

BOROUGH OF NEWCASTLE-UPON-TYNE.

REPORT
OF THE
MEDICAL OFFICER OF HEALTH
ON THE
SANITARY CONDITION
OF
NEWCASTLE-UPON-TYNE,
WITH
TABULAR RETURNS, DIAGRAMS, &c.,
OF THE
SICKNESS AND MORTALITY
DURING
THE YEAR 1877.



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TO MR. ALD. WILSON, J.P., CHAIRMAN OF THE SANITARY COMMITTEE
OF THE CORPORATION OF NEWCASTLE-UPON-TYNE.

SIR,—I have the honour to present herewith my Annual Report for the year 1877, which is arranged under three chief heads, viz.:—

1.—Inquiry into and estimates of, by the means at my disposal, the causes, origin, and distribution of diseases within the district, and the extent to which the same have depended on conditions capable of removal or mitigation; the results of inspection of the district; information, as far as practicable, respecting influences affecting or threatening to affect injuriously the public health within the district.

2.—Advice given to the Sanitary Authority on matters affecting the health of the district.

3.—The action taken with regard to infectious and epidemic disease; nuisances injurious to health; offensive processes of trade; provisions unfit for food.

I am, Sir,
Your faithful and obedient Servant,
HENRY E. ARMSTRONG, M.R.C.S.,
MEDICAL OFFICER OF HEALTH.

*Health Department, Town Hall,
Newcastle-upon-Tyne, 26th March, 1878.*

BOROUGH OF NEWCASTLE-UPON-TYNE.

REPORT, 1877.

DURING the fifty-two weeks ended 29th December, 1877, 5,610 births and 3,178 deaths have been registered in the Borough. The births represent an annual rate of 39·4, and the deaths an annual rate of 22·3 per 1,000 population at all ages, as estimated by the Registrar General to the middle of the year. The rate of mortality is the lowest recorded.

The birth rate shows a decrease of 2·2 and the death rate a decrease of 0·4 per 1,000 population (estimated) as compared with the rates of 1876.

The births during the five last preceding years are equivalent to an average rate of 41·2, and the deaths during the same period to an average rate of 26·7 per 1,000 population.

The decrease in number of births is general throughout the five registration sub-districts of the Borough.

The rates of birth per 1,000 population (estimated) are as follow:—Westgate, 38·4; St. Andrew's, 28·8; St. Nicholas', 29·7; All Saints', 39·0; and Byker, 59·4. From the magnitude of the birth rate of Byker, it is probable that the actual population of that sub-district has increased in a greater ratio than has been allowed for in the estimate.

The rates of mortality in the different registration sub-districts, per 1,000 estimated population of each, are:—Westgate, 21·2; St. Andrew's, 17·4; St. Nicholas', 37·3; All Saints', 20·4; and Byker, 25·7. The rate in St. Nicholas' sub-district is increased by 135 deaths in the Infirmary, of which 69 were those of patients admitted from beyond the Borough; and by 8 deaths in the Fever Hospital, of which 1 came from beyond the Borough. The death rates of St. Andrew's and All Saints', show a decrease of 1·0 and 1·8 respectively, and those of Westgate, St. Nicholas', and Byker, an increase of 0·2, 4·3, and 0·2 respectively per 1,000 estimated population of each, as compared with those of the previous year.

The rates of death per 1,000 per annum from all causes in the different quarters of the year, for the Borough, have been as follow:—First quarter, 24·2; second quarter, 23·2; third quarter, 20·2; and fourth quarter, 21·8.

The deaths from all causes average a weekly number of 61.1—the same as during the previous year. The three weeks in which the highest numbers of deaths have been registered are those ended March 31st, April 7th, and April 21st, the numbers recorded being respectively 82, 88, and 74. The three weeks in which the lowest numbers of deaths have been recorded are those ended February 10th, June 9th, and June 23rd, the numbers recorded being respectively 46, 47, and 46.

Comparison of the weekly mortality of the different quarters of the year yields the following:—

1877.	Number of Weeks with Deaths above the Average of the Year.	Number of Weeks with Average Number of Deaths in the Year.	Number of Weeks with Deaths below the Average of the Year.
First Quarter	9	2	2
Second Quarter	8	1	4
Third Quarter	2	...	11
Fourth Quarter	5	1	7
Entire Year	24	4	24

ZYMOTIC DISEASES.

The rate of mortality from the seven chief Zymotic Diseases, viz.:—Small-pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, "Fever" (including Typhus, Enteric, and Continued Fevers), and Diarrhoea, is 2.4, being the same as during the year 1876, and a considerable reduction below the corresponding rates of recent preceding years.

The entire Miasmatic order, to which the seven above-named diseases of the Zymotic class belong and of which a detailed list is given in the Appendix, has caused 416 deaths, as compared with 424, 577, 863, and 975 respectively during the years 1876, 1875, 1874, and 1873. The 416 Miasmatic deaths of the year under report represent a rate of 2.9 per 1,000 of the entire population, as against corresponding rates of 3.0 in 1876 and 4.3 in 1875. Decrease of mortality under this head in the year 1877, as compared with 1876, is observable in the sub-district of Westgate, including the Township of Elswick, where the rate is 2.9 per 1,000 against 3.1; in All Saints', where it is 2.5 against 2.8; and in Byker, where it is 3.7 against 4.0. Increased mortality, as compared with the year before, is observable in St. Andrew's, where the rate is 2.3 against 2.2; and St. Nicholas', including the Parish of St. John's, where it is 4.0 against 2.5.

The diseases to the diminution of which this improvement is chiefly due are—Diarrhoea, Measles, Enteric Fever, and Typhus. Under these heads the mortality of the Borough, for the year 1877, is less than that of 1876 by 30, 6, 16, and 4 deaths respectively.

On the other hand, there has been an increase in the Borough of 17 deaths from Scarlet Fever and 40 from Whooping Cough.

The condition of the different registration sub-districts in regard of mortality from Miasmatic diseases during 1877, as compared with the previous year, is as follows:—

Westgate shows a total decrease of 13 deaths from the entire order of Miasmatic diseases, viz.:—Decrease of 8 from Scarlet Fever, 12 from Diarrhoea, 9 from Measles, 6 from Enteric Fever, and 5 from other Zymotic diseases, as against an increase of 26 from Whooping Cough and 1 from Typhus.

St. Andrew's shows a total increase of 2 Miasmatic deaths, viz.:—Decrease of 5 from Diarrhoea and 4 from Enteric Fever, as against an increase of 2 from Scarlet Fever, 2 from Measles, 5 from Whooping Cough, and 2 from other Miasmatic diseases.

*St. Nicholas's** shows a total increase of 15 Miasmatic deaths, viz.:—Increase of 1 from Diarrhoea, 6 from Measles, 6 from Whooping Cough, and 9 from other Miasmatic diseases, as against a decrease of 2 from Enteric Fever and 5 from Typhus.

All Saints' shows a total decrease of 8 Miasmatic deaths, viz.:—Decrease of 8 from Diarrhoea, 1 from Measles, 2 from Enteric Fever, and 15 from other Miasmatic diseases, as against an increase of 10 from Scarlet Fever, 7 from Whooping Cough, and 1 from Typhus.

Byker shows a total decrease of 5 Miasmatic deaths, viz.:—Decrease of 6 from Diarrhoea, 4 from Measles, 4 from Whooping Cough, 3 from Enteric Fever, and 1 from Typhus, as against an increase of 13 from Scarlet Fever.

With respect to the relative fatality of the chief Zymotic diseases of the Borough and sub-districts during the successive seasons of the year,*

Small-pox caused 1 death only in the Borough, viz., in Westgate sub-district during the spring quarter.

Measles, with a total of 21 deaths for the year, caused 5 of these in the first quarter, viz., 2 in Westgate, 1 in St. Andrew's, 1 in St. Nicholas', and 1 in Byker; 6 in the second quarter, viz., 1 in St. Andrew's, 2 in St. Nicholas', 2 in All Saints', and 1 in Byker; 7 in the third quarter, viz., 3 in Westgate, 2 in St. Andrew's, and 2 in St. Nicholas'; and 3 in the fourth quarter, viz., 2 in Westgate and 1 in St. Nicholas'.

Scarlet Fever, with a total of 69 deaths for the year, caused 14 of these during the first quarter, viz., 4 in Westgate, 1 in St. Andrew's, 1 in St. Nicholas', 2 in All Saints', and 6 in Byker; 25 in the second quarter, viz.,

* Corrected by distribution of deaths in the Fever Hospital.

4 in Westgate, 1 in St. Andrew's, 10 in All Saints', and 10 in Byker; 7 in the third quarter, viz., 1 in Westgate, 3 in All Saints', and 3 in Byker; and 23 in the fourth quarter, viz., 5 in Westgate, 8 in St. Andrew's, 5 in St. Nicholas', 2 in All Saints', and 3 in Byker.

Diphtheria, with a total of 10 deaths for the year, caused 2 of these in the first quarter in Westgate; 1 in the second quarter in Westgate; 3 in the third quarter, viz., 2 in Westgate and 1 in Byker; and 4 in the fourth quarter, viz., 2 in Westgate, 1 in St. Nicholas', and 1 in Byker.

Croup, with a total of 26 deaths for the year, caused 6 of these in the first quarter, viz., 3 in Westgate, 1 in St. Andrew's, 1 in St. Nicholas', and 1 in All Saints'; 4 in the second quarter, viz., 2 in Westgate, 1 in St. Nicholas', and 1 in Byker; 5 in the third quarter, viz., 1 in Westgate, 2 in St. Nicholas', and 2 in Byker; and 11 in the fourth quarter, viz., 6 in Westgate, 2 in All Saints', and 3 in Byker.

Whooping Cough, with a total of 84 deaths for the year, caused 5 of these in the first quarter, viz., 1 in Westgate, 1 in St. Andrew's, 2 in All Saints', and 1 in Byker; 22 in the second quarter, viz., 13 in Westgate, 1 in St. Andrew's, 3 in St. Nicholas', 2 in All Saints', and 3 in Byker; 21 in the third quarter, viz., 9 in Westgate, 2 in St. Andrew's, 2 in St. Nicholas', and 8 in All Saints'; and 36 in the fourth quarter, viz., 20 in Westgate, 3 in St. Andrew's, 2 in St. Nicholas', 7 in All Saints', and 4 in Byker.

Typhus, with a total of 9 deaths for the year, caused 5 of these in the first quarter, viz., 3 in Westgate and 2 in St. Nicholas'; 2 in the second quarter, viz., 1 in St. Andrew's and 1 in Byker; 1 in the third quarter in Westgate; and 1 in the fourth quarter in All Saints'.

Enteric (or Typhoid) Fever, with a total of 21 deaths for the year, caused 7 of these in the first quarter, viz., 4 in Westgate, 2 in All Saints', and 1 in Byker; 4 in the second quarter, viz., 2 in Westgate, 1 in St. Andrew's, and one from beyond the Borough;* 6 in the third quarter, viz., 2 in Westgate, 1 in St. Nicholas', and 3 in Byker; and 4 in the fourth quarter, viz., 3 in Westgate and 1 in Byker.

Diarrhœa, with a total of 120 deaths for the year, caused 12 of these during the first quarter, viz., 5 in Westgate, 3 in St. Andrew's, 3 in All Saints', and 1 in Byker; 16 in the second quarter, viz., 8 in Westgate, 2 in St. Andrew's, 1 in St. Nicholas', 4 in All Saints', and 1 in Byker; 64 in the third quarter, viz., 28 in Westgate, 7 in St. Andrew's, 9 in St. Nicholas', 13 in All Saints', and 7 in Byker; and 28 in the fourth quarter, viz., 10 in Westgate, 1 in St. Andrew's, 1 in St. Nicholas', 4 in All Saints', and 12 in Byker.

* A foreign sailor dying in Hospital.

LOCAL DISEASES.

In this class, which includes diseases of the Nervous, Circulatory, Respiratory, Digestive, Urinary, Generative, Locomotory, and Integumentary Systems, 1,427 deaths are recorded, against 1,397 during the preceding year. Of the various orders included in the class, the most liable to fluctuation is that of diseases of the Respiratory Organs, which has caused 526 deaths, as compared with 508 in the previous year. The two most prominent factors of the order, Bronchitis and Pneumonia, have together caused 443 deaths, as compared with 427 in 1876. Thus:—

Bronchitis, with a total of 311 deaths for the year, caused 120 of these in the first quarter, viz., 42 in Westgate,* 15 in St. Andrew's, 13 in St. Nicholas',† 27 in All Saints', and 23 in Byker; 80 in the second quarter, viz., 28 in Westgate, 13 in St. Andrew's, 9 in St. Nicholas', 15 in All Saints', and 15 in Byker; 27 in the third quarter, viz., 14 in Westgate, 2 in St. Andrew's, 2 in St. Nicholas', 2 in All Saints', and 7 in Byker; 84 in the fourth quarter, viz., 30 in Westgate, 11 in St. Andrew's, 9 in St. Nicholas', 11 in All Saints', and 23 in Byker.

Pneumonia, with a total of 132 deaths for the year, caused 32 of these in the first quarter, viz., 10 in Westgate,* 4 in St. Andrew's, 4 in St. Nicholas',† 9 in All Saints', and 5 in Byker; 50 in the second quarter, viz., 22 in Westgate, 3 in St. Andrew's, 4 in St. Nicholas', 11 in All Saints', and 10 in Byker; 15 in the third quarter, viz., 7 in Westgate, 0 in St. Andrew's, 2 in St. Nicholas', 5 in All Saints', and 1 in Byker; and 35 in the fourth quarter, viz., 14 in Westgate, 3 in St. Andrew's, 4 in St. Nicholas', 9 in All Saints', and 5 in Byker.

The subjoined Table shows the relative mortality of the two diseases combined in the different districts and in successive seasons of the year:—

RATES OF MORTALITY FROM BRONCHITIS AND PNEUMONIA PER 10,000 ESTIMATED POPULATION PER ANNUM.

A.D. 1877.	REGISTRATION SUB-DISTRICTS.					BOROUGH.
	Westgate (Workhouse).	St. Andrew's.	St. Nicholas' (Infirmary).	All Saints'.	Byker.	
First Quarter ...	32.8	38.6	63.3	50.2	56.5	42.7
Second Quarter ...	31.6	32.6	48.4	36.3	50.5	36.5
Third Quarter ...	13.3	4.1	14.9	9.8	16.1	11.8
Fourth Quarter ...	27.7	28.4	48.4	27.9	56.5	32.4
Year ...	26.4	25.9	43.7	31.1	45.5	31.1
Rate for previous Year (1876) ...	21.2	21.0	25.0	48.0	46.6	32.0

* Workhouse. † Infirmary.

As compared with the corresponding returns for last year, the above rates of mortality from Bronchitis and Pneumonia, in the entire Borough, show a slight decrease from diminished prevalence of these diseases in the eastern portion of the town (All Saints' and Byker).

Comparison of the different seasons of the two years shows a decreased mortality in the first quarter of the year under report, of 4.1 per 10,000 of population, entirely due to decreased prevalence of the two diseases in All Saints' and Byker; the three remaining districts, in which are included the Workhouse and Infirmary, showing a considerably higher rate of deaths from these causes. The second quarter shows an increase of deaths from these causes, at the rate of 7.7 per 10,000 in the Borough, All Saints' sub-district only showing a decrease. The third quarter shows a decrease at the rate of 5.8 per 10,000 in the Borough, the only sub-district in which an increase occurred being Westgate. In the fourth quarter the returns show an increase of death from these causes at the rate of 4 per 10,000 in the Borough; the only sub-district in which an increase occurs is All Saints'.

INFANT MORTALITY.

The number of children dying from all causes before having completed the first year of life is 842, as compared with 971 and 1,050 during 1876 and 1875 respectively.

The numbers in each sub-district in 1877, as compared with 1876, are—Westgate, 360, against 385; St. Andrew's, 74, against 106; St. Nicholas', 70, against 67; All Saints', 181, against 235; Byker, 157, against 178.

The rates per cent. of deaths under one year of age to births registered in the Borough and sub-districts, compared with the corresponding figures for the previous year, are as follows:—For the Borough, 15.0, as against 17.0; for Westgate, 14.8, as against 15.5; for St. Andrew's, 13.5, as against 16.7; for St. Nicholas', 21.9, as against 18.0; for All Saints', 16.2, as against 20.8; and for Byker, 13.4, as against 15.5.

The death rates of children under one year per cent. to estimated population in the Borough, and in the different sub-districts, are as follows:—Borough, 5.9, as against 6.9 in 1876; Westgate, 5.7, as against 6.2; St. Andrew's, 3.8, as against 5.4; St. Nicholas', 6.5, as against 6.0; All Saints', 6.3, as against 8.1; and Byker, 7.9, as against 9.2. The higher rate in Byker corroborates the supposition already expressed that the population of this sub-district is under-estimated.

The infant mortality of the year affords some illustration of the possible

fallacies and legitimate inferences deducible from the consideration of Vital Statistics.

Each of the three sets of figures above stated in reference to deaths of children under one year of age, viz., actual number of deaths, rate of these to births registered, and rate to estimated population, shows a diminution below the corresponding figures for the preceding year in four of the five registration sub-districts of the Borough, viz., Westgate, St. Andrew's, All Saints', and Byker. In St. Nicholas' sub-district the position is reversed: the infantile deaths are more in number, and their proportion to births and estimated population, are greater than those of the previous year. Excluding the statistics for this sub-district—which will be presently reverted to—the above returns of the present, as compared with the preceding year, appear to show a great improvement as regards infant mortality in the Borough. But conclusions based on such facts alone might be altogether false, and in the present instance would certainly be to some extent erroneous. Without due allowance for the fluctuation in the births of successive years, no accurate idea can be formed of the rates of infant mortality in these periods; an actual increase in numbers of such deaths being perhaps relatively, from increased birth-rate, even a decrease, or *vice versa*. In the present instance, although the indications of improvement given by the various infantile death-rates is not negatived by the comparison of these rates with the birth-rates, it is much diminished thereby. Thus, the number of deaths under one year of age in Westgate sub-district is 6.5 per cent. below that of 1876; but the births—which have contributed to this infant mortality—are 2.1 below those of the previous year; in St. Andrew's, the infantile deaths are 30.1 per cent. below, but the births are also 10.7 per cent. below those of the previous year; in All Saints', where these deaths are reduced 23 per cent., the births are also reduced, but in a much less degree (0.9 per cent.); in Byker the deaths are reduced 11.8 per cent., the number of births is 1.8 per cent. less than in 1876. In St. Nicholas', notwithstanding that the births are diminished more than in any other district (14.0 per cent.), the deaths are 4.5 per cent. *more* numerous. In the aggregate, the actual number of infantile deaths is less by 129 or 13.3 per cent. in 1877 than in 1876, but the aggregate births are at the same time less by 204 or 3.5 per cent., which reduces the rate of improvement to 9.8 per cent.

In explanation of the foregoing, the following Table has been prepared, showing the Births in Newcastle-upon-Tyne* during each of the last five

* Superintendent Registrar's District of the Registrar General, which includes the Municipal Borough of Newcastle-upon-Tyne and Townships of Benwell and Fenham.

years, and opposite to these the marriages during the twelve months ending 31st March of each of these years:—

Year ended December 31st.	Number of Births Registered.	Year ended March 31st.	Number of Marriages Registered.
1873	5,866	1873	2,212
1874	5,610	1874	2,314
1875	5,815	1875	2,251
1876	5,988	1876	2,170
1877	5,789	1877	1,954
Yearly average...5,819		Yearly average...2,186	

The number of births in 1877 is here shown to be less than the average of four preceding years, and 199 less than in 1876.

There has been therefore both relatively and actually a smaller number of births to swell the deaths of children under one year of age.

A cause for this decrease is found in the second half of the Table, which shows a gradual yearly decline of *Marriages* since the spring of 1874; the number of marriages for the twelve months ended last March is 360 less than that for the corresponding period three years before, and 290 less than the average of four preceding years.

It cannot be expected that with such a falling off, the births should maintain their usual relative proportion.

The comparatively low death-rate of infants in 1877, then, depends to a considerable extent on the low birth-rate, which is due to the low marriage rate, which is the direct result of the depressed state of trade.

NON-CERTIFIED DEATHS.

That is, deaths unattended by any medical attendant, and on which no inquest has been held, have contributed 148 cases to the general mortality, including 85 of children under one year of age (of which five have been certified to by midwives), 13 aged one year and under two years, and 50 aged two years and above. The number of non-certified deaths recorded during 1876 was 179. A list of the alleged causes of those of 1877 is given in the Appendix. 35 are returned on notification from the coroner that no inquest was necessary, of which 13 are registered as due to "supposed" diseases, viz., 3 to supposed Heart Disease, 1 to supposed Bursting of an Aneurism, 1 to supposed exhaustion from excessive drinking, 1 to supposed Erysipelas of Navel, 1 to supposed "some internal complaint," 1 to supposed Apoplexy, 1 to supposed Convulsions, 1 to supposed Inanition, 2 to supposed "some natural cause," and 1 to supposed

Spasm of the Glottis. In addition to these, 1 of the uncertified deaths on which no inquest was held, is that of a person found dead in bed (no cause returned); 1 is registered as due to a fall (accidental); and opposite the name of one occurs the remarkable entry, "Died suddenly after being treated by a quack doctor;"* 5 are returned as due to "Natural causes," 2 to "Convulsions," 1 to "Marasmus from want of proper food and nourishment," 1 to "Exhaustion," and the rest to various diseases. The foregoing have all been registered as stated on notification from the coroner that no inquest was necessary.

In regard to the nature of many of the accounts of death such as the above, even after inquests, the Registrar General has said, that they are no answers at all to the question, "What is the cause of death?" but "mere evasion." Where there is no inquest, but the return is given all the same, the irregularity becomes much more palpable.

No evidence appears as to what, if any, steps short of an inquest have been taken to determine the accuracy of any of the foregoing returns of cause of death, or whether, in such cases as that of the body found dead in bed, or the sudden death after illegal medical treatment, the deceased came to his death by fair or foul means.

There can be little advantage in requiring a particular specified form of attestation of cause of death from the legally-authorized medical attendant, when any statement by a midwife or illegal practitioner is allowed equal weight; or when, in the absence of even this latter very doubtful testimony, the death is registered, and the body buried without any certificate whatever.

It is not intended to convey the idea that a coroner's inquest should be held on every case of uncertified death, but no such case should be passed over without being brought to the knowledge of the Local Authority.

ADVICE GIVEN.

Among the various matters upon which, in accordance with duty, the Medical Officer of Health has advised the Sanitary Authority, are—

1.—The proceeding under the Artizans and Labourers Dwelling Improvement Act, 1875, of which some account will be given later in the Report.

2.—The state of several of the unpaved streets in the Borough.

3.—The practice adopted by Relieving Officers of declining to bury the dead bodies of poor persons unless compelled to do so by order of a Justice, which order cannot legally be given until such body has first been

* Westgate sub-district. July 21st.

removed by the Sanitary Authority to the Dead-house. The delay in burial, and the unnecessary expenses to the Corporation of taking to the Dead-house the bodies dead from non-contagious disease have been shown, but hitherto without effect. Notices continue to be received that dead bodies await interment which will not take place until such steps as above-mentioned are carried out. The dislike of the relatives to such proceedings is naturally strong.

4.—The Medical Officer of Health has also advised the Sanitary Authority on various points in connection with infectious disease, including among others a sharp though short outbreak of Typhus at the beginning of the year, which was checked by isolation of cases in Hospital, with thorough disinfection of premises, bedding, &c.; and a second appearance of the same disease, of a severe type, in December, due to importation, which has since yielded to the same treatment; the appearance of Small Pox on four occasions; the first an imported case under private treatment, which terminated fatally, the disease extending to a second member of the family; and three separate cases, of which no history of contagion could be made out. Two were removed to Hospital, and the third remained at home under private treatment. In none of the latter cases was there extension of disease to relatives. Cases of Enteric or Scarlet Fever, and other Zymotic disease, in which special action was required in addition to the usual process of disinfection, &c., have also been advised on.

The Medical Officer of Health has also reported on the insufficiency and defects of the Hospital accommodation for infectious diseases in the Borough, including the absence of private wards; and has advised as to the nature of the accommodation required, such as is provided in London, Cheltenham, and other towns, whose Fever Hospitals he inspected in the early part of the year.

On the completion of the disinfecting apparatus he recommended that this means of purifying and rendering fit for use infected bedding, clothing, &c., should be open to the public at a small charge to cover the cost of working expenses, which was not agreed to.

5.—The deposits of animal and vegetable refuse in old quarries and other hollows, in the town, for "made ground," on which houses are intended to be built. These deposits, which at certain seasons of the year when manure is not in demand, are contributed to by the refuse of the Corporation, have several times been complained of by medical men, and have twice during the year been the subject of report to the Sanitary Authority by the Medical Officer of Health.

6.—The Authority has also been advised as to the use, for drinking

purposes, of the water of several pumps, samples from twelve pumps having been analysed and reported on unfavourably.

7.—The offensive state of certain slaughter-houses, and the tardy removal of refuse therefrom by the Corporation.

8.—The want of paving, defective closet accommodation, and insanitary state of dwellings at Percy Court, Monk Square, Tuthill Chapel Yard, Cottage Yard, and Cochrane's Green, Tuthill Stairs (second report); some of the remedies suggested have been applied.

9.—The defective construction of recently-built rooms at Morpeth Street, Chimney Mills, and defective drainage at Dunn's Terrace, Spital Tongues.

10.—Exceptional Nuisances from sewage, drains, middens, cow byres, defective paving, draining, or closet accommodation, rooms unfit for occupation, over-crowding, &c., in different parts of the Borough.

11.—A special Report on the Cow Byres and Dairies of the Borough was made to the Authority in August last, and contained accurate information under seventeen heads connected with the public milk supply, including numbers of cattle, state of the ground in the vicinity and in the interior of the byres, cubic space, ventilation, drainage, lighting, water supply, cleanliness, condition of walls, quality and kind of food, state of mangers, grain tub, hay loft, the use of the byre for other purposes, its distance from human habitations; the condition of the manure pit, the state of the dairy, and the milk vessels. An account was also given of the extent of Pleuro-pneumonia and its locality in the Borough during the past six years; its prevalence was also shown to have been greatest in byres where insanitary conditions were in excess.

The Report showed the ill effects of confinement in unwholesome byres on the health of cattle, and the consequent deterioration of the milk yielded; the probability of the injury to the health of human beings from their living in too close proximity to byres where drainage and paving is defective; the risk to life from possibility of contamination of milk by impure water, and liability to its becoming infected with zymotic poison in the houses of the dairy-keepers. To prevent these evils the Report recommended that steps be taken to obtain legal power to place the byres and dairies under proper regulation and supervision.

The Report was accompanied by a map showing the localities of the different byres, the number of cattle kept in each, and the number dying from Pleuro-pneumonia during the past six years, as also a plan of a proposed model cow byre.

It is to be regretted that no action has followed this Report. The

attention of the Sanitary Authority is again directed to this subject which, in addition to the reasons already mentioned, is one of pecuniary importance to the Corporation. During the past four years the compensation given by the Corporation on account of cattle slaughtered, chiefly for Pleuro-pneumonia, averages £263 per year. If the evidence of the Report be trustworthy, this sum, or most of it, might have been saved by insisting upon the maintenance of the sanitary condition of the byres. Since the presentation of the Report a serious and fatal outbreak of Enteric Fever in Glasgow has been distinctly traced by the Medical Officer of Health to the insanitary state of a cow byre and the dissemination of the disease by means of milk from the infected house of the milk supplier. In consequence of this epidemic, a draft bill for the regulation of places of milk supply has been prepared and is now under consideration.

ACTION TAKEN, &c.

The subject of the Health Department, which has perhaps occupied more attention than any other during the year, is that of the provision of dwellings for the labouring classes. In the Annual Report for 1876 some account was given of the proceedings under the Artizans and Labourers Dwellings Improvement Act, 1875, including the official representation on the New and Old Pandon Groups. Important action has followed that representation. As the carrying out of the scheme of the Authority awaits the confirmation of Parliament, the present is a suitable occasion to review the proceedings from the date of last report to the present time. The subject has received more or less of consideration at every meeting of the Sanitary Committee, and has been before the Council at several meetings. In August a Report was presented to the Council by the chairman of the Sanitary Committee (Mr. Ald. Wilson) recommending the demolition of the houses in the New Pandon Group, the raising of the ground to a suitable level, and the erection thereon of substantial buildings for commercial purposes.

Estimated cost of purchase of property thus to be dealt with	} £26,000
Deduct estimated value of land to be resold	13,060
Total estimated cost	13,940

The Committee recommended that the property in the Old Pandon Group be repaired by the owners and allowed to remain; and that the report be confirmed in order that a detailed scheme might be submitted for sealing. The report was received.

On September 5th a petition was presented by Mr. Councillor Youll from the residents in New Pandon Group, asking that suitable dwellings should be provided in the vicinity of, and in lieu of, those proposed to be demolished.

On October 3rd a Report of the Sanitary Committee was presented to the Council by the chairman, recommending the course already advised as to the New Pandon Group, but containing the following modification of the previous report, which was thereby withdrawn, viz., a recommendation that accommodation for the displaced families be provided on the Old Pandon site.

On October 17th, after a prolonged discussion, this report was confirmed, an amendment for the deferring of it being lost.

On November 6th a special meeting of the Council was held to consider a resolution submitted by Mr. Ald. Wilson, to the effect that the Council was of opinion that such portion of the area in the New Pandon Group "as lies on the east side, and inclusive of the street or road known as New Pandon, is an unhealthy area, and that an improvement scheme ought to be made in respect of such area." An amendment to adjourn being lost, the motion was put and carried. The confirmation of a report of the Sanitary Committee, recommending the adoption of a scheme, was then moved by the chairman of the Committee, who stated that, owing to difficulties and expense, the Committee had been compelled to abandon Old Pandon as the proposed site for the erection of the new dwellings, and to substitute for it part of the land known as the Battle Field.

The following was also submitted:—

BOROUGH OF NEWCASTLE-UPON-TYNE.

Proposed Scheme under the "Artizans and Labourers Dwellings Improvement Act, 1875," by the Mayor, Aldermen, and Burgesses of the Borough of Newcastle-upon-Tyne, acting by the Council of the said Borough as the Local Authority within the meaning of the said Act, for the Improvement of Unhealthy Areas within the Borough.

1.—This Scheme may be cited as the Newcastle-upon-Tyne Artizans and Labourers Dwellings Improvement Scheme, 1877.

2.—In this Scheme "the Borough" means the Borough of Newcastle-upon-Tyne, "the Corporation" means the Mayor, Aldermen, and Burgesses of the Borough, the "Town Clerk" and "the Surveyor" mean respectively the Town Clerk of the Borough and the Borough Engineer and Town Surveyor for the time being, and "the Plans" means the Plans which accompany this Scheme.

3.—Duplicates of the Plans, showing the property proposed to be dealt with under this Scheme, are deposited at the Office of the Town Clerk, and copies of the Plans, or any part thereof, certified by the Surveyor, shall be received in all Courts of Justice, or elsewhere, as evidence of the contents thereof respectively.

4.—The Corporation may enter on, take compulsorily, and, for the purposes of this Scheme, deal with all or any of the lands, messuages, and premises, hereinafter mentioned and referred to, and delineated on the Plans marked respectively A and B, and thereon coloured blue and red respectively.

5.—This Scheme comprises a portion of the area in respect of which an official representation has been made by the Medical Officer of Health, dated 1st August, 1876, and therein referred to as the New Pandon Group, and concerning which portion the Council of the Borough, as the Local Authority within the meaning of the said Act, has passed a resolution that such portion is an unhealthy area, the said portion containing 5,533 square yards or thereabouts, being bounded on the south by a Timber Yard in the occupation of Messrs Borries, Craig, and Company; on the south-west by Land and Buildings belonging to the said Corporation and others; on the east by a street called Pandon Bank; and on the north by Land and Buildings the property of the North Eastern Railway Company and others, and with the streets, lanes, roads, entries, and courts lying within the above-described boundary is more particularly described on the said Plan marked A, and thereon distinguished by being coloured blue.

6.—The buildings on the land coloured red on the said Plan marked B, and intended to be demolished, are situate at a place called the Battle Field, within the Borough, and are bounded on the north by Vacant Land, the property of Mrs. Susannah Gibson; on the south by a Public Highway known as New Road; on the east by the Burial Ground of St. Ann's Church; and on the west by a Public Highway known as Elwick's Lane.

7.—The Corporation may, for the purpose of carrying out this Scheme, lay out, form, pave, sewer, flag, and complete the streets and improvements following, shown on the said Plan marked B, that is to say:—

- 1.—A new Front Street, of the width of 40 feet, on the east side of, and opening into, Elwick's Lane, and terminating at the western boundary of St. Ann's Church.
- 2.—A new Back Street, of the width of 20 feet, running parallel the whole length of and behind the before-mentioned Front Street.
- 3.—A new Back Street, of the width of 20 feet, forming a means of communication with the before-mentioned new Front and Back Streets, commencing at the before-mentioned Back Street, and running in a northerly direction, and forming a junction with the herein-before described Front Street.
- 4.—The widening and improving of the north side of a Road or Highway, known as the New Road, commencing at the junction of that road with Elwick's Lane, and terminating at the south-west corner of the Burial Ground of St. Ann's Church.

8.—The Corporation may make, widen, and form all such approaches, communications, alterations of level, stopping up, widening, or diversion of existing

streets, highways, or roads as may be necessary, and as may hereafter be determined by the Corporation to be necessary or proper, for the purposes of this Scheme.

9.—In laying out and forming the aforesaid new streets, and executing the aforesaid improvements and works, the Corporation may deviate from the lines shown on the said Plan marked B, to the extent shown on the said Plan.

10.—Inasmuch as from natural configuration of surface and lowness of level, as compared with neighbouring lands, the ground portion of the New Pandon Group, coloured blue on the said Plan marked A, and found by the said resolution of the Local Authority to be an unhealthy area, is unsuitable in its present state for the erection of dwellings for the working classes, the ground may be filled up to the level of the surrounding lands.

11.—The Corporation may, for all or any of the purposes of this Scheme, sell and dispose of all or any of the lands herein-before authorised to be dealt with by them: that is, to sell such part of them as is so required for the purposes of this Scheme, and to sell such part thereof as is not so required for other and general purposes.

12.—The dwellings for the accommodation of the persons of the working class that may be displaced under the provisions of Clause 4 of this Scheme, are intended to be erected on the ground coloured red on the Plan marked B, and are calculated to accommodate families constituting 782 persons, being the number of persons that may be displaced.

13.—The Corporation may settle, determine, and approve the Designs, Elevations, and Space, and all other particulars respecting the Buildings to be erected on the lands shown on the said Plans marked A and B, or either of them, including not only such portion thereof as may be required for Artizans' Dwellings, but also the land not so required.

14.—The Corporation shall, as soon as practicable after the passing of the Act for confirming the provisional order authorising this Scheme, proceed to carry the same into execution; but they may, from time to time, purchase and deal with parts of the lands within the unhealthy area without being required to deal with the whole of the lands within that area.

15.—The expenses of the execution of this Scheme (so far as they are not defrayed out of receipts of the Corporation, pursuant to the Artizans and Labourers Dwellings Improvement Act, 1875), and the costs, charges, and expenses, preliminary to, and of, and incidental to, the preparation of this Scheme, and the application for the Order confirming the same, and the obtaining the confirmation by Parliament of such Order, shall be paid by the Corporation out of all, or any of, the local rates, as defined by the said Act (Section twenty-one), or out of money borrowed in pursuance of the said Act.

16.—The said Maps or Plans marked respectively A and B, Particulars, and Estimates, accompany this Scheme.

The resolution was carried.

On December 5th, the Council resolved, "That the Sanitary Officer be instructed to summon before the magistrates the owners of the property in the new Pandon Group which the Medical Officer of the Borough, on the 1st August, 1876, reported unfit for habitation, and

which unfitness has since been confirmed by the Council by their vote on the 17th October, 1877."

On January 9th, the reports of the Medical Officer of Health and Inspector of Nuisances, to the effect that three rooms only, in the New Pandon property, were in such a condition from dampness, darkness, or other intrinsic defect, as to justify proceedings being taken for the immediate closing of the rooms, having been read—On the motion of Mr. Ald. Wilson, the Council resolved, "That a petition to the Local Government Board confirming the Improvement Scheme lately made under the Artizans and Labourers Dwellings Improvement Act, 1875, be sealed."

On February 28th, 1878, a Local Inquiry was held for the purpose of ascertaining the correctness of the official representation, the sufficiency of the Scheme, and any local objections to the same. No reply being made to the question of the presiding Inspector of the Local Government Board, as to whether there was any opposition to the Scheme, the following evidence was given by the Town Clerk :—

The population of the Borough at the census of 1871 was 128,443; the estimated population by the Registrar-General at midsummer, 1878, 144,570. The acreage of the Borough is 5,325 acres; the rateable value, £701,613. Municipal rates: General rate, 2s.; improvement rate, 11d.; education rate, 2d.; free library rate, 1d.; making 3s. 2d. in the pound in the year. The bond debt of the Corporation is £551,740.

The following evidence was given by the Medical Officer of Health :—

Parts comprised in New Pandon Group.—This group comprises the whole of New Pandon Street, together with the houses, yards, and entries immediately adjoining on each side, and is contained within the space near the foot of Trafalgar Street, bounded on the north by the North-Eastern Railway, and on the east by the roadway of Pandon Bank from St. James' Lane upwards, on the west by the road leading south from Trafalgar Street, and on the south by the enclosure now used as a petroleum store. The group which is included within the blue margin on the accompanying plan consists of 239 tenement dwellings, occupied at the time of inspection (November, 1875), by 958 persons; of these dwellings, no less than 179 consist of 1 room, 57 of two rooms, and 3 only of 3 rooms each. In addition to the above, there are a public-house and three common lodging houses of 8, 7, and 4 rooms respectively, with which exceptions there are no other dwellings in the group.

The group defined is composed of houses in two blocks. The larger block, comprising all the houses in the group to the east of the roadway of New Pandon Street, covering an area of 1.14 acres, contains 199 tenements, occupied by 764 persons, or at the rate of 720 persons per acre. The smaller block, to the east of the roadway of New Pandon Street, covers an area of 0.234 acres, containing 40 tenements and 194 occupants, or at the rate of 829 persons per acre. Including the street way, the group covers 1.66 acres, and is populated at the rate of 647 persons per acre, the number per acre in the entire borough being 26.

The Group is in large part built on the sloping sides and bottom of what was formerly Pandon Dene. On the Plan, the height in feet above sea level at various points in the area is indicated by the figures within circles, from which it will be seen that the roadway of New Pandon Street is at a mean of about 40 feet above sea level. The northern end of the street is closed in by a natural bank with a gradient of 32 feet in 150, sloping upwards to the foot of Trafalgar Street, at which point the roadway is on a level with the eaves of the houses in New Pandon Street. Ventilation is still further obstructed at this end of the street by the embankment of the North-Eastern Railway and by a wall ranging from about 20 to 40 feet in height, extending a considerable way over the Dene between the railway and the street, and rising several feet above the eaves of the houses. Near and to the west of the New Pandon Group is another embankment rising to a level with the eaves of the houses, and having also a wall of about 20 feet in height along its crest. To the south side of the group, at no great distance, are high warehouses and other buildings. To the east is the slope of Pandon Bank, the upper part of which has a gradient to New Pandon Street of 43 feet to 250. The group is, therefore, much enclosed on every side.

General character of the Property.—The east block of the Group consists of houses in New Pandon Street and Pandon Bank, with yards and entries between. The yards, which are reached by the house doors only, are small, and are for the chief part surrounded by high buildings on every side. The entries or courts are five in number. Of these one—Belt's, holding twenty-five tenements, is a narrow blind alley of high houses; Phoenix, Travellers', School, and Matford's Entries, which comprise in all seventy tenements, are courts, the only access to which is by narrow, covered passages beneath the upstairs rooms of houses. In Matford's Entry is a Macfarlane closet of ten seats (male and female) in the middle of the yard. The block to the west side of New Pandon Street consists chiefly of houses on three sides of an unpaved space known as Graham's Yard. Most of the rooms on the ground floor have no doors or windows except those facing this yard, whilst many of the front and higher floors (known as Mowbray's Buildings) have entrances at the back only.

The condition of the individual houses and rooms of the New Pandon Group is as follows :—Of the staircases, 90, or 37 per cent. of the whole, have sanitary defects, being either dilapidated, damp, narrow, or imperfectly ventilated. The staircases in a large number of the houses of the group are unsuited for dwellings of any kind, and, least of all, for those of the tenement class, being narrow, and having the doors of numerous tenements opening directly into them, and this generally on both sides, while there is often little or no means for cross-ventilation, except through the rooms themselves—conditions which help to account for much of the infectious disease prevalent in the locality. Of the total rooms 45, or 15 per cent., are dark, either from the deficiency of window provision or overshadowing by opposite buildings. In 48 rooms, or 16 per cent. of the whole, there is defective ventilation. In the majority of these the defect is due to the construction of what are known as "well-rooms"—i.e., rooms having door, window, and fireplace near one end, so that the air in the opposite part of the apartment stagnates, even when door and windows are open. The walls of 110, or 36 per cent. of the rooms, are either dilapidated, damp, or boarded up to hide damp. The ceilings of 71, or 23 per cent.,

are dilapidated; in 78, or 26 per cent., damp from defective roofs, &c.; and in 25, or 9 per cent., they are low; of the latter, the height from the floor is under 7 feet in seven of the rooms, under 7 feet 6 inches in eight others, and under 8 feet in the remaining thirteen rooms. The floors of eleven rooms, or 4 per cent., are dilapidated. In 25, or 8 per cent., the windows are defective from dilapidation, having the upper sashes fixed, &c. &c. In addition to the defects, 69, or 23 per cent. of the rooms have other sanitary imperfections not classed. The roofs of twelve of the houses also were, at the time of inspection, especially defective. The foregoing account may be considered in some respects as an under-statement of defects rather than the reverse, since rooms of eight feet and upwards in height have not been classed as "low;" and the terms "dark," or "defectively ventilated," have been applied to such rooms only as presented these conditions in a marked degree.

The privy and water-closet accommodation in the New Pandon Group is defective in amount, which varies considerably in different parts of the Group as well as in quality and situation. In the larger block, the first three houses have four seats (privies) for 17 tenants; the next set of tenements, which includes Phoenix Court, has one seat only (privy) for 23 tenants: the property including Travellers' Entry and Nos. 16 and 17, Pandon Bank has six seats (privies) for twenty tenants; that including the school yard and the house adjoining on each side has privy accommodation of four seats for 13 tenants; Belt's Yard, &c., six seats for 26 tenants; that of Matford's Entry, including also three houses in Pandon Bank, contains seven seats (privies) for 52 tenants. In Pandon Bank, the accommodation with the exception of a private water-closet in a small public-house, is at the rate of from four to seven tenants per seat (privy or closet). The quality and situation of the privies are defective, many being badly ventilated, more or less dilapidated, in close proximity to living rooms, having large middens allowing of the accumulation of night soil and refuse for several weeks together, and environed by the lofty walls and overlooked by the windows of tenements. In the smaller block (Mowbray's Buildings, &c.), there are at present five water-closets of one seat each for 34 tenants. There were 40 tenants in the block at the date of the official representation.

Examined—I surveyed a large portion of the tenemented property of Newcastle, capable of accommodating 8,000 persons; and I came to the conclusion that this was the very worst, from sanitary and building imperfections, from sickness and mortality, and from situation and surroundings. Part of this property belongs to the Corporation, who also own a large portion of the property round this district. Whether or not the high death-rate in this property is due very much to the dissolute and intemperate habits of the people who live there, and have gone there in the last extremity of their lives, rather than to the situation and condition of the dwellings, is a question which will take a great deal of answering. A considerable portion of the property in the New Pandon Group belongs to the Corporation.

Ald. WILSON informed the Inspector that the Corporation were, in many cases, purchasing the old and dilapidated properties in this neighbourhood for the purpose of removing them for general public improvements.

The TOWN CLERK said the Corporation had compulsory powers over the whole of this Pandon Group by the Improvement Act, 1871, the powers of which were revived by Act of 1877.

Examination Continued—On the occasion of the Government inquiry as to the outbreak of cholera in 1853, it was stated that the Old Pandon Group was in a very bad state.

The MAYOR—It is patent to everybody who knows the town that it has been in a very bad state for very many years.

The MEDICAL OFFICER OF HEALTH added that in his Official Representation he stated that the death-rate in the New Pandon Group for three years was 47·7 per thousand, as against 28·5 in the town. In the Old Pandon Group the death-rate is 37·3. The health is better in the Old Pandon Group than in the New, but the property is worse. He had given his opinion that nothing but an improvement scheme would meet the case.

Examined by the Mayor—The removal of the people from the place would be the best, but it is not for the Medical Officer of Health to say how the improvement scheme is to be carried out.

By the INSPECTOR—The ground proposed to be built upon is nearly all open, and very accessible to the Quayside.

Mr. A. M. FOWLER, the Borough Engineer and Town Surveyor, handed in a statement giving particulars of the scheme as follows:—The area covered by yards and buildings proposed to be demolished is 5,533 square yards, or 1a. 0r. 23p., and the area of the lands on which the dwellings are to be erected is 7,078 square yards, or 1a. 1r. 34p. The number of persons of the working classes who would be displaced (at the time the scheme was prepared) is 782. The number was reduced two or three days ago to 590. Accommodation will be provided for about 800 persons in the dwellings proposed to be erected at the Battle Field, and the erection of such dwellings, and the demolition of the dwellings on the unhealthy area, will be proceeded with *pari passu*, so as not to leave any of the persons displaced unaccommodated. The reasons for providing accommodation at the Battle Field for the persons displaced are, that the greater portion of the unhealthy area is on a low level, and that, owing to the configuration of the land and the surrounding streets and approaches, the lower portion of the unhealthy area cannot be adapted to the erection of new dwellings. The distance by the nearest public thoroughfare from the unhealthy area to the site for the dwellings proposed to be erected at the Battle Field is 600 yards. The lower portion of the unhealthy area will be utilised for the erection of business premises. The area on which the artisans dwellings are to be erected will be set out in streets, 40 feet in width for front streets, and 20 feet in width for back streets, with two rows of dwellings facing the front streets. The dwelling houses will be erected three or four storeys in height to suit the requirements of the families displaced. The sanitary arrangements will consist of each house being drained with glazed sanitary tubes, and provided with water closet accommodation, fire-place and ventilating grates to each room, yard space behind each block of houses, with wash-houses erected thereon. The site abuts upon two streets, New Road, with an average width of 60 feet, and Elwick's Lane, 40 feet in width. The ground is elevated. The blocks of buildings will have windows looking to the south, and the land slopes to the south. The following is the estimate of the cost of carrying the scheme into effect:—Cost of acquiring land and buildings at New Pandon and at the Battle Field, interest of capital expended, law and other expenses, new street formation, &c., £40,000; deduct—re-sale of land in New Pandon and Battle Field, £21,700; total net cost, £18,300.

In reply to questions put by the Inspector, Mr. FOWLER said the site on which the buildings were proposed to be demolished would be left vacant for some years, during which it would be filled up to a uniform level, so as to make it suitable for building warehouses on it. The land would have to be thoroughly consolidated before they could build warehouses on it, or they would have to build on arches or solid material, which would carry buildings above it.

The INSPECTOR—Your new dwellings must precede any dealings with the block proposed to be pulled down?

Mr. FOWLER—Yes, if we are compelled to carry out strictly the provisions of the Act. The Industrial Dwellings Company are now erecting a second block of houses which will accommodate sixty families, and there is a block of property at present unoccupied which would accommodate five families, and there are other houses unoccupied.

Examined—There is already a block of industrial dwellings, and a part of the occupants of the Pandon Dene Group are anxious to go into a new block which the Artizans Dwellings Company are about to erect. A large portion of the new block will not be applicable for the persons turned out of the New Pandon Group. The new buildings on the Battle Field will be available to the extent of the accommodation for the persons displaced from the New Pandon Group. There is no nearer site that I know of. The large blank space to the right of the New Pandon Group is valuable land, but undulating, and not at all suitable for artizans' dwellings. The gradients are very steep. A few of the people who live in the New Pandon Group work on the Quayside.

Examined—Is it your opinion that the class of people in the New Pandon Group will be likely to occupy the houses on the Battle Field?

Mr. FOWLER—I think we should have to educate them to it, because they are a very poor class, and we should have almost to compel them to go into improved houses of any sort. I think the people living in the New Pandon Group, and who work on the Quay, would not be in the slightest degree inconvenienced by going to the new houses proposed to be built.

Mr. PRICE, secretary to the Industrial Dwellings Company, examined, said—We have one block of buildings finished and occupied for the last seven years, and are building a new block to accommodate 65 families. It will be ready in eighteen months or two years. We have always a long list of applicants for the houses. We have at present applications from several persons who wish to occupy the second block. The last tenants we got came from Byker, leaving self-contained houses to come to tenements of two rooms. They are labourers on the Quay. We charge 3s. 6d. a week. I find that the working classes, as a rule, get as near their work as possible. The Company pays five per cent.

Mr. YOULL—It has been already suggested that the Industrial Dwellings Company, of which I am a member, should take the proposed new buildings, and I think we will do so.

This was the evidence, and the Inspector having closed the inquiry, in company with the Mayor and some members and the officers of the Corporation, visited the places referred to.

THE PREVENTION OF ZYMOTIC DISEASE.

The action taken by the Health Department during the year for the prevention of infectious sickness has been the following:—

Disinfection of Rooms, &c., by the Inspector after 178 cases of Scarlet, 41 of Enteric, 21 of Typhus, and 14 of other forms of Fever, 57 of Measles, 5 of Small-pox, and 7 of Diphtheria; total, 323 cases, as compared with 340 in 1876. Details are given in Appendix, Table XVI. A large proportion of the cases of infectious sickness has, as usual, been reported through the courtesy of the Committee and Medical Officers of the Dispensary.

Isolation of Cases.—The number of cases admitted to the Fever Hospital is small as compared with the admissions of former years. 39 patients only have been received, of which 27 have been removed there by the Medical Officer of Health, at the cost and with the sanction of the Sanitary Authority. The admissions include 8 cases of Typhus, 14 of Enteric Fever, 11 of Scarlet Fever, 2 of Small-pox, 1 of Continued Fever, 1 of Measles, and 2 of other diseases not febrile. A detailed list appears in the Appendix, Table XIII.

In most instances the consent of the patient and friends for the removal of the former to hospital has been readily, or with a little persuasion, obtained. In one instance, where the surroundings of the case were of a highly insanitary character, the patient's positive refusal to leave the house necessitated her removal to hospital on a magistrate's order, which was effected.

Purification or Destruction of Infected Articles.—Since the issue of last Report, the Ransome's disinfecting apparatus has been completed and has done a considerable amount of work. Upwards of 200 articles, including beds, mattresses, bedding, curtains, carpets, wearing apparel, &c., &c., have been purified by it. (See Appendix, Table XV.) The stove has been the means of obviating the destruction of a large amount of articles (beds, bedding, &c.), which would otherwise have had to be made good to the owners at the cost of the Sanitary Authority. 36 articles only have been replaced in this way after destruction on account of infection, as compared with 113 articles in 1876, before the erection of the apparatus.

In last Report allusion was made to the public importance of the early removal of cases of Fever to hospital; at the same time it was shown that from want of legal power to maintain in hospital patients suffering from infectious fever, who, though not paupers, could not pay for themselves, the Sanitary Authority was unable to isolate many cases which

might otherwise be removed to the great advantage of themselves and the community. It was also shown that this difficulty would be met by a participation of the Fever Hospital in the proceeds of the Hospital Sunday collection, which has not hitherto been granted. Shortly before the meeting of the Hospital Sunday Committee for the division of last year's collection, the Medical Officer of Health wrote to and also called upon the Secretary and represented the claims of the Fever Hospital to a share of the proceeds. The Secretary, although of opinion that the Fever Hospital was not entitled to participate in the fund, promised to lay the letter before his committee. As yet no reply has been received. At the interview above mentioned, the Secretary stated that the principle of apportionment adopted—by which the largest share of the fund is given to the institution with the largest outlay—would of itself prevent the Fever Hospital, with its small yearly average of working expenses, from receiving any but the most trifling benefit therefrom. The adoption of such a principle as this in the apportionment of money collected for purposes of public charity is a great injustice to the fever-stricken poor, whose removal to hospital would not only benefit themselves and their relatives, but is an urgent public necessity, and who on this account have more than others a claim for public relief.

SUSPECTED AND UNWHOLESOME PROVISIONS.

42 carcasses of beef, 1 tierce of salt beef, 2 carcasses of veal, 47 of mutton, 116 of pork, 23 rabbits, 6 baskets of cherries, and 1 of gooseberries—all suspected—have come under observation during the year; 11 carcasses of beef, 1 tierce of salt beef, 2 carcasses of veal, 10 of mutton, 39 of pork, as well as all the rabbits and fruit, have been destroyed as unfit for food. (See Appendix, Table XIV.) The quantities of flesh meat destroyed are considerably in excess of those of the previous year. Most of the flesh meat unfit for food was diseased. The carcasses of pork were chiefly those of pigs from Ireland, dead or killed whilst suffering from the disease popularly known as "red soldier." The unwholesome fruit is much less in quantity than usual, probably from deficiency of the crops.

HENRY E. ARMSTRONG, M.R.C.S.,

MEDICAL OFFICER OF HEALTH.

Health Department,
Town Hall, Newcastle-upon-Tyne,
March, 1878.

BOROUGH OF NEWCASTLE-UPON-TYNE, 1877.

APPENDIX.

TABLE I.

POPULATION (ESTIMATED BY THE REGISTRAR GENERAL) TO THE MIDDLE OF THE YEAR—142,231.

Registration Sub-Districts.	Births Registered in 52 Weeks, ended 29th December, 1877.			Deaths Registered in 52 Weeks, ended 29th Dec., 1877.				
	Male.		Female.	Total.	Male.	Female.	Totals.	
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.				
Westgate	1,157	57	1,163	56	2,433	675	668	1,343
St. Andrew's	287	13	251	16	567	180	160	340
St. Nicholas'	157	6	147	9	319	245	157	402
All Saints'	488	30	568	30	1,116	282	298	580
Byker	567	21	570	17	1,175	243	270	513
Borough Total	2,656	127	2,699	128	5,610	1,625	1,553	3,178

The Births represent a rate of 39·4 per 1,000 estimated population. The Deaths represent a rate of 22·3 per 1,000 estimated population. Increase of Births over Deaths, 2,432.

TABLE II.

ANNUAL DEATH RATE PER 1,000 LIVING IN NEWCASTLE FOR THE PAST FIVE YEARS, COMPARED WITH THE AVERAGE RATE IN 23 TOWNS IN THE UNITED KINGDOM.

	1873.		1874.		1875.		1876.		1877.	
	Annual Average in 21 Towns.	Annual Rate in Newcastle.	Annual Average in 23 Towns.	Annual Rate in Newcastle.	Annual Average in 23 Towns.	Annual Rate in Newcastle.	Annual Average in 23 Towns.	Annual Rate in Newcastle.	Annual Average in 23 Towns.	Annual Rate in Newcastle.
1st Quarter	25·6	29·4	25·6	29·1	29·6	27·4	26·8	25·5	24·7	24·2
2nd "	22·7	27·0	22·9	24·9	23·5	22·7	23·0	21·8	23·9	23·2
3rd "	23·8	29·9	24·5	31·6	23·7	28·9	22·7	22·6	20·5	20·2
4th "	25·4	33·4	28·9	31·7	25·3	25·4	22·4	21·2	23·0	21·8
Annual Rate	24·3	30·1	25·5	29·2	25·4	26·1	23·7	22·7		22·3

TABLE III.

RATES OF DEATH IN THE DIFFERENT CLASSES OF DISEASE PER 1,000 POPULATION IN THE BOROUGH, AND IN EACH REGISTRATION SUB-DISTRICT.

Registration Sub-Districts.	Westgate (V.W.)* excluding Benwell and Fenham.	St. Andrew's	St. Nicholas' (H.)*	All Saints'.	Byker.	Borough.
Population (estimated to middle of 1877)....	63,379	19,672	10,743	28,643	19,794	142,231
CLASS.	Rate per 1,000.	Rate per 1,000.	Rate per 1,000.	Rate per 1,000.	Rate per 1,000.	Rate per 1,000.
I.—Zymotic† ...	3.2	2.8	4.8	3.0	4.0	3.4
II.—Constitutional ...	3.9	3.0	7.3	3.1	3.7	3.9
III.—Local ...	9.3	8.5	15.4	9.2	12.2	10.0
IV.—Developmental ...	3.8	2.3	3.2	3.7	4.0	3.6
V.—Violent Deaths ...	0.5	0.5	5.1	0.7	0.7	0.9
VI.—Violent Deaths not classed ...	0.0	0.0	0.0	0.0	0.0	0.0
Sudden Deaths, causes unascertained, or ill-defined ...	0.5	0.3	1.0	0.7	1.1	0.6
Total ...	21.2	17.4	37.3	20.4	25.7	22.3

*Workhouse and Vagrant Ward. †Hospital.

‡ The deaths in the Zymotic Class are corrected by distribution of those occurring at the Fever Hospital to the Sub-District, from which each came.

TABLE IV.

DEATHS FROM ALL CAUSES IN EACH SUB-DISTRICT ACCORDING TO ORDER OF CLASSIFICATION OF THE REGISTRAR GENERAL.

ORDER.	Westgate	St. Andrew's	St.* Nicholas'	All Saints'.	Byker.	TOTALS.	
	Number of Deaths.	Number of Deaths.	Number of Deaths.	Number of Deaths.	Number of Deaths.	Deaths from all Causes.	Percentage of Total Deaths in each of the different orders to Total Deaths from all causes.
CLASS I.							
ZYMOTIC DISEASES.							
1. Miasmatic ...	178	45	48	71	74	416	13.1
2. Enthetic ...	12	7	5	4	3	31	1.0
3. Dietic ...	12	4	3	6	3	28	0.9
4. Parasitic ...	1	0	1	0	0	2	0.06
	203	56	57	81	80	477	15.0
CLASS II.							
CONSTITUTIONAL DISEASES.							
1. Diathetic ...	30	9	18	9	11	77	2.5
2. Tubercular ...	219	50	60	81	64	474	15.2
	249	59	78	90	75	551	17.3
Carried forward ...	452	115	135	171	155	1028	

TABLE IV.—CONTINUED.

DEATHS FROM ALL CAUSES IN EACH SUB-DISTRICT ACCORDING TO ORDER OF CLASSIFICATION OF THE REGISTRAR GENERAL.

ORDER.	Westgate	St. Andrew's	St.* Nicholas'	All Saints'.	Byker.	TOTALS.	
	Number of Deaths.	Number of Deaths.	Number of Deaths.	Number of Deaths.	Number of Deaths.	Deaths from all Causes.	Percentage of Total Deaths in each of the different orders to Total Deaths from all causes.
Brought forward ...	452	115	135	171	155	1028	
CLASS III.							
LOCAL DISEASES.							
Diseases of—							
1. Nervous System ...	206	56	49	99	90	500	16.0
2. Circulatory „ ...	83	19	32	32	22	188	6.0
3. Respiratory „ ...	212	57	58	101	98	526	16.2
4. Digestive „ ...	56	23	11	23	20	133	4.2
5. Urinary „ ...	18	7	7	4	4	40	1.3
6. Generative „ ...	4	1	4	2	3	14	0.4
7. Locomotory „ ...	4	1	4	1	3	13	0.4
8. Integumentary „ ...	7	1	1	1	3	13	0.4
	590	165	166	263	243	1427	45.0
CLASS IV.							
DEVELOPMENTAL DISEASES.							
Diseases of—							
1. Children ...	58	6	5	16	20	105	3.3
2. Adults ...	13	3	1	4	5	26	0.8
3. Old People ...	88	20	14	27	16	165	5.2
4. Nutrition ...	81	16	15	59	38	209	7.0
	240	45	35	106	79	505	16.0
CLASS V.							
VIOLENT DEATHS.							
1. Accident and Negligence ...	27	7	54	20	13	121	4.0
2. Homicide ...	0	0	1	1	0	2	0.06
3. Suicide ...	2	2	0	0	1	5	0.16
4. Execution ...	0	0	0	0	0	0	0.00
	29	9	55	21	14	128	4.0
Violent Deaths not classed							
Sudden Deaths (cause unascertained) ...	6	2	3	1	3	15	0.5
Causes not specified, or ill-defined ...	26	4	8	18	19	75	2.3
	32	6	11	19	22	90	3.0
Totals ...	1343	340	402	580	513	3178	

* The number in St. Nicholas' sub-district is increased by 135 deaths in the Infirmary and 8 in the Fever Hospital; 69 of the former came to that Institution from beyond the Borough.

TABLE V.—AGES AT DEATH.

Periods.	Westgate.	St. Andrews	St. Nicholas.	All Saints.	Byker.	Total in Borough.
Under 1 Year ...	360	74	70	181	157	842
1 Year and under 5 Years...	205	54	61	98	93	511
5 Years " 20 " ...	88	16	41	35	51	231
20 " " 40 " ...	193	52	83	58	70	456
40 " " 60 " ...	205	60	80	104	68	517
60 " " 80 " ...	252	70	60	90	62	534
80 " and above ...	40	14	7	14	12	87
Total (all ages) dying during the 52 weeks ended Dec. 29th, 1877	1343	340	402	580	513	3178

TABLE VI.

WEEKLY MEAN NUMBERS OF DEATHS AT SEVEN ÆTAL PERIODS.

	Westgate.	St. Andrews	St. Nicholas.	All Saints.	Byker.	Total in Borough.
Under 1 Year ...	6.9	1.4	1.3	3.5	3.0	16.2
1 Year and under 5 Years...	4.0	1.0	1.2	1.9	1.8	9.8
5 Years " 20 " ...	1.7	0.3	0.8	0.7	1.0	4.4
20 " " 40 " ...	3.7	1.0	1.6	1.1	1.3	8.8
40 " " 60 " ...	4.0	1.2	1.5	2.0	1.3	8.2
60 " " 80 " ...	4.8	1.3	1.2	1.7	1.2	12.7
80 " and upwards ...	0.8	0.3	0.1	0.3	0.2	1.7
Totals ...	26.0	6.5	7.7	11.2	9.9	61.1
Percentage of Deaths under 1 Year to total Deaths in Sub-District, &c. ...	26.8	21.8	17.4	31.2	30.6	26.1

TABLE VII.

BIRTHS AND DEATHS IN THE DIFFERENT QUARTERS IN THE YEARS 1874, 1875, 1876, 1877.

	Births.				Deaths.			
	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.
First Quarter ...	1,425	1,447	1,553	1,485	982	942	890	858
Second " ...	1,366	1,346	1,392	1,418	838	778	761	825
Third " ...	1,355	1,386	1,396	1,361	1,069	992	792	719
Fourth " ...	1,388	1,407	1,473	1,346	1,068	876	740	776
Total ...	5,534	5,586	5,814	5,610	3,957	3,588	3,183	3,178

TABLE VIII.

DEATHS OF CHILDREN UNDER 1 YEAR AND PERSONS OVER 60 YEARS, IN 1874, 1875, 1876, AND 1877.

	NUMBER OF DEATHS.							
	Under 1 Year of Age.				Over 60 Years.			
	1874.	1875.	1876.	1877.	1874.	1875.	1876.	1877.
First Quarter ...	229	220	235	202	173	212	188	197
Second " ...	236	192	216	193	141	157	127	153
Third " ...	382	383	301	235	172	140	114	127
Fourth " ...	249	255	219	212	187	156	135	146
Total ...	1,096	1,050	971	842	673	665	564	623

TABLE IX.

DEATHS OF CHILDREN UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 29TH DECEMBER, 1877.

CLASS.	CAUSE OF DEATH.	Westgate.	St. Andrews.	St. Nicholas.	All Saints.	Byker.	TOTAL.
I.—ZYMOTIC DISEASES.	ORDER 1.						
	Measles ...	3	1	...	1	...	5
	Scarlet Fever (Scarlatina) ...	1	1	1	1	2	6
	Diphtheria ...	2	...	...	...	...	2
	Croup ...	2	...	1	...	...	3
	Whooping-cough ...	19	5	5	9	3	41
	Erysipelas ...	3	...	1	...	1	5
	Dysentery ...	1	...	...	1	...	2
	Diarrhœa ...	36	8	8	15	11	78
	ORDER 2.						
	Syphilis... ..	7	7	2	3	3	22
	ORDER 3.						
	Privation ...	1	1	...	...	2	4
Want of Breast-milk ...	3	...	2	2	...	7	
ORDER 4.							
Thrush	1	...	1	...	...	2	
II.—CONSTITUTIONAL DISEASES.	ORDER 2.						
	Scrofula	4	1	...	...	1	6
	Tabes Mesenterica ...	11	7	4	11	9	42
	Phthisis... ..	5	...	1	...	...	6
	Hydrocephalus... ..	4	...	...	...	2	6
Carried forward ...	103	31	26	43	34	237	

TABLE IX.—CONTINUED.

DEATHS OF CHILDREN UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 29TH DECEMBER, 1877.

CLASS.	CAUSE OF DEATH.	Westgate.	St. Andrew's.	St. Nicholas.	All Saints.	Byker.	TOTAL.
III.—LOCAL DISEASES.	Brought forward	103	31	26	43	34	237
	ORDER 1.						
	Cephalitis				1		1
	Epilepsy	1					1
	Convulsions	56	8	14	27	20	125
	Brain Disease, etc.	3	1	1	11	14	30
	ORDER 2.						
	Heart Diseases, etc.	1					1
	ORDER 3.						
	Laryngitis					1	1
	Bronchitis	39	9	4	15	23	90
	Pneumonia	8	2	1	9	5	25
	Lung Diseases, etc.	6		2			8
	ORDER 4.						
	Enteritis	4					4
Ulceration of Intestines	1					1	
Stomach Disease, etc.		1				1	
Jaundice	3	1	1	1		6	
ORDER 5.							
Kidney Disease, etc.				1		1	
IV.—DEVELOPMENTAL DISEASES.	ORDER 1.						
	Premature Birth	34	3	3	13	14	67
	Cyanosis	1					1
	Other Malformations	5				2	7
	Teething	8	1	2	1	1	13
	ORDER 2.						
	Childbirth (see Puerperal Fever)	4			1	1	6
	ORDER 4.						
	Atrophy and Debility	69	13	9	49	34	174
	V.—VIOLENT DEATHS, &c.	ORDER 1.—(ACCIDENT OR NEGLIGENCE.)					
Drowning		4			1		5
Suffocation		2	3	6	2	2	15
Otherwise		1					1
ORDER 2.—(HOMICIDE.)							
Murder and Manslaughter					1		1
ORDER 4.—(EXECUTION.)							
Violent Deaths (not classed)		1					1
Sudden Deaths (Cause unascertained)		1					1
Cause not specified or ill-defined		5	1	1	5	6	18
Representing a rate of 5.9 } per 1,000 per Annum. }	TOTAL	360	74	70	181	157	842

TABLE X.

NON-CERTIFIED *DEATHS IN EACH SUB-DISTRICT DURING THE 52 WEEKS ENDED 29TH DECEMBER, 1877.

ALLEGED CAUSE OF DEATH.	Westgate.		St. Andrew's.		St. Nicholas.		All Saints.		Byker.		Total.							
	Under 1 Year.	1 Year and Under 2.	Under 1 Year.	1 Year and Under 2.	Under 1 Year.	1 Year and Under 2.	Under 1 Year.	1 Year and Under 2.	Under 1 Year.	1 Year and Under 2.	Under 1 Year.	1 Year and Under 2.						
Supposed some Organic Disease... } Privation			2									1		3				
Bronchitis	1	1	1						1			2	1	2				
Convulsions	5	1	4	1		6	1	11	1	4		30	4					
Supposed from Syncope												1		1				
Supposed Scarlet Fever							1		1			1	1	1				
Diarrhœa									1	1		1	1					
Supposed Heart Disease			2				2							4				
Natural Causes	1						1	1	1	1	3	3	1	5				
Debility	3						8			4		15						
Exhaustion							2	2		4		6		2				
Supposed Apoplexy					1		2				2			5				
Accident							1							1				
Sudden Inflammation of Lungs												1		1				
Suffocation	1											1		1				
Old Age			1				2							3				
Want of Breast Milk							1					1		1				
Premature Birth	6		1				2					9		2				
Paralysis					1							1		1				
Phthisis												1		1				
Effects of Mothers Milk										1				1				
Heart Disease			3				1					1		5				
Aneurism			1											1				
Sudden Death							3							3				
Inanition from Birth				2										2				
Whooping Cough		1												1				
Tabes Mesenterica	1							1						2				
Apoplexy			1							1				1				
Unknown			1		1									1				
Alcoholic Phthisis				1										1				
Measles			1											1				
Consumption				1										1				
Rupture of a Blood Vessel			1											1				
Difficult Labour	1													1				
Dentition	1													1				
Supposed from Inanition								1						1				
Syphilis										1				1				
Simple Cholera			1											1				
Supposed from some natural cause								1	2	1		1	1	2				
Carried forward	20	3	14	8	2	5	6	1	14	28	3	4	19	3	11	81	12	48

*The term "Non-Certified" does not include Inquest cases, or cases certified by unqualified practitioners, but is applied only to Deaths unattested by any Medical attendant whatever, and on which no inquest has been held.

TABLE X.—CONTINUED.

NON-CERTIFIED DEATHS IN EACH SUB-DISTRICT DURING THE 52 WEEKS ENDING 29TH DECEMBER, 1877.

ALLEGED CAUSE OF DEATH.	Westgate.			St. Andrew's.			St. Nicholas'.			All Saints'.			Byker.			Total.		
	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.
Brought forward	20	3	14	2	2	5	6	1	14	28	3	4	19	3	11	81	12	48
Violent Inflammation of Lungs...	1																1	
Supposed Spasm of the Glottis ...										1							1	
Debility from Birth...													1				1	
Died suddenly from some Natural Cause ...			1															1
Accidentally Suffocated ...				1													1	
Suddenly from Apoplexy ...						1												1
Convulsive Fit during a Paroxysm of Whooping Cough...	1																1	
Total ...	21	4	15	9	2	6	6	1	14	29	3	4	20	3	11	85	13	50

TABLE XI.

RETURN OF DEATHS FROM MIASMATIC DISEASES FOR THE 52 WEEKS ENDING 29TH DECEMBER, 1877, CORRECTED BY DISTRIBUTION OF THOSE OCCURRING IN THE FEVER HOSPITAL TO THE REGISTRATION SUB-DISTRICT FROM WHICH EACH CAME.

	Number in entire Borough.	REGISTRATION SUB-DISTRICTS.					From beyond Borough (Ship-board).
		West-gate.*	St. Andrew's	St. Nicholas'	All Saints'	Byker.	
Total Miasmatic Deaths ...	416	181	45	43	72	74	1
INCLUDING—							
Small-pox ...	1	1					
Measles ...	21	7	4	6	2	2	
Scarlet Fever ...	69	14	10	5	18	22	
Diphtheria ...	10	7		1		2	
Croup ...	26	12	1	4	3	6	
Whooping Cough ...	84	43	7	7	19	8	
Typhus ...	9	4	1	2	1	1	
Enteric Fever ...	21	11	1	1	2	5	1
Erysipelas ...	14	10	1	2		1	
Diarrhoea ...	120	51	13	11	24	21	
Other Miasmatic Diseases ...	41	21	7	4	3	6	
Total Miasmatic deaths per 1,000 population in sub-districts ...	2.9	2.9	2.3	4.0	2.5	3.7	
Deaths from Scarlet Fever per 1,000 do.	0.5	0.2	0.5	0.5	0.6	1.1	
Deaths from Diarrhoea per 1,000 do.	0.8	0.8	0.7	1.0	0.8	1.0	
Deaths from Enteric Fever per 1,000 do.	0.14	0.17	0.01	0.04	0.07	0.3	
Deaths from Whooping Cough per 1,000 do.	0.6	0.7	0.4	0.7	0.7	0.4	

* Excluding Benwell and Fenham.

TABLE XII.

LOCALITY OF DEATHS FROM PREVALENT ZYMOTIC DISEASES.

LOCALITY.	DEATHS IN WESTGATE SUB-DISTRICT.												During 13 Weeks ended 29th Sept., 1877.	
	SCARLET FEVER.				WHOOPIING COUGH.				ENTERIC (OR TYPHOID) FEVER.				AUTUMNAL DIARRHOEA.	
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Under 1 Year.	1 Year & under 2. All Ages.
6, Oakes square	1													
4, Suffolk street									1					
15, Tulloch street	1													
Bentnick House	1								1					
10, Darnell street									1					
31, Tulloch street									1					
22, Herbert street									1					
Cannon street	1													
10, Bell street					1	1							2	2
32, Diana street		1												
34, Stanhope street						1								
Marlboro' Crescent						1								
Crispin street		1												
Stone street						1								
Norfolk street						1								
George street						3		1						
Dunn street						1					1		1	1
Railway street														
Cottenham street						1								
Mansfield street		1												
Warden street						1								
Pine street						1		1						
Park road						1							1	1
Scotswood road		1						1						
Brunel terrace							1	1						
Bowman terrace														
Clumber street								1					1	1
Oakes place								1						
Alexander street								2						
Sycamore street						1				2			1	1
Blandford street												1		
Harle street													2	2
Elswick street								1						
Thorpe street													1	2
Newcombe street														
Bath Lane terrace							1							
Wylam road										1				
Handyside street										1				
Belgrave terrace										1				
Bowman street										1				
Edward street							1							
Spring Garden terrace.										1				
Portland street										1				
Sunderland street										1				
Mill Lane										1				
Noble street										1				
Carried forward ...	4	4	1	3	1	13	9	16	4	1	2	1	9	10

TABLE XII.—CONTINUED.

LOCALITY OF DEATHS FROM PREVALENT ZYMOTIC DISEASES.

DEATHS IN WESTGATE SUB-DISTRICT—Continued.															
LOCALITY.	SCARLET FEVER.				WHOOPIING COUGH				ENTERIC (OR TYPHOID) FEVER.				AUTUMNAL DIARRHOEA.		
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	During 13 Weeks ended 29th Sept., 1877.		
													Under 1 Year	All Ages	
Brought forward ...	4	4	1	3	1	13	9	16	4	1	2	1	9	1	10
North Elswick street...								1							
Thornton street				1											
Buckingham street				1				1					1		1
Douglass terrace								1							
Elswick East terrace...												1	1		1
Palace street								1							
Brougham place													1		1
Centre street													1		1
Westmoreland lane													1		1
Derby street													1		1
Panmure street													2		2
Spring street													1		1
Back Duke street													1		1
Crown street													1		1
Seaham street													1		1
Tyneside terrace													2		2
Durham street														1	1
Total ...	4	4	1	5	1	13	9	20	4	1	2	2	23	2	25

DEATHS IN ST. ANDREW'S SUB-DISTRICT.

Cowgate ...	1														
Fleece court ...					1										
Marianople street						1									
High Friar street										1					
Gladstone terrace		1													
Gallowgate ...							1								
Spital Tongues													1		1
Prudhoe street				2											
Bulmer street										1					
Percy street				1											
Liverpool street				1									1		1
Lovaine crescent				1											
Elswick court				1									1		1
Leazes court								1							
Leazes terrace				1											
Prudhoe place				1									1		1
Lambton place													1		1
Chester street													1		1
Carnaby's yard															1
Total ...	1	1		8	1	1	2	3		1			6	1	7

TABLE XII.—CONTINUED.

LOCALITY OF DEATHS FROM PREVALENT ZYMOTIC DISEASES.

DEATHS IN ST. NICHOLAS' SUB-DISTRICT.															
LOCALITY.	SCARLET FEVER.				WHOOPIING COUGH				ENTERIC (OR TYPHOID) FEVER.				AUTUMNAL DIARRHOEA.		
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	During 13 Weeks ended 29th Sept., 1877.		
													Under 1 Year	All Ages	
Dean street ...	1														
Fever Hospital				1									2		1
Tuthill stairs ...						1									
Low Friar street						1									
Stowell street														1	1
Pitman's row, Forth Banks										1					
Infirmary (Foreigner)													1		
Sussex street ...										1					
Westgate road											1				
Orchard street											1				
Queen's lane ...							2								
Clayton street...							1								
Dawson's court							1								
St. Nicholas' Church yd														1	1
Dog Leap stairs														2	2
Chambers' court, Newgate street														1	1
Grove's entry, Close														1	1
Monk square ...														1	1
Friars ...															
Total ...	1						5		3	2	2		2	1	1

DEATHS IN ALL SAINTS' SUB-DISTRICT.

North Shore ...															
Victoria place...							1								
Regent terrace													1		
Cut bank ...		1												1	1
St. Ann's terrace															
Grenville street															
St. Ann's row ...															
Gibson street ...															
Gibb's yard ...															
Richmond street															
New Road ...										1	1				
Blacksmiths' entry															
Albert street ...										1					
Chatham place															
Picton terrace...											1				
Howard street															
Pilgrim street											1				
Stock bridge ...											1				
Chapel buildings											1				
Carried forward ...	2	10	2				2	2	6		2			1	1

TABLE XII.—CONTINUED.
LOCALITY OF DEATHS FROM PREVALENT ZYMOTIC DISEASES.

DEATHS IN ALL SAINTS' SUB-DISTRICT—Continued.															
LOCALITY.	SCARLET FEVER.				WHOOPIING COUGH.				ENTERIC OR TYPHOID FEVER.				AUTUMNAL DIARRHOEA.		
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	During 13 Weeks ended 29th Sept., 1877.		
													Under 1 Year	All 1 Year under 2 Ages	
Brought forward ...	2	10	2	...	2	2	6	...	2	...	...	...	1	1	2
Camden street	1	...	...	...	...	...	...	...	...	...	...	...	...
Copland terrace	1	...	...	...	...	...	...	...	...
Vincent street	1	...	...	...	...	...	...	...	...
Silver street	2	...	...	...	...	...	...	1	1
Lime street	1	...	...	...	...	...	1	...	1
Wilkinson's buildings...	1	...	...	...	...	...	...	...	...	...	...	...	...
Wall Knoll	1	...	...	...	...	...	...	...	...
Pawton Dene terrace	1	...	...	...	...	...	...	...	...	...	...	...	...
Back Picton terrace	1	...	...	...	...	...	...	...	...
Hail's yard, Pilgrim st.	1	...	...	...	...	...	...	...	...
Adelaide terrace	1	...	...	...	...	...	...	...	...
All Saints' Church walk	1	...	1
Carlton street	1	...	1
Low bridge	1	...	1
Tinners' entry, Pandon	1	...	1
Clarence crescent	1	...	1
Russell terrace	1	...	1
Total ...	2	10	3	2	2	2	8	7	2	...	...	...	8	2	10

DEATHS IN BYKER SUB-DISTRICT.															
LOCALITY.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	During 13 Weeks ended 29th Sept., 1877.		
													Under 1 Year	All 1 Year under 2 Ages	
St. Anthony's ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thompson street ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Molineux street ...	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Jane street ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Portland road ...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Byker bank ...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
St. Peter's ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Conyer's road ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Rosedale street ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Quality row ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Clifford street...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Brown's terrace ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Ballast hills ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Addison road ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Headlam street ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Leighton street ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
St. Lawrence square ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Thornborough street...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Cook street ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Shipley street...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1
Harvey street...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Bywell terrace ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Clayton Park square...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
Day's buildings ...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Raby street ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	6	10	3	3	1	3	4	1	3	1	...	...	5	2	7

SUMMARY OF TABLE XII.

REGISTRATION SUB-DISTRICTS.	SCARLET FEVER.					WHOOPIING COUGH.					ENTERIC (OR TYPHOID) FEVER.				AUTUMNAL DIARRHOEA.			
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	For 13 Weeks ended 29th Sept., 1878.		
																Under One Year.	One Year and under Two Years.	All Ages.
Westgate ...	4	4	1	5	14	1	13	9	20	43	4	1	2	2	9	23	2	25
St. Andrew's ...	1	1	...	8	10	1	1	2	3	7	...	1	...	...	1	6	1	7
St. Nicholas' ...	1	...	...	5	6	...	3	2	2	7	...	2	1	1	4	7	2	9
All Saints' ...	2	10	3	2	17	2	2	8	7	19	2	...	...	...	2	8	2	10
Byker ...	6	10	3	3	22	1	3	...	4	8	1	...	3	1	5	5	2	7
Grand Total } of Deaths {	14	25	7	23	69	5	22	21	36	84	7	4	6	4	21	49	9	58

TABLE XIII.

ADMISSIONS TO AND DEATHS AT THE NEWCASTLE FEVER HOSPITAL FROM 1ST JANUARY TO 31ST DECEMBER (INCLUSIVE), 1877.

DISEASES.	ADMISSIONS.										DEATHS.						
	Jan.	Feb.	April.	May.	June.	Aug.	Oct.	Nov.	Dec.	Total.	Jan.	Feb.	April.	May.	Oct.	Nov.	Total.
Typhus ...	3	2	...	...	...	...	...	...	3	8	1	1	...	...	...	...	2
Enteric Fever ...	3	1	1	2	2	...	...	5	...	14	...	...	...	1	1	...	3
Scarlet Fever ...	1	...	...	...	...	5	3	...	2	11	...	...	...	...	1	...	1
Small Pox ...	...	...	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Measles ...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Pneumonia ...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1
Cerebral Disease ...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1
Total ...	7	4	2	2	2	6	4	5	7	39	1	2	2	1	1	1	8

TABLE XIV.

RETURN OF INSPECTIONS OF SUSPECTED AND UNWHOLESOME PROVISIONS DURING 1877.

PROVISIONS INSPECTED.	Amount Inspected.	CONDITION.		BAD—HOW DISPOSED OF.	
		Fit for Food.	Unfit for Food.	Destroyed by Magistrates Order.	Destroyed with consent of the Owner.
Carcases of Beef...	42	31	11	7	4
Tierce Salt Beef...	1	...	1	1	...
Carcases of Veal...	2	...	2	...	2
" Mutton	47	37	10	...	10
" Pork	116	77	39	...	39
Rabbits ...	23	...	23	...	23
Baskets of Cherries	6	...	6	6	...
" Gooseberries..	1	...	1	1	...

Jan. 20th, 1878.

(Signed) WM. HEDLEY, Inspector.

TABLE XV.

INFECTED ARTICLES DESTROYED AND REPLACED BY THE HEALTH DEPARTMENT
DURING THE YEAR 1877.

11 Straw Mattresses.	1 Rug.
6 Flock Beds.	2 Bolster Cases.
13 „ Pillows.	1 Pillow „
1 „ Bolster.	1 Bed-Tick.

TABLE XV.—CONTINUED.

INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS.

FROM THE BOROUGH.	FROM THE FEVER HOSPITAL.
19 Beds.	13 Beds.
10 Mattresses.	7 Mattresses.
8 Bolsters.	2 Bolsters.
37 Pillows.	39 Pillows and 2 Sets.
13 Blankets.	7 Sets of Blankets.
3 Bed and Window Curtains.	7 Sets of Rugs.
9 Quilts.	Strips of Carpet.
14 Cushions.	2 Sets of Wearing Apparel.
18 Carpets.	6 Sets of Books, Toys, &c.
3 Sets of Linen.	
4 Sets of Wearing Apparel.	

TABLE XVI.

SUMMARY OF CASES DISINFECTED BY THE INSPECTORS OF NUISANCES DURING THE
YEAR ENDED 29TH DECEMBER, 1877.

PARISH OR TOWNSHIP.	NATURE OF DISEASES.							TOTAL.
	Scarlet Fever.	Enteric Fever.	Typhus Fever.	Measles.	Small Pox.	Diph- theria.	Fever, (other varie- ties).	
Elswick	4	10	4	9	2	1	...	30
Westgate	27	9	5	14	...	1	1	57
St. Andrew's	20	1	1	2	1	...	2	27
St. John's	4	1	...	5	1	...	...	11
St. Nicholas'	11	...	3	3	...	...	...	17
All Saints'	61	11	7	20	1	...	3	103
Jesmond ... ..	...	1	...	...	...	...	3	4
Byker	51	8	1	4	...	5	5	74
Total	178	41	21	57	5	7	14	323

TABLE XVII.—NUISANCE REMOVAL.

SUMMARY OF NUISANCE CASES FOR THE YEAR ENDED 29TH DECEMBER, 1877.

PARISH OR TOWNSHIP.	Rooms Closed unfit for Human Habitation.	Rooms Whitewashed, Purified, and Repaired.	Yards, Passages, and Staircases Cleansed and Repaired.	Dilapidated Privies and Ashpits Repaired.	Defective Drains and Gutters Cleansed and Repaired.	Swine and other Animals Removed.	Water Closets Cleansed and Repaired.	Overcrowding.	Defective Water Spouts Repaired.	Water Supply.	Branch Drains.	New Water Closets, Privies, and Ashpits.	Stagnant Pools and Accumulations.	TOTAL.
Elswick	3	8	89	113	137	1	166	2	4	19	7	24	6	579
Westgate	11	21	49	148	118	6	62	3	15	16	5	70	30	554
St. Andrew's ...	5	15	48	90	188	9	39	11	19	4	14	17	27	486
St. John's	3	8	23	29	49	1	27	2	18	5	2	14	32	213
St. Nicholas' ...	3	2	40	3	21	...	26	...	2	6	11	2	5	121
All Saints'	18	24	70	118	146	13	124	9	20	48	12	96	69	767
Jesmond	1	...	1	7	7	3	1	...	...	4	3	4	5	36
Byker	4	4	23	73	58	2	9	...	8	17	7	11	3	219
Total	48	82	343	581	724	35	454	27	86	119	61	238	177	2975
Notices for Consumption of Smoke														9
														2984

TABLE XVIII.

SUMMARY OF PROCEEDINGS TAKEN BEFORE THE MAGISTRATES OF THE BOROUGH
BY THE SANITARY DEPARTMENT DURING THE YEAR ENDED 29TH DEC., 1877.

Nature of Complaint.	No. of Cases.	How disposed of.	Amounts of Penalties imposed.
Dilapidated Yards, Water- Closets, Privies, and Ashpits Repaired ...	13	{ Twelve did Work and paid Costs; one ordered to be done by Magistrates ... }	£ s. d.
Rooms closed, unfit for human habitation ...	3	{ One did Work and paid Costs; two ordered to be done by Magistrates ... }	.....
Defective Drains ...	4	Four did Work and paid Costs	.....
Water Spouts ...	2	Two did Work and paid Costs	.....
Water Supply ...	3	Three did Work and paid Costs	.....
Sanitary Bye-Laws ...	36	{ Twenty-seven did Work and paid Costs; five Fined 2s. 6d. and Costs; two Fined 10s. and Costs; and two dis- missed ... }	1 12 6
Whitewashing ...	48	{ Forty-three did Work and paid Costs; one Fined 2s. 6d. and Costs; two Fined 5s. and Costs; and two dis- missed ... }	0 12 6
Total	109		£2 5 0

TABLE XIX.
1877.—RAINFALL, MEAN TEMPERATURE, &c.

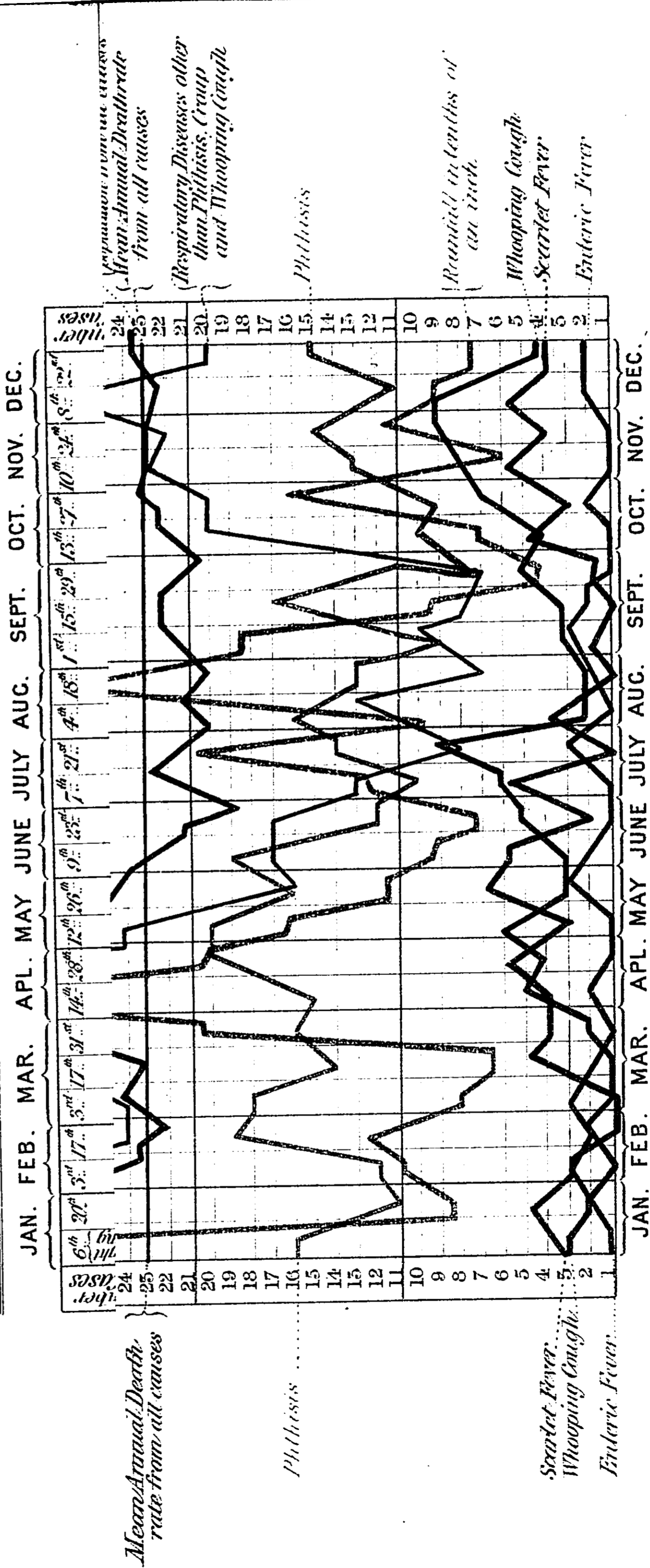
1ST QUARTER.			2ND QUARTER.			3RD QUARTER.			4TH QUARTER.		
Week Ended.	Rainfall, Inches.	Mean Temperature deg. Fahr.	Week Ended.	Rainfall, Inel.	Mean Temperature deg. Fahr.	Week Ended.	Rainfall, Inches.	Mean Temperature deg. Fahr.	Week Ended.	Rainfall, Inches.	Mean Temperature deg. Fahr.
1877.			1877.			1877.			1877.		
Jan. 6	2.06	38.3	April 7	1.16	42.4	July 7	0.81	54.8	Oct. 6	0.00	49.5
" 13	0.12	39.1	" 14	1.80	42.9	" 14	0.25	58.1	" 13	0.60	45.8
" 20	0.64	41.2	" 21	0.70	39.8	" 21	1.72	56.2	" 20	0.51	43.1
" 27	0.25	39.1	" 28	1.22	38.9	" 28	0.62	59.1	" 27	1.02	47.5
Feb. 3	0.74	40.6	May 5	0.10	40.3	Aug. 4	0.27	60.2	Nov. 3	0.23	49.8
" 10	0.50	42.8	" 12	1.44	43.9	" 11	0.98	59.4	" 10	0.25	45.4
" 17	0.63	43.2	" 19	0.97	47.5	" 18	1.61	58.3	" 17	0.51	45.5
" 24	0.48	39.1	" 26	0.12	46.4	" 25	4.96	70.4	" 24	0.56	43.2
March 3	0.23	35.0	June 2	0.65	50.8	Sept. 1	0.83	54.6	Dec. 1	0.09	38.7
" 10	0.29	35.8	" 9	0.21	57.5	" 8	0.46	50.6	" 8	0.74	40.0
" 17	0.30	38.9	" 16	0.12	55.6	" 15	0.36	55.4	" 15	0.67	40.4
" 24	0.84	35.7	" 23	0.49	59.7	" 22	0.31	57.6	" 22	0.00	43.9
" 31	1.10	39.5	" 30	0.32	57.2	" 29	0.03	49.7	" 29	0.48	36.7
Totals ..	8.18	39.1	.....	9.30	47.9	.....	13.21	57.3	.....	5.66	43.8

Total Rainfall during the year 1877—36.35 inches.
Mean Temperature during the year 1877—47.02 deg. Fahr.

NEWCASTLE-ON-TYNE: A. REID, PRINTING COURT BUILDINGS, AKENSIDE HILL.

BOROUGH OF NEWCASTLE UPON TYNE, 1877.

Fortnightly Diagram of Deaths from principal Zymotic Diseases and Diseases of the Respiratory Organs

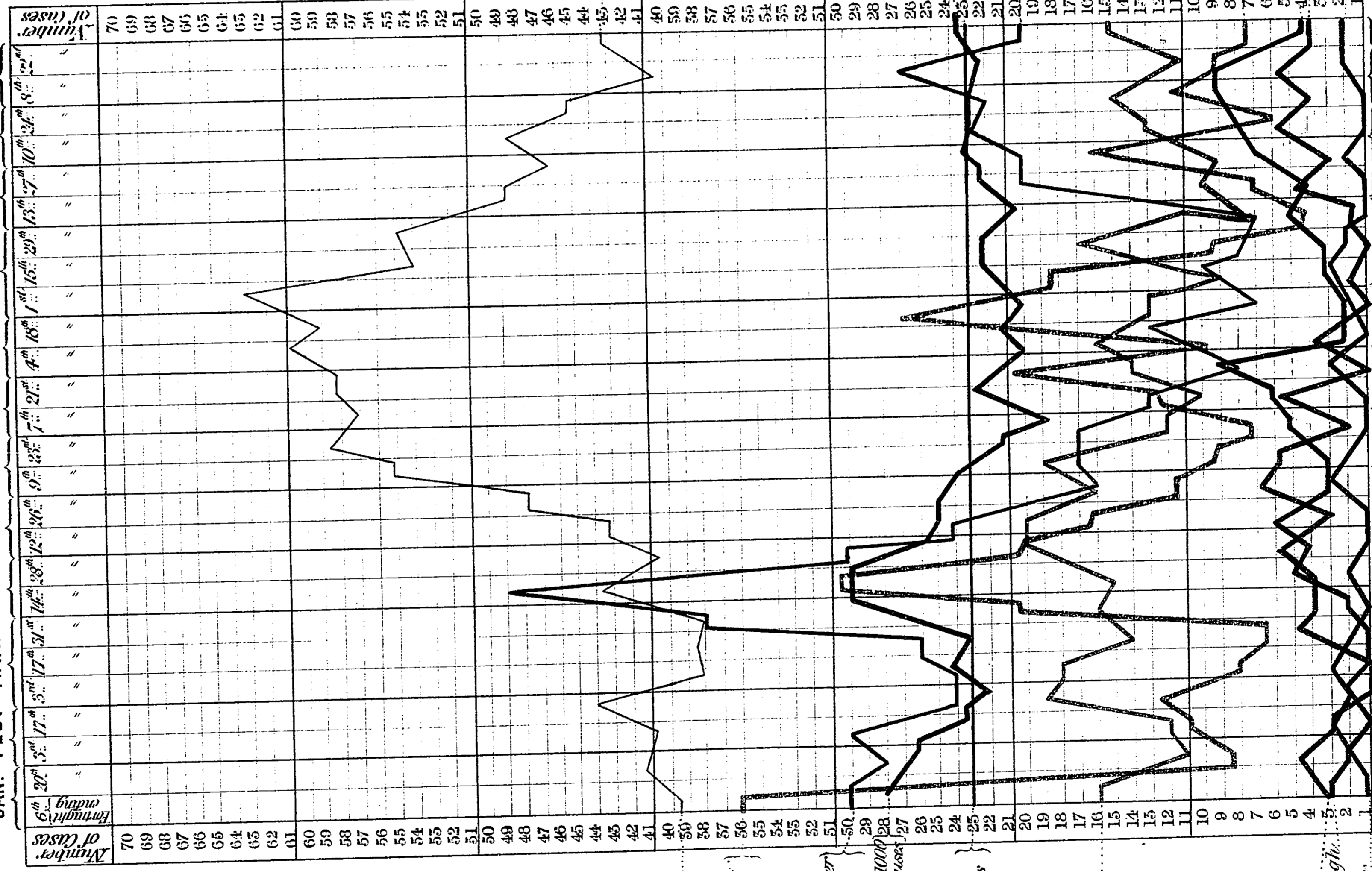


Mean Temperature Fahr.	43.8
43.9	40.4
38.7	40.0
43.2	45.5
45.1	45.4
49.8	45.4
47.5	49.8
43.1	47.5
45.8	43.1
49.5	40.0

BOROUGH OF NEWCASTLE UPON TYNE, 1877.

Fortnightly Diagram of Deaths from principal Zymotic Diseases and Diseases of the Respiratory Organs

JAN. FEB. MAR. APL. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.



Mean Temp. Fahr.

Rainfall in tenths of an inch

Respiratory Diseases other than Phthisis, Croup and Whooping Cough

Fortnightly Deathrate per 1000 population from all causes

Phthisis

Scarlet Fever

Whooping Cough

Enteric Fever

Mean Temp. Fahr.

Fortnightly Deathrate per 1000 population from all causes

Respiratory Diseases other than Phthisis, Croup and Whooping Cough

Phthisis

Rainfall in tenths of an inch

Whooping Cough

Scarlet Fever

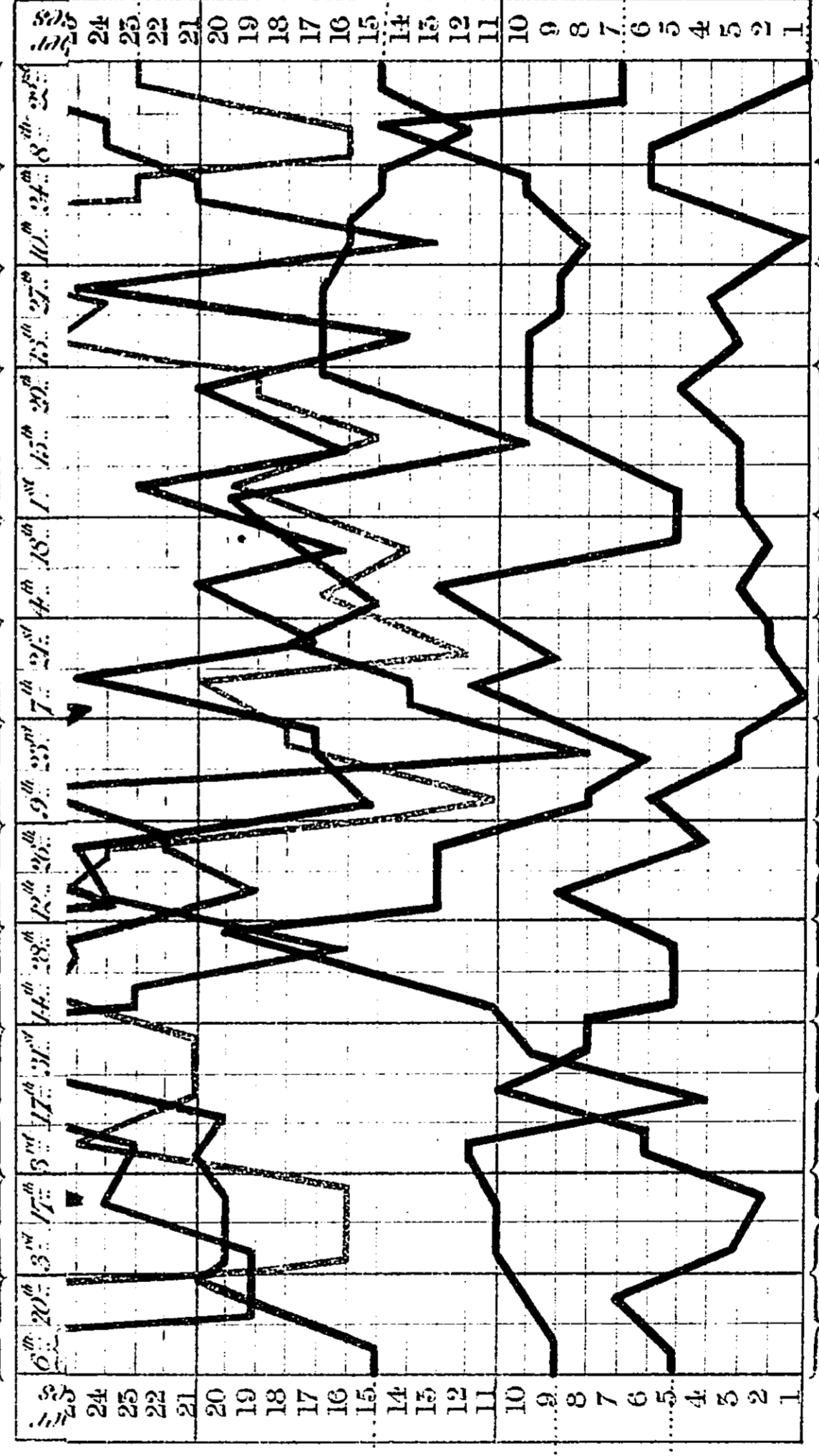
Enteric Fever

JAN. FEB. MAR. APL. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

BOROUGH OF NEWCASTLE UPON TYNE, 1877.

Fortnightly Diagram of Deaths from all causes at Seven Fatal periods with Temperatures

JAN. FEB. MAR. APL. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.



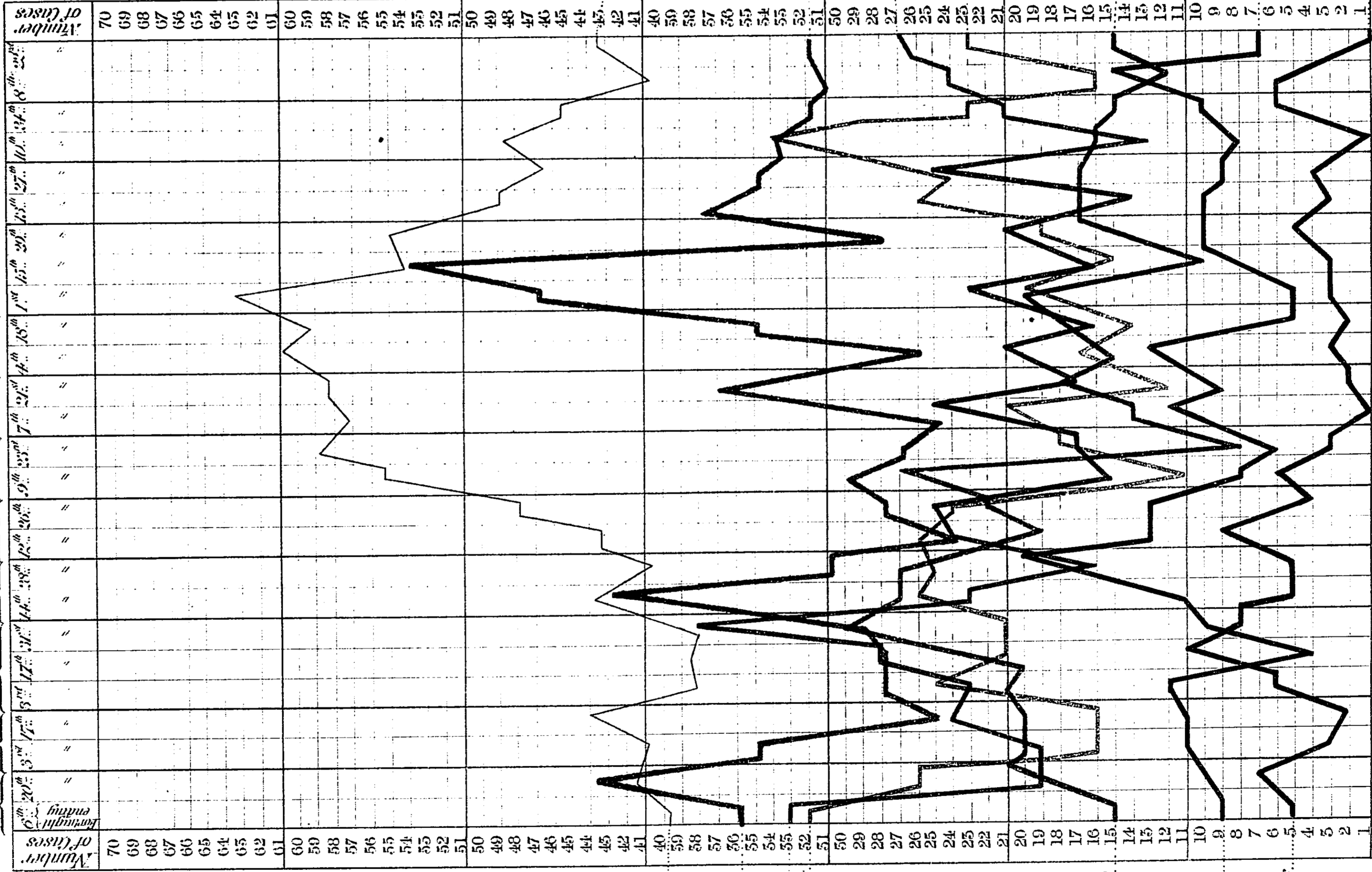
20 Years and under 40
5 Years and under 20
80 Years and Upwards

1 Year and under 5 years
20 Years and under 40
5 Years and under 20
80 Years and Upwards

BOROUGH OF NEWCASTLE UPON TYNE, 1877.

Fortnightly Diagram of Deaths from all causes at Seven-Rival periods with Temperatures

JAN. FEB. MAR. APL. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.



Mean Temp. Fahr.°

Under One Year of age

60 Years and under 80

1 Year and under 5 years

20 Years and under 40

5 Years and under 20

80 Years and Upwards

Mean Temp. Fahr.°

Under One Year of age

60 Years and under 80

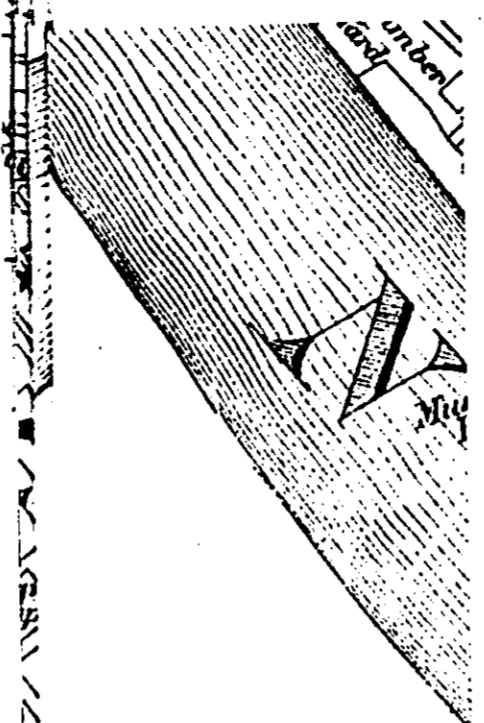
1 Year and under 5 years

20 Years and under 40

5 Years and under 20

80 Years and Upwards

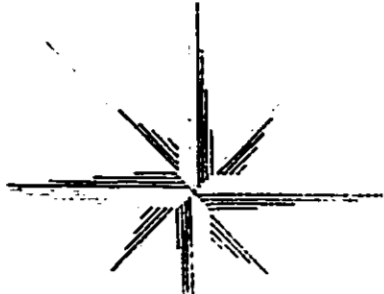
JAN. FEB. MAR. APL. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.



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Lu



St. Andrews

Castle Leazes

Public Park

Westgate

Intake

Intake

Intake

Intake

Intake

Intake

Reservoir

Bull Park

St. Nicholas Cemetery

Cavalry and Infantry Barracks

North Blarney Hall

Wingrove Cottage

Wingrove House

The Union Workhouse

Callerton

Grainpville

Gloucester House

HAMILTON STREET

ST. HOPSON STREET

ST. STONE STREET

ST. GONGEY STREET

HIGH SNOW STREET

DOUGLAS STREET

SEBING ROAD

ST. ANDREW'S STREET

ST. ANDREW'S STREET

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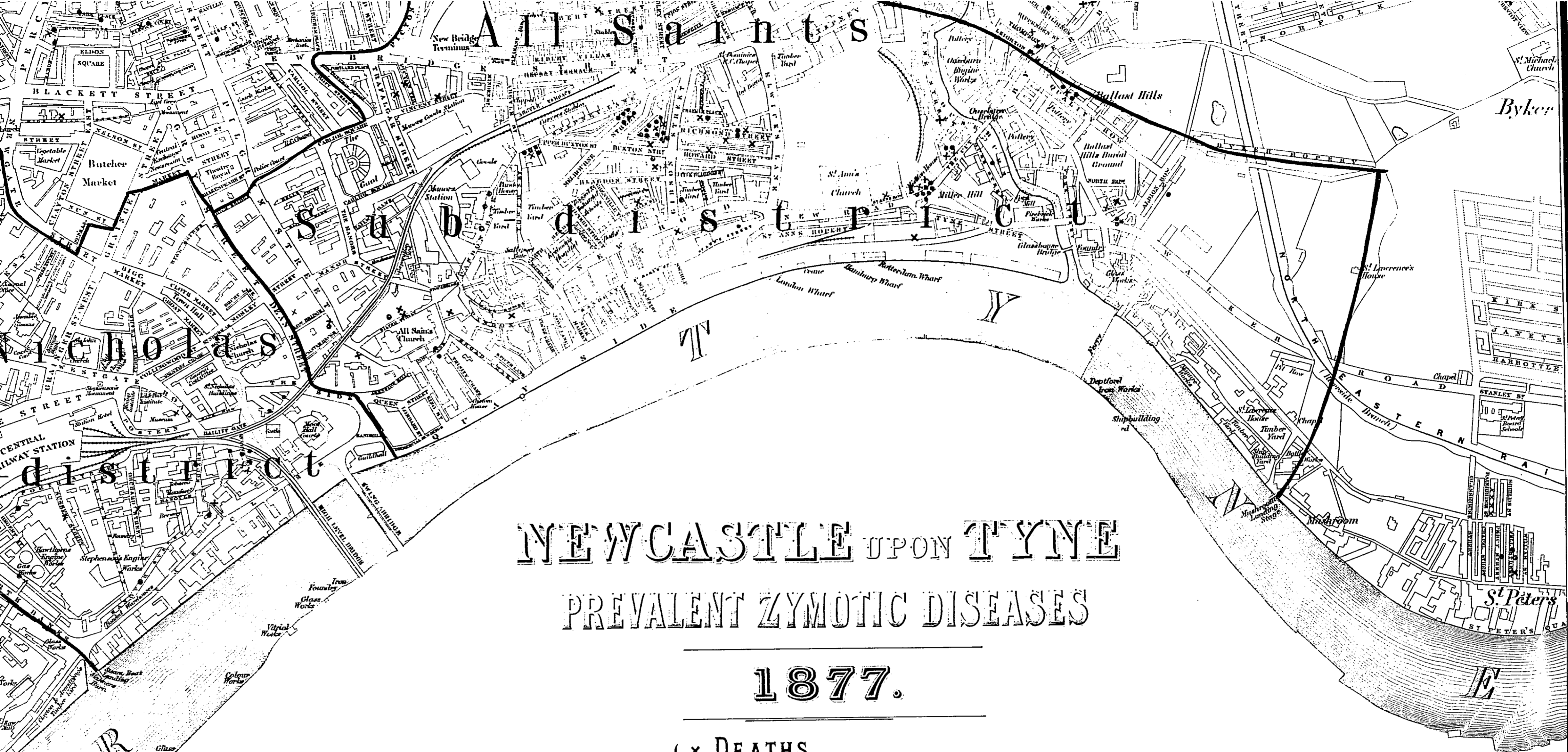
ST. ANDREW'S STREET

ST. ANDREW'S STREET

ST. ANDREW'S STREET

Butcher Market





NEWCASTLE UPON TYNE
PREVALENT ZYMOTIC DISEASES

1877.

- SCARLET FEVER {
 - × DEATHS
 - Cases not fatal (chiefly in Dispensary practice)
- ENTERIC FEVER {
 - × DEATHS
 - Cases not fatal (chiefly in Dispensary practice)
- WHOOPING COUGH × DEATHS

*Henry J. Armstrong M.R.C.S.
Medical Officer of Health.*

Scale - 12 inches to a mile