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REPORT

ON THE

HEALTH OF SOUTH SHIELDS,

FOR THE YEAR 1875.

BY

JOHN SPEAR,

MEDICAL OFFICER OF HEALTH FOR THE BOROUGH.




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REPORT, 1875.

In obedience to the General Order of the Local Government Board, of November, 1872, directing each Medical Officer of Health to make an Annual Report at the end of each year comprising tabular statements of the sickness and mortality of his district, together with a summary of his proceedings in all matters relating to the public health, I have the honor to submit my first annual report.

During the fifty-two weeks of the year 1875 the births of 2,239 children and the deaths of 1,234 persons of both sexes, 647 males and 587 females, were registered in the Borough. The natural increase of population was therefore 1005.

The birth-rate per 1000 of the population (estimated at the middle of the year to be 54,300) was 41·2, or 4·7 above the average of the 50 other large English towns, and 3·3 below the mean of the last five years for the whole South Shields Union.

DEATHS.—The 1,234 deaths represent a rate of 22·7 per 1000 ; a rate less by 4·7 than that of the previous year, and 3·7 below the mean of the last five years in the South Shields Union. We must go back further than I have any record to find a death-rate in South Shields so low as that now recorded ; for the first time, also, in recent years, the mortality has been below the average of that of other large English towns ; as will appear from the subjoined table.

Annual death-rate per 1000 from all causes in recent years, in the 50 large English towns and in South Shields.

	1871.	1872.	1873.	1874.	1875.
50 large English towns.....	24·7	23·8	22·8	24·5	23·9
South Shields.....	*33·8	26·4	23·7	27·4	22·7

* Year of small-pox epidemic.

LOCALITIES AND SEASONS.—The Borough is divided into two unequal registration sub-districts—Westoe with an estimated population of 44,371, and South Shields with a population of 9,929. In the former, the death-rate during the year was equal to to 22·5, in the latter, to 23·5 ; the necessary corrections being made for the deaths that occurred in the Workhouse.

The death rates in these districts in the several quarters of the year, will be found compared with the rates in corresponding quarters of the preceding year in the annexed table.

Quarters of Years 1874 and 1875.	BOROUGH.		WESTOE (registration sub-district.)		SOUTH SHIELDS (re- gistration sub-district)	
	1874.	1875.	1874.	1875.	1874.	1875.
1st quarter.....	24.0	26.3	23.3	25.6	26.9	29.7
2nd „	25.0	20.4	26.0	19.8	22.6	22.9
3rd „	33.4	23.0	31.0	23.3	44.0	21.7
4th „	28.4	21.0	28.6	21.4	27.7	19.7
Year.....	27.4	22.7	26.9	22.5	30.0	23.5

The first quarter of the year only, exhibits a high rate of mortality; this excess was general over the whole country, and was due almost entirely to the severely cold weather which prevailed during the last two months of the quarter, (in February the mean temperature was as low as 36°) and to the consequent excessive fatality from inflammatory diseases of the lungs; 74 deaths were registered from bronchitis and pneumonia during the quarter, being considerably more than one-third of the total number referred to these diseases during the year.

A marked increase was also observable in the deaths from tubercular meningitis, 21 out of a total of 50 deaths registered during the year being now recorded. The low temperature possibly acted as an exciting cause to the disease amongst children predisposed by hereditary taint, or by unwholesome surroundings, or both, to scrofulous affections.

From what I have already said it may be supposed that the registration division of the borough is not what is required for sanitary purposes, and I have consequently divided the town into five sanitary districts with sub-divisions. A description of these, with the deaths, and the ascertained cases of zymotic disease, that occurred in the several streets of each district, together with their population, will be found in the appendix.

The information to be derived from the mortality in one small district, or in a single street, in one year, may not be very great; but if these data, of which the annexed tables will form the foundation, continue to be collected, they will ultimately become of great value, and will enable the Authority to speak with certainty as to the healthiness or unhealthiness of the several quarters of their district, and to act accordingly.

AGES.—The 1,234 deaths from all causes and at all ages included 373, or 30.2 per cent. of infants under one year of age, and 220, or 18.0 per cent. of persons aged 60 and upwards. Or if the infant mortality be measured by the more accurate method of proportion of deaths under one to births registered, we find it equal to 166 per 1000, showing a decrease of 10 per 1000 over the mortality of the preceding year, but still in excess of the average rate of other towns. In analyzing then this ex-

cessive infant mortality, we find that 72 deaths were referred to bronchitis and pneumonia, 70 to atrophy and debility, 50 to convulsions, 45 to tubercular diseases, 40 to diarrhœa, 24 to whooping cough, and 13 to syphilis.

It cannot be denied that a great part of this mortality is due to the improper management of tender infant life. Children would not die in such large numbers from bronchitis and pneumonia were they properly protected from the inclemency and variations of the weather; but this does not explain why the mortality from these diseases should be in South Shields in excess of that in other parts of England. (See appendix, D.) I think the impurities of our atmosphere—the smoke from the manufactories and the acid gases from the chemical works—impurities which I am ready to admit are to a certain extent inseparable from the atmosphere of a manufacturing town, but which are, I believe, capable of much mitigation, must be held in some measure responsible. This indeed is what our knowledge of the pathology of bronchitis would lead us to expect. Cold air inhaled, as it often is by children and sometimes by adults, directly into the lungs through the mouth, and not through the nasal passages, will act as an irritant to the delicate lining of the air tubes, and to the air cells, and thus set up inflammatory action, but if to cold is superadded even minute quantities of sulphurous acid from coal combustion, hydrochloric acid from factories, or black smoke, themselves acting as irritants, and against the action of which nature has not so well protected us, this inflammatory action, it is only reasonable to suppose, will be confirmed and intensified. Of course if this be so, and I think the evidence points in this direction, adults will be exposed to such an influence even more than children; but then conditions inimical to health almost invariably exhibit their full power upon infant life; a child may be destroyed while the health of a man in the prime of life may scarcely perceptibly suffer; and it is this, chiefly, which renders infant mortality so interesting a study to the sanitarian.

Another cause of excessive infant mortality is, I am convinced, the pernicious and most reprehensible custom of dosing young children with anodynes; and it is believed by respectable chemists, and by others best able to form an opinion on the subject, that the practice prevails here to an enormous extent. Amongst ignorant parents, or mothers, solicitous rather for their own comfort than their children's welfare, a child is probably not many weeks old before for some imaginary "spasm" a dose of a patent preparation is administered—"soothing syrup," or "cordial," or "infants' preservative" or some preparation of the kind, the acting ingredient is nearly always the same, and from that moment the child is too often doomed to a painful death. The medicine itself produces the ailment it was intended to relieve. The first dose upsets the child's digestive organs, the next meal disagrees with it, and cannot be assimilated; another dose is administered to quiet its cries, and after a few weeks of such treatment the child figures in the death register as having died from atrophy, or debility, or inanition; in other words, by starvation, induced by the action of a slow poison; or by convulsions, from the same cause.

The deaths of 45 infants were referred to tubercular diseases. The mortality from this cause may be expected to decline, as the sanitary condition of the town im-

proves, and unwholesome dwellings improved or swept away. It is in damp unwholesome rooms, devoid of a sufficient amount of air and sunlight, that we find the fatality from tubercular diseases most marked.

The mortality ascribed to syphilis was relatively high (appendix, D), although it is to be feared that the 13 infants whose deaths were thus recorded do not represent even approximately the number of those who fall victims to the disease.

ZYMOTIC DISEASES.—(Appendix, C.)—To the seven principal zymotic diseases 223 deaths were referred, of which 73 resulted from diarrhœa, 69 from whooping cough, 20 from scarlet fever, 44 from the fevers, including typhus, typhoid, and simple continued fever, 9 from measles, and 8 from diphtheria. There has been no appearance of small-pox in the Borough during the year. The 223 deaths represent a rate of 4·2 per 1000, against 6·0 the average of recent years. This is so far satisfactory; but the mortality from these diseases is still above that which is experienced in most of the large towns, as will be seen in the annexed table.

Zymotic rate of recent years in 50 large English towns and in South Shields compared.

	1872.	1873.	1874.	1875.
50 large English towns.....	5·0	3·5	4·4	3·5
South Shields	7·2	5·2	5·5	4·2

The cause of this excess so persistently shown has hitherto been largely due to the excessive infant mortality in the autumnal months from diarrhœa. But this year the deaths from this disease have shown a considerable decline; the rate during the autumn quarter being 3·1 per 1000, and for the first time in recent years below the average rate of the large English towns.

Table showing the annual death rate from diarrhœa during the autumnal months in the 50 large English towns and in South Shields.

(Annual death rate per 1000 during the third quarters of the following years.)

	1871.	1872.	1873.	1874.	1875.
50 large English towns.....	3·7	3·5	2·9	3·0	3·2
South Shields	5·5	3·9	7·9	4·5	3·1

Inquiries were made into the circumstances of every fatal case of this disease that occurred during the summer. I think it cannot be doubted that its fatal prevalence in the hot months of the year is mainly to be attributed to the unwholesome exhalations which then, especially, pervade the atmosphere wherever decomposable organic matter is allowed to accumulate. Referring to my note book, I find the conditions most usually found were the following:—rooms in too close proximity to middens; unpaved, or badly paved, courts and yards, afford-

ing facilities for the lodgement of foul liquids; no closet accommodation, and the consequent improper retention in living rooms of refuse; ill ventilated rooms, and walls impregnated with organic effluvia; and, lastly, unwholesome foundations.

The relationship between autumnal diarrhoea and the various meteorological conditions, as exemplified during the past year in South Shields, is seen in the annexed table.

DATE. — Weeks ending,	No. of Deaths.	Mean reading of Barometer.	Mean Temperature.	Rainfall in inches.	Prevailing Winds.
July 10	—	29·90	61·0	0·92	N.W.
” 17	2	30·07	60·2	0·75	N.E.
” 24	1	29·90	61·5	1·90	N.W.
” 31	2	30·25	60·6	0·14	N.W.
August ... 7	2	29·90	61·1	1·46	N.E.
” .. 14	11	30·12	63·0	0·78	S.W.
” ... 21	4	30·19	64·	0·10	W.
” ... 28	6	29·95	63·1	0·26	S.W.
September. 4	5	30·20	60·0	0·78	W.
” . 11	8	30·15	62·2	0·50	S.W.
” . 18	1	30·30	58·3	0·04	N.E.
” . 25	5	29·90	53·2	0·77	E.
October ... 2	2	29·90	50·5	0·04	W.

SCARLET FEVER.—The 20 deaths referred to scarlet fever represent a rate of 0·38 per 1000, the mean of the last three years being 0·66. Scarlet fever must be looked upon as an endemic disease of the locality. The quarterly returns of the Registrar General show that not a single quarter has passed, at any rate within the last nine years, but several deaths from this cause have been recorded; and from my own experience I should say that the disease is never absent from the town. The late Dr. Gwynne Harries, who was sent two years ago by the Local Government Board to inquire into the prevalence of scarlet fever in this district, but who, sad to say, contracted the disease, and died before he could report, attributed, I believe, its excessive prevalence in this town in great measure to the filthy state of some of the back streets, courts, and houses of the borough; and perhaps the improvement which has lately to a certain extent been effected in this direction may account for the diminished fatality. It is undeniable that such influences greatly facilitate the spread of this disease, and although I have been able to attribute its appearance in the majority of cases to exposure to direct infection, often in public and private schools, yet the relationship which it seems also to bear to unwholesome conditions of house and locality has repeatedly forced itself upon my attention. In the most severe outbreak that occurred during the year, for instance, when in Orange Street alone, within a few days, eight houses were invaded, besides several others in the immediate vicinity, the atmosphere of these back streets was redolent of emanations from the middens; these having become more than usually offensive, in consequence

of recent heavy rainfalls, and the subsequent action of heat upon the heaps of sodden refuse which they contained; and, as if to show that the disease will spread thus rapidly when conditions favourable to the appearance of other more universally acknowledged "filth" diseases obtain—at this very time, typhoid fever also appeared in Orange Street; one person suffered, and, at a later period, another died.*

FEVER.—From the fevers, including typhus, typhoid, and simple continued fever, 44 deaths were recorded, being equal to a rate of 0·81 per 1000, against 1·13, the average in recent years. The fever rate in England was equal last year to 0·52. Of the 44 deaths, 11 were referred to typhus fever, 18 to typhoid, and 15 to simple continued fever. Four of the deaths from typhus occurred in the Workhouse Hospital; in the other cases, there was usually found much overcrowding, but in no instance did this disease spread after proper precautions had been taken, and the thorough ventilation of the rooms in which the disease appeared effected.

Several localised outbreaks of typhoid fever occurred during the year, the district which suffered the most severely being that at the west of Claypath Lane. I was led soon after my appointment to investigate fully the cause of the prevalence of fever here; for in other quarters of the town when typhoid fever broke out, some defect of drainage, or other cause leading to the excremental pollution of the atmosphere of the house, could almost invariably be found, but in this part, such apparent causes were more frequently absent. After very careful investigation, and for reasons which were fully detailed in a report which I made to the Local Government Board in August last, I came to a decided conclusion that the undue prevalence of fever in this district was to be attributed to two concurrent causes,—a surface and subsoil composed of loose and impure material, held in an undrained basin of impervious clay; and (2) a defective system of refuse removal. To these may be added as an auxiliary cause—houses in which the ventilation between the earth and the loosely boarded floors had been neglected. Excavations were made in the clay in this district for brickmaking purposes, and these excavations were filled in with refuse of all descriptions. Had these deposits of refuse been drained, and placed under favourable conditions, they might before now have become harmless. But such precautions were never thought of. The subsoil is not drained; and from the middens which now thickly stud the surface of this loose, "made"

* Several cases, which appear to show a close etiological relationship between these zymotic diseases, at least in their diffusion, might be mentioned. The following may serve as instances:—In one of the best houses in the town, where several of the family had for some time been subject to inflammatory affections of the throat, two distinct outbreaks of scarlet fever occurred within a few months, although in no way could the disease be attributed, at any rate in the first outbreak, to direct infection. The medical attendant had long before advised attention to the drainage, but this, a very complicated system, was supposed to be perfect. At this time, however, when my services were asked for, it was found that in reality defects of old standing, and of the most serious nature existed; and at the very time of the examination which revealed these defects, the master of the house himself was sickening for enteric fever. In another house, two children suffered from scarlet fever; a baby who had scarcely been taken out of the house being the one first attacked. Diphtheria supervened in one case and the child died. The most careful enquiry failed to discover any of the more usual modes by which scarlet fever extends, but beneath the floor of the room in which the children lived, there ran an uncovered and leaking water-closet pipe. Offensive odors had been noticed.

ground, foul liquid, bearing it may be the specific poison of disease, is constantly soaking; so that the foundations of the houses, instead of becoming gradually less impure through the oxidation of the contained organic matter are, day by day, becoming more and more polluted. That this is no imaginary evil I have frequently proved by seeing foul liquid oozing into cellars from adjoining middens. I am convinced that we shall not be free from constant outbreaks of typhoid fever until our present barbarous system of refuse removal is relinquished; in the mean while, houses that are built on "made" ground should have their foundations covered with concrete, and special attention should be paid to the ventilation beneath the floors.

I may be permitted to refer to one particular outbreak of this disease, in a part of the town distinct from that above referred to, as one showing clearly how necessary it is that the sanitary officials should receive prompt information of its appearance, so that its origin may be investigated, and proper measures taken to prevent its spread:—A single case occurred in a small block of houses known as Cowen's Place. The medical man who would have attended the case, and who, had he done so, would have reported it to me, was away from home, and his assistant did not inform me of it. Three or four weeks afterwards, however, another case in an adjoining house was reported. By that time the disease had spread to four houses besides the one first invaded. The alvine discharges from the first patient had been thrown down a defective closet, to which no water was supplied, and which was used in common by the tenants of these houses. When this defect was remedied there was no further extension of the disease; but had it been attended to in the first instance, the five persons who subsequently suffered would each have been saved a serious and painful illness; their lives were quite unnecessarily placed in great jeopardy.

DIPHThERIA.—This is another disease that can usually be attributed to defects of drainage, or some similar source of air pollution. In the early part of the year a slight localized outbreak occurred at Tyne Docks. The North-Eastern Railway Company thereupon ventilated their main sewer in a very efficient manner; two or three ventilating shafts were also connected with the town's drain; and no further extension of the disease was reported. In the winter, again, the disease became somewhat prevalent in the more respectable parts of the town, and in most of the houses that were invaded some defect or other of the drainage was discovered. In one house, for instance, where several cases of diphtheria occurred, at the time of the examination sewer gas was rushing through a defective drain in the basement, with a force sufficient to blow out a lighted candle that was held over the opening. At this time, moreover, there was reason to believe that the sewers were unusually foul; and in a condition perhaps which would allow sewer gas to more readily escape through the house drains. It was a time of very dry weather which had succeeded a period when exceptionally heavy rains had fallen. Thus in the six weeks ending November 21st we had nearly six inches of rainfall, in the six weeks following, during which diphtheria broke out, little more than one inch. In the former period, the sewage would be running high in the sewer, (the sewer, indeed, on the line of which most of the cases of diphtheria afterwards appeared was running at times nearly full);

in the latter, it would be running low, below the point at which the house drains open; so that these openings would be patent, and the sewer gas, which would now be generated in large quantities, both from the more sluggishly running sewage, and from the saturated brick work which this in receding would leave exposed to the atmosphere, would readily reach the house drains, and from thence, as I have said, too often, through defective traps, the interior of the houses.

WHOOPING-COUGH is the only zymotic which has shown a mortality above that of recent years. The mortality was equal to 1·3 per 1000, against 0·44 for the previous year. The disease was epidemic during the first three quarters, and showed a considerable decline in the fourth. In some streets, notably Heugh Street and Wellington Street, and the district, almost every family, in which were children susceptible of attack, suffered. Sanitary authorities have practically little *direct* control over this disease, from its long duration, its intermittent character, and often from the mildness of the attack, it is almost impossible to secure the isolation of the affected children, at any rate amongst the lower classes. The most culpable recklessness is shown by some parents in exposing their children to the danger of infection, and if you remonstrate with them they will tell you that if their children suffer it is the will of God! They seem to think that the more they expose themselves and their children to danger, the more do they show their regard for their sick neighbours, and the greater is the obligation under which they place them. In the present state of the law, and with the present means of isolation at our disposal, we might despair of ever hoping to check the spread of such diseases as scarlet fever, whooping cough, and measles, when once they were thoroughly implanted, did we not remember that by insisting upon cleanliness of house and town we rob the infective poison of more than half its potency; secure cleanliness in a city and in spite of individual faults and recklessness it will be maintained in a healthy state. At the same time, an efficient and practical mode of securing isolation in cases of infectious disease is a necessity, as every health officer must feel, of the most urgent nature; its absence is one of the weakest points in our sanitary administration. Failure now meets us at the very outset, and although the duty of checking as far as possible the spread of disease has been confided to the health officer, no efficient arrangements for securing for him prompt and sure information of its presence have yet been made. The medical practitioner feels that by giving the required information to the sanitary officer, very often against the wishes of his clients, and without being compelled by any law or regulation to do so, he is placing himself in an invidious position. I have been told by medical men that they would more willingly give me such information were they compelled by law to do so; and I believe if the Legislature were to impose this duty upon them, it would be to many no unpleasant task. In this way—the duty being imposed both upon medical men and householders—our first difficulty would be disposed of, it would then remain to isolate the patient, of whose sickness we have received prompt information, by the best means at our disposal. For smallpox, typhus, and typhoid fever, when the most rigid isolation cannot be established in the patient's own home, no doubt removal to a hospital provided and

Difficulties in dealing with infectious diseases.

maintained by the sanitary authority is the proper plan; but in the milder diseases of childhood, in scarlet fever, and measles, and whooping cough, I fear that this course would be found often impracticable. In well ordered houses, when infectious disease breaks out, a species of quarantine is established, with the effect, as we know, of confining the disease usually to the persons first attacked; and the health officer should have power to require the adoption to the utmost extent of the same precautions in the houses of the poor. A room in which he finds a case of infectious disease would be declared by him an infected place, to enter which without his authority would be in itself a penal offence. In maintaining this quarantine, and in assisting the poor in their sicknesses, the employment by the authority of female nurses might sometimes be of advantage.

From the statistics that I have presented, it will be at once apparent that there has been a most marked improvement in the health of the district during the past year. Amongst a population estimated to have increased by more than 2000, the number of deaths recorded were less by 146 than in the previous year; or, taking the increase of population into account, less by 200. This improvement, moreover, was most marked during the autumn months, when the death rate is more largely and directly influenced by sanitary condition. On the calculation of the Registrar General there are on average ten cases of serious illness to one death; so that for the year under notice the amount of sickness in the Borough shows a reduction by 2000 serious cases; and this diminished sick rate represents in its turn a pecuniary gain to the community, by saving of lost time, &c., of several thousands of pounds. If the labours of the Health Committee or of their officers have been the means of saving any number of these lives, or of averting this sickness, and I cannot but think that the means which are now systematically adopted to prevent the spread of disease, and to render habitations more wholesome, have had their effect, the labour cannot be said to be lost, or money spent in so good a cause in any respect thrown away.

SANITARY WORK.

That part of the work of the department which includes the investigation into the cause of disease has been necessarily dealt with in the foregoing pages. Such investigation I conduct personally in every case of dangerous infectious disease that is reported. The Inspector subsequently keeps the house under his surveillance for a sufficient time; he sees that instructions are carried out, that disinfectants are properly used, supplying them gratuitously when from poverty or otherwise the people themselves are unable to obtain them; and at the termination of the case, the room occupied by the patient is usually fumigated with sulphurous gas, and re-papered or limewashed. This is the course that is pursued under ordinary circumstances when infectious disease appears; since the small wooden hospital was opened, persons found suffering from such diseases in lodging houses, and (in the case of the more dangerous epidemic diseases) in other houses where sufficient accommodation cannot be obtained, are removed thither. Steps are at once taken to abate any nuisance which may have led to the appearance of the disease, or which may result in its extension; and at the following meeting of the Health Committee, this action, and the results of the investigations are usually reported. Placards and handbills, warning the public against any breach of the sanitary laws relating to infectious diseases, and containing plain directions for preventing the spread of such diseases, have, from time to time, been distributed by order of the Health Committee.

For the systematic inspection of the district, the divisions which have been made for sanitary purposes, and to which I have already alluded, are made use of. The Inspector, as far as he is able, for his duties compel him unfortunately frequently to break the rule, visits one of these sanitary districts daily. Each morning he reports the results of his previous day's inspection for my information, calling attention particularly to anything he considers may require my interference.

HOUSES UNFIT FOR HABITATION.

I have had occasion to certify, partly under the Artizans' and Labourers' Dwellings Act, 1868, and partly under the Nuisances Removal Act, 1855 (now repealed) of the unfitness for human habitation of a large number of cottages at Templetown (174 in all) comprising the greater part of the colliery village there situated. The owners—the Harton Coal Co.—have at length decided, very wisely in my opinion, to rebuild the village on another site, where more space around the dwellings may be obtained. When this is done, and the work is to be proceeded with immediately, the buildings at Templetown will be demolished. Every attention is to be paid to the sanitary requirements of the new cottages, and I have been invited to go into the

details of their erection, and to make such suggestions as I think advisable. Several houses in other parts of the town have been certified as unfit for habitation; of these, some have been closed, others temporarily repaired. (Appendix, F.) There are very many still in an almost equally bad condition—on the ballast hills behind Holborn, in the Low Street, and in the Milldam Valley; as much as possible has been done in the way of cleansing and whitewashing, and in many instances of repairing, to mitigate their wretched condition, but I fear with very partial success.

CELLAR DWELLINGS.

Many cellars, which at the commencement of the year were occupied by whole families both as living and sleeping rooms, are now either closed, or used only as kitchens and wash-houses. Those that remain, 78 in number, will soon be similarly dealt with; the Authority having ruled that no cellar shall be used as a sleeping room, or held in separate occupation, after the 1st of May of the present year. This step met with considerable opposition, but it was one absolutely necessary for the health of the town. Not only are damp and dark cellars fatal to the health of the inmates, they are a source of danger to whole districts; it is in such unhealthy spots that destructive epidemics are kindled—epidemics which may afterwards prove so far-reaching, and so difficult of control.

VENTILATION OF SEWERS, DRAINS, &c.

This most necessary work is in progress. The Surveyor reports that seventy-five ventilating pipes were connected with the sewers during the year; the whole length of main sewers being about $13\frac{1}{2}$ miles. Open gratings in the streets, also, have been made use of in some cases; and this mode of ventilation is to be more thoroughly carried out in such places as the Surveyor considers it to be applicable. In the sewers now in course of construction such openings are to be 70 yards apart; in the new parts of the town, ventilating pipes are erected at a distance of about every 100 yards; in the lower districts and old parts of the town, especially on the banks behind the Low Street and in Holborn, more of such ventilation is much needed. This, however, will in time be supplied, the Health Committee having directed the work to be carried out wherever it is required. A resolution has also been passed directing house-drains in new buildings to be ventilated, in accordance with a bye-law of the Borough.

I have had in more than one instance to attribute the appearance of disease to escape of sewer gas from large gullies, or openings into the sewers, such as are usually seen in yards, but which are here situated in the interior, generally in fact at the foot of the stairs, of many old and poor houses. Orders have consequently been given for the removal of these objectionable gullies to the house yards or street. This has been done in 30 cases; about an equal number remain to be removed.

In connection with the subject of sewerage it must be mentioned that whole rows of houses are now in course of erection, some indeed are even now finished and occupied, to which as yet no system of drainage is applied. I am told that the

sewers will soon be laid; but as the hot weather advances many dangerous nuisances will be certain to arise; if something, indeed, is not speedily done, and if the houses are allowed to be occupied, the land and the foundations will become saturated with sewage, and this may even render these localities unhealthy for years.

VENTILATION OF ROOMS.

The subject of the special ventilation of small bed rooms has been frequently brought under the notice of the Health Committee, and in consequence of my representations a resolution was passed requiring the bye-law relating to the subject, and which requires special means of ventilation to be provided in rooms not having a fireplace, to be strictly enforced. The bye-law, although too restricted in its operation, will, if carried out in its integrity, be conducive to much good. It is no uncommon thing to find, even in the better class of houses, very small bedrooms which have no fireplace, and no special means of ventilation, and in these rooms, at night, when the door and window are closed, as they are almost sure to be, the air must of necessity soon become dangerously impure.

SPACE AROUND DWELLINGS.

Cases have from time to time been reported where the yard space of houses has been improperly built upon; and the scarcely less pernicious practice of building off-shoots at the back of every house still prevails; whole streets are now being built in this way. Apart from such objectionable obstructions to the circulation of air around dwellings, I look upon it as most unfortunate that a custom is now almost universally adopted in this district of building houses with no open ground worthy of the name attached to them. The result is that the town is becoming too closely built over; there are many parts, (I am not speaking of courts and alleys, but exclusively of new streets and districts) where the density of population must be at the rate of 400 to the acre. I can recall no town to my memory so destitute as this one is of garden ground; no matter of what class almost the house may be, the bare regulation yard space is apparently considered all that is required.

SUBSOIL DRAINAGE.

The drainage of the sites of houses is also a matter that has engaged much attention; and it was resolved by the Health Committee that the regulations relating to the subject should be enforced. There are still many parts of the town, especially in those where excavations in the clay have been made, and these filled in with rubbish, where sub-soil drainage is in my opinion most necessary; but where I understand it is not yet carried out.

COMMON LODGING HOUSES.

There are 62 common lodging houses in the Borough, 19 having been added to the register during the year. These are kept, as far as cleanliness and ventilation are concerned, in a very satisfactory condition. 47 formal notices were served upon lodging house keepers during the year to abate overcrowding, to cleanse and whitewash, &c. 12 informations were laid for overcrowding found to exist on night

inspections, and convictions obtained. South Shields is a town that is much exposed to the dangers of imported infectious diseases, and it is most important therefore that all lodging houses should be under strict supervision; it may depend indeed entirely upon the supervision that is exercised over such places whether an outbreak of smallpox, for instance, may be at once stamped out, or whether it burst into an epidemic as violent as that which raged in South Shields in 1870-71, when in one quarter the death-rate from this disease alone was equal to that of a healthy population from all causes. Our work in this direction has hitherto been much hampered for want of an adequate staff of inspectors; but it is hoped that before long sub-let houses, and lodging houses other than those which come under the designation *common* lodging house, may be registered, and placed under proper supervision.

ALKALI WORKS.

It would be out of place to discuss in an annual report the effect of acid gases on health. All gases emitted from the works come by the Alkali Acts under the notice of special inspectors appointed by Government; and the action of the health department during the year, therefore, has been confined to bringing under the notice of the manufacturers, and occasionally under the notice of Mr. Todd, the district inspector, extraordinary escapes, (which on investigation have usually been found to occur either through defective plant, or through carelessness on the part of workmen), and to diminishing, as far as possible, the nuisances which arise through the deposit of tank waste. At the Tyne Alkali Works improvement has been effected in the plant, new leaden chambers, &c., having been erected; the tank waste also is removed from the works to sea at more frequent intervals than formerly. Frequent complaints at one time reached this office, from the inhabitants of the Waterloo Vale district, of the escape of sulphuretted hydrogen from the sewers; and it was found that this was caused by the drainage from old deposits of waste situated in the works, finding its way into the public sewers of the district. After other means had failed, trenches and a catch-pit were formed to intercept the drainage; this being then pumped back into the works, and there deodorized. The remedy so far appears to be effectual. In the early part of the year, notices were served upon the proprietors of the two works at East Jarrow (1) to discontinue depositing tank waste, and (2) to drain by means of covered drains that already deposited, and to drain and fill up the pools of "tank" liquid which had formed in the vicinity. The latter notice was carried out, much to the advantage of the locality. That requiring the removal of the waste to sea was allowed to stand over for a time, in consequence of the difficulty of getting craft of sufficient size up to the works. The St. Bede Company, however, have now overcome this difficulty, and are removing their freshly formed waste; the other works it is hoped will very soon be in a position to follow.

BAKEHOUSES.

These are now inspected periodically, and are in a more satisfactory condition. 20 statutory notices were served during the year to abate nuisances in connection

with them—to cleanse and whitewash, or to remove drains and privies or other sources of air pollution from their neighbourhood. No proceedings before the Justices were required.

SLAUGHTER HOUSES.

There are 91 private slaughter houses in the Borough; these have been inspected as regularly as circumstances allowed. The majority are in a very unsatisfactory condition; and from their structural arrangements, are scarcely susceptible of much improvement. It was thought that as long as the question of erecting a public slaughter house remained in abeyance it would be better to take no active measures, beyond enforcing the regulations relating to cleanliness. This course has been followed with two or three exceptions, where the circumstances of the case were really too flagrant to be passed by even for a time.

With regard to tripe and offal boiling establishments and similar businesses, three have been closed, the premises being quite unfitted for the purpose, one after an order of the Justices had been obtained. The owners of others have been required to carry the effluvia resulting from the various boiling and manufacturing processes by means of flues into chimnies of a sufficient height; and since this was done the complaints from neighbouring householders, which before were very frequent, have almost ceased.

SCHOOLS.

These have been inspected. The sanitary arrangements of the Board Schools—the means of ventilation, the provision for closet accommodation, &c., are for the most part excellent. In the denominational schools, a more perfect and self-acting system of ventilation is in many cases required. Advice has been given in this respect; in two instances it has been necessary to require alteration in the system of drainage.

The energetic action of the School Board has had the effect of late of closing many private adventure schools. Those of the better class that remain have required no active interference on my part; although the degree of excellence in these shows a considerable range. Of the few dame schools that still exist, one, which was much overcrowded, has been closed since my inspection; the number of scholars attending another has been diminished; in others, the ventilation has been improved.

HOSPITAL FOR INFECTIOUS DISEASES.

Allusion has already been made incidentally to the small wooden hospital, which, erected years ago at the time of a cholera epidemic, has lately been re-opened for the reception of patients in case of emergency, and until more suitable hospital accommodation should be provided. Although this temporary erection has been found very useful in several instances, it must be remembered that as a fever hospital it is quite inadequate to the requirements of the Borough. It is really little better than a shed, and will accommodate only twelve patients. By a recent arrangement, moreover, with the Guardians of the Poor—an arrangement rendered necessary by the generally over-crowded state of the Union Workhouse and In-

firmly—pauper patients are now admitted; so that in the event of an epidemic this little hospital would be immediately filled, and would be rendered useless for that class of the population for whose reception hospitals maintained by a Sanitary Authority are usually intended.

The erection of a proper fever hospital therefore should not be delayed under a mistaken impression that the accommodation we now possess is sufficient.

WATER SUPPLY.

This is derived from the dolomite or magnesian limestone. The wells are very deep; and the water remarkably free from organic impurities. The double carbonate of magnesia and lime which it contains renders it, however, very hard, with a hardness that is not materially reduced by boiling. It is therefore a wasteful water when used for some domestic purposes. It is the custom with the inspectors of the Water Company when they find house fittings defective, allowing the water to run to waste, to cut off the supply, if the owner or tenant fails to do the required repairs. The result is that many tenemented houses have been deprived of their supply of water, much to the disadvantage and injury of the tenants. Notice has now to be served upon the owners in all such cases to remedy this defect.



It must be admitted that the work of carrying out the sanitary laws in South Shields has been no easy task. This town was one of the last to appoint a Medical Officer of Health, it had gained an unenviable notoriety for being one of the most unhealthy in the country. Sanitary affairs had been admittedly neglected; slaughter houses, and bakehouses, were under no kind of supervision; the necessity of attending to these matters was by some denied, by others ignored. I have it on the authority of the present and past inspectors that their work was mostly confined, with the exception of registered lodging houses, to the supervision of outside premises, and consequently, when a new order of things was established, and the interior as well as the exterior of houses began to be systematically visited much surprise was excited in the minds of the inhabitants, although I am glad to say, thanks no doubt to the tact of the inspector, in very few cases were his visits resented by them as an intrusion.

Taking into consideration these adverse circumstances the general result of this the first year of real sanitary work, cannot be regarded as unfavourable. Certainly I can point to no very large measures in the cause of Sanitary Reform, but events have occurred within the last few months, the prospect before then was assuredly black enough, which lead me to hope that in time even the most heroic of these may be adopted, if found necessary for the welfare of the town. For this gleam of sunshine, if I may so express it, I may at once say that I believe I am indebted to the passive, but at the same time most sagacious assistance of the Local Government Board. It will be remembered that in the middle of the year I received a communication from Government pointing out the excessive mortality from epidemic

diseases in South Shields, and requesting me to report upon their cause. In replying to this letter, and in giving a faithful record of my actions here, I was compelled to admit that my recommendations had not received the attention which their importance demanded. The reply which I received, to the effect that as I had reported upon the Sanitary Administration of the Borough so fully to the Local Authority, the Board did not consider it necessary to address them upon the subject at that time, although, perhaps, it may at the time have somewhat disappointed me, was dictated, I was soon convinced, by a thorough knowledge of the situation. The letter at once had the effect which was no doubt intended for it. The Local Authority saw that a most serious responsibility devolved upon them; the Government relied upon them to carry out the law, and left in their hands the best interests of the town—a charge which, as men of honour, they could not ignore. My periodical reports on the health of the district, which before that time had been listened to late in the evening by a Committee already tired by the arduous work of the Building and Town Improvement Committees, and then at once forgotten, were ordered to come up for consideration as the first business on alternate meetings, and to be afterwards read before the Council. The owners of houses unfit for habitation were pressed to proceed with the work of demolition and re-construction. It was resolved that the occupation of cellars as living and sleeping rooms should no longer be permitted. Building bye-laws were ordered to be more strictly enforced. The question of possessing a complete hospital for infectious diseases was seriously entertained, and negotiations were commenced with neighbouring Authorities with this object. The subjects of introducing an efficient system of refuse removal also, and of erecting a public slaughter house, in this town so peculiarly desirable, were reconsidered, and I was directed to visit, in company with the Borough Surveyor, different towns in the country to make inquiries into these matters, and to report thereon. So that, although, as I have said, none of these necessary reforms have as yet been accomplished, still the prospect of carrying them out has immeasurably improved.

(Signed)

JOHN SPEAR,

MEDICAL OFFICER OF HEALTH.

April, 1876.

APPENDIX [A.]

THE DEATHS FROM DIFFERENT CAUSES, AND THE ASCERTAINED CASES OF NON-FATAL SICKNESS FROM THE MORE IMPORTANT ZYMOTIC DISEASES, CLASSIFIED ACCORDING TO LOCALITIES.

DISTRICT NO. I.

The District situated between the Market Place, King Street, and Ocean Road, on the South-East, and the River on the North-West.

SUB-DIVISION 1.—That part of the District West of Mile-end Road.

Area in Acres*..... 131 | Range above Ordnance datum, 6 to 55 ft.
 Estimated Population 8953 | Density of Population, 68·3 to the acre.
 Death Rate per 1000, 1875..... 23·4 | Zymotic Death Rate, 4·1.

STREETS, COURTS, &c.	Population.	DEATHS.											SICKNESS†						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.‡	Inflammatory Disease of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Albion Street.....	135	2						1						1					
Anderson's Lane	90	3		1											2			1	
Broad Landing	9	1							1										
Cookson's Quay.....	36	1													1				
Deer's Lane	27	2						1			1								
Dean Street	22	1											1						
Dock Lane.....	18	3							1				2						
Dairy Lane	45	2							1					1					
Fairles's Stairs	40	2								1	1								
Ferry Court	50	2											2						
Ferry Street	90	2											1	1					
Foster Street	104	...															1		
Heron Street	589	11				1		1		1		4	1	3				1	
Heugh Street.....	378	14			1			4	1			2	2	4				2	
Harding's Bank.....	112	2								1				1				1	
Hancock's Square	49	1											1						
Half-moon Quay	18	1											1						
King Street	90	6					1	1	1			1		2					1
Kirton's Quay	122	1		1															
Long Row	148	6				1			1		1	2		1				1	
Long Bank.....	112	1											1				1	1	
Mile-end Road	343	9											1	1	7				
Mitre Street	204	6									1			2	3				
Carried forward ...	...	79	.	2	1	1	1	1	8	6	4	3	17	9	26	.	2	7	1

* For the computation of the acreage of the several Districts, I am indebted to the Surveyor and his assistant, Mr. West.

† The fatal cases are not included in this Division. The figures represent the number of houses in which sickness other than that which proved fatal occurred.

‡ These include tubercular and wasting diseases of children, and convulsions.

DISTRICT NO. 1.—SUB-DIVISION 1.—(Continued.)

STREETS, COURTS, &c.	Population.	DEATHS.													SICKNESS.				
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflam. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Brought forward.....	...	79	...	2	1	1	1	1	8	6	4	3	17	9	26	.	2	7	1
Market Place.....	163	5	...	...	...	...	...	1	...	...	1	...	2	1	...	...	...	...
North Street	234	3	...	...	...	...	...	1	...	...	...	...	2	...	...	...	1	...
North Lane	90	7	...	...	...	...	...	...	...	1	...	2	1	3	...	...	1	...
Palatine Street	184	4	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...
Philips's Court	72	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Price Street	111	2	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...
Queen Street	297	3	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...	...
Soulsby's Court.....	30	8	...	...	...	...	...	...	...	...	2	3	2	1	...	...	...	...
Salem Street	94	3	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...
Spring Lane	90	2	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Stob Lane	104	5	...	...	...	1	...	1	...	...	1	...	2	...	...	...	...	...
Studley Stairs	63	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Shotton's Stairs.....	31	2	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Saltwell Lane.....	9	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tyne Street	139	3	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...
Thrift Street	216	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Thames Street	999	21	...	...	...	...	1	1	...	2	3	6	8	...	1	1	...	...
Union Alley	72	7	...	1	...	...	...	...	...	...	...	2	4	...	1	...	...	...
Wellington Street	585	15	...	...	...	...	1	...	...	1	3	4	6	...	1	2	...	...
Walker's Buildings ...	68	7	...	...	...	1	...	1	...	...	2	1	2	...	...	...	1	...
Wapping Street.....	554	27	2	...	...	...	1	1	...	2	7	5	9	1	1	...	...	...
Wellington Place	40	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Totals	209	2	3	2	1	3	2	14	10	5	14	41	40	72	1	8	12	3

SUB-DIVISION 2.—East of Mile-end Road.

Area in Acres	65	Range above Ordnance datum, 6 to 59 ft.
Population.....	3220	Density of Population, 49·5 to the acre.
Death Rate per 1000, 1875.....	23·0	Zymotic Death Rate, 4·9.

STREETS, &c.	Population.	DEATHS.											SICKNESS.					
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Infl. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Alderson Street	265	6						1	1		1	1		2		1		
Bath Street	140	3							2					1		1		
Blumer's Terrace	193	4										2	1	1				
Byron's Lane.....	27	1											1					
Coble Landing	45	1											1					
Custom-house Quay ...	63	3										1		2				
Green's Terrace.....	152	2											1	1				
Green's Place.....	100	2											2				1	
Grubb's Buildings.....	59	3		1							1			1				
Ingham Street	144	5	1									1	2	1			1	
Lawe Cottages	116	5			1							2	1	1				
Lawe Buildings	63	2						1						1				
Lawson's Bank	57	1						1										
Military Road	337	6		1									1	4			1	
Ocean Road	54	2			1						1							
Ocean Terrace	32	2												2				
Pilot Stairs	45	1												1				
Pearson Street	31	1									1						1	
Rose Lane	22	1	1												1			
Stephen Street	45	2									1			1		1		
Shadwell Street	516	18						3	1		1	5	3	5		3	2	
Salmon's Quay	18	3										1	1	1				
Workhouse* .....	...	30	4		1				1	2	2	3	4	13				
Totals .....	...	74	2	2		2		6	4		6	13	14	25	1	6	6	

* The deaths in the Workhouse have been distributed as far as possible to the streets from which the deceased persons were removed. Those recorded above were mostly amongst old inmates, or those having no fixed residence. Although entered here they are not included in the deaths of the district, nor in the estimate of its death rate.

The same remarks apply to the deaths in the Ingham Infirmary recorded in the following page.

DISTRICT NO. II.

District extending from South side of Ocean Road to Borough boundary beyond Westoe, bounded on the N.W. by the Stanhope and Tyne Railway, and on the East by the Ocean.

SUB-DIVISION 1.—That part of the District North of the Infirmary.

Area in Acres 398 | Range above Ordnance datum, 29 to 105 ft.
 Population..... 9825 | Density of Population, 24·7.
 Death Rate per 1000, 1875..... 17·6 | Zymotic Death Rate, 2·9.

STREETS, &c.	Population.	DEATHS.													SICKNESS.				
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phtthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Agnes Street	229	9	...	1	...	1	...	1	1	...	...	1	...	4	...	...	1	...
Albion Terrace	216	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Albemarle Street	219	5	...	...	...	...	...	1	1	...	1	...	...	2	...	...	...	...
Albert Terrace	75	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Alma Street	167	2	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Burrow Street	260	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Bent Cottages	108	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Charlotte Street.....	230	3	...	...	...	1	...	...	...	...	...	...	...	2	...	1	1	...
Challoner Grove	90	4	...	1	...	...	...	...	...	...	1	...	1	1	...	...	...	...
Catherine Street.....	432	5	...	...	...	...	1	...	...	...	2	...	2	2	...	...	...	...
Dale Street.....	513	13	...	...	...	1	...	1	...	2	5	1	3	...	1	2	...	...
Denmark Street.....	508	9	...	...	...	...	...	1	1	1	1	3	2	...	...	...	...	...
Fowler Street.....	238	3	...	...	...	...	...	...	...	1	1	1	1	...	1	1	1	1
Franklin Street	333	5	...	...	...	...	...	...	...	2	1	...	2	...	...	1	1	...
Gardner Street	180	7	...	...	...	...	...	...	...	...	4	...	3	...	...	...	...	...
Garden Lane	180	3	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...
Grace Street	148	1	...	1	...	...	...	...	...	...	...	...	...	...	1	2	...	...
Ingham Infirmary.....	...	12	...	...	...	...	...	...	1	...	...	2	9	...	...	...	...	...
Ivy Street	266	7	...	...	...	...	...	...	...	...	1	6	...	...	1	...	...	...
Ingham Place	139	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...
John Street	166	3	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...
Kepple Street.....	180	3	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...
Mariners' Cottages ...	171	4	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...
Ogle Terrace	64	4	...	...	...	1	...	...	...	...	...	1	2	...	...	...	...	...
Pier Terrace	180	3	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...
Percy Street	634	15	...	...	2	...	1	1	...	1	6	2	2	...	...	2	...	...
Ravensbourne Terrace	112	3	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...
Seafield Terrace.....	99	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
Somerset Street	206	5	...	...	...	...	...	1	...	...	1	1	2	...	...	1	...	...
Saville Street	185	7	...	...	...	...	...	...	...	2	4	1	...	...	...	...	...	...
Sunny Terrace	27	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Shortridge Street	220	4	...	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...
Thomas Street	113	5	...	...	...	...	1	...	...	...	1	3	...	...	...	...	...	...
Victoria Terrace	138	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...
Victoria Place	135	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
Winchester Street	382	17	...	1	...	...	...	...	...	3	3	3	7	...	...	...	2	...
William Street	130	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Wellington Street	78	2	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Woodbine Street	337	6	...	...	...	...	1	...	...	...	1	4	...	...	...	...	1	...
Totals	173	.	3	1	4	3	1	8	9	2	21	29	31	61	.	3	12	9

SUB-DIVISION 2.—That part of District II South of Infirmary.

Area in Acres	378	Range above Ordnance datum, 70 to 118 ft.
Population	529	Density of Population, 1·4 to the Acre.
Death Rate per 1000, 1875.....	10·4	Zymotic Death Rate, 0·0.

STREETS, &c.	Population.	DEATHS.											SICKNESS.					
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Westoe	438	5	...	...	...	...	...	...	...	...	...	1	1	3	...	1	1	...
Wood's Terrace	36	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Totals .....	...	6	.	.	.	.	.	.	.	.	.	1	1	3	.	1	2	.

DISTRICT III.—*The District situated between King Street on the NE, Laygate Street and Laygate Lane on the SW, the River on the N.W., and the Stanhope and Tyne Railway on the S.E.*

SUB-DIVISION 1.—That part of the District to the West of the Passenger Line.

Area in Acres	46	Range above Ordnance datum, 21 to 42 ft.
Population	4640	Density of Population, 100·9 to the Acre.
Death Rate per 1000, 1875.....	26·5	Zymotic Death Rate, 4·0.

STREETS, &c.	Population.	DEATHS.											SICKNESS.						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Academy Hill	450	7	...	...	...	...	...	...	...	...	1	1	2	3	...	...	2	...
Addison Street	84	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Bottle Bank	90	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Commercial Road	1115	25	...	1	...	...	...	3	1	...	2	7	3	8	...	2	4	...
Cowan's Place	77	2	...	...	...	...	...	...	...	...	...	2	...	...	...	5	...	...
Carpenter's Hill.....	22	5	...	...	...	...	...	...	1	...	1	1	2	...	...	...	1	...
Cone Street	184	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...	4	...
Dockwray's Bank	67	3	...	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...
East Holborn.....	414	24	...	1	1	...	...	1	...	2	5	4	3	7	...	2	3	...
Forest's Hill	18	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Hill Street	226	6	...	...	...	...	...	...	...	...	...	3	2	1	...	...	...	...
Henderson's Lane.....	30	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Johnson's Hill	170	9	...	...	...	...	...	3	...	...	2	3	1	...	1	1	...	...
Laygate Street	365	8	...	...	...	...	...	2	...	1	2	1	2	1	...	2	1	...
Nile Street.....	112	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
Pleasant Place	45	2	...	...	...	...	...	1	...	...	...	1	...	...	2	1	...	...
Pratt's Bank	72	5	...	...	...	...	...	1	...	...	1	1	2	...	...	1	...	...
Paine's Lane	45	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Roper's Court	18	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Swan Hill	124	4	...	...	...	...	...	...	...	...	3	...	1	...	1	...	...	...
Todd's Court	85	5	...	...	...	...	...	...	...	...	2	1	2	...	1	...	...	...
Tiney Street	50	2	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Wawn's Court	68	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
Wilson's Cottages	40	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Totals	123	.	.	2	1	1	.	8	7	2	12	30	26	34	1	14	20	1

SUB-DIVISION 2.—That part of District III East of the Passenger Line, and
North-East of Claypath Lane.

Area in Acres 46 | Range above Ordnance datum, 10 to 35 ft.
Population..... 2745 | Density of Population, 59·7 to the Acre.
Death Rate per 1000, 1875 22·3 | Zymotic Death Rate, 3·3.

STREETS, &c.	Population.	DEATHS.											SICKNESS.						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Parthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Barrington Street	216	3									1	1	1					2	
Chapter Row	86	1			1														
Coronation Street	265	6						1		1		1	2	1				1	
Cornwallis Street	157	1													1				
Dove Court	27	1												1					
East Street.....	54	1												1					
Hilda Pit Yard	54	2												2					
Kepple Street (West)...	81	2										1		1					
Kepple Court.....	118	3										2		1				1	
Mount Terrace	90	4						1				3							
Nelson Street.....	67	3								1				1	1				
Oliver's Court	27	3							1						2		1		
Oliver Street	76	1													1				
Park Street	108	3							2					1				1	
Russell Street.....	18	2												2					1
Smithy Street	234	4								1	1	1		1					1
Waterloo Vale	294	13							1		2	5	1	4		1	1		
Wallis Street	130	4							2			1		1					
Waterloo Lane	99	2										2							
West Street	14	2												2					
Totals		61	.	.	1	.	.	.	2	6	3	4	17	6	22	.	2	6	2

SUB-DIVISION 3.—That part of District III East of Passenger Line, and South-West of Claypath Lane.

Area in Acres 46 | Range above Ordnance datum, 36 to 40 ft.
 Population..... 8359 | Density of Population, 181·8 to the Acre.
 Death Rate per 1000, 1875 23·7 | Zymotic Death Rate, 5·1.

STREETS, &c.	Population.	DEATHS.											SICKNESS.						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Adelaide Street	982	17	..	..	..	..	..	2	..	..	1	3	5	6	..	..	..	..
Bedford Street	193	8	..	..	..	1	..	2	..	1	..	2	..	1	..	..	1	..
Brunswick Street	738	12	..	..	1	..	..	..	..	..	1	2	..	8	..	1	1	1
Cambridge Street	580	18	..	..	..	..	..	1	2	..	1	4	4	6	1	..	..	..
Claypath Lane	126	6	..	..	..	..	..	..	..	..	..	2	4	..	1	1	..	..
Cuthbert Street	446	13	..	1	1	..	..	..	..	1	1	3	2	4	..	1	..	..
Derby Street	315	7	..	1	..	1	..	..	..	..	..	2	1	2	..	4	2	..
Dixon Street	117	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Edward Street	279	5	..	..	..	..	..	..	..	..	..	2	1	2	..	..	..	..
Green Street	306	5	..	..	..	..	..	..	..	..	1	2	1	1	..	..	1	..
George Street.....	238	6	..	..	..	..	1	..	1	..	..	1	1	2	..	..	2	..
Hardwick Street	148	6	..	..	..	..	..	..	1	..	..	1	1	3	..	1	..	..
Laygate Terrace	81	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Maxwell Street	949	24	..	2	1	..	..	3	2	1	1	5	4	5	..	6	1	1
Martin Street.....	144	4	..	..	..	..	..	..	..	..	..	..	2	2	..	..	1	..
Orange Street.....	342	11	..	1	..	..	..	1	2	..	1	..	2	4	..	2	8	..
Orange Place.....	72	6	..	..	..	1	..	..	..	..	1	1	2	1	..	..	1	..
Princes Street	234	11	1	..	..	..	1	1	1	..	1	2	2	2	..	..	2	..
Peel Street.....	202	2	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Pallister Street	90	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1
Raglan Street.....	423	15	1	..	..	1	..	2	1	1	2	3	3	1	..	1	4	..
Victoria Road	266	4	..	1	..	..	..	..	..	..	..	..	2	1	1	..	..	..
Wilson Street.....	666	16	..	..	..	..	..	1	2	..	1	8	1	3	..	2	..	2
Totals	199	2	6	3	4	..	2	14	12	4	13	42	37	60	2	19	26	5

DISTRICT NO. IV.

District extending from Laygate Street and Laygate Lane South-West to the Dean Burn, bounded on the South-East by the Stanhope Line, and on the North-West by the River.

SUB-DIVISION 1.—That part of the District situated West of the Passenger Line.

Area in Acres	181	Range above Ordnance datum, 19 to 42 ft.
Population.....	4735	Density of Population, 26·2 to the acre.
Death Rate per 1000, 1875.....	27·4	Zymotic Death Rate, 3·2.

STREETS, &c.	Population.	DEATHS.											SICKNESS.						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Pneumonia.	Diseases of Children.	Inflam. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Archer's Hill	112	3							1		1		1				1		
Brickgarth Row	76	2							1				1					1	
Back Row	126	3						1		1									
Barrow Street	76	3											2	1					
Colliery Square	198	4						1				1	2						
Corstorphine Town ..	302	11			1			1			3		2	4				3	
Cornwallis Square.....	210	4							1					3				1	
Dinning's Buildings ...	76	2							1			1							
Drake Street	126	1												1				1	
Friend's Buildings ...	14	3				1			1			1							
Fox's Quay	23	1											1						
Hudson's Buildings ...	54	3							1			1	1						
Haddock's Buildings...	76	3										3							
Henderson's Lane	54	1									1						1		
Junction Row	77	1										1							
Jacob's Ladder	36	3						1	1			1							
Laygate Square	36	2				1	1											1	
Portberry Street	111	4										2	1	1					
Pan Bank	45	6								1		1	2	2					
Pott's Quay	45	1												1					
River Street	126	4										1		2					
Simon Street	54	4					1				1	1	2						
Stackyard	36	2											1	1					
Shepherd Street.....	45	1											1						
Station Cottages.....	144	3									1	1		1					
Sanderson's Court	54	2							1					1					
Slake Row	153	3							2			1							
Temple Town	22	8									1	1	2	4				1	
Thornton Street.....	216	7							1		1	2	3						
Turncoat Row	157	3						1	1				1						
West Holborn	360	21					1		2		2	3	4	9		1	3		
Weetman Street.....	22	2												2				1	
Windmill Hill	204	7						1		1	2	1	2	1	1			1	
Waggonway Side	72	2										2							
West Pan Place.....	139	...														1			
Totals	130	.	.	1	2	1	2	5	14	3	11	27	27	37	1	3	13	1

SUB-DIVISION 2.—That part of District IV situated to the East of the Passenger Line.

Area in Acres	134	Range above Ordnance datum, 12 to 42 ft.
Population.....	6645	Density of Population, 49·6.
Death Rate per 1000, 1875.....	20·2	Zymotic Death Rate, 3·2.

STREETS, &c.	Population.	DEATHS.													SICKNESS.				
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Alice Street	99	1										1							
Barnes (The).....	215	2										1	1						
Campbell Street.....	1056	22						4	3			4	3	8				3	
Deans (The)	63	4		1								2	1						
Dean Terrace.....	24	1											1			1			
Eldon Street	1183	39			1	1	1		3		3	5	12	13		2	7	1	
Francis Street	266	3												3					
Frederick Street.....	504	11			1						2	4	1	3					
Garden Walks	81	3										1	1	1		1			
Gladstone Terrace.....	162	2									1	1							
Havelock Street.....	175	5					1		1		1	1	1				1		
John Williamson Street	446	12				1					1	4	4	2			2	1	
Laygate Lane.....	234	3								1	2								
Laygate Gardens	108	1											1						
Palmerston Street	1113	19			1	1					4	3	3	7		1	3		
Rekentyke Lane	188	2										1	1						
Walpole Street	216	3				1					1	1				1	2		
Totals		133	.	1	3	4	1	1	4	7	1	15	27	28	41	.	6	18	2

DISTRICT NO. V.

The district extending from the Dean Burn to the River Don; bounded on the South-West by the Stanhope and Tyne Railway, and on the North-East by the River Tyne.

SUB-DIVISION 1.—Tyne Dock, East of Leam Lane.

Area in Acres 137 | Range above Ordnance datum, 12 to 56 ft.
 Estimated Population 2821 | Density of Population, 20·6 to the acre.
 Death Rate per 1000, 1875..... 23·4 | Zymotic Death Rate, 5·0.

STREETS, &c.	Population.	DEATHS.											SICKNESS.						
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Bede Street	598	13	...	...	...	...	1	4	...	...	2	3	1	2	...	...	...	...
Dock Street	612	10	..	1	...	...	...	...	1	...	1	2	2	3	...	...	...	...
Dean Street	36	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Frost Street	392	11	1	...	...	...	...	2	1	...	1	2	1	3	...	...	2	1
Hudson Street	202	7	...	...	...	...	...	1	...	...	1	2	...	3	...	...	...	2
Leam Lane.....	85	3	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...
Lord Nelson Street ...	351	3	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...
Marshall's Buildings...	40	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Slake Terrace.....	211	5	...	1	...	...	...	...	...	...	1	2	1	...	...	...	...	...
Tyne Dock.....	22	10	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...
Watson Terrace	40	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Whitehead Street	13	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Totals	66	1	2	1	.	.	1	7	3	.	6	12	7	26	.	.	2	3

SUB-DIVISION 2.—East Jarrow, West of Leam Lane.

Area in Acres 273 | Range above Ordnance datum, 12 to 20 ft.
 Population 893 | Density of Population, 3·2 to the Acre.
 Death Rate per 1000, 1875..... 25·9 | Zymotic Death Rate, 5·5.

STREETS, &c.	Population.	DEATHS.											SICKNESS.					
		Total Deaths.	Typhus.	Typhoid.	Simple Continued.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Diarrhoea.	Other Zymotics.	Phthisis.	Diseases of Children.	Inflm. Dis. of Lungs.	Other Causes.	Typhus.	Typhoid.	Scarlet Fever.	Diphtheria.
Bell Street	243	8	...	1	...	2	...	1	...	...	1	...	1	2	...	1	3	...
Cleveland Place.....	103	2	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...
East Jarrow	9	3	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	...
Jarrow Lodge	40	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Swinbourne Street.....	100	4	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...
Straker Street	238	6	...	...	...	...	...	1	...	1	2	...	2	...	...	...	...	...
Totals .....	...	24	.	1	.	2	.	1	1	.	3	4	3	9	.	.	4	.

APPENDIX [B.] { MORTALITY AMONGST MEN ENGAGED IN
 VARIOUS OCCUPATIONS, YEAR 1875.

OCCUPATIONS.	Total Mortality.	DISEASES.										
		Fever.	Other Zymotics.	Diseases of Brain and Spinal Cord.	Inflam. Dis. of Lungs.	Consumption	Heart.	Abdomen.	Cancer.	Paralysis.	Violence.	Old Age.	Other Causes
Architect	1	...	...	...	...	...	...	1	...	...	...	...
Butcher	3	1	...	...	1	...	...	...	...	...	...	1
Boatbuilder	4	...	...	...	2	...	...	2	...	...	...	...
Boilersmith	7	...	...	3	1	...	1	1	...	...	...	1
Bookseller	2	...	...	1	..	1	...	...	...	...	...	...
Bootmaker	4	1	...	2	...	...	...	...	...	1	...	...
Chimney Sweeper ...	1	...	...	...	...	...	...	...	...	...	...	1
Cartman	7	...	...	...	...	2	...	1	...	...	2	2
Coastguardsman ...	2	...	...	...	...	...	1	...	...	...	1	...
Chemist	1	...	...	...	...	1	...	...	...	...	...	...
Clerk	8	...	...	1	1	2	...	3	...	...	...	1
Chemical Labourer .	10	2	...	1	3	2	...	...	...	...	1	1
Cabinet Maker	2	...	...	...	2	...	...	...	...	...	...	...
Draper	2	...	...	...	1	1	...	...	...	...	...	...
Fireman	17	...	...	...	3	6	1	1	...	...	5	1
Farmer	3	1	...	...	1	1	...	...	...	...	...	...
Grocer	4	...	...	...	2	2	...	...	...	...	...	...
Gentleman	4	...	...	2	...	...	1	...	...	...	1	...
Glassworker	9	...	...	1	2	2	...	...	3	...	...	1
Hairdresser	1	...	...	...	...	1	...	...	...	...	...	...
Hatter	4	...	...	...	2	...	1	...	...	1	...	...
Ironmonger	2	...	...	...	...	1	...	..	...	...	1	...
Ironworker.....	3	..	...	...	...	1	1	...	...	...	1	...
Joiner.....	8	...	1	...	...	6	1	...	...	...	...	...
Labourer*	38	3	5	...	7	5	5	3	1	3	2	4
Miner	4	...	1	...	...	1	...	...	...	...	2	...
Marine Store Dealer	1	...	...	...	...	...	...	1	...	...	...	...
Miller	2	...	1	1	...	...	...	...	...	...	...	...
Merchant	2	...	...	...	1	...	...	1	...	...	...	...
Publican.....	8	...	...	1	2	4	1	...	...	...	...	...
Pilot	7	1	...	1	2	...	...	...	...	2	...	1
Plumber	5	...	...	...	1	2	1	...	1	...	...	...
Painter	2	...	..	2	...	...	...	...	...	...	...	...
Pawnbroker	1	...	...	...	...	...	...	...	1	...	...	...
Roper	3	...	...	...	...	1	...	...	1	1	...	...
Railway Servants ...	3	...	...	...	1	...	1	...	2	...	1	...
Shipwright.....	14	...	...	...	1	4	3	1	...	2	...	...
Seaman	53	3	3	7	8	3	8	2	...	2	9	7
Shipowner	4	...	1	...	1	...	1	...	...	...	1	...
Sailmaker	3	...	...	...	1	1	...	...	...	...	...	1
Surgeon	4	...	...	1	1	1	...	...	...	...	...	1
Slater	2	...	...	...	...	...	...	1	...	...	1	...
Saddler	1	...	...	...	...	...	...	...	...	...	1	...
Trimmer (coal)	2	1	...	...	...	...	1	...	...	...	...	...
Teacher	1	...	...	1	...	...	...	...	...	...	...	...
Timber Merchant ...	1	...	1	...	...	...	...	...	...	...	...	...
Tobacconist	1	...	...	...	...	...	...	1	...	...	...	...
Veterinary Surgeon .	1	...	...	...	...	...	...	...	...	...	1	...
Weaver	2	...	...	...	2	...	...	...	...	...	...	...
Others.....	6	1	1	...	1	...	...	...	1	...	1	...
Totals	280	14	14	25	50	51	28	19	11	10	28	822

* This is an unsatisfactory definition; but it is the best the district registrars are able to give.

APPENDIX [C.]

DEATHS FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES
DURING THE DIFFERENT QUARTERS OF THE YEAR 1875.

In that part of the WESTOE registration sub-district included within the Borough boundaries. (Estimated population 44,371.)

	Total deaths during the four quarters.	Death rate per 1000 per annum.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
Total deaths from the seven principal Zymotic diseases...	181	4·1	34	38	83	26
1. Small pox .....	...	...	...	...	...	...
2. Measles	7	·16	...	...	3	4
3. Scarlet fever	18	·4	7	3	5	3
4. Diphtheria	6	·14	...	2	3	1
5. Whooping cough	57	1·3	12	16	23	6
6. Fevers { Typhus.....	7	·16	4	3	...	...
{ Enteric (typhoid)...	14	·3	2	5	4	3
{ Simple continued...	12	2·7	3	4	4	1
7. Diarrhœa.....	60	1·4	6	5	41	8

In that part of the SOUTH SHIELDS registration sub-district included within the Borough boundaries. (Estimated population 9,929.)

	Total deaths during the four quarters.	Death rate per 1000 per annum.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
Total deaths from the seven principal Zymotic diseases...	42	4·2	12	10	16	4
1. Small pox .....	...	...	...	...	...	...
2. Measles	2	·2	...	...	2	...
3. Scarlet-fever	2	·2	...	...	...	2
4. Diphtheria	2	·2	1	...	...	1
5. Whooping cough.....	12	1·2	8	3	1	...
6. Fevers { Typhus.....	4	·4	2	1	...	1
{ Typhoid (enteric)...	4	·4	1	1	2	...
{ Simple continued...	3	·3	...	2	1	...
7. Diarrhœa	13	1·3	...	3	10	...

APPENDIX [C 2.]

Annual death-rate from the seven principal Zymotic diseases in the several quarters of the years 1872, 1873, 1874, 1875, in the 50 large English towns and in South Shields, compared.

	ANNUAL DEATH RATE Per 1000.			CAUSE OF EXCESS.
	50 large English Towns.	South Shields Union.	South Shields Borough.*	
1872.				
1st quarter	5·6	13·4	...	Prevalence of Small Pox, Measles, and Scarlet fever.
2nd „	4·8	6·1	...	Do. do. do.
3rd „	6·1	6·7	...	Prevalence of Diarrhœa.
4th „	3·3	2·8	...	
1873.				
1st quarter	2·7	3·0	...	
2nd „	2·3	2·2	...	
3rd „	4·5	9·5	...	Prevalence of Diarrhœa.
4th „	4·3	5·5	...	Prevalence of Scarlet fever & Diarrhœa.
1874.				
1st quarter	4·3	5·4	...	Prevalence of fever.
2nd „	3·8	4·4	...	Do.
3rd „	5·8	7·5	...	Prevalence of diarrhœa.
4th „	3·9	4·8	...	Prevalence of fever.
1875.				
1st quarter	3·2	4·7	3·4	
2nd „	2·5	3·9	3·5	Prevalence of Whooping-cough.
3rd „	5·0	6·2	7·2	Do. do.
4th „	3·4	3·0	2·2	

* The returns necessary for separating the Zymotic deaths in the Borough, during the earlier years, from those that were registered in the whole South Shields Union, are not in the possession of the Medical Officer; the rate per 1000 for the whole Union, however, will represent very fairly that for the Borough.

APPENDIX [D.]

Causes of death (OTHER THAN EPIDEMIC DISEASES) which have shown more than their average fatality in South Shields, in the year 1875, as compared with the rest of England, arranged in the order of their fatality.

CAUSES OF DEATH.	No. of deaths registered.	Proportional number from each cause to 1,000,000 deaths from all causes.	Corresponding proportional number in all England.
Bronchitis	158	130490	105002
Atrophy and Debility ...	78	64840	62020
Tubercular meningitis ...	50	42146	14783
Tabes mesenterica.....	39	32420	14051
Cancer	33	27557	21377
Liver disease	22	18642	15192
Syphilis	16	14590	3768
Teething	15	12968	8737
Scrofula	12	10536	5623
Drowning	12	10536	5511
Rheumatism	8	6889	6118
Asthma	8	6889	6852
Enteritis	8	6889	5829
Laryngitis	8	6889	3727
Aneurism	6	5164	1268
Intemperance	4	3282	842
Nephritis	4	3282	1421
Privation.....	2	1622	145
Stone	1	811	460
Ague	1	811	204
Ovarian disease	1	810	204

NOTE.—The causes of 28 deaths were not specified. In compiling the above table these deaths have been distributed pro rata over all the specified causes.

The numbers in the last column are taken from the Registrar General's Annual Reports.

APPENDIX [E.]

RETURN OF SICKNESS AND DEATHS AMONGST PAUPERS
AND OTHER PERSONS RECEIVING GRATUITOUS MEDICAL RELIEF
DURING THE YEAR 1875.

(BEING A SUMMARY OF THE QUARTERLY RETURNS.)

NAMES OF DISEASES.	NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.				NEW CASES of Sickness brought into the District for treatment in Public Medical Institutions therein, and Deaths among such Cases.			
	Sickness.		Deaths.		Sickness.		Deaths.	
	Aged under 5.	Aged 5 and upwards	Aged under 5.	Aged 5 and upwards	Aged under 5.	Aged 5 and upwards	Aged under 5.	Aged 5 and upwards
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
All Diseases and Injuries.....	948*	4181*	62	157	2	73	1	9
Small-Pox .....	...	...	...	...	...	...	...	...
Measles	9	2	3	...	...	...	...	...
Scarlatina	10	10	4	...	...	...	...	...
Diphtheria.....	3	2	1	...	...	...	...	...
Whooping Cough	74	3	4	...	...	...	...	...
“Continued” { Typhus .....	...	4	...	4	...	...	...	...
{ Enteric	1	26	...	5	...	2	...	1
{ Of other, or doubtful sorts	36	66	2	3	...	...	...	...
Diarrhœa and Dysentery	167	108	10	6	...	...	...	...
Cholera .....	...	...	...	...	...	...	...	...
Rheumatic Fever .....	...	9	...	...	...	1	...	...
Erysipelas	1	25	...	3	...	2	...	1
Pyæmia .....	...	...	...	...	...	...	...	...
Puerperal Fever .....	...	...	...	...	...	...	...	...
Ague .....	...	6	...	...	...	...	...	...
Phthisis	1	163	...	29	...	3	...	2
Bronchitis, Pneumonia, and Pleurisy...	166	559	11	21	...	4	...	1
Heart Disease .....	...	85	...	14	...	2	...	1
Injuries	41	318	...	12	...	8	...	1

* About 3000 of these were treated as “casuals” in the out-patients’ department of the Ingham Infirmary.

APPENDIX [F.]
INSPECTOR OF NUISANCES' REPORT.
 STATUTORY NOTICES ISSUED FROM HEALTH OFFICE DURING
 YEAR 1875.

I.—COMMON NUISANCES.	
To remedy defective drainage, defective and delapidated privies, ashpits, and water-closets	1044
To whitewash and purify houses, rooms, and passages	464
To remove offensive accumulations of refuse	33
To provide closet accommodation	39
" " drainage to houses and land	66
" " water supply to houses	26
To pave yards	10
To remove animals kept so as to be a nuisance	30
" " stables	6
" " water cisterns	4
II.—HOUSES UNFIT FOR HABITATION.	
To close rooms or houses unfit for habitation	44
Closed	33
Repaired	11
To repair delapidated houses	65
III.—OVERCROWDING AND INSUFFICIENT VENTILATION.	
To abate overcrowding in houses	36
" " in school	1
" " provide more efficient ventilation in houses, shops, and schools.....	48
IV.—LODGING HOUSES.	
To register common lodging houses	19
To abate overcrowding in lodging houses.....	18
To whitewash and cleanse do.	29
V.—TRADES, &c.	
To cleanse and whitewash slaughter houses.....	31
To discontinue slaughtering in inhabited rooms	2
To cement floors of slaughter houses.....	3
To remove water closets from neighbourhood of slaughter houses.....	3
To abate nuisances connected with tripe boiling, storing of paraffin, &c. ...	12
To cleanse and whitewash bakehouses, and to remove privies, &c., from neighbourhood thereof	20
To abate nuisances arising from excessive smoke	27
Renewed notices for same	4
To remove tank waste	2
To drain tank waste	3
Total Statutory Notices served during year.....	1916
Verbal Notices	918
Total.....	2834

INFECTIOUS DISEASES IN HOUSES.	
Number of houses visited in consequence of presence of infectious disease.	451*
Number disinfected under supervision	256
Number disinfected by Inspector	56

* Many of these were visited several times.

UNWHOLESOME FOOD SEIZED AND DESTROYED.

DESCRIPTION OF FOOD.	No. of Seizures.	Amount.	No. of Informations.	No. of Convictions.	Penalties.
					£ s. d.
Beef	4	722lbs.....	2	2	12 10 0 and costs.
Mutton	1	30lbs.....	...	...	...
Bacon	1	28lbs.....	...	...	...
Cheese	1	42lbs.....	...	...	...
Fish	2	210lbs.....	1	1	0 2 6 and costs.
Rabbits	2	17½ couples	1	1	2 0 0 and costs.
Ducks	1	10 .....	...	...	...
Cherries.....	1	6 baskets	...	...	...
Totals	13	...	4	4	£14 12 6

OTHER PROCEEDINGS BEFORE THE JUSTICES.

NUISANCES.	No. of Cases.	Results.	Penalties.
Overcrowding in Registered Lodging houses	12	10 fined	£5 1s. and costs.
		2 cautioned, and to pay costs.	
Defective Drainage ...	8	Orders to abate in 7 days...	Costs.
Nuisances arising from offensive trades	2	1, Order to abate nuisance and for that purpose to discontinue trade.....	"
		2, Order to abate in 3 days.	"
Want of proper Water supply	4	Orders to abate nuisance ...	"
Offensive Stable.....	1	Order to remove	"
Foul Ashpit	1	Do. do.	"
Defective Water Closet	1	Order to repair ..	"
Delapidated Houses ...	2	Do. do.	"
		For failing to comply with one of last named Orders.	£5.
Excessive Smoke	4	2 convicted	£3.
		2 dismissed	
Totals	35	... ..	£13 1s.

PROCEEDINGS UNDER ADULTERATION ACT.

Samples of Milk taken.....	18	Convictions	6
Adulterated	8	Dismissed	2
Informations	8	Fines.....	£3 and costs.

