

[Report 1901] / Medical Officer of Health, Newcastle-upon-Tyne City & County.

Contributors

Newcastle upon Tyne (England). City & County Council.

Publication/Creation

1901

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CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

TWENTY-NINTH

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of Newcastle-upon-Tyne,

WITH

TABULAR RETURNS

OF THE

SICKNESS AND MORTALITY


DURING THE YEAR 1901.



Newcastle-upon-Tyne :

TYNE PRINTING WORKS Co., 22 AND 26, 'SIDE.

1902.



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CONTENTS.

GENERAL STATISTICS—	PAGE.
Rates of Mortality from “All Causes” and the seven “Chief Zymotic Diseases,” 1870-1901	12
Deaths from each of the “Chief Zymotic Diseases” in each quarter of 1901	13
Infant Mortality	14
Uncertified Deaths	14
Marriages	14
INFECTIOUS DISEASE INQUIRY—	
Cases of Infectious Disease..	15
Different Diseases in the respective Wards of the City	15
No. of Households, &c., in which Infectious Disease was notified	16
Scarlet Fever and School Attendance	16-17
Diphtheria in relation to Milk Supply	17
Enteric Fever in relation to Milk Supply	18
Puerperal Fever	18
Infectious Disease Inquiry and Disinfection	18
Compensation granted in connection with Infectious Disease	18
Cases of Infectious Disease in Public Institutions	18
CITY HOSPITAL FOR INFECTIOUS DISEASES—	
Admissions, &c....	19
SMALLPOX HOSPITAL, TOWN MOOR	20
PERCENTAGE OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED IN THE SAME FORM OF PRACTICE	20
MAINTENANCE OF PATIENTS IN HOSPITAL	20
SUMMARY OF REPORTS MADE	20-21
WORK OF THE INSPECTORS OF THE HEALTH DEPARTMENT—	
Report of the Inspector of Nuisances, New House Drainage, Common Lodging Houses, Workshops, and Adulteration	21-24
Report of the Inspector of Cattle, Slaughter Houses, Cow-sheds, and Provisions	25-26
HOUSES BUILT DURING THE YEAR—	
Accommodation provided	27
PLANS—Sanitary Alterations	27

APPENDIX A.

	PAGE.
Births and Deaths in City and Sub-districts. Numbers (Table I.) ...	28
Number of Deaths from different causes, City and Sub-districts (Table II.)	29-32
Annual Death-rate from "All Causes," and from the seven "Chief Zymotic Diseases"—Newcastle and Large Towns Compared (Table III.)	33
Ages at Death (Table IV.) ...	33
City Hospital for Infectious Diseases (other than Smallpox)—Admissions and Deaths (Table V.)	34
Smallpox Hospital—Admissions and Deaths (Table VA)	34
„ Smallpox in relation to Vaccination (Table VB)	35
„ Smallpox Contacts, &c. ...	36
Disinfection Returns (Table VI.)	36
Provisions—Inspection Returns (Table VII.)	37
Nuisance Removal Returns (Table VIII.)	38
Works carried out in the Abatement of Nuisances (Table IX.)	39
Magisterial Proceedings (Table X.)	40-41
Food and Drugs Adulteration Acts—Analyses (Table XI.)	42-43
Common Lodging Houses, &c. (Tables XII. and XIIA)	44

APPENDIX B.

Notice on the Prevention of Smallpox and other Infectious Diseases, and
Recommendations in favour of Vaccination and Re-Vaccination,
February, 1901.

TO MR. ALD. H. W. NEWTON, J.P., L.F.P.S., MAYOR, AND
CHAIRMAN OF THE SANITARY COMMITTEE OF THE CORPORATION OF NEWCASTLE-UPON-TYNE.

SIR,

Herewith I beg to submit to you my Twenty-ninth Annual Report, viz., that for the year 1901.

The *Death-rate* of Newcastle from "All Causes" during the year was 21·2 per 1,000 population. Details as to the general mortality in the different Registration Sub-districts will be found at pages 29-32. The Death-rate from the seven "Chief Zymotic Diseases" in Newcastle was 2·2 per 1,000 population, against 2·7 in the 33 large English towns. (See pages 13 and 33).

Marriages (see page 14). In the year ended 31st March, 1901, 2,077 marriages were registered in the Registration District of Newcastle-upon-Tyne (which includes the sub-district of Benwell and Fenham), a decrease of 211 on the number (2,288) during the previous twelve months.

Zymotic Diseases caused 479 deaths, against 292 in the previous year. The most prominent of these diseases were Diarrhœa,† Whooping Cough, and Measles, from which 249,† 105, and 68 deaths occurred respectively, against 83, 81, and 87 in the previous year. (See pages 13 and 29).

The number of deaths from *Scarlet Fever* was 42* against 20* in the previous year. The mortality from that disease per cent. to cases notified was 3·0, as compared with a rate of 3·3 for the year 1900. 1,389 cases of Scarlet Fever were notified, an increase of 786 on the returns of the year before.

†Dysentery, Epidemic and Zymotic Enteritis, and Intestinal Catarrh included.

*Corrected by distribution of those of persons belonging to the City occurring in the City Hospital for Infectious Diseases.

Enteric (or Typhoid) Fever caused 12* deaths, against 18* in the previous year. The rate of mortality to cases notified was 15·8 per cent., as compared with 22·8 in the year 1900. The number of cases notified (76) is a decrease of 3 on the previous year's return.

Typhus.—Two cases of Typhus were notified during the year; both recovered.†

Diphtheria caused 32* deaths, against 27* in 1900. The rate of mortality to cases was 22·5 per cent., as against 31·4 in the previous year. The total number of cases (142) notified shews an increase of 56 on those of the previous year.

The death-rate from the "*Seven Chief Zymotic Diseases*" *i.e.* Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, "Fever," and Diarrhœa, (including Dysentery, Epidemic and Zymotic Enteritis, and Intestinal Catarrh) is 2·37* per 1,000 of the population.

Hospitals for Infectious Diseases.—647 patients have been admitted to the City Hospital for Infectious Diseases at Walker Gate. The proportion of patients in private medical practice removed to Hospital was 29·3 per cent. of the cases notified in the same form of practice. The proportion of cases notified in public practice (including those of the Dispensary) removed to Hospital was 66·3 per cent. The mortality to cases was 5·9 per cent. Details are given on pages 19, 20, and 34.

Smallpox Hospital.—24 cases of Smallpox were admitted during the year, one of which died. 65 "contacts" were isolated in Hospital, and 75 other persons were kept under observation at their homes.

The first case of Smallpox reported in the city occurred on January 9th near the Cattle Market at a small hotel, to which infection appears to have been brought from North Tyne. Every patient in the outbreak was removed to the Smallpox Hospital, together with all known contacts. Infection was fortunately limited. The last of the cases was discharged from Hospital on May 16th.

* Corrected by distribution of those of persons belonging to the City, occurring in the City Hospital for Infectious Diseases

† One of the patients died soon afterwards from other old-standing disease.

Apart from the foregoing, a case notified as Smallpox in December, in a private house, remained under treatment at home.

Hospital Accommodation.—The accommodation for patients, both at the Smallpox Hospital on the Town Moor and the City Hospital for Infectious Diseases at Walker Gate having proved insufficient, a new ward block of 32 beds has been provided for Smallpox, and other extensions on the site of the Moor Hospital are in progress. The approval of the Council has been obtained for the erection of two new pavilions and several other additions, to meet immediate requirements, at the Walker Gate Hospital. A Report on a scheme for the proposed extension of the Hospitals for Infectious Diseases and the erection of a permanent Smallpox Hospital and an Isolation House for "contacts," was prepared in autumn last, and is at present under consideration.

The immediate need of additional accommodation for Smallpox and general infectious disease is urgent. This difficulty is one which will undoubtedly increase year by year.

Infant Mortality.—The deaths of Infants under one year of age (1,226) show an increase of 22 on the returns for the year before (see page 14).

The *Uncertified Deaths* registered are 65 against 46 in the preceding year.

The number of *Cases of Infectious Diseases Notified* by medical practitioners (see page 15) is 1,784 against 932 in the previous year. The increase is mainly due to Smallpox, Scarlet Fever, and Diphtheria (25 against nil, 1389 against 603, and 142 against 86 respectively).

Bacterial Examination of Water.—The Bacterial Examination of the Water Supply has been continued by Professor George Murray. Four specimens, drawn from taps in different parts of the City, have been examined each month of the year. The results are tabulated on the following page:—

SUMMARY OF RESULTS.

Sample No.	Date of Collection.	GELATINE PLATE CULTIVATION FROM 1 C.C. OF WATER.			FOUL SMELL BY GROWTH OF BACTERIA.		CONDITION.			REMARKS.
		BACTERIA FOUND.					Very Satisfactory.	Satisfactory.	Fairly Satisfactory.	
		Number Liquefying Gelatine.	Number not Liquefying Gelatine.	Total.	No.	Yes.				
1	1901.	83	448	531	1	Not satisfactory. Too many Bacteria.
2	Jan. 7	25	135	160	1	1	...	
3		109	462	571	{ Strong but not foul smell		{ Not satisfactory. Too many Bacteria.
4	97	396	493	1		
1	Feb. 4	22	52	74	1	...	1	{ *Estimated from 1/2 c.c. plate as 1 c.c. plate had liquefied too much.
2		28	120	148*	1	1	...	
3		46	128	174*						
4		50	134	184*						
1	Mch. 4	21	319	340	1	Not quite satisfactory. Too many Bacteria.
2		22	436	458	1	
3		12	260	272	1	1	
4		2	48	50	1	...	1	
1	April 1	13	43	56	1	...	1	{ Strong but not foul smell
2		27	97	124	1	...	1	
3		10	19	29						
4		27	55	82						
1	May 6	9	27	36	1	
2		8	68 & 1 mould	77						
3		4	2 & 2 moulds	8						
4		26	58	84						
1	June 3	13	12	25	1	
2		14	13	27						
3		15	10	25						
4		6	6	22						
1	July 1	23	30	53	1	...	1	{ *Estimated from 1/2 c.c. plate only as 1 c.c. plate had liquefied.
2		26	38	64*						
3		10	32	42*						
4		26	40	66*						
1	Aug. 19	10	55	65	1	...	1	Too many bacteria for spring water. Quite satisfactory, even for spring water.
2		69	128	197	1	
3		2	15	17	1	
4		94	172	266	1	1	
1	Sept. 2	11	9	20	1	...	1	
2		23	41	64						
3		26	29	55						
4		11	16	27						
1	Oct. 7	31	60	91	1	...	1	
2		19	29	48						
3		14	19	33						
4		42	67	109						
1	Nov. 4	12	26	38*	1	...	1	{ *Estimated from 1/2 c.c. plate as 1 c.c. plate had liquefied.
2		4	24	28*						
3		11	18	29						
4		26	26	52*						
1	Dec. 2	18	109	127	1	1	...	Not at all satisfactory. Far too many Bacteria.
2		87	566	653	1	
3		43	186	223	1	1	Estimated from one gelatine plate.
4		28	86	114	1	1	...	

THE WORK OF THE HEALTH DEPARTMENT.

The Reports of the Inspectors are given on pages 21 to 26, and the returns of their work will be found in Appendix A. (Tables VII. to XIII A).

27,104 *Inspections of Tenement Property* have been made during the year. The number of contraventions of the Bye-laws returned is 1,951.

179 cases of *nuisance* have been ordered to be taken before the magistrates. Of the defaulting persons only 13 were summoned, the rest doing the work before the order could be carried out.

Customs and Inland Revenue Act, 1890, s. 26 (2).

Applications for certificates entitling the owners to exemption from inhabited house duty have been made during the year in respect of 9 tenement houses. After examination of the respective properties, a certificate, on the form amended and adopted by the Sanitary Committee in 1895, was given in one case. In the eight remaining cases certificates were declined.

Factory and Workshop Acts.

Last year 30 "Workshops," including 58 Workrooms, were reported by H.M. Inspector of Factories to the Medical Officer of Health on account of nuisance or sanitary defect. After examination, various insanitary conditions, as specified by the Inspector of Nuisances in his report, were dealt with.

The Closure of Insanitary Dwellings.

The improvement of the habitations of the poor is a problem to which you, Sir, and your Committee have for many years past given most serious and anxious attention, and with the intricacies and difficulties of which you are too familiar to need any indication on my part. It is desirable, however, to place briefly on record some of these difficulties as experienced during the past year, together with their effect on your course of action and its promise for the future.

As you, Sir, are aware, the principal statute at the present time for dealing with the Housing Question, and that to which the eyes of hope are being generally turned, is the Housing of the Working Classes Act, 1890. Since this Act came into operation, attempts have been made, year after year, by the direction of your Committee, to close, under its provisions, the worst of the tenement dwellings in the city; but the process has been difficult and dilatory, and the result disappointing. Last year five small groups of unhealthy houses (for the most part let in single-room tenements) were dealt with under the statute. Particulars of these are given below:—

*Dwellings Closed under the Housing of the Working
Classes Act, 1890.*

- 2, 3, 4, Addy's Entry, Sandgate.—These houses, for which closing orders were obtained in December, 1900, were finally closed in June, 1901.
- 5, 6, 7, Chapel Lane, Sandgate.—Closing orders for these houses were made as a matter of form in February, 1901. The owner had, however, voluntarily closed the houses.
- 2, 3, 4, 6, 10, Chapel Entry, Sandgate.—The Magistrates in January ordered that these houses be closed until they had been put in habitable repair. The owner then made certain alterations and improvements, when the Magistrates, after viewing the places, decided that No. 2 was still unfit for habitation, but determined their original closing order respecting the remaining houses by a subsequent order allowing them to be re-occupied.
- 7, 8, Scott's Entry, Sandgate.—A closing order was obtained for these houses in January. One of the rooms in No. 8 is persistently and illegitimately occupied by a tenant, who pays no rent. The remaining rooms are closed.
- 3, 4, Grenville Street.—These houses are still occupied. The owner in October attended a meeting of the Sanitary Committee, and on his representation a Sub-Committee was appointed to visit the places. On the report of the

Sub-Committee the owner was given two months in which to carry out certain improvements. At the close of the year nothing further had been done. At the date of writing this Report the houses are being demolished.

The experience of the working of the above-named statute in Newcastle having proved unsatisfactory, the Sanitary Committee decided to cease—at least for the present—to take further action under its provisions, and to proceed instead under the powers they had acquired about twenty years ago under

The Newcastle-upon-Tyne Improvement Act, 1882, Section 32, which is as follows:—"If the Medical Officer of Health or any two medical practitioners shall by writing certify to the Corporation that any building or part of a building is unfit for human habitation, the Corporation may cause a notice of such certificate to be served on the owner or occupier of such building or part of a building, and appoint a time for him to appear and answer the same before them, and upon such appearance or in default thereof may by their order affixed conspicuously on the building or part of the building declare that the same is not fit for human habitation, and the same shall not after a date therein to be specified be inhabited, and after the date or time mentioned in such order no person shall let or occupy or continue to let or occupy or knowingly suffer to be occupied such building or part of a building. Provided always that if at any time after such order has been made the Corporation shall be satisfied that such house has become or been rendered fit for human habitation they may revoke their said order, and the same shall thenceforth cease to operate."

The powers above defined had never before been put into operation. Under the section two houses (No. 48, Pudding Chare and 30-32, Dog Bank) were closed during 1901. Toward the end of the year others, viz., 2, 5, and 6, Sellars Entry, Sandgate, proceedings against which, under the Housing of the Working Classes Act, 1890, had failed, after prolonged efforts, were then successfully dealt with under the Local Act. These dwellings were closed and vacated in February of the present year. Similar action with respect to other dwellings is in progress, and will form matter for next Annual Report.

The Housing Problem.

The question of providing dwellings for the working classes has been carefully and closely studied by the Sanitary Committee. A Special Report was drawn up on the instruction of the Committee and for their information by the Medical Officer of Health, giving examples of Single and Pair Room Tenement Dwellings provided by the Municipalities in London, Liverpool, Manchester, Edinburgh, and Glasgow, all of which were surveyed in autumn by the Housing Committee, whose special report thereon, together with their scheme for housing of the poor in Newcastle, is at the present moment in course of preparation.

Housebuilding in the City.

New accommodation has been provided for 655 families against provision for 741 families during the previous year. Details are given on page 27.

Health Visitors.—On the recommendation of the Sanitary Committee confirmed by the Council, two ladies were engaged by the Medical Officer of Health as Health Visitors, and took office in October last. They have performed their duties with zeal and intelligence. The work done by them, although as yet, either in duration or extent as to area, hardly sufficient to produce marked results, has undoubtedly been beneficial, and is an encouragement for future efforts in the same direction.

I have the honour to be,

Sir,

Your obedient Servant,

HENRY E. ARMSTRONG, D.H.Y.,

MEDICAL OFFICER OF HEALTH.

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
14th May, 1902.*

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

REPORT, 1901.

GENERAL STATISTICS.

Births and
Deaths (all
causes).

DURING the 52 weeks ended 28th December, 1901, 6,917 births and 4,580 deaths have been registered in the City. The births represent a rate of 32·1 and the deaths a rate of 21·2* per 1,000 of a population of 215,715 at all ages, as estimated by the Registrar General to the middle of the year.

The following is a Table of the recorded rates of mortality from "All Causes," and the seven "Chief Zymotic Diseases," for the year under report and previous years :—

RATES OF MORTALITY PER 1,000 POPULATION OF NEWCASTLE-UPON-TYNE.

A.D.	All Causes.	Seven "Chief Zymotic Diseases."
	Average for the Decade.	Average for the Decade.
1870	25·4	3·9
1871	32·2	9·3
1872	26·3	4·5
1873	30·1	6·9
1874	29·2	5·5
1875	26·1	3·6
1876	22·7	2·6
1877	22·3	2·5
1878	23·7	4·6
1879	23·5	3·9
1880	22·3	3·2
1881	21·7	2·6
1882	23·0	3·3
1883	25·4	4·3
1884	23·5	3·2
1885	26·0	4·4
1886	22·2	2·5
1887	25·2	3·3
1888	20·5	1·4
1889	25·0	3·0
1890	26·2	2·1
1891	23·6	2·5
1892	19·5	1·5
1893	20·9	2·3
1894	18·0	1·9
1895	20·0	2·1
1896	18·4	1·8
1897	18·7	1·6
1898	20·9	2·2
1899	20·2	1·6
1900	19·1	1·2
1901	21·2	2·2†

* This return does not include the deaths in the City Hospital for Infectious Diseases, 38 in number, of persons belonging to Newcastle. With these included the death-rate is 21·4 per 1,000. This latter rate is further corrected to 20·1 per 1,000 by deducting the deaths in the Infirmary of non-citizens (231).

† Deducting deaths from diseases not ordinarily notifiable (Measles, 68; Whooping Cough, 105; and Diarrhoea, 249), the rate is 0·3.

The numbers of births and deaths in the different Registration Sub-districts of the City during the year 1901 are given in Appendix A, Table I.

The mortality from the "Chief Zymotic Diseases" during successive seasons of the year is as follows:—

	REGISTRATION SUB-DISTRICTS AND CITY.																			
	WESTGATE. †					ST. ANDREW'S.					ST. NICHOLAS.					ALL SAINTS.				
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.
Smallpox ...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Measles ...	5	10	3	2	20	2	3	1	1	7	...	2	...	...	2	10	3	6	10	29
Scarlet Fever (Scarlatina)	3	2	4	3	12	...	...	1	...	1	...	...	...	...	...	...	...	1	1	2
Diphtheria ...	4	...	2	1	7	...	1	...	...	1	1	1	...	...	2	...	1	1	2	4
Whooping Cough ...	3	9	20	8	40	...	1	6	2	9	...	...	...	...	...	3	2	1	...	6
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric (or Typhoid) Fever	1	...	3	1	5	...	...	...	...	...	...	...	1	1	1	...	...	...	1	1
Simple Continued or Ill-defined Fever ...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Diarrhoea (including Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh) ...	1	...	56	2	59	1	1	35	3	40	...	...	1	...	1	...	...	30	4	34
TOTALS ...	17	21	88	17	143	5	6	43	6	60	1	3	1	1	6	13	6	39	18	76
																56	59	285		79
																				479†

* Exclusive of Deaths in the City Hospital for Infectious Diseases.

† Representing a Rate of 2·2 per 1,000 population.

+ Exclusive of Benwell and Fenham.

Births and Deaths.

Mortality from Chief Zymotic Diseases.

Diarrhœa,
Whooping
Cough,
and
Measles.

The most fatal Zymotic diseases have been Diarrhœa, Whooping Cough, and Measles, from which 249, 105, and 68 deaths respectively are returned.

INFANT MORTALITY.

Infant
Mortality

The number of Infants dying before the completion of the first year of life is 1,226, as compared with 1,204, 1,386, and 1,340, respectively in 1900, 1899, and 1898.

REGISTRATION SUB-DISTRICTS.	Deaths of Children under 1 year of age.		Rates per cent. of Deaths under 1 year to Births registered.	
	1901.	1900.	1901.	1900.
Westgate... ..	458	457	16·3	16·1
St. Andrew's	133	124	18·1	16·1
St. Nicholas'	35	47	23·5	26·0
All Saints'	171	211	18·4	21·3
Byker	429	365	18·6	15·6
City	1,226	1,204	17·7	16·9

UNCERTIFIED DEATHS DURING THE YEAR 1901.

Uncertified
Deaths.

65 deaths have been registered for which no proper medical certificate has been given or inquest held, as compared with 46 during the previous year.

MARRIAGES.

Marriages

The number of marriages registered in Newcastle-upon-Tyne (Superintendent Registrar's district†), during each of the past ten years (1892-1901), is as under :—

Year ended March 31.	Number of Marriages.	Year ended March 31.	Number of Marriages.
1892	1,894	1897	2,173
1893	1,892	1898	2,208
1894	1,812	1899	2,370
1895	1,851	1900	2,288
1896	1,983	1901	2,077

† Superintendent Registrar's district, which includes the Municipal area and the Extra-municipal Townships of Benwell and Fenham.

INFECTIOUS DISEASE INQUIRY.

CASES OF INFECTIOUS DISEASE KNOWN TO THE HEALTH DEPARTMENT.

During the year under report the following cases of Infectious Disease have been made known to the Medical Officer of Health by medical practitioners and otherwise. Notification of Infectious Disease.

				CASES KNOWN TO THE HEALTH DEPARTMENT.	
				1901.	1900.
Smallpox	...	...	...	25*	...
Scarlet Fever	...	...	...	1389	603
Diphtheria	...	...	...	142	86
Typhus	...	...	...	2	2
Enteric (or Typhoid) Fever	...	...	...	76	79
Simple Continued Fever	...	...	...	8	2
Puerperal Fever	...	...	...	3	4
Erysipelas	...	...	...	135	141
Membranous Croup...	...	...	...	4	15
TOTAL	...	...	...	1784	932

A Return to the Local Government Board of the Notifications during the previous week continues to be forwarded each Monday morning during the year, on the form supplied for the purpose.

The following Table shows the different diseases in the respective Wards of the City :—

WARDS.	Smallpox.	Scarlet Fever.	Diphtheria.	Typhus.	Enteric (or Typhoid) Fever.	Continued Fever.	Puerperal Fever.	Erysipelas	Membr. Croup.	TOTAL.
Elswick East	1	60	4	...	...	...	...	3	...	68
Elswick North	...	131	12	...	5	...	...	3	2	153
Elswick South	...	149	9	...	7	...	...	27	...	192
Arthur's Hill	18	185	22	...	7	1	1	16	...	250
Westgate North	2	54	2	...	9	...	...	11	...	78
Westgate South	3	70	4	...	6	...	...	2	...	85
St. Andrew's North	...	63	6	2	3	...	1	6	...	81
St. John's	...	6	...	...	...	...	...	1	...	7
St. Nicholas'	...	6	...	...	1	...	...	1	...	8
All Saints' West	...	26	1	...	...	...	...	5	...	32
All Saints' East	...	41	14	...	7	1	...	11	...	74
All Saints' North	...	82	5	...	4	1	...	5	...	97
St. Andrew's South	...	13	8	...	...	...	...	3	...	24
Jesmond	1	115	10	...	9	2	...	4	...	141
Heaton	...	217	27	...	4	2	...	12	1	263
Byker	...	171	18	...	14	1	1	25	1	231
City	25	1389	142	2	76	8	3	135	4	1784

*With one exception all of these cases of Smallpox occurred in connection at the beginning of the year. The remaining case was notified as Smallpox in December.

Infectious Diseases in the respective Wards of the City.

No. of
Infected
Households,
&c.

RETURN SHOWING THE NUMBER OF HOUSEHOLDS, &c., IN WHICH
INFECTIOUS DISEASE WAS NOTIFIED DURING THE YEAR 1901.

DISEASES.	HOUSEHOLDS WITH							Public Institu- tions. *	TOTAL.
	Single Cases.	2 Cases each.	3 Cases each.	4 Cases each.	5 Cases each.	6 Cases.	8 Cases.		
Smallpox ...	6	1	2	...	2	...	...	1	12
Scarlet Fever ...	783	173	39	16	3	1	1	8	1024
Diphtheria ...	113	7	2	...	...	...	...	3	125
Typhus ...	...	1	...	...	...	...	...	...	1
Enteric (or Typhoid) Fever }	57	3	2	...	...	...	...	3	65
Continued Fever	8	...	...	...	...	...	...	...	8
Puerperal Fever	2	...	...	...	...	...	...	1	3
Erysipelas ...	122	...	...	...	...	...	...	1	123
Membranous Croup ...	{ 4	...	...	...	...	...	...	...	4
TOTAL ...	1097	184	45	16	5	1	1	17	1365

* See page 18.

Scarlet
Fever in
relation to
School
attendance.

Scarlet Fever in relation to School Attendance.—Of the households infected with Scarlet Fever, 869 contained scholars of one or other of 84 different schools in the City. Scholars of 24 of the largest elementary schools resided in upwards of 10 of such households during the year, the largest number of such households from which children attended any one school being 61.

In six schools there was infection in the households of its scholars during eleven months of the year, and in seven during ten months.

Rate of Scarlet Fever in Board Schools.—Through the courtesy of the Clerk to the School Board, Mr. A. Goddard, who has furnished the average daily attendance at each of the Board Schools of the City, it has been possible to prepare the subjoined statement, shewing the percentage of households of scholars in which Scarlet Fever was notified to the average number of scholars in each school:—

Board School.	Per cent. of Households infected with Scarlet Fever.
Arthur's Hill	3.6
Bentinck	2.9
Blenheim Street	3.0
Chillingham Road	4.3
Diana Street	5.1
Elswick Road	3.0
Heaton Park Road	3.0
Leighton Memorial	2.9
North View	1.6
Ouseburn	0.9
Raby Street	2.2
Royal Jubilee	1.1
Scotswood Road	2.3
Shieldfield	1.5
Spital Tongues	2.2
Saint Peter's	1.1
Sandyford Road	3.2
Todd's Nook	3.3
Union British, Bath Lane	0.5
Victoria Jubilee	1.9
Westmorland Road	2.6
Westgate Hill	2.6
West Jesmond	3.0

The principals of schools continue to be informed of the presence of infectious disease in the homes of their pupils, as also of the cessation of infection.

Diphtheria in relation to Milk-supply.—The households affected were supplied by a large number of dealers. There is no reason to suppose that any outbreak was attributable to milk. 10 dairies supplied milk to more than 1 infected household, viz. :—

1 Dairy	*27 households.	
1 „	4 „	
2 Dairies	3 „	each
6 „	2 „	„

* A large Dairy. The cases were spread over many months of the year.

Enteric
Fever & Milk
Supply.

Enteric Fever in relation to Milk-supply.—The milk supplies of the households infected with Enteric Fever were derived as follows:—

1 Dairy supplied	...	...	...	*16 households.
1 „ „	...	...	...	4 „
1 „ „	...	...	...	3 „
2 Dairies „	...	...	...	2 „ each.

Each of the remaining households was supplied by a separate dairy.

* This dairy supplies a large number of persons, and has branch establishments in several parts of the city. *The cases of Enteric Fever in question were not connected in point of time.* There is no known reason to blame the milk supply for their occurrence.

Puerperal
Fever

PUERPERAL FEVER.

Inquiries were made in 2 households containing 2 cases. 1 case also occurred in the Workhouse

Infectious
Disease
Inquiry.

Infectious Disease Inquiry and Disinfection.—1,784 cases of notifiable infectious disease have been inquired into by the Special Inspectors, and the houses or rooms connected therewith disinfected. The bedding and other infected articles were removed to the Disinfecting Station, and, after purification, returned to the owners.

Compensa-
tion.

Compensation granted on account of infection.—In two cases compensation was allowed by the Sanitary Committee to the occupiers of infected houses for articles of food destroyed. The sum of £69:5:1 was also allowed for loss of work or other loss sustained in connection with Smallpox, and £6:8:4 for the same purpose in connection with the Typhus cases.

Infectious
Disease in
Public
Institutions
&c.

INFECTIOUS CASES NOTIFIED IN PUBLIC INSTITUTIONS, &c.

INSTITUTIONS, &c.	Small- pox.	Scarlet Fever	Enteric Fever.	Diph- theria.	Puer- peral Fever.	Ery- sipelas.	TOTAL.
Royal Infirmary ... ..	...	1	5	3	...	...	9
Barracks (Military) ... ..	...	14	...	1	...	...	15
Prison ... ..	...	1	...	...	...	...	1
Fleming Memorial Hospital, North Road ... ..	...	24	1	5	...	...	30
Childrens' Hospital, City Road	...	2	..	...	...	...	2
Workhouse	1	5	1	...	1	13	21
Scotswood Road Police Station	...	1	...	...	...	...	1
Arthur's Hill Police Station ...	...	2	...	...	...	...	2
Totals	1	50	7	9	1	13	81

CITY HOSPITAL FOR INFECTIOUS DISEASES.*

647 patients have been treated at the City Hospital for Infectious Diseases at Walker Gate during the year, including 19 admitted from the Walker Urban District. The cases were as under:—

Work at the City Hospital for Infectious Diseases.

Admitted as	No. of Cases.	After observation proved to be												
		Scarlet Fever.	? Scarlet Fever.	Scarlet Fever and Diphtheria.	Diphtheria.	? Diphtheria.	Typhus.	Enteric Fever.	? Enteric Fever.	Enterocolitis.	? Rotheln.	Miliary Tuberculosis.	Follicular Tonsillitis.	Perforating Gastric Ulcer.
Scarlet Fever	539	5	1	...	1	...	...	1	...	1	1	...	...	...
Suspected Scarlet Fever	3	1	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever and Diphtheria	4	2	...	1	1	...	...	...	...	...	...	...	...	...
Scarlet Fever & Suspected Diphtheria	2	2	...	1	34	...	...	...	...	...	...	...	1	...
Diphtheria	45	7	...	1	...	...	...	...	...	...	...	...	...	...
Diphtheria (Conjunctivals)	1	...	...	1	...	...	2	...	...	...	...	...	...	...
Typhus	2	...	...	...	...	...	...	...	5	...	...	1	...	...
Enteric Fever	36	...	...	...	...	...	...	27	...	...	...	...	...	...
Continued Fever	1	...	...	...	...	...	...	1	...	...	...	...	...	1
Other Ailments	3	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	647	551	5	4	35	3	2	29	5	1	1	1	1	5
		3												

* For other details see Appendix A, Table V.

SMALLPOX HOSPITAL, 1901.

Smallpox
Hospital.

Twenty-four cases were admitted during the year. For other details see Pages 34, 35 and 36.

NOTIFIED CASES OF INFECTIOUS DISEASE REMOVED TO THE CITY HOSPITAL
FOR INFECTIOUS DISEASES, WALKER GATE, DURING 1901.

	No. of cases Removed.	Rate per cent. of cases re- moved to cases notified in the same form of practice.
In private practice ...	446	29·3
In Dispensary practice ..	114	68·0
In public practice (including Dispensary) ...	173	66·3

Expense of
Mainten-
ance of
Patients.

Expense of Maintenance.—Of the patients admitted, the expense of maintenance is charged as under :—

	Cases
To the Newcastle Sanitary Authority ...	617
To private guarantors ...	11
To Walker Sanitary Authority ..	19
Total ...	647

SUMMARY OF REPORTS MADE DURING 1901.

Summary of
Reports, &c.
made during
the year.

The following, among other matters, have been brought before the Sanitary Committee during the year :—

ZYMOTIC DISEASES.

	DATE.
Smallpox—Outbreak in City ...	Jan., Feb., March, April, May
„ Isolation of Contacts—Reception House ..	Feb. and March
„ Compulsory Isolation of Contacts ...	March
„ Claims on account of loss sustained, &c. ...	Feb. and March
„ Epidemic in London, &c. ...	Oct. and Nov.
Plague Precautions—Serum ...	August
Scarlet Fever—Case not notified by medical attendant ...	September
„ Public Exposure of Cases ...	Sept. and October
„ Epidemic in Newcastle ...	Oct., Nov., and Dec.
„ Suspected connection with a milk custom* ...	October
Typhus in Newcastle ...	Nov. and Dec.

* This suspicion on investigation proved to be erroneous.

SUMMARY OF REPORTS—Continued.

HOSPITALS FOR INFECTIOUS DISEASES.

Smallpox—Hospital Accommodation	January
Smallpox Hospital—Application from Walker Urban District Council to be allowed to send Cases to the Moor Smallpox Hospital	April and May
" Application from Benwell and Fenham U.D.C. to be allowed to send Cases to the Moor Smallpox Hospital ...	June
City Hospital for Infectious Diseases—Insufficiency of Accommodation	March, Aug., Sept.
" " " Telephones ...	August

LOCALITIES.

[illegible]

GENERAL

Water Supply	...	...	...	...	...	...	November
Bacterial Examination of Water Supply	...	...	...	...	...	...	Monthly
Appointment of Assistant Inspectors	...	...	...	...	...	...	March and June
Appointment of Health Visitors	...	...	...	...	...	...	Oct. and November
Census of Newcastle-upon-Tyne	...	...	...	...	...	...	May and November
Fire Escapes for Factories and Workshops	..	...	...	...	...	...	May and October
British Congress on Tuberculosis	...	...	...	...	...	...	May
Ice Creameries	...	...	...	...	...	...	August
Nuisance from Hides and Skins whilst being removed from Carriers' Carts	...	...	...	...	...	...	September
Factory and Workshop Acts—Lists of Workshops from Inspector of Factories	...	...	...	...	...	...	November

WORK OF THE INSPECTORS OF THE HEALTH DEPARTMENT.

The Report of Mr. W. H. Wells, Inspector of Nuisances, New House-Drainage, Common Lodging Houses, Workshops, and Food Adulteration, is given below :—

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to present you my report of the work done in my section of the Department during the year ended December 31st, 1901, which includes Tables Nos. VIII. to XIIA. (Appendix A).

Nuisance
Abatement

Nuisance Abatement.—See tables VIII. and IX. for details. There have been 154 privies (midden-privies) removed.

Magisterial
Proceedings

Magisterial Proceedings.—See Tables X. and XI.

Tenement
Bye-laws

Tenement Bye-Laws.—The enforcement of these bye-laws has had a good effect, but, as stated in previous reports, the occupiers have to be constantly remonstrated with.

Health
Visitors.

Health Visitors.—In October of the year under report (1901) the Authority appointed two Lady Inspectors for work in tenement houses. Their labours promise well.

Drains of
New
Buildings.

Drains of New Buildings.—New Bye-laws are still urgently needed.

No. of Drains Tested with Water.	No. of Drains Tested with Smoke.	Supplementary Tests.	Supervision of Works in Progress.	Visits to Learn if Works were in Progress.
645	97	620	2,783	1,128

Smoke
Inspection.

Smoke Inspections.—

No. of Observations of Chimneys made.	No. of Cases in which black smoke issued in such quantity as to be a nuisance for periods of over 5 minutes in the aggregate in one hour.	No. of Notices Served for the Abatement of Smoke Nuisances.
340	83	66

Offensive
Trades.

Offensive Trades.—There are 43 premises in the City where offensive trades are carried on. These have been systematically visited. The trades referred to are—Tripe Boilers (8), Gut Scrapers (1), Bone Boilers (2), Soap Boilers (3), Tanners (3), Leather Dresser (1), Fish Curers (5), Manure Manufacturer (1), Marine Store Dealers (17), Fell-monger (1), Bone Store (1).

Common
Lodging
Houses

Common Lodging Houses.—These have been well conducted. Three of the older houses have been closed. Three additional ones have been placed on the Register. There are still a few houses very dilapidated, and these are getting into a worse condition every year. The number of houses on the Register at the end of the year was 58.

The total number of lodgers for which the Common Lodging Houses of the City were registered was, at the close of 1900, 1,934. At the close of the year under report the number was 2,013.

The average number of lodgers per night was 1,719. The highest and lowest numbers on any one night were respectively 1,825 and 1,580.

For details see Appendix A, Tables XII. and XIII.

Bakehouses.—The Retail Bakehouses (74) have been systematically inspected every six months, and at other times. They are all kept in good order. Bakehouses

Adulteration Acts.—The total number of samples of food and drugs dealt with during the year was 331. See Table XI. The number of milk samples purchased was 207. Of these 56 were suspected to be adulterated, and were submitted for analysis to the Public Analyst, who certified that 15 of them were adulterated, 25 were of doubtful genuineness, and 16 were genuine. The remaining samples, on examination at the Office of the Health Department, were found to be genuine. Adulteration Acts.

Margarine Acts.—19 samples of Margarine have been purchased and analysed. None of them contained more than 10% of butter fat. The margarine warehouses have been systematically visited. There have been 157 visits made. Margarine Acts.

Houses Demolished.—Ten houses (31 holdings) have been pulled down for railway extensions in Ellison Terrace (5), Snowdon Street (3), Adelaide Terrace (1), and Pleasant Row (1). A still larger number will, it is expected, be removed during the year 1902. Houses Demolished.

Thirty-two houses (98 holdings) have been taken down to make room for business premises.

Factory and Workshop Acts.—Thirty Workshops “not previously reported,” and a large number of those already on the books of the Department, have been visited. 356 visits were made to the latter. Factory and Workshop Acts.

There are now 745 Workshops on the Register. These are periodically inspected as frequently as can be done with the present staff.

The following sanitary defects were found and dealt with :—

Sanitary Defects Found.	In Workshops not previously reported.	In Workshops on the books at end of the year 1900.
Overcrowded rooms	1	5
Dirty rooms	—	44
Underground room badly ventilated	1	—
Temperature of rooms too high ...	1	1
Pony kept in workroom	1	—
Dirty passages and staircase ..	—	9
Dirty yard	1	—
Foul accumulations	4	2
Broken roof and spouting ..	—	3
Gas Stoves without means provided to carry off the fumes	1	9
No water-closet accommodation ...	10	2
Insufficient w.c. accommodation ...	5	5
Defective water-closets	—	1
Want of water supply to water-closet	—	1
Dirty water-closets	1	8
Choked water-closets	1	1
Defective drains	2	1
Foul privy and ashpit	1	—
Insufficient means of escape from fire	—	6
Unclassified nuisances	—	2
Totals	30	100

A new Statute, repealing, excepting a few sections, all the existing Acts *re* Factories, &c., and called the Factory and Workshop Act, 1901, is to be put in force in 1902. The duties imposed upon Local Authorities by the provisions of this Statute are very onerous. The Inspecting Staff cannot efficiently comply with them without being increased.

I am,

Your obedient Servant,

W. H. WELLS,

INSPECTOR OF NUISANCES, COMMON
LODGING HOUSES, &c.

Health Department,
Town Hall,
10th May, 1902.

The following is the report of Mr. Wm. Hedley, Inspector of Cattle, Cow-sheds, Slaughter Houses, and Food :—

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to present to you my Report for the year ending December 31st, 1901.

Four cases of Anthrax have occurred. On two occasions animals intended for the fat cattle market were found dead in the railway wagons on arrival here. A third case occurred in a cattle lair, where a fat bullock was found dead on the morning after arrival by train from Morpeth. The fourth case was a young bull, which died after two days' illness. In each case a sample of the blood was submitted to Professor Murray, and Anthrax was confirmed.. Every precaution was taken, and no spread of infection occurred from any of the cases.

One outbreak of Swine Fever occurred, in which 59 swine were implicated. About 40 died from the disease; 2 recovered. The others were slaughtered.

The *dairy cows* have continued free from infectious disease, as defined under the Contagious Diseases (Animals) Acts. Thirteen milk cows have been sent to knackers' yards owing to various causes; seven of that number were found to be affected with Tuberculosis.

The number of *cowkeepers* in the City continues to decrease. At the close of the year only 38 persons were keeping cows for the purpose of supplying milk to the public. Nine cowsheds have been closed, and have been either pulled down or are occupied as stables. No case of infectious disease has been reported in the families of cow-keepers.

Slaughter-houses.—124 places were approved of by the Council to be licensed as slaughter-houses for 12 months from the 1st October, 1901. At the close of the year six of these places were unoccupied. This was caused by the Co-operative Society removing to new premises in Stepney Bank, and leaving seven places vacant in Dispensary Lane.

The principal groups have been kept under close supervision, being visited almost daily, and the others as often as time permits. Sundry necessary repairs have been done on verbal complaint being made by the Inspector. No proceedings have been taken against any of the occupiers.

On some occasions complaints have been received of bad smells arising from gut-scraping. This is an offensive trade, and should be prohibited in slaughter-houses.

Occupiers complain of the difficulty of disposing of the refuse from slaughter-houses that are isolated from the principal groups. This matter has been referred to the City Engineer.

The return of diseased meat and other suspected provisions dealt with is given in Table VII. (Appendix A).

Of the 76 carcasses of beef returned there as unfit for food, 32 of the animals had been purchased in the public markets by members of the Butchers' Association as apparently healthy cattle. When slaughtered they were found affected with tuberculosis, and were surrendered to be destroyed.

Fish Market, Close.—The fish exposed in this market have been inspected daily, and 154 stones of various kinds being found stale were destroyed. 1,512 lbs. of salmon and trout imported from Norway were found unclean and unfit for food. They were destroyed with the consent of the consignees.

I am, Sir,

Your obedient Servant,

WM. HEDLEY,

INSPECTOR OF CATTLE, PROVISIONS, &c.

Health Department,

Town Hall,

Newcastle-upon-Tyne,

12th March, 1902.

HOUSES BUILT DURING THE YEAR 1901.

The following return of houses built during the year under report ^{House-} is supplied through the courtesy of the City Engineer :— ^{building.}

Newcastle-upon-Tyne.				Houses. Self-contained.	Houses of Two Flats each.
Elswick Township	...	...	...	3	14
Westgate Township	...	..	...	20	37
Byker Township	...	...	...	30	50
Jesmond Township	..	...	...	73	69
Heaton Township...	..	...	...	63	60
St. Andrew's Parish	...	...	...	—	—
St. John's Parish	...	...	...	1	—
St. Nicholas' Parish	..	...	...	—	—
All Saints' Parish...	...	...	...	5	—
				195	230
				(for 460 families.)	

New accommodation has thus been provided for 655 families, or at the rate of 5 persons to a family, 3,275 persons, as compared with accommodation estimated for 3,705 persons provided during 1900. ^{New Accom-}

SANITARY ALTERATIONS.

71 plans for minor sanitary works have been examined and approved or otherwise by the Medical Officer of Health and forwarded to the City Engineer for his consideration, as compared with 76 during the previous year.

HENRY E. ARMSTRONG, D.Hy.,

MEDICAL OFFICER OF HEALTH.

Health Department,

Town Hall,

Newcastle-upon-Tyne,

12th May, 1902.

City and County of Newcastle-upon-Tyne, 1901.

APPENDIX A.

TABLE I

POPULATION (ESTIMATED BY THE REGISTRAR GENERAL TO THE MIDDLE
OF THE YEAR)—215,715.

Registration Sub-districts and City.	Different Quarters of the Year.	Births Registered in 52 Weeks ended 28th December, 1901.			Deaths Registered in 52 Weeks ended 28th December, 1901.		
		Male.	Female	Total.	Male.	Female	Total.
Westgate ...	1st Quarter ...	390	312	702	240	208	448
	2nd „ ...	349	352	701	211	176	387
	3rd „ ...	352	368	720	284	247	531
	4th „ ...	342	338	680	206	211	417
	Total ...	1,433	1,370	2,803	941	842	1,783
St. Andrew's ...	1st Quarter ...	94	87	181	86	76	162
	2nd „ ...	99	103	202	55	66	121
	3rd „ ...	95	85	180	78	86	164
	4th „ ...	90	80	170	69	64	133
	Total ...	378	355	733	288	292	581
St. Nicholas' ...	1st Quarter ...	27	14	41	93	59	152
	2nd „ ...	9	18	27	80	45	125
	3rd „ ...	25	16	41	98	45	143
	4th „ ...	23	17	40	85	51	136
	Total ...	84	65	149	356	200	556
All Saints' ...	1st Quarter ...	129	128	257	68	68	136
	2nd „ ...	121	121	242	59	62	121
	3rd „ ...	127	124	251	91	70	161
	4th „ ...	88	93	181	84	73	157
	Total ...	465	466	931	302	273	575
Byker ...	1st Quarter ...	293	282	575	122	123	245
	2nd „ ...	300	276	576	115	111	226
	3rd „ ...	298	288	586	185	158	343
	4th „ ...	276	288	564	143	128	271
	Total ...	1,167	1,134	2,301	565	520	1,085
City ...	1st Quarter ...	933	823	1,756	609	534	1,143
	2nd „ ...	878	870	1,748	520	460	980
	3rd „ ...	897	881	1,778	736	606	1,342
	4th „ ...	819	816	1,635	587	527	1,114
	Total ...	3,527	3,390	6,917	2,452	2,127	4,580

The Births represent a rate of 32·1, and the Deaths a rate of 21·2 per 1,000 estimated population. The increase of births over deaths is 2,337 this year, as compared with 2,635 in 1900.

The population based on the Census of 1901 shows a decrease of 18,654 on that estimated by the Registrar General for the previous year (234,369).

TABLE II.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1901.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	City.	Westgate.	St. Andrew's.	St. Nicholas.	All Saints.	Byker.
I.						
Smallpox	1	...	1	...	...	...
Measles... ..	68	20	7	2	29	10
Scarlet Fever	23	12	1	...	2	8
Epidemic Influenza	22	13	3	1	2	3
Whooping Cough	105	40	9	...	6	50
Diphtheria	24	7	1	2	4	10
Membranous Croup	4	2	...	...	...	2
Croup	6	3	2	...	...	1
Enteric Fever	8	5	...	1	1	1
Diarrhoea, Dysentery	190	41	38	1	26	84
Epidemic or Zymotic Enteritis	59	18	2	...	8	31
Other Epidemic Diseases (Continued Fever)	1	...	1	...	...	...
II.						
Anthrax, Splenic Fever	1	...	...	...	...	1
III.						
Syphilis	11	6	...	...	2	3
Gonorrhoea	1	...	...	...	1	...
IV.						
Phagædena	1	...	1	...	...	...
Erysipelas	11	5	...	2	1	3
Pyæmia, Septicæmia	8	1	...	5	1	1
Puerperal Fever	1	1	...	...	...	...
Infective Endocarditis	2	...	...	2	...	...
Other Septic Diseases	10	2	4	3	1	...
V.						
Rheumatic Fever, Rheumatism of Heart	13	6	...	3	2	2
VI.						
Tubercular Disease of Brain or Meninges, Acute Hydrocephalus	62	29	4	4	5	20
Laryngeal and Pulmonary Phthisis	428	214	50	27	50	87
Tabes Mesenterica, Tubercular Disease of Intestine	59	28	6	3	8	14
General Tuberculosis, Tubercular Disease of Undefined Position	29	14	4	2	3	6
Other forms of Tuberculosis, Scrofula	18	1	4	4	2	7
<i>Total Tuberculosis—Class VI. ..</i>	596	296	68	40	68	134
VII.						
Thrush	1	...	...	...	1	...
VIII.						
Starvation and Want of Breast Milk	4	2	1	...	1	...
Rickets... ..	14	3	5	1	3	2
Scurvy	1	...	1	...	...	...
Carried forward	1,186	473	145	63	159	346

TABLE II.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1901.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	CITY.	Westgate.	St. Andrew's.	*St. Nicholas.	All Saints.	Byker.
Brought forward ...	1,186	473	145	63	159	346
VIII.—Contd.						
Chronic Alcoholism ...	13	7	4	...	...	2
Acute Alcoholism, Delirium Tremens ...	6	3	1	1	1	...
X.						
Osteo-arthritis, Rheumatoid Arthritis ...	3	1	...	...	1	1
Cancer ..	214	70	26	71	13	34
Diabetes Mellitus ...	20	7	5	5	1	2
Purpura Hæmorrhagica ...	1	1	...	...	...	...
Hæmophilia ...	1	1	...	...	...	...
Anæmia, Leucocythæmia ...	20	7	1	4	...	8
Hodgkin's Disease ...	2	...	...	1	..	1
XI.						
Premature Birth ...	139	52	12	5	19	51
Debility at Birth ...	109	41	8	3	.8	49
Injury at Birth ...	5	...	...	...	1	4
Atelectasis ...	3	1	...	...	..	2
Malformation of Heart ...	9	2	1	...	2	4
Spina Bifida, Hydrocephalus ...	6	1	2	1	1	1
Cleft Palate, Hare-lip ...	2	1	1	...	...	...
Other Congenital Defects ...	17	6	4	...	3	4
Old Age, Senile Decay ..	208	121	28	3	25	31
XII.						
Inflammation of Brain or Membranes	68	20	7	4	9	28
Convulsions ...	153	71	11	6	25	40
Apoplexy ...	125	63	19	3	11	29
Softening of Brain ...	5	4	1	...	...	...
Hemiplegia, Brain Paralysis ...	32	10	6	1	6	9
Paralysis Agitans ...	2	1	...	...	1	...
Insanity, General Paralysis of Insane	8	3	3	...	...	2
Chorea ..	2	...	...	...	...	2
Epilepsy ...	10	5	1	1	1	2
Laryngismus Stridulus ...	1	1	...	...	...	...
Paraplegia, Disease of Spinal Cord	17	6	4	3	..	4
Other and Undefined Diseases of Brain or Nervous System ..	42	14	9	10	4	5
XIII.						
Otitis, Otorrhœa ...	11	4	3	4	...	...
Epistaxis, Diseases of Nose ...	1	...	...	...	...	1
XIV.						
Endocarditis, Valvular Diseases of the Heart ...	79	15	18	13	12	21
Pericarditis ...	1	...	1	...	...	...
Hypertrophy of Heart ...	2	...	2	...	...	...
Carried forward ...	2,523	1,012	323	202	303	683

TABLE II.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1901.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	CITY.	Westgate.	St. Andrew's.	*St. Nicholas.	All Saints.	Byker.
Brought forward	2,523	1,012	323	202	303	683
XIV.—Contd.						
Angina Pectoris	3	2	...	1	...	..
Aneurism	12	3	2	5	1	1
Senile Gangrene	6	4	...	1	1	...
Embolism, Thrombosis	15	7	...	1	2	5
Phlebitis	4	1	2	...	...	1
Other and Undefined Diseases of Heart and Circulatory System ...	241	114	38	27	26	36
XV.						
Laryngitis	10	2	3	...	4	1
Other Diseases of Larynx and Trachea	2	1	...	1	...	...
XVI.						
Bronchitis	286	141	30	13	42	60
Lobar, Croupous Pneumonia ...	16	8	...	3	2	3
Lobular, Broncho Pneumonia ...	136	49	18	3	26	40
Pneumonia, form not stated ...	130	49	16	18	16	31
Emphysema, Asthma	21	10	...	2	4	5
Pleurisy	12	3	1	2	5	1
Other and Undefined Diseases of Respiratory System	26	15	2	6	1	2
XVII.						
Sore Throat, Quinsy	2	1	1	...	...	...
Diseases of Stomach	55	13	5	11	11	15
Enteritis	135	65	12	22	10	26
Cirrhosis of Liver	50	16	9	6	7	12
Obstruction of Intestine	44	8	7	26	1	2
Peritonitis	29	13	5	6	1	4
Other Diseases of Digestive System	50	14	8	16	3	9
XIX.						
Acute Nephritis	63	20	8	22	8	5
Bright's Disease, Albuminuria ...	34	19	3	4	1	7
Calculus	5	1	1	3	...	...
Disease of Bladder and of Prostate	16	5	5	6	...	...
Other and Undefined Diseases of the Urinary System	16	6	2	6	2	...
XX.						
Male :—Diseases of Testis	2	2	...	...	...	...
Diseases of Penis	1	...	1	...	...	...
Female :—Diseases of Ovaries	3	...	1	1	...	1
Diseases of Uterus and Appendages	9	1	3	4	...	1
XXI.						
Abortion, Miscarriage	3	...	...	1	1	1
Puerperal Mania	1	1	...	...	...	...
Carried forward	3,961	1,606	506	419	478	952

TABLE II.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1901.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	City.	† Westgate.	St. Andrew's.	* St. Nicholas.	All Saints.	Byker.
Brought forward	3,961	1,606	506	419	478	952
XXI.—Contd.						
Puerperal Convulsions	4	2	...	...	...	2
Placenta Prævia, Flooding	2	...	1	...	1	...
Other and Undefined Accidents of Childbirth	13	4	3	1	1	4
XXII.						
Arthritis, Ostitis, Periostitis	4	1	...	2	1	...
Other and Undefined Diseases of Organs of Locomotion	19	8	1	4	1	5
XXIII.						
Ulcer, Bedsore	1	1	...	...	...	...
Eczema	4	1	1	1	...	1
Pemphigus	1	1	...	...	...	...
Other and Undefined Diseases of Integumentary System	4	2	...	1	...	1
XXIV.						
<i>Deaths from Accident or Negligence—</i>						
By Vehicles and Horses	1	...	...	1	...	...
On Railways	4	...	...	4	...	...
In Building Operations	4	...	...	4	...	...
By Weapons and Implements	1	1	...	...	...	...
Burns and Scalds	34	4	5	19	2	4
Poisons, Poisonous Vapours	9	3	1	5	...	...
Drowning	13	3	...	3	6	1
Suffocation, overlaid in bed	28	9	2	...	8	9
Suffocation, otherwise	1	1	...	...	...	...
Falls	7	1	...	4	2	...
Otherwise and not stated	78	14	7	52	1	4
XXV.						
Homicide	4	1	1	2	...	...
Suicide	17	5	1	3	3	5
Execution	2	...	...	...	2	...
XXVI.						
Sudden Death, cause not ascertained	5	...	...	1	2	2
Other Ill-defined and not Specified Causes	359	115	52	30	67	95
TOTALS	4,580	1,783	581	556‡	575	1,085

† Includes Union Workhouse.

* Includes Royal Infirmary.

‡ The number of Deaths is increased by 432 in the Royal Infirmary, 241 of which came to that Institution from beyond the City. In 9 other Infirmary cases the residences are not stated in the returns.

TABLE III.

ANNUAL DEATH-RATE FROM ALL CAUSES AND FROM THE SEVEN "CHIEF ZYMOTIC DISEASES" PER 1,000 LIVING IN NEWCASTLE, COMPARED WITH THE AVERAGE RATES IN THE LARGE TOWNS OF THE UNITED KINGDOM.

	All Causes.		Seven "Chief Zymotic Diseases."*	
	1901.		1901.	
	Average in 33 Towns.	Rate in New-castle.	Average in 33 Towns.	Rate in New-castle.
1st Quarter	19.2	21.2	1.64	1.04
2nd „	16.9	18.2	1.68	1.09
3rd „	19.2	24.9	5.33	5.28
4th „	18.6	20.7	2.03	1.46
Annual Rate	18.5	21.2	2.67	2.22

* Smallpox, Scarlet Fever, Diphtheria, Typhus, Enteric, and Continued "Fevers," Measles, Whooping Cough, and Diarrhœa, which now includes Dysentery, Epidemic and Zymotic Enteritis, and Intestinal Catarrh.

TABLE IV.—AGES AT DEATH.

Periods.	REGISTRATION SUB-DISTRICTS.					
	Total in City.	Westgate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.
Under 1 Year	1,226	458	133	35	171	429
1 Year and under 5 Years ..	605	213	81	31	105	175
5 Years „ 20 „ ...	295	92	40	73	25	65
20 „ „ 40 „ ...	626	237	65	157	67	100
40 „ „ 60 „ ...	827	308	86	186	99	148
60 „ „ 80 „ ...	857	402	146	72	97	140
80 „ and upwards ...	143	73	29	2	11	28
Age not known	1	—	1	—	—	—
Total (all ages) dying } during 52 weeks ended } 28th December, 1901 .. }	4,580	1,783	581	556	575	1,085

TABLE V.

ADMISSIONS TO AND DEATHS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES
(OTHER THAN SMALLPOX) DURING THE YEAR 1901.

DISEASES.	ADMISSIONS													DEATHS.												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Jan.	Feb.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
Scarlet Fever	31	17	34	31	43	38	51	43	79	89	53	42	551*	2	...	1	2	4	...	...	...	2	3	5	19
? Scarlet Fever ..	...	...	...	...	2	...	...	1	...	...	1	1	5	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever and Diphtheria	1	...	1	1	...	...	...	1	...	...	...	...	4	...	...	1	...	...	...	1	...	...	...	...	...
Diphtheria	2	3	1	1	2	3	2	4	5	2	3	7	35†	1	...	...	...	...	1	...	3	1	1	1	8
? Diphtheria	2	...	...	...	...	...	...	...	...	...	1	...	3	1	...	...	...	...	...	...	...	1	...	...	2
Typhus ... ..	...	...	...	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	4	...	...	1	1	...	2	6	6	4	2	3	29	...	...	...	...	...	2	...	1	1	...	...	4
? Enteric Fever ... ..	...	1	...	...	...	...	...	...	...	...	4	...	5	...	1	...	...	...	...	...	...	...	...	...	1
Entero-Colitis ... ..	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1
? Rotheln ... ..	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Miliary Tuberculosis ...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1
Follicular Tonsillitis ...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Perforating Gastric Ulcer	...	...	...	...	...	...	...	...	...	1	...	...	1†	...	...	...	...	...	...	...	...	...	...	...	...
Chronic or Non-febrile Ail-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ment ... ..	...	...	...	...	...	...	1	1	...	1	2	...	5||	...	...	...	...	...	...	...	...	...	...	...	...
Ill defined Disease ... ..	...	...	1	1	...	...	1	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	40	25	37	34	48	41	57	56	91	97	67	54	647	4	3	2	2	4	1	3	3	4	6	6	38	

* Includes nurse, probationer, wardmaid, and ambulance driver in Hospital, and 18 cases from Walker Urban District.

† Includes wardmaid in Hospital and 1 case from Walker Urban District.

‡ Wardmaid in Hospital.

|| Includes 2 wardmaids in Hospital and workman employed at the Hospital.

TABLE V_A.

SMALLPOX HOSPITAL.

ADMISSIONS AND DEATHS DURING 1901.

	Admissions.	Deaths.
January...	19	1
February	2	—
March ...	2	—
April ...	1	—
Total ...	24	1

TABLE VB.

SMALLPOX IN RELATION TO VACCINATION.

RETURN OF CASES TREATED IN THE SMALLPOX HOSPITAL DURING 1901.

	Con- fluent.	Died.	Semi- Con- fluent.	Died.	Discrete	Died.	Totals.	
							Cases.	Deaths.
Not Vaccinated ...	1	...	3	...	...	...	4	...
Doubtful as to Vaccina- tion
Vaccination reported, but no Cicatrix visible	2	...	2	...
GOOD CICATRICES.								
1 Cicatrix
2 Cicatrices	1	...	1	...
3 „	1	...	1	...
4 „	1	...	1	...
More than 4 Cicatrices	4	1*	4	1*
Total good Cicatrices	7	1	7	1
INDIFFERENT OR VERY FAINT CICATRICES.								
1 Cicatrix
2 Cicatrices	1	...	2	...	3	...
3 „	3	...	3	...
4 „	2	...	2	...
More than 4 Cicatrices	3	...	3	...
Total indifferent or faint Cicatrices	1	...	10	...	11	...
Total good Cicatrices	7	1*	7	1*
Total Vaccinated	1	...	17	1	18	1

*This case was that of a Chronic Alcoholic, and was fatal on the 25th day from heart failure.

SMALLPOX "CONTACTS," 1901.

65 "Contacts" were isolated in the Reception House during the disinfection of the infected premises, &c. 54 of these were isolated for from one to three days, after which they were allowed to return to their homes and there watched until danger of possible incubation of the disease was over. 11 others were detained in the Reception House for 17 days each.

75 other persons were kept under observation at their homes for 17 days each.

TABLE VI.

INFECTED ARTICLES DESTROYED AND REPLACED BY THE HEALTH DEPARTMENT.

	1901.	1900.
Half Straw Mattresses	124	54
Flock Beds	2	1
Bed Tick	1	1

INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1901.	1900.	1901.	1900.
18,371	8,632	2,347	1,773

TABLE VII.

RETURN OF SUSPECTED AND UNWHOLESOME PROVISIONS INSPECTED DURING
THE YEAR 1901.

PROVISIONS INSPECTED.	Amount of Suspected Provisions Inspected.	CONDITION.		BAD—HOW DISPOSED OF.	
		Fit for Food.	Unfit for Food.	Destroyed by Order of Justice.	Destroyed with Owner's Consent.
Carcases of Beef ...	137	61	76	5	71
Sides of Beef ...	398	396	2	...	2
Quarters of Beef ...	30	16	14	...	14
Carcases of Veal ...	52	25	27	...	27
Carcases of Mutton ...	123	47	76	...	76
Carcases of Pork ...	182	122	60	...	60
Pieces of Beef and Mutton, lbs. ...	664	...	664	...	664
Pieces of Pork, lbs. ...	160	...	160	...	160
Sausage Meat, lbs. ...	480	...	480	...	480
Ox Heads ...	4	...	4	...	4
„ Kidneys, lbs. ...	833	...	833	...	833
„ Livers, lbs. ...	408	...	408	...	408
„ Tripe, lbs. ...	1,430	...	1,430	...	1,430
„ Sweetbreads, lbs. ...	50	...	50	...	50
„ Tails, lbs. ...	84	...	84	...	84
Sheep Plucks ...	72	...	72	...	72
Pig Plucks ...	49	...	49	...	49
Pig Kidneys, lbs. ...	72	...	72	...	72
Rabbits (Couples) ...	304	...	304	...	304
Turkeys ...	6	...	6	...	6
Geese ...	17	...	17	...	17
Ducks ...	79	...	79	...	79
Chickens ...	51	...	51	...	51
Pears (Barrels) ...	82	...	82	...	82
Pears (Baskets) ...	6	...	6	...	6
Cherries (Baskets) ...	160	...	160	...	160
Plums (Baskets) ...	364	...	364	...	364
Bilberries (Baskets) ...	5	...	5	...	5
Tomatoes (Boxes) ...	61	...	61	61	...

The sides of beef examined were imported from Denmark. Two of these, found to be affected with tuberculosis, were destroyed with the consent of the consignee. Three persons have been summoned for being the owners of diseased or unsound meat, exposed or deposited for the purpose of sale. One was fined £10 and costs, and another £5 and costs. One case was dismissed. One person was summoned for having sold 61 boxes of tomatoes, which were in such a condition as to be liable to be seized, and were unfit for food at the time of sale. He was fined £5 and costs.

(Signed)

WM. HEDLEY, INSPECTOR.

TABLE VIII.

SUMMARY OF NUISANCES FOR THE ABATEMENT OF WHICH NOTICES
HAVE BEEN SERVED DURING 1901.

Foul privies and ashpits (to replace with water-closets or pail-closets)	{ Privies Ashpits	142 96
Cellar dwellings not in conformity with law (to be closed or not used separately as dwellings)		3
Dirty or dilapidated rooms (to be cleaned or repaired)		123
Insufficient privy accommodation (additional water-closets or pail- closets ordered)		30
Foul ashpits not connected with privies (to remove and provide tubs)...		85
Defective tubs (to provide new tubs)		28
Insufficient tubs for dry house refuse (to provide additional tubs) ...		121
*Defective water-closets		255
*Water-closets without water supply		105
*Choked water-closets (mostly served on tenants) ..		354
*Dirty water-closets (all served on tenants)		50
†Defective pail-closets		444
†Dirty pail-closets (all served on tenants)		9
Smoke nuisances (to abate)		66
Overcrowding (to abate)		51
Defective pavement in yards and passages (to repair)		122
Dirty yards and passages (to cleanse)		314
Defective drains, sinks, soil-pipes, &c. (to cleanse, repair, or construct new drains)		1,165
Broken roofs and water spouting (to repair)		254
Want of water (to provide supply)		345
Animals, pigeons, and fowls improperly kept (to remove)		21
Accumulations of manure (to periodically remove)		42
Offensive accumulations (to remove)		208
Unclassified minor nuisances (to abate)		58
Want of sanitary conveniences in public houses (to provide)		1
Dirty bakehouses (to cleanse)		2
Totals		4,494

*To repair or cleanse. †To provide new pans, or to repair the roofs, seats, and floors, or to cleanse.

(Signed,) W. H. WELLS,

INSPECTOR OF NUISANCES

TABLE IX.

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT
OF NUISANCES DURING 1901.

Length in yards of old drains removed	2,975
„ „ new „ constructed	3,675½
New trapped gullies provided to drains	436
Combined privies and ashpits removed { privies	*154
„ „ „ „ { ashpits	*98
Water-closets provided	†176
Pail-closets „	12
Pail-closets removed and water-closets provided	12
Foul “container” closets removed, and closets of a better design substituted	21
Dry ash-tubs substituted for dry ash-pits where water-closets existed...	21
No. of drains tested	773
No. of tests of above drains made by smoke and water... ..	1,123
No. of complaints made at office (verbally or by letter)	1,145
No. of tenement inspections made	27,104
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	‡1,951
Inspections of houses made from complaints received outdoors or nuisances discovered in the district, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	5,785
Inspections to learn if works ordered were in progress	7,835
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing of same	30,082
Inspections after infectious disease	998
Supervisions of works in progress	2,125
Inspections of milk shops	795
„ bakehouses	437
„ offensive trades	499

* Some ashpits have more than one privy attached.

† 20 of these have been provided on premises where the accommodation was previously insufficient.

‡ In addition to this number the District Inspectors have daily had premises cleansed on verbal order.

(Signed) W. H. WELLS,

INSPECTOR OF NUISANCES.

TABLE X.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE
THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, &C., DURING
THE YEAR 1901.

Nature of Complaint.	No. of Cases.	How disposed of.
Want of Privy Pails, Pails defective, &c.	7	Nuisances abated before the summonses were applied for.
Choked and defective Drains.	20	In 1 case the summons was withdrawn on the nuisance being abated. In the remaining 19 cases the nuisances were abated before the summonses were applied for.
Want of Drainage.	1	The nuisance was abated before the summons was applied for.
Foul privies and ash-pits.	15	In 11 cases the summonses were withdrawn on the nuisances being abated. In the 4 other cases the nuisances were abated before the summonses were applied for.
Foul Ashpit.	1	Nuisance abated before the summons was applied for.
Want of Water Supply.	12	Nuisances abated before the summonses were applied for.
Choked and Defective Water-closets.	2	Ditto.
Defective House Roofs.	4	Ditto.
Want of tubs for dry house refuse.	8	Ditto.
Accumulations of refuse	2	Ditto.
Manure Pits full.	3	Ditto.
Want of Hatch Doors to Pail closets.	4	Ditto.
Defective Yard Pavements.	2	Ditto.
Damp Room.	1	Nuisance abated before the summons was applied for.
Smoke Nuisance.	1	Ditto.
Disobeying Justices' Order to abate Nuisance from Foul Privies and Ashpits.	1	Nuisance abated. Case withdrawn.
<i>Carried forward...</i>	84	

TABLE X.—CONTINUED.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE
THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, &c., DURING
THE YEAR 1901.

Nature of Complaint.	No. of Cases.	How disposed of.
<i>Brought forward ..</i>	84	
<i>Tenement Bye-laws—</i> Contravention of Bye-laws 4 and 6, over-crowding.	2	Nuisances abated before the summonses were applied for.
Contravention of Bye-law No. 12, insufficient water-closet.	10	Ditto.
Contravention of Bye-law No. 15, dirty yard.	2	Ditto.
Contravention of Bye-law No. 16, water-closet apparatus out of order.	11	Ditto.
Contravention of Bye-law No. 17, defective structure of privies, pails leaking, &c.	10	Ditto.
Contravention of Bye-law No. 19, dirty pail-closet	1	Nuisance abated before the summons was applied for.
Contravention of Bye-laws No. 24 and 32, dirty rooms.	3	Nuisances abated before the summonses were applied for.
Contravention of Bye-law No. 31, lime-washing passages and staircases.	41	Ditto.
Contravention of Bye-law No. 33, yard pavement defective.	4	Ditto.
Contravention of Bye-law No. 34, no water supply for domestic purposes.	11	Ditto.
Total	179	

(Signed,) W. H. WELLS,

INSPECTOR OF NUISANCES AND COMMON LODGING HOUSES.

TABLE XI.

FOOD AND DRUGS ADULTERATION ACTS.

SAMPLES TAKEN FOR ANALYSIS DURING THE YEAR 1901.

Articles taken for Analysis.	No. of Samples	Result of Analysis.	Proceedings taken and result.
New Milk ...	207	<p>167 genuine. 25 of doubtful genuineness.</p> <p>1 contained 31·3% less fat than natural.</p> <p>1 contained 14·6% less fat than natural.</p> <p>1 contained 13·6% less fat than natural and 3·6% added water.</p> <p>1 contained 15·0% less fat than natural and 24·2% added water.</p> <p>1 contained 13·7% added water.</p> <p>1 contained 10·7% added water.</p> <p>1 contained 21·4% added water.</p> <p>1 contained 6·7% added water.</p> <p>1 contained 5·7% added water.</p> <p>1 contained 3·5% added water.</p> <p>1 contained 9·4% added water.</p> <p>1 contained 9·1% added water.</p> <p>1 contained 22·6% less fat than natural and 8·8% added water.</p> <p>1 contained 3·3% less fat than natural and 5·88% added water.</p> <p>1 contained 12·5% added water, and had had formalin added as a preservative.</p>	<p>Vendor summoned and fined 10/- and costs.</p> <p>Ditto.</p> <p>Defendant proved that milk was sold in the same condition as received from the farmer. Case therefore withdrawn on payment of costs.</p> <p>Vendor summoned and fined £6 and costs.</p> <p>Vendor summoned and fined 20/- and costs.</p> <p>Ditto.</p> <p>Ditto.</p> <p>Ditto.</p> <p>Vendor summoned and fined 40/- and costs.</p> <p>Ditto.</p> <p>Vendor summoned. Cases dismissed, as they were based on the two following cases against the farmer who supplied the milk.</p> <p>Vendor summoned. The defendant's evidence that neither he nor his servants had adulterated the milk was accepted by the magistrates and the cases dismissed.</p> <p>Vendor summoned and fined 10/- and costs.</p>
Butter ...	35	<p>33 Genuine.</p> <p>1 contained 100% margarine</p> <p>1 „ 100% „</p>	<p>Vendor cautioned by order of Sanitary Committee.</p> <p>Vendor summoned and fined 10/- and costs.</p>
Carried forward }	242		

TABLE XI.—CONTINUED.

FOOD AND DRUGS ADULTERATION ACTS.
SAMPLES TAKEN FOR ANALYSIS DURING THE YEAR 1901.

Articles taken for Analysis.	No. of Samples	Result of Analysis.	Proceedings taken and result.
Brought forward }	242		£ s. d.
Margarine ...	19	All Genuine.	
Ground Rice ...	10	All Genuine.	
Corn Flour ..	9	All Genuine.	
Ground Ginger	6	All Genuine.	
White Pepper	7	6 Genuine. 1 contained at least 30% ground rice.	Retail dealer proved a warranty. Proceedings were then taken against the wholesale dealer. The case was dismissed with costs against the defendant.
Arrowroot ...	5	All Genuine.	
Black Pepper	5	All Genuine.	
Potass Water	4	2 Genuine. 1 certified to be soda water.	Vendor summoned and fined 10/- and costs.
		1 certified to contain no potash and not to be potass water, but ordinary water into which carbonic acid had been forced.	Ditto.
Gregory's Powder ...	3	All Genuine.	
Flour ...	3	All Genuine.	
Compound Liquorice Powder ...	3	All Genuine.	
Cream of Tartar ...	3	All Genuine.	
Demerara Sugar ...	2	Both Genuine.	
Granulated Sugar ...	1	Genuine.	
Trinidad Sugar	1	Certified to consist of crystals of sugar coloured with an aniline dye.	No proceedings taken.
Whisky ...	2	1 certified to be 31·4 deg. under proof. 1 certified to be 27·2 deg. under proof.	Vendor summoned and fined 20/- and costs. Ditto.
Condensed Milk	6	All Genuine.	Taken for analysis for glucose.
Total ...	331		Total amount of penalties £19 0s. 0d.

(Signed), W. H. WELLS,

INSPECTOR UNDER THE FOOD AND DRUGS ADULTERATION ACTS.



CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

PREVENTION OF INFECTIOUS DISEASES.

NOTICE.

ALL Persons in whose households there is Infectious Disease such as SMALLPOX, SCARLET FEVER, "FEVER," MEASLES, &c., are CAUTIONED against the REMOVAL of CLOTHING OR OTHER ARTICLES FROM THEIR HOUSES, except by the Officers of the Corporation, for the purpose of being purified in the Disinfecting Apparatus.

SUCH ARTICLES MUST NOT ON ANY ACCOUNT BE TAKEN TO ANY OF THE PUBLIC WASHHOUSES.

The Public are also cautioned against permitting any person whilst recovering from any such disease to leave his house until he has been certified by his medical attendant as being quite free from fear of conveying infection to others; and until his clothing, bedding, and the infected premises have been thoroughly disinfected to the satisfaction of the Medical Officer of Health.

Wilful exposure of any infected person or infected article of any kind, so as to endanger the public health, renders the offender liable to a heavy penalty.

Proceedings will be taken against any person offending against the Law.

Printed instructions for the protection of the healthy from the infected sick in households, and the precautions recommended, may be had on application to the Health Department, Town Hall. The Medical Officer of Health will be happy to give any further advice or assistance in his power respecting the cause of outbreaks of Infectious Disease, or the means of preventing their spread.

SMALLPOX AND RE-VACCINATION.

Smallpox has recently appeared in the western parts of the City, infection having 'apparently been introduced toward the end of November last. Since then several households have been invaded. Every available measure of protection and precaution is being taken by the Sanitary Authority. It is, however, impossible to say how far infection may spread. *Householders are strongly urged, without delay, to protect themselves and the members of their families by RE-VACCINATION.* In support of this recommendation, the following reasons issued by me, in the face of an epidemic nineteen years ago, apply with equal force to-day.

Against no infectious or "catching" disease, other than Smallpox, has man in his own person the means of guarding himself. Isolation and disinfection of the patient and his surroundings are the only processes by which other plagues can be stayed; * * * * * but against Smallpox a man may shield himself and his children through life, so that they may live, eat, and sleep amid the disease without fear, *because they have been made insusceptible to its effects!*

This shield is vaccination.

Heads of families are earnestly recommended to have every member of their households who have reached seven years of age re-vaccinated without delay. The comparatively few individuals who through negligence or ignorance have not been

vaccinated at all, or their guardians, are urged, as they value their health or that of those dear to them, to seek, while there is yet time, that protection which is open to them, not only free of charge, but of which, for their own and the public good, they are by law required to avail themselves. To those whom prejudice, founded on "a little knowledge," has tempted to break that law, let the unquestionable rhetoric of the facts, which my own opportunities for observation enable me to present in these pages, appeal. What object can I, or medical men in general, have in distorting such facts? And yet the almost universal consensus of professional opinion in favour of vaccination, based though it be on personal experience and the stubborn statistics of large institutions such as the various Smallpox hospitals in the Metropolis, is discarded by some, in favour of the rash, biassed, and often (it is to be feared) unprincipled, assertions of individuals, who have had neither the opportunity for observation, nor the medical training necessary to turn such opportunity to account, and some of whom attempt to lay at the door of vaccination the diseases of themselves and their offspring due to their own misconduct.

Some vaccinations are more efficient than others. The protective influence of primary vaccination, *i.e.*, the vaccination of a person for the first time, is in exact relation to the quality, and (within a certain limit) the quantity of the permanent scars left by the operation. Thus, a distinct vaccination-mark is better than a faint one; two marks are better than one, and three than two, and so on. By the term "better" is to be understood *more powerful*, and probably also *more lasting in protective agency*.

None but successful vaccinations, *i.e.*, those leaving conspicuous permanent scars, can be counted as efficiently protective.

Owing to changes in the body, the protective effect of vaccination in infancy is liable to wear out in adult life, as is sometimes the case even with Smallpox itself, of which disease

I have treated eight persons for second attacks. It is therefore advisable to have the operation repeated at a later age. Under ordinary circumstances it is sufficient if it be done efficiently for the second time at the age of fourteen or fifteen years; but in times of danger, all persons of seven years and upwards should be re-vaccinated. This re-vaccination, if successfully performed, may, it is believed, be regarded as almost absolutely protective for life.

Abundant proof of the accuracy of the foregoing statements may be found in Government Reports and other reliable publications. Having had under my own care at the Newcastle Fever Hospital upwards of 900 cases of Smallpox in the epidemic of 1871-72, it may be useful to give my experience of this epidemic:—

The mortality of the vaccinated was ... 9.5 per cent.
That of the unvaccinated was ... 42.4 „

The subjoined statistics are taken from my Report for the 68th year of the Hospital (May, 1871, to April, 1872), which included the heaviest portion of the epidemic:—

49 vaccinated cases died.
112 unvaccinated „

In 48 of the fatal vaccinated cases noted—

25	had only 1 cicatrix, or scar, of former vaccination.		
10	had 2 cicatrices	„	„
7	„ 3 „	„	„
3	„ 4 „	„	„
3	„ more than 4 cicatrices	„	„

As evidence in favour of *re-vaccination*, the following is quoted from the same Report:—

The best proof of the protection afforded by re-vaccination is shown by the nurses and servants in the Hospital. Each was re-vaccinated by myself before taking duty; and though, from repeated

changes, we had many nurses and domestic servants, not one caught Smallpox. On the other hand, shortly after the return of fever, which had been totally absent for several months, three nurses were struck down with typhus, and a fourth fell a victim to the same disease about a month later.

Further, although cases were received from nearly every public institution of the town, including the Infirmary, Child's Hospital, Blind Asylum, Lying-in Hospital, the Home at Brandling Place, Penitentiary, Gaol, Vagrant Ward, Police Stations, hotels, factories, schools, ships, and even from the Byker Smallpox Convalescent Home, not one single official or servant connected with the Fever and Smallpox Hospitals contracted Smallpox whilst doing duty during this epidemic.

The following are the returns as to vaccination, &c., of the cases treated in the Fever Hospital during the outbreak of the year 1881 :—

Seventy-two cases of Smallpox were admitted—fifteen were unvaccinated; of these six had the disease in the confluent (severe) form, and three died.

In two there was doubt as to vaccination; each of these had the semi-confluent (moderately severe) form, and both recovered.

In three, vaccination was reported to have been performed in youth, but no cicatrix was perceptible; two of these died from confluent Smallpox; the other recovered after the semi-confluent form of the disease.

Fifty-two cases occurred in vaccinated persons. Of these vaccinated cases, five had the confluent form, and two died; six had the semi-confluent form, and all recovered; and forty-one had the discrete, or mildest, form of the disease, and all recovered. Several of the latter were so slightly affected that, but for the occurrence of other cases in their families, their cases might have been overlooked. In some instances the eruption was limited to four or five pimples, and in one patient there was only one.

The foregoing results may be summarised thus:—

In the known unvaccinated cases of Smallpox treated, 40 per cent. suffered from the confluent form of the disease, of which one-half died.

In the known vaccinated cases, the proportion of confluent cases was below 10 per cent., and the deaths below 4 per cent. of the whole.

The fact that in some epidemics more vaccinated than unvaccinated persons actually contract Smallpox is, if considered alone, apt to mislead, since it might, at the first glance, be regarded as evidence against the efficacy of vaccination. But when considered in connection with the other fact that about 95 per cent. of the population are vaccinated, it will at once be seen that the proportion of vaccinated cases of Smallpox to vaccinated persons in the community is vastly below the proportion of unvaccinated cases of the disease to unvaccinated persons. Thus if, for example, in a population of 10,000 persons, of which 95 per cent. are vaccinated, an epidemic causes 300 cases of Smallpox, viz., 200 in vaccinated and 100 in unvaccinated people,—although the actual number of the former cases is double that of the latter, the relative proportion is:—

Vaccinated cases to vaccinated persons	...	2·1 per cent.
Unvaccinated cases to unvaccinated persons	...	20·0 „

THE PRESENT OUTBREAK OF SMALLPOX IN RELATION TO VACCINATION.

The protective influence of vaccination and re-vaccination is further manifested by the experience—limited, happily, as yet though it be—of the present outbreak of Smallpox. Of the twenty recent cases in the city up to date, three are those of unvaccinated persons, one having the disease in a severely confluent, and two in the semi-confluent, form. Each of these will bear the scars of the attack during the rest of life. The seventeen other patients shewed traces, more or less distinct, of vaccination in infancy. In none of these

is the Smallpox confluent. One, a person of broken down constitution, died from heart-failure, who, but for this complication, should have recovered. The others are all favourable cases, most being very mild, with little or no sense of ailment. Three or four shew barely enough of the disease to swear by. None of these vaccinated ones will be permanently marked.

There has been no case of Smallpox in a re-vaccinated person.

The security of the nurses and other officers exposed to infection,—every one of whom has been re-vaccinated,—is relied on with absolute confidence.

Signed,

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
2nd February, 1901.*

[OVER.

Vaccination or Re-Vaccination is performed **FREE OF CHARGE** by the following Public Vaccinators :—

Eastern District—

By Dr. H. W. NEWTON, 2, Ellison Place.

East Central District—

By Dr. F. HAWTHORN, 6, Regent Terrace.

Western District—

By Dr. J. A. ANGUS, 11, Wentworth Place.

West Central District—

By Dr. J. DALGLIESH, 31, West Parade.



