table was to a large extent imperfect, but it showed evidence of accuracy of work and accuracy of reporting work, and on the whole I have reason to think that the work of the district inspectors is being more carefully and more systematically performed than it was. My own attention has been specially directed, in addition to visits to various parts of the borough, to examining houses reported to me by the inspectors as unfit for habitation, as without water supply, or as having structural defects on which they wished my advice. It has also, as I have said, been specially directed to the district already named, in the neighbourhood of St. Peter's Square. I have spent a good deal of time personally in examination of the streets, yards, and houses, in this district, to some of which I have already made allusion, and with which I propose to deal more in detail in the special report.

Special and personal inspections have included, along with smaller matters, the complete inspection of the Judges' Lodgings and the Town Hall, in both of which the sanitary arrangements were far from satisfactory.

A good deal of work has been done by Mr. Newhouse and myself during the year in personal inspection of pollutions thrown into the Aire, and the streams adjoining it. I have gone over the whole of the tributaries of the river personally, and have reported to the Committee from time to time.

I have gone somewhat fully into the conditions found in the houses in which pneumonia and typhoid fever existed. The following table compiled from Table I. in the several quarterly reports, gives roughly the conditions in "case houses" in which scarlet fever, diphtheria, typhoid fever, and pneumonia occurred.

TABLE 10.

Showing cases - houses examined on account of certain diseases, and some of the conditions found as to drainage and closet arrangements.

	CASES.		TOTAL DEATHS.	DRAINAGE.		CLOSETS.		BOTH.
	Alive.	Dead.		Good.	Defective.	Water Carriage.	Privies.	
Scarlet Fever ..	361	75	103	155	281	240	198	2
Diphtheria ..	35	11	24	20	26	18	30	2
Typhoid Fever	243	71	108	75	239	157	158	1
Pneumonia ..	..	446	599	122	324	259	188	1
Total ..	639	603	834	372	870	674	574	6

The same houses will no doubt occur occasionally more than once in this enumeration, especially in diseases like scarlet fever, where the illness is apt to run through a family. While it is useful to keep the total conditions in mind, it is of importance also to keep these diseases separate. The particulars as to registration districts are given in Table I. in the reports for each of the four quarters.

It will be seen from the table appended that of 1,242 "case houses" the drainage was good in 372 and defective in 870 cases, the defective houses being about 70 per cent. of those examined. I have not included diarrhœa in the above table. Houses in which deaths occurred from this cause have been specially inspected, and the same details obtained as for other zymotic diseases. During the second and third quarter the particulars have been entered in a book kept specially for the purpose, but during the two earlier quarters the information is still buried in the inspectors' note books. In my report for the second quarter of 1890, on pages 9, 10 and 11, I went into the localization of the diarrhœa deaths during the third quarter of the preceding year. In the report for the third quarter

of 1890, I went somewhat fully into the matter of diarrhoea, and in Table E. I detailed for each district and for the whole Borough all the information in regard to 218 houses in which fatal cases of diarrhoea had occurred that I have given in regard to the cases of typhoid fever in the table on page 17. I analysed the information in this table in pages 10, 11, 13, 14, 15, and 17 of the report for the third quarter, and I showed that "in three-fourths of the houses in which diarrhoea deaths had occurred, a proper disconnection from the drains had not been effected at the time of our visit."

HOUSES UNFIT FOR HABITATION.

During the year, in consequence largely of information received in the first instance from the district inspectors, I have, with Mr. Newhouse, visited and reported to you on houses which I found unfit for human habitation. You gave the necessary orders in consequence under the local bye-laws, and the houses were in each case either closed or put into such a condition as to make them fit for habitation. The whole question of accommodation for the working classes and the putting in force of the new Act of 1890 will come up for consideration with the special report already referred to.

FOOD AND DRUGS ACT.

Twenty-two cases were taken by the Inspector into court on account of adulteration. One, a case of milk, was dismissed on account of disputed ownership. A second, a case for exposing margarine without proper label, was dismissed on payment of the costs. Fines, amounting to £44 10s., and varying in amount from a minimum of 10s. to a maximum of £10, were inflicted in the remaining cases.

Out of 200 samples of milk submitted to the Borough Analyst, only 131 were above suspicion; 19 were so much adulterated that the total solids had been reduced below 10·8 parts in a hundred, whilst the remaining 50 contained less than 12 parts of total solids in a hundred of milk. It is difficult, of course, to believe that milk mixed from several cows, in so large a number of cases as 50

out of 200 examined, managed, without assistance, just to keep above the mark of the weakest possible milk, and for the protection of the public it is really necessary that a standard of total solids should be agreed upon, and that any milk sold containing, say less than 12 per cent. of total solids, should be regarded as adulterated. It might occasionally happen that the milk from a single cow might come below this mark, but it is exceedingly improbable that the mixed milk of half a dozen cows should ever come below that limit unless water had been added.

BAKEHOUSES.

Bakehouses are not such an important feature in Yorkshire as in Scotland and the South of England. Most of the housewives in Yorkshire bake their own bread. During the year 331 inspections of bakehouses were made in the borough, and the condition in most of them was found satisfactory. Each district inspector keeps his eye on the bakehouses in his own district.

JEWISH WORKSHOPS.

These have been examined regularly during the year. On the whole there has been very little to complain of.

SMOKE INSPECTION.

During the 53 weeks, 33 complaints were received, 3,677 furnaces inspected, 1,549 observations taken of chimneys, each for an hour. The average duration of dense smoke at these observations was 2.64, 63 notices were served upon manufacturers, 59 upon stokers, 11 new chimneys were erected, and 104 smoke prevention appliances adopted, in consequence of the action of the department.

Details of these and other inspections will be found in full in the several quarterly reports, a resumé of the contents of these reports is given below.

REPORTS.

The reports which I have laid before the Committee have consisted of the reports for the four quarters of 1890, presented to you respectively on the 12th May, 11th August, 17th November

of last year, and 9th February of the present year. I should also perhaps include a report presented to you on the 10th of February, 1890, dealing with the 13 closing weeks of 1889; these reports dealt with the statistics of each quarter and enumerated the work done by the various inspectors.

I do not think it necessary to reprint the tables contained in these reports, but I may briefly enumerate what they were. Table A corresponded largely to the table of the same designation appended to this report. Table C contained information as to the death rates on the estimated population from the seven common zymotic diseases, from diseases of the breathing organs other than consumption, for each district of the borough, and, for comparison, the death rates in the 28 large towns for the same quarter, and in Leeds for the corresponding quarter for the 10 previous years. Table D contained a summary of the births, deaths, and mortality at certain ages, and from a few diseases in each district, with infantile and general death rates. I have continued this table for the sake of comparison with previous years. Table E varied in different reports according to the diseases more prevalent in the quarter. Table F is so valuable that I might repeat it.

Table I. contained the condition of the houses as to drainage and closet arrangement, found on examination in consequence of death or sickness in the house; Table II. contained details of work done by district inspectors; Table III. dealt with the pollution of the river and its tributaries, and their removal; Tables IV. and V. with the inspection of the Jewish workshops; Tables VI. and VII. with house refuse removal, followed by observations of work done by the destructors and a running report on the work of the Street Scavenging Department; Table VIII. dealt with cowsheds and milkshops; Table IX. with the examination of food and drugs, while Table X. and the paragraphs following it dealt with slaughter-house and meat inspection; Table XI. detailed the work done by the Smoke Inspector; XII. that done by the disinfecting staff; Tables XIII. and XIV. refer to patients removed to the hospital; Tables XV., XVI. and XVII. to canal boats, houses let in lodgings, and common lodging houses, respectively.

A special report, presented by the Committee to the Town Council dated October 13th, 1890, dealing with the work for the municipal year, also passed through my hands.

The report for the fourth quarter of 1889 dealt generally with the health of the borough, and specially referred to the condition of fever in the South-east and Hunslet sub-registration districts, already spoken of in this report.

The report for the first quarter of 1890, besides dealing generally with the health of the town, as has been already said, dealt specially with influenza and pneumonia. The report also referred at page 27 to the number of carcasses confiscated on account of tuberculosis.

The report for the second quarter dealt with diseases generally, and specially with the desirability of establishing two gangs of drain flushers; and, as has already been said in this report, the distribution of diarrhoea during the preceding autumn. The subject of typhus fever was also referred to and the removal of house refuse (page 20). The report also contained a supplement to a report to be presently mentioned dealing with hospital accommodation.

The report for the third quarter, in addition to the ordinary statistical information, dealt specially with diarrhoea, and in connection with the district inspectors' work, went somewhat into detail in regard to the reason for adopting a new schedule of work done. The seizure of a live pig was also mentioned under the head of meat inspection. The appendix to this report contained an introduction to a report and specifications as to the condition of the Town Hall, read to the Sanitary Committee November 17th, 1890, adopted by them and sent to the Corporate Property Committee as their own report.

The report for the fourth quarter, besides giving statistical information, dealt, as I have said, with the condition of the houses in which cases of typhoid had existed. In this report, as in the

previous one, the total work of the district inspectors was placed under the headings of the new schedule, and this report for the first time contained a table giving the individual work of each district inspector, in each district in which he had been working during the quarter. At page 23 the circumstances connected with the seizure of a cow which had suffered from milk fever were narrated, and the subject of puerperal apoplexy and the relations, in regard to meat inspection, of the veterinary profession to the Medical Officer of Health were discussed. In the same report the question of the accommodation for the patients in the Beckett Street Fever Hospital was gone into, and an appendix to the report contained a letter from the resident Medical Officer upon the subject of overcrowding during the typhoid season.

On the 4th of January, 1890, at the request of the Sanitary Committee, I presented a report on notification and hospital accommodation, in which I concluded as follows (p. 8): "If the Corporation are willing to provide within a short period adequate hospital accommodation, I should recommend the adoption of the new Act; but knowing the delay inevitable to the carrying out of so large an undertaking, I strongly recommend that further hospital accommodation be insisted upon as a condition necessary to the enforcement of compulsory notification. In order that we may have the smallest number of fever patients to treat in the long run, we ought to have ample accommodation to deal rapidly, by isolation, with a large number of cases at the commencement of an outbreak. Not only, if notification is to be effectual, must we have beds with ample air space for each, in which to put the patients we ought to remove, but we must have numerous small wards for doubtful cases—cases which we cannot safely leave at home till they are well marked, and which we cannot place in ordinary wards while the exact nature of their disease is still uncertain. I do not insist here upon the collateral advantages of notification. They are sufficiently dealt with in the pamphlet already spoken of."*

* A pamphlet entitled "Hints on Working the Notification Act, 1889. Huddersfield, 1889," forwarded to each member of the Sanitary Committee with the report quoted from.

This report also contained a tabular statement as to the increase or otherwise in the number of patients isolated in the larger towns which have adopted compulsory notification. On the 11th August, in the report for the second quarter, an addendum was printed, and was afterwards re-printed, giving for 11 large towns the date of the adoption of notification, the number of fever beds provided previous to notification, the number of such beds now provided, the number of fever cases treated in hospital during the three years prior to notification, and the number of such cases treated in 1887, 1888, and 1889.

A further report on this subject was prepared at the request of the Council, and presented on the 29th November, 1890, dealing with the mortality from the seven infectious diseases in the large towns which had adopted notification prior to 1886. The more important information in the report was put in the form of charts, showing by this graphic method the relation of the death rate from the four notifiable to that of the three unnotifiable infectious diseases for each of the 20 years—1870 to 1889. The charts referred to Bolton, Bradford, Leicester, Manchester, Newcastle, Norwich, Nottingham, Oldham, Portsmouth, and Salford, all towns, with the exception of Norwich, of more than 100,000 population at the last census, and a similar chart was given for Leeds.

On the 5th of June I presented you with a report of an outbreak of typhus which had occurred in Leeds during the months of April and May. After narrating how the first information came to us and how we followed it up by diligent search for other cases, I narrated the subsequent history of the outbreak, and made some remarks upon certain matters of interest and importance coming to our knowledge through the examination thus set on foot.

In addition to the pamphlet on notification, I presented the Committee, at their request, on the 9th October, with a memorandum on recent legislation. The Infectious Diseases (Prevention) Act, 1890, The Public Health Acts Amendment Act, 1890, Housing of the Working Classes Act, 1890, were the three Acts dealt with.

In regard to the two former, I went into detail of each section specially affecting sanitary matters.

In regard to the Infectious Diseases (Prevention) Act, I said (page 5): "I recommend the adoption of the whole Act. I do not think any part of it will require to be rescinded, unless we should obtain by special legislation stronger powers of dealing, for instance, with infected milk, than those which are given by this Act, in which case, if necessary, we could rescind the section we wish to amend. The Act as a whole will probably prove of great service; I therefore recommend its immediate adoption."

In regard to the Public Health Acts Amendment Act, I also recommended generally that part III. should be adopted in the Borough. I also brought the matter of the insanitary area before the Committee, and received their instructions to make a further and complete report.

J. SPOTTISWOODE CAMERON.

May 11th, 1891.

TABLES.

TABLE B.

TABLE OF POPULATION, BIRTHS, AND NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health, during the 53 weeks of 1890, in the Urban Sanitary District of Leeds; classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.	Population at all ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.													Number of such Cases Removed from their Homes in the several Localities for Treatment in the Isolation Hospital.														
	Census, 1891.	Estimated to middle of 1890.			1	2	3	4	5	6	7	8	Fever.			Cholera.	Erysipelas.	Other.	TOTAL.	1	2	3	4	5	6	7	8	9	10	11	12	13
													Typhus.	Enteric or Typhoid.	Continued.																		Relapsing.	Puerperal.
(a.)	(b.)	(c.)	(d.)	(e.)	Smallpox.	Scarlatina.	Diphtheria.	Membranous Group.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Other.	TOTAL.	Smallpox.	Scarlatina.	Diphtheria.	Membranous Group.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Other.	TOTAL.		
North (H) ...	60,618	60,272	2,345	Under 5 upwards	...	13	...	...	2	4	...	...	...	...	...	1	20	...	...	...	...	2	4	...	...	...	...	...	...	1	14
West ...	83,520	82,790	2,394	Under 5 upwards	...	23	...	...	...	2	...	...	...	...	...	15	115	...	...	...	...	...	47	...	...	...	...	...	16	93	
South ...	33,385	33,163	1,279	Under 5 upwards	...	54	5	...	1	51	...	...	...	...	1	4	116	...	...	...	...	1	32	...	...	...	...	4	59		
Hunslet ...	58,164	57,260	2,127	Under 5 upwards	...	16	...	...	2	17	...	...	...	...	2	3	40	...	...	...	...	2	16	...	...	...	...	...	1	37	
Holbeck ...	28,593	23,486	798	Under 5 upwards	...	61	1	...	...	13	...	...	...	...	2	...	17	...	...	...	...	...	6	...	...	...	...	...	...	...	34
Wortley ...	49,436	48,665	1,699	Under 5 upwards	...	23	...	...	...	14	...	...	...	...	...	...	37	...	...	...	...	...	2	...	...	...	...	...	...	...	12
Kirkstall ...	29,911	28,938	923	Under 5 upwards	...	16	...	...	...	20	...	...	...	...	...	4	50	...	...	...	...	...	24	...	...	...	...	...	4	...	38
Bramley ...	14,787	14,474	453	Under 5 upwards	...	8	1	...	...	12	...	...	...	...	...	1	9	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Chapelton ...	13,661	13,294	398	Under 5 upwards	...	24	12	1	49	13
Whitkirk ...	431	425	10	Under 5 upwards	...	1
Totals ...	367,506	362,768	12,336	Under 5 upwards	...	91	2	...	2	12	...	...	...	...	...	2	109	...	26	...	...	2	9	...	...	...	...	...	...	2	39
Grand total ...	...	...	...	...	...	...	246	20	...	10	193	...	...	...	7	28	504	...	107	...	...	10	142	...	...	...	...	4	28	291	
					...	...	337	22	...	12	205	...	...	...	...	...	613	...	133	...	...	12	151	...	...	...	...	...	4	30	330

Notification is not compulsory. The Borough General Fever Hospital (the old House of Recovery) and the Smallpox Hospital are *not* situated in the district marked H.

TABLE F.

Births, Deaths, and Meteorology* in each week of the 13 ended March 29th, 1890.

JANUARY.					FEBRUARY.				MARCH.				TOTALS AND AVERAGES.		
Jan. 4th.	Jan. 11th.	Jan. 18th.	Jan. 25th.	Feb. 1st.	Feb. 8th.	Feb. 15th.	Feb. 22nd.	March 1st.	March 8th.	March 15th.	March 22nd.	March 29th.			
237	264	236	198	227	222	245	196	250	268	265	226	238	3,072	1	Total Births
189	202	182	189	172	178	210	205	255	206	191	183	158	2,520	2	Total Deaths
32	29	38	30	41	31	41	34	54	38	45	26	28	467	3	Under 1 year
15	15	16	20	7	11	22	15	24	15	11	9	10	189	4	1 to 2 years.....
13	13	11	13	12	12	14	8	19	18	14	9	11	167	5	2 to 5 years.....
84	82	67	74	65	63	86	96	93	96	65	92	71	1,034	6	5 to 60 years
45	63	50	52	47	61	47	52	66	39	56	47	38	663	7	60 yrs. and upwards
1	1	1							1			1	5	8	Deaths: Smallpox ..
3	6	5	2	3	3	3	4	3	6	2	3	3	46	9	Measles
1	1	2		2									6	10	Scarlet Fever
5	4	3	7	4	8	3	4	12	7	4	5	5	71	11	Diphtheria
2	4	1	1	2	3	2		4	2		1	1	23	12	Whooping Cough
														13	{ Typhus
														14	{ Enteric Fever....
4	2	2	3	1		1	1	3			1	2	20	15	{ Other or doubtful
16	18	14	13	12	14	9	9	22	16	6	10	12	171	16	Diarrhoea or Dysent
														17	All seven..
														18	Cholera
3							1			1			5	19	Croup
57	63	53	54	55	53	72	67	85	56	60	54	52	781	20	Dis. of Resp. System
			1		1	4	2	3	2	1	3	2	19	21	Influenza
11	15	15	17	14	8	16	23	16	20	8	17	9	189	22	Phthisis
8	9	15	15	8	11	14	14	18	18	11	11	8	160	23	Dis. of Circul. System
														24	Violent deaths (R.G.)
26	15	21	22	11	9	6	14	16	14	13	13	6	186	25	Inquest cases
23	20	13	22	17	11	21	20	29	27	12	30	18	263	26	Deaths in Pub. Inst.
29.92	29.87	29.78	29.10	29.96	30.21	29.89	30.04	30.28	29.76	29.95	29.36	29.55	29.82	27	Barom. (inches).....
17.77	51.60	55.70	51.61	54.38	54.15	51.90	51.90	53.15	53.50	55.68	55.55	57.69	53.66	28	Attached Ther. ° F.
34.92	48.07	46.60	40.90	43.38	41.30	37.80	39.07	39.46	41.23	50.00	44.38	51.00	42.93	29	Therm. { Dry bulb
33.31	46.00	44.20	38.70	41.07	39.23	36.15	37.46	37.90	40.07	48.07	42.80	49.00	41.07	30	° Fahr. { Wet bulb
82.94	85.51	83.20	83.30	81.90	84.04	85.95	87.12	87.52	90.95	86.49	88.12	86.00	85.61	31	Humidity (Sat. = 100)
37.57	50.40	50.00	43.00	46.30	43.80	41.00	41.50	42.42	44.70	54.00	49.00	53.00	45.89	32	Reading of Mean of highest
28.00	44.10	41.57	36.40	39.40	37.00	33.70	34.80	33.70	34.28	41.00	37.80	43.80	37.35	33	self-reg. { reading.
9.57	6.30	8.43	6.60	6.90	6.80	7.30	6.70	8.72	10.42	13.00	11.20	9.20	8.54	34	Therm. in { Do. lowest.
0.03	0.55	0.10	1.37	1.25		0.08	0.58	0.05	0.02	0.18	0.63	0.81	5.65	35	air. { Mn. d'y. range.
SSW	SW	WSW	WSW	W	NNW	ENE	SE	NNE	W	WSW	WSW	WSW		36	Total rainfall inches.
1.15	1.70	1.46	1.53	1.46	1.00	1.38	1.38	1.69	1.46	1.23	1.54	1.77	1.44	37	Wind { Direction
7.15	8.23	6.50	7.00	7.30	6.85	7.6	8.53	6.84	6.7	6.61	7.23	6.46	7.15	38	{ Force 0.6
														39	Amount of Cloud 0.10
34.0	37.9	33.8	28.4	32.6	31.8	35.1	28.1	35.9	38.4	38.0	32.4	34.1	33.9	40	Birth rate (Leeds)
27.1	29.0	26.1	27.1	24.7	25.5	30.1	29.4	36.6	29.5	27.4	26.2	22.7	27.8		Death rate (Leeds)
25.2	28.1	27.0	24.2	22.8	23.0	25.3	25.1	25.6	26.6	23.6	21.7	21.4	24.7		„ (28 towns)

* For the Meteorological data I am indebted to Mr. Waite and the Council of the Philosophical and Literary Society.

The humidity has been taken from Mr. Glaisher's hygrometric tables, and corresponds to the data in the two lines immediately above, uncorrected for diurnal range. The corrected humidity (Glaisher) for the calendar month of January was 26, for February 89, and for March 92. Average, 89.

24 The numbers for line 24 are respectively 11, 6, 7, 11, 4; 3, 2, 3, 6; 5, 4, 4, 2; Total 68.

TABLE F. (Continued.)

Births, Deaths, and Meteorology* in each week of the 13 ended June 28th, 1890.

		APRIL.					MAY.				JUNE.				TOTALS AND AVERAGES.
		April 5th.	April 12th.	April 19th.	April 26th.	May 3rd.	May 10th.	May 17th.	May 24th.	May 31st.	June 7th.	June 14th.	June 21st.	June 28th.	
Total Births	1	226	235	264	245	198	235	247	252	196	254	259	233	245	3,085
Total Deaths	2	169	163	181	159	150	159	166	141	125	145	125	104	134	1,921
Under 1 year	3	34	36	42	27	38	34	38	20	30	32	32	35	43	441
1 to 2 years	4	5	16	12	12	10	15	12	9	9	12	7	8	11	138
2 to 5 years	5	11	9	14	12	8	9	8	14	7	9	9	6	6	122
5 to 60 years	6	75	64	69	75	61	63	65	72	44	56	51	30	46	771
60 yrs. and upwards	7	44	38	44	33	33	38	43	26	33	36	26	25	28	449
Deaths: Smallpox ..	8														
Measles	9					2					1		1		4
Scarlet Fever	10	1	2	2	2	1	1	3	5	1	3	1	3	2	27
Diphtheria	11														
Whooping Cough ..	12	4	7	8	2	6	3	6	2	3	5	1	4	3	54
Typhus	13						1	1	1						3
Enteric Fever	14	1	1		1	1		4	1	1		1	1	1	13
Other or doubtful ..	15		1						1	1					3
Diarrhoea or Dysent.	16	1		1	1		2	3		2	3	2	6	7	28
All seven	17	7	11	11	6	10	7	17	10	8	12	5	15	13	132
Cholera	18														
Croup	19				1			2	2			1	1		7
Dis. of Resp. System	20	49	46	55	46	36	54	43	30	33	35	25	18	28	498
Influenza	21														
Phthisis	22	11	9	18	16	11	11	9	11	14	13	13	6	12	154
Dis. of Circul. System	23	9	10	10	10	6	9	11	11	6	16	11	1	8	118
Violent deaths (R.G.)	24	7	5	8	4	5	4	3	2	2	1	7	3	4	55
Inquest cases	25	11	19	13	7	9	12	10	7	9	11	12	8	7	135
Deaths in Pub. Inst.	26	14	18	11	24	15	20	15	14	16	14	12	11	7	191
Barom. (inches)	27	30.08	29.63	29.56	29.61	29.80	29.53	29.58	29.92	29.95	29.81	29.84	29.95	29.85	29.78
Attached Ther. ° F.	28	56.66	56.92	53.38	57.08	59.61	60.62	61.23	64.46	64.54	62.92	63.54	64.46	64.85	60.79
Therm. { Dry bulb ..	29	47.16	44.54	44.07	50.38	55.85	55.31	56.46	63.92	55.92	59.97	59.92	61.62	59.69	54.98
° Fahr. { Wet bulb ..	30	44.33	40.92	41.85	46.38	51.15	51.77	52.15	57.46	49.92	55.15	54.92	55.85	55.61	50.57
Humidity (Sat. = 100)	31	80.35	73.82	82.53	74.38	71.65	78.07	73.60	65.62	65.92	72.05	71.00	68.77	76.21	72.52
Reading of self-reg. { Mean of highest ..	32	54.00	48.28	46.71	54.28	61.28	61.14	59.71	68.57	61.29	63.71	62.43	65.71	64.28	59.34
Therm. in { Do. lowest ..	33	34.85	37.57	37.57	41.00	40.14	45.71	46.86	50.00	44.71	50.71	49.71	51.71	53.14	44.90
air. { Mn. d y. range.	34	19.15	10.71	9.14	13.28	21.14	15.43	12.85	18.57	16.58	13.00	12.72	14.00	11.14	14.44
Total rainfall inches.	35		0.44	0.12	0.24	0.04	0.71	1.6	0.14	0.12	0.27	0.84	0.13	0.16	4.86
Wind { Direction ..	36	SES	NbyW	ENE	WbyN	ESE	E	WSW	SEE	NW	WSW	NWW	WbyS	W	WNW
{ Force 0-6 ..	36	1.33	1.85	1.38	1.61	1.08	1.62	1.54	1.62	1.46	1.38	1.46	1.77	1.54	1.51
Amount of Cloud 0-10	37	4.08	6.46	8.92	6.00	4.77	7.23	5.54	5.23	5.62	7.77	8.54	7.69	8.46	6.64
Birth rate (Leeds)	38	32.4	33.7	37.9	35.1	28.4	33.7	35.4	36.1	28.1	36.1	37.1	33.4	35.1	34.1
Death rate (Leeds)	39	24.2	23.4	26.0	22.8	21.5	22.8	23.8	20.2	17.9	20.8	17.9	14.9	19.2	21.2
„ (28 towns)	40	19.3	20.6	20.9	20.7	20.6	19.2	19.9	18.6	17.8	18.0	17.2	17.9	16.9	19.0

* For the Meteorological data I am indebted to Mr. Waite and the Council of the Philosophical and Literary Society.

The corrected humidity (Glaisher) for the calendar month of April was 84, for May 75, and for June 78. Average 79.

TABLE F. (Continued.)

Births, Deaths, and Meteorology in each week of the 13 ended September 27th, 1890.

JULY.					AUGUST.				SEPTEMBER.				TOTALS AND AVERAGES.		
July 5th.	July 12th.	July 19th.	July 26th.	Aug. 2nd.	Aug. 9th.	Aug. 16th.	Aug. 23rd.	Aug. 30th.	Sept. 6th.	Sept. 13th.	Sept. 20th.	Sept. 27th.			
239	265	243	246	224	220	229	225	247	236	237	244	222	3,077	1	Total Births
142	126	151	121	141	136	151	142	128	129	122	153	153	1,795	2	Total Deaths
44	43	54	44	52	50	79	51	50	49	37	55	60	668	3	Under 1 year
11	7	9	15	10	9	13	15	15	10	10	17	13	154	4	1 to 2 years
9	5	7	7	5	6	2	6	7	7	5	10	11	87	5	2 to 5 years
50	50	43	35	46	42	33	41	31	38	45	43	51	548	6	5 to 60 years
28	21	38	20	28	29	24	29	25	25	25	28	18	338	7	60 yrs. and upwards
														8	Deaths: Smallpox
			1		1	2	1	2		2	3	3	15	9	Measles
	1		1	1			1		1	3	1	2	11	10	Scarlet Fever
			1		1	2			1				5	11	Diphtheria
1		4	3	4	3	2	1	4	2	1	1	2	28	12	Whooping Cough
														13	Typhus
2	3			2	1			1		3	3	3	18	14	Enteric Fever
												1	1	15	Other or doubtful
10	10	9	5	14	16	30	28	27	17	10	19	25	219	16	Diarrhoea or Dysent.
13	14	13	11	21	22	36	30	32	21	19	27	37	296	17	All seven
														18	Cholera
	1		2						2	1	1		7	19	Croup
35	20	27	25	24	27	22	20	27	20	19	26	22	314	20	Dis. of Resp. System
														21	Influenza
13	14	7	4	7	12	10	8	5	6	7	10	12	115	22	Phthisis
8	8	12	5	5	7	7	8	7	7	8	8	6	96	23	Dis. of Circul. System
9	3	6	5	4	1	1	6	6	6	6	3	3	59	24	Violent deaths (R.G.)
16	6	15	8	8	16	5	8	7	13	13	11	9	125	25	Inquest cases
15	13	15	8	14	12	10	12	13	14	15	9	11	161	26	Deaths in Pub. Inst.
29·51	29·68	29·79	29·92	29·75	30·06	29·54	29·74	29·56	30·14	30·17	29·81	29·95	29·82	27	Barom. (inches)
63·08	62·85	65·08	67·38	67·85	69·15	67·54	65·00	63·00	64·62	68·62	67·08	65·23	65·88	28	Attached Ther. ° F.
57·31	57·62	61·92	64·77	64·92	66·77	61·54	59·85	56·62	62·54	63·38	62·38	60·92	61·58	29	Therm. (Dry bulb
52·69	52·00	55·92	58·54	59·23	60·85	57·15	55·38	51·85	58·85	58·54	59·38	58·15	56·81	30	° Fahr. { Wet bulb
72·21	67·52	67·92	66·62	69·47	69·17	75·05	74·03	71·15	78·55	73·18	82·38	83·38	73·15	31	Humidity (Sat. = 100)
61·00	61·14	65·86	69·14	68·29	72·00	64·29	65·29	58·29	66·00	69·29	69·14	64·29	65·69	32	Reading of { Mean of highest
50·00	49·29	53·86	52·43	56·00	53·86	54·86	51·29	45·71	53·00	52·14	52·71	52·00	52·09	33	self-reg. { reading
11·00	11·85	12·00	16·71	12·29	18·14	9·43	14·00	12·58	13·00	17·15	16·43	12·29	13·61	34	Therm. in { Do. lowest
1·52	0·45	0·84	0·24	0·73	0·01	1·34	0·95	0·95	0·59	.....	0·47	0·62	8·71	35	air. { Mn. d'y. range
WNW	W.	NWW	WbyN	WbyS	NW	W	W	NNW	WbyN	WbyS	SE.E.	WbyS			Total rainfall inches.
1·77	1·46	1·54	2·15	1·46	1·46	1·92	1·77	1·46	1·38	1·54	1·46	2·00	1·64	36	Wind { Direction
7·85	8·31	7·77	6·62	7·31	6·54	7·46	7·84	6·77	8·31	5·58	6·23	6·69	7·18	37	{ Force 0·6
															Amount of Cloud 0·10
34·3	38·0	34·8	35·3	32·1	31·5	32·8	32·3	35·4	33·8	34·0	35·0	31·8	33·9	38	Birth rate (Leeds)
20·4	18·1	21·6	17·3	20·2	19·5	21·6	20·4	18·3	18·5	17·5	21·9	21·9	19·8	39	Death rate (Leeds)
17·4	17·7	18·0	17·6	19·6	19·2	21·0	21·0	20·7	19·0	18·6	19·1	20·0	19·2	40	„ (28 towns)

The meteorological details are compiled from data kindly supplied to me by Mr. E. R. Waite, Curator of the Museum of the Leeds Philosophical Society. The averages of thirteen actual but uncorrected readings are given.

The corrected humidity (Glaisher) for the calendar month of July was 73, for August 77, and for September 89. Average, 80.

TABLE F. (Continued.)

Births, Deaths, and Meteorology in each week of the 14 ended January 3rd, 1891.

		OCTOBER.					NOVEMBER.				DECEMBER.					TOTALS AND AVERAGES.
		Oct. 4th.	Oct. 11th.	Oct. 18th.	Oct. 25th.	Nov. 1st.	Nov. 8th.	Nov. 15th.	Nov. 22nd.	Nov. 29th.	Dec. 6th.	Dec. 13th.	Dec. 20th.	Dec. 27th.	Jan. 3rd.	
Total Births	1	260	214	240	219	227	213	209	220	211	237	211	227	163	245	3,098
Total Deaths	2	132	160	133	133	146	145	160	163	134	151	145	160	201	171	2,134
Under 1 year	3	48	57	45	43	41	34	35	32	33	29	42	32	52	29	552
1 to 2 years	4	12	21	12	10	17	15	17	23	17	23	15	11	19	9	221
2 to 5 years	5	9	5	8	6	14	11	16	5	6	11	8	4	18	11	132
5 to 60 years	6	45	48	50	51	53	55	49	68	47	54	57	62	71	83	793
60 yrs. and upwards	7	18	29	18	23	21	30	43	35	31	34	23	51	41	39	436
Deaths: Smallpox ..	8															
Measles	9	1	1	4		4	10	10	7	7	7	4	8	7	6	76
Scarlet Fever	10		5		1	1	1	2	2	1	3		1	2		19
Diphtheria	11					1	1	2		1	1	5			2	13
Whooping Cough ..	12	1	1		1	1	1	8	5	5	2	4	1	2	2	31
Typhus	13															
Enteric Fever	14	3	1	3	6	5	4	2	7	1	3	4	4	4	1	49
Other or doubtful ..	15		1													1
Diarrhoea or Dysent.	16	22	26	12	12	4	3	2	4	3	1	2	2	2		97
All seven	17	27	35	19	20	16	20	26	25	16	17	19	16	17	11	284
Cholera	18															
Croup	19		2	1		2	1	2	3	1		1		1		14
Dis. of Resp. System	20	23	22	22	22	20	38	35	46	25	41	33	29	64	56	476
Influenza	21															
Phthisis	22	4	14	14	5	8	8	7	13	15	12	6	15	18	15	154
Dis. of Circul. System	23	6	7	10	11	7	7	11	7	3	11	3	16	13	14	126
Violent deaths (R.G.)	24	6	3	5	5	5	5	1	8	4	5	4	3	6	6	66
Inquest cases	25	11	8	11	10	13	8	11	15	8	19	10	10	17	21	172
Deaths in Pub. Inst.	26	2	15	14	17	14	11	12	17	16	14	21	17	15	19	204
Barom. (inches)	27	29.85	30.07	29.80	30.08	29.65	29.26	29.64	30.10	29.82	29.81	29.10	29.66	30.13	30.15	29.79
Attached Ther. ° F.	28	62.69	61.07	58.54	58.85	55.08	56.31	53.31	56.08	51.69	52.15	49.46	48.54	46.00	48.23	54.14
Therm. { Dry bulb	29	57.23	56.15	51.75	50.54	47.08	46.15	43.31	49.46	36.25	39.85	33.85	31.85	31.16	34.15	43.48
° Fahr. { Wet bulb	30	54.50	53.85	48.85	48.54	44.38	43.08	41.31	47.77	34.31	38.23	32.85	30.15	30.16	33.00	41.49
Humidity (Sat. = 100)	31	82.85	85.20	80.60	81.54	81.18	78.66	84.27	88.63	83.09	77.12	88.36	79.69	85.96	87.65	83.91
Reading of Mean of highest self-reg. reading.	32	61.57	60.00	56.00	53.00	48.86	49.00	47.43	52.43	39.57	42.00	35.14	34.57	34.00	35.43	46.35
Therm. in { Do lowest.	33	51.42	50.85	44.28	46.85	38.86	40.28	36.86	42.43	33.28	35.00	32.28	27.57	26.37	31.43	38.42
air. { Mn. d y. range.	34	10.15	9.15	11.72	6.15	10.00	8.72	10.57	10.00	6.29	7.0	2.86	7.00	7.43	4.00	7.93
Total rainfall inches.	35	0.15	0.03	0.17	0.11	0.25	1.05	0.53	0.10	0.63	0.26	0.10	0.01	0.26	0.18	3.83
Wind { Direction	36	WbyS	W.	W.	WNW	WbyN	W.	S.	WbyS	NN.E	E.	SEbyE	NEbyE	S.E.	E.	
{ Force 0-6	36	2.08	1.54	1.77	1.15	1.85	1.46	1.46	1.85	1.08	1.61	1.69	1.09	1.25	1.31	1.51
Amount of Cloud 0-10	37	6.61	5.89	4.84	8.00	6.08	8.15	5.69	7.23	6.62	9.15	8.00	9.54	7.25	7.23	7.16
Birth rate (Leeds)	38	37.3	30.7	34.4	31.4	32.6	30.5	30.0	31.6	30.5	34.0	30.3	32.6	23.4	35.1	31.7
Death rate (Leeds)	39	18.9	22.9	19.1	19.1	20.9	20.8	22.9	23.4	19.2	21.7	20.8	22.9	28.8	24.5	21.9
„ (28 towns)	40	19.3	19.8	20.8	20.6	22.1	20.8	21.1	21.3	19.0	21.5	21.3	25.1	27.8	28.7	22.1

The humidity has been taken from Mr. Glaisher's hygrometric tables, and corresponds to the data in the two lines immediately above, uncorrected for diurnal range. The corrected humidity (Glaisher) for the calendar month of October was 88, for November 87, and for December 87. Average, 87

ADDENDUM.

In the body of the report I have referred to the possibility that our estimated population might not be the same as if calculated from the results of the recent census, and the strong probability that, so far as the districts are concerned, very little value could be placed upon death rates based upon estimated populations for small areas nine-and-a-half years after the census (page 28). Through the courtesy of the Registrar-General and of Mr. Noel Humphreys, the Superintendent of the Census Department, I have since been able to obtain the unrevised populations enumerated in the several sub-districts of the Borough.

The population estimated to the middle of 1890, at the rate at which the Borough had increased during the decade 1871-1881, was 363,799; calculating the population to the same time (the middle of 1890) on the rate at which the increase has taken place in the decade between the two censuses of 1881-91, we get a population of 362,768. This is not a very great disparity, the difference between the two populations being only one of 0.29 per cent., consequently if all the death rates for the whole Borough for the year 1890 are multiplied by the factor, 1.0029, they will be more nearly correct than those given in the report. But the difference will be so slight that for practical purposes we may disregard it.

This, however, is not the case in regard to the several districts. The addition which has to be made to the death rate in one district amounts to nearly 39 per cent.; a small and not very important district. In the large West district, however, all the death rates for 1890, if the new population may be taken as correct, will be nearly seven per cent. too low, while in the North and in the Holbeck and Wortley districts the rates are about three per cent. too low.

On the other hand, one district will require to have all its death rates diminished upwards of 15 per cent., another about 13 per cent., another 10 per cent., and another 5. I give below the factors by which the death rates in each registration district of the Borough, given in this report and in the previous quarterly reports, will require to be multiplied in order to bring them into correspondence with the figures resulting from the recent census.

North Leeds ..	1.0321	Wortley	1.0289
West do. ..	1.0668	Kirkstall .. ..	.8712
South-East Leeds ..	.9506	Bramley .. ..	.8460
Hunslet	1.0037	Chapelton .. ..	.8977
Holbeck	1.0322	Whitkirk	1.3850

In Table 9 in the text you will find the rates of mortality from each of the zymotic diseases, from croup, phthisis, and lung diseases, including influenza, calculated for each district upon the assumed populations, after all deaths in public institutions had been referred to the districts from which the patients had been sent. I repeat this table here, adding to it the death rate from all causes in these districts, but correcting the rates according to figures derived from the unrevised populations of the recent census.

TABLE

Showing the mortality stated in deaths per 1,000 of the populations of the sub-districts, as estimated to the middle of 1890, from the censuses 1881 and 1891.

	Small-Pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	"Fever."	Diarrhoea.	All Seven.	Croup.	Phthisis.	Influenza and Diseases of the Air Passages other than Consumption.	All Causes.
Leeds, North	...	0.20	0.13	0.05	0.57	0.20	1.08	2.22	0.10	2.11	6.87	24.47
,, West	...	0.14	0.24	0.08	0.34	0.26	0.70	1.77	0.11	1.69	5.14	21.06
,, South	...	0.12	0.36	...	0.71	0.30	1.16	2.64	...	2.20	8.13	27.34
Hunslet	...	0.45	0.31	0.03	0.81	0.34	1.55	3.49	0.09	1.08	5.57	23.95
Holbeck	...	0.21	0.50	...	0.63	0.42	1.09	2.85	0.17	1.84	5.91	23.81
Wortley	...	0.22	0.49	...	0.22	0.40	0.63	1.96	0.08	1.48	4.53	20.53
Kirkstall	...	0.24	0.20	0.24	0.58	0.41	1.22	2.89	0.03	0.95	3.64	18.48
Bramley	...	1.56	0.14	0.27	0.20	0.20	0.88	3.27	0.14	2.18	5.65	23.06
Chapelton	0.07	0.22	0.15	0.07	0.52	0.07	1.41	2.96	13.70
Whitkirk	2.31	2.31	...	2.31	4.62	11.56
*Bor. of Leeds	...	0.27	0.28	0.07	0.50	0.30	0.98	2.40	0.87	1.64	5.56	22.36

One hundred and thirty-two deaths which occurred in the public institutions in the Borough, amongst persons not in any way belonging to the town, have been omitted in the above table

The diseases from which these deaths occurred will be found classified in Table A. The death rates given at the foot of the latter table (Table A) include these deaths. Although these rates are also calculated upon the population as obtained from the recent census, the ratios, on this account, will therefore be found not to correspond in the two tables.

I purposely refrained in the text of the report from saying much about the districts on account of the great uncertainty how the several populations would turn out.

The considerable discrepancies which the census reveals between the district populations as estimated and enumerated, indicate the importance of having an enumeration, at least of the general population, more frequently than once in ten years.

June 15th, 1891.

J.S.C.

BLOCK MAP OF LEEDS,

Showing the Registration Sub-districts dealt with in the foregoing Report, and the (unrevised) populations of these Sub-districts at the recent census of 1891. Whitkirk is only a portion of the Sub-district of Osmondthorpe, the rest of the Sub-district being outside the Borough.

MAP

OF THE

REGISTRATION SUB-DISTRICTS

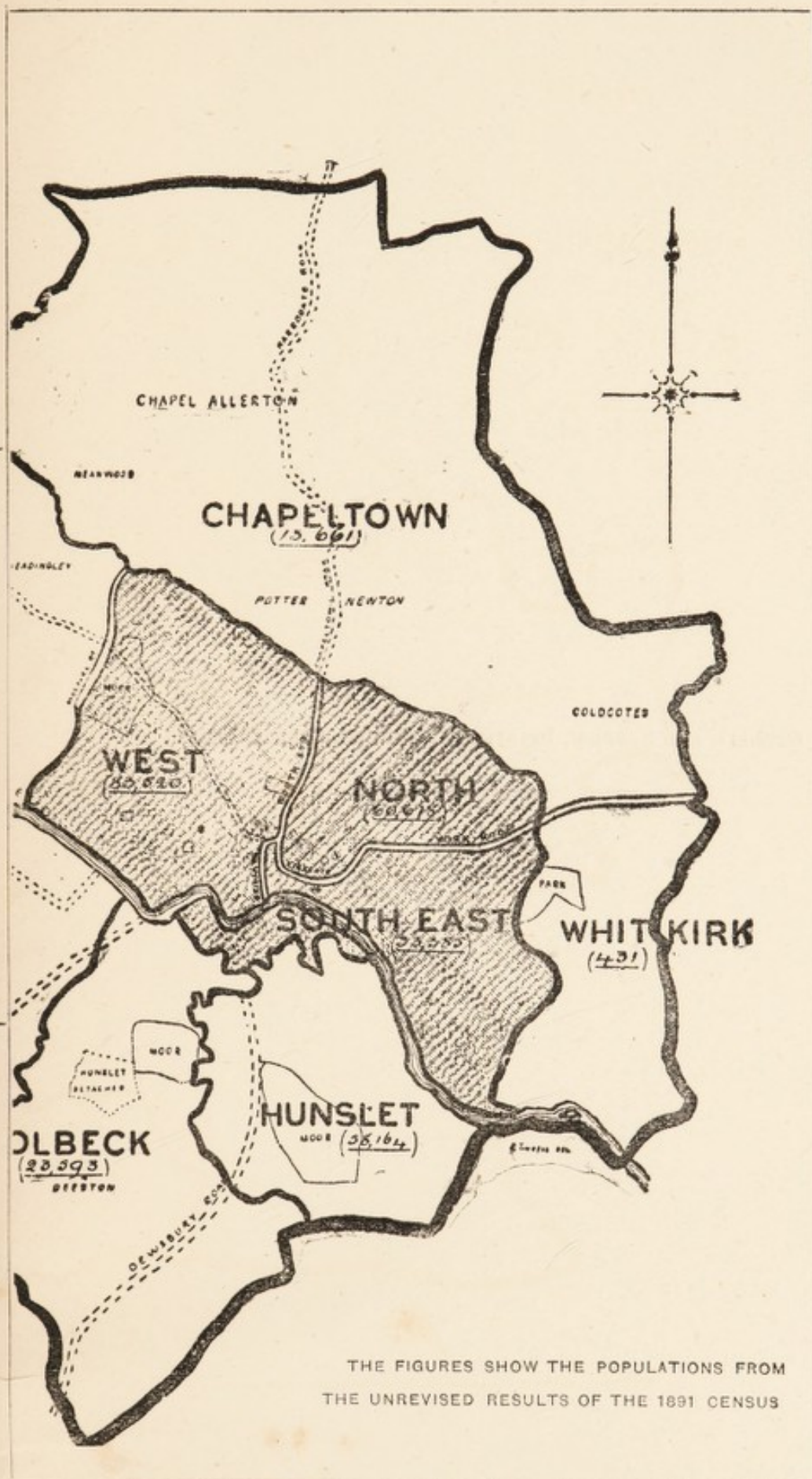
OF THE

BOROUGH OF LEEDS.



Scale





GOODALL AND SUDDICK, PRINTERS, COOKRIDGE STREET, LEEDS.

