

[Report 1891] / Medical Officer of Health, Leeds Borough.

Contributors

Leeds (England). City Council.

Publication/Creation

1891

Persistent URL

<https://wellcomecollection.org/works/szqh3mu8>

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution license.

This licence permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

15 JAN. 96
15 JAN. 96
ROK
ANNUAL REPORT

MADE TO THE

URBAN SANITARY AUTHORITY

OF THE

BOROUGH OF LEEDS,

For the Year 1891,

BY

J. SPOTTISWOODE CAMERON,

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

Medical Officer to the Borough.

Leeds :

GOODALL AND SUDDICK, PRINTERS, COOKRIDGE STREET.

1892.





ANNUAL REPORT

MADE TO THE

URBAN SANITARY AUTHORITY

OF THE

BOROUGH OF LEEDS,

For the Year 1891,

BY

J. SPOTTISWOODE CAMERON,

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

Medical Officer to the Borough.

Leeds:

GOODALL AND SUDDICK, PRINTERS, COOKRIDGE STREET.

1892.

CONTENTS.

	PAGE.
Epidemic Influences	1
Comparisons of Death Rate	3
Age Mortality	5
Special Diseases—	
Tuberculosis	9
Pneumonia	10
Smallpox	13
Measles	40
Scarlet Fever	46
Diphtheria	52
Continued Fever	69
Diarrhœa	74
Influenza	80
Other diseases	81
Health of Districts—	
Wards	86
Sub-Registration Districts	89
Insanitary Areas	94
Local Factors	103
Inspection of Borough	105
Rivers Pollution	115
Workshops	116
Refuse Removal	117
Destructors	119
Street Cleansing	123
Dairies, &c.	124
Food and Drugs	124
Meat Inspection	125
Smoke Inspection	126
Disinfection	128
Hospital Patients	129
Canal Boats	129
Lodgings and Lodging Houses	130
Reports and Recommendations	130
Appendix	134

LIST OF TABLES.

	IN THE TEXT.	PAGE
TABLE	1.—Mortality in Leeds from all and certain groups of causes, and comparison with previous years.	3
"	2.—Mortality in nine largest towns in United Kingdom in 1891	4
"	3.—Deaths in Leeds, 1891 and quarters, Age groups	6
"	4.—Do. per 1,000 living	7
"	5.—Death rate, Children under 1 year	8
"	6.—Mortality from Tuberculosis	9
"	7.—Pneumonia—Deaths and Death Houses	12-13
"	8.—Dates in some Small-pox cases	22
"	9.—Small-pox—Inmates of Inspected Houses: Houses . .	36-39
"	10.—Measles—Deaths and Death Houses.	42-43
"	11.—" Recoveries and Recovery Houses	44-45
"	12.—Scarlatina—Cases and Case Houses	50-51
"	13.—Diphtheria and Croup—Cases and Houses	58-68
"	14.—Typhoid—Cases and Case Houses	72-73
"	15.—Diarrhoea—Deaths and Death Houses	78-79
"	16.—Influenza—Deaths and Death Houses	82-83
"	17.—Deaths in Leeds from groups of causes, 1891 and quarters	84
"	18.—Do. per 1,000 living	85
"	19.—Deaths in Municipal Wards (those from Institutions allocated), 1891 and quarters. Death Rates for year	87
"	20.—Deaths (those in Institutions allocated) from groups of causes in Sub-Registration Districts, 1891	90
"	21.—Do. per 1,000 living	91
"	22.—Insanitary area No. 1. Enumeration areas and blocks, with Deaths during earlier half of 1891	95
"	23.—Insanitary area No. 1. Enumeration areas of 1891 census. Deaths in each in 1891 and quarters. Rate per 1,000 enumerated population	97
"	24.—Insanitary area No. 1. Deaths in 1891 and quarters from groups of causes. Death Rates	99
"	25.—Drainage and Closet Arrangements of Case and Death Houses examined on account of certain Infectious Diseases in 1891	104
TABLE	I.—Details of Inspections in 1891 and quarters	111
"	II.—Analysis of Ward Inspection, second half of 1891	112-113
"	III.—River Pollutions cut off	115

	PAGE.
TABLE IV. and V.—Inspection of Workshops	116-117
„ VI. and VII.—House Refuse removal	118
„ VIII.—Dairy and Milk Shops Inspection	124
„ IX.—Samples of Food and Drugs analysed	125
„ X.—Slaughter Houses and Meat Inspection	126
„ XI.—Smoke Inspection	127
„ XII.—Disinfection	128
„ XIII. and XIV.—Patients admitted to Infectious Hospitals ..	129
„ XV.—Inspection of Canal Boats	130
„ XVI. and XVII.—Inspection of Houses Let as Lodgings, and other work of Sub-Inspector	130

APPENDIX.

TABLE A.—Part 1.—Causes of Deaths in Registration Sub-Districts, Institutions as separate districts	134-135
„ A.—Part 2.—Population, Births, Mortality at certain ages in Registration Sub-Districts, Public Institutions being classed as separate districts	136
„ B.—Population, Births, new cases of certain Infectious Diseases and admissions to Infectious Hospitals, 1891	137
„ F.—Births, Deaths in Leeds from all and certain groups of causes, Sickness, and Meteorological Data for each week of 1891, with Death Rates of Leeds and 28 towns	138-141

The accompanying report was submitted in draft to the Sanitary Committee on the 8th of August, 1892. I thought it desirable to reduce some of the tables, which had, contrary to my instructions, been printed on large sheets, to a form in which they could be inserted without any folding. I have taken the opportunity also of revising the whole of the figures of the original draft. In consequence of a suggestion which fell from a member of the Committee, I have added a memorandum, in each case where the information was at our command, as to the vaccination or non-vaccination and the number and distinctness of the vaccination marks of every patient suffering from small-pox. I had not introduced this material so fully into the draft, as it had been pretty completely dealt with in the report of the Resident Medical Officer to the Fever Hospital made to the Hospital Sub-Committee on the 5th of May, 1892. The information as to the number and quality of the vaccination marks was filled into my manuscript draft of Table 9 by Mr. Pearson himself.



REPORT

OF THE

MEDICAL OFFICER OF HEALTH.

For the fifty-two weeks ended January 2nd, 1892.

To the Chairman of the Sanitary Committee.

SIR,

The year 1891 had to some extent an epidemic character. Commencing in the latter part of 1890, an outbreak of measles spread rapidly throughout the Borough, and reached its highest point, as indicated by the mortality, in the month of March, 1891. After this the deaths rapidly declined towards the middle of the year, although it was not my good fortune in any monthly report to record the entire absence of this disease from our death returns. There is always in a town the size of Leeds a considerable number of cases of measles attracting little or no attention. At periodical intervals, determined probably in part by atmospheric conditions, and in part by the accumulation of children born since the last epidemic, and not protected by a previous attack, the disease assumes a more formidable aspect, and figures conspicuously in the death returns. Such an epidemic prevalence was the one just referred to.

Before the virulence of this epidemic subsided, the town suffered from one of an even more severe character. At the end of the year 1889, a few cases of influenza began to occur in Leeds, and cases of this disease became increasingly frequent during the beginning of 1890, after which time the illness almost entirely disappeared from the Borough. Nineteen deaths were reported from it in the first quarter of 1890, none in any of the other three quarters. No death was reported as due to this disease in the first quarter of 1891, and it was not until the week ended 25th April that the disease re-appeared in our death returns. In that week one death was attributed to this disease, and in the following three weeks, 18, 41, and 48 respectively. In the following week, ended May 23rd, the deaths fell to 27, and in the seven ensuing weeks to 21, 7, 11, 4, 2, 3, and 1. Then came an interval of five weeks without a death from this cause, five of the remaining seven weeks of the third quarter had each one death. After this the disease did not appear again in our mortality sheets until November. Single deaths were recorded in the first and fourth weeks of November, and the second, fourth, and fifth weeks of December preceding the more general third outbreak in the present year. Fortunately this third epidemic (1892) was much less severe than either of the two which preceded it.

The number of deaths ascribed to influenza as the primary disease in the fifty-two weeks of 1891, was 194, of which 183 were registered in the second quarter. The number of deaths attributed to the disease, however, by no means represents the mischief done. The cause of death in many fatal cases was ascribed not to the primary disease but to symptoms, such as broncho-pneumonia, arising out of it. The disease also exerted a deleterious influence upon persons suffering from debilitated conditions of internal organs. The number of deaths from heart disease and diseases of the nervous system have increased beyond the average of the five years preceding the occurrence of influenza.

Taken altogether our death rate from all causes, which had been 21.16 during the 261 weeks of the years 1885-9,* rose in the year 1890, the first year of influenza epidemic, to 22.71, and in

* This death rate and others throughout the report, unless the contrary is stated, have been re-calculated since the publication of the preliminary report as to the results of the recent census.

TABLE 1.
Annual Deaths per 1,000 of the estimated population.

	All Causes.	Seven Zymotics.	Consump- tion.	Bronchitis, Pneumonia, Pleurisy.	Other Lung Diseases.
Five years, 1885-9... 261 weeks	21.16	2.78	1.70	3.93	0.27
Year 1890 ... 53 weeks	22.71	2.40	1.66	5.33	0.30
Year 1891 ... 52 weeks	22.91	2.41	1.79	5.25	0.33
1891 Increase on '90	0.20	0.01	0.13	...	0.03
„ Decrease „ '90	...	...	...	0.08	...
1891 Increase on '85-9	1.75	...	0.09	1.32	0.06
„ Decrease „ '85-9	...	0.37	...	...	...

the year we are considering, to 22.91; an increase in 1891 of 0.20 upon the rate of the previous year, and an increase of 1.75 on that of the quinquennium.

The group of the seven zymotic diseases, to which the attention of sanitarians is generally specially directed, gives practically the same rate in 1891, notwithstanding the measles epidemic already spoken of, as in 1890, and a rate of 0.37 below the death rate from the same group in the pre-influenza quinquennium (1885-9), for which period the corrected rate from this group is 2.78.

From consumption our death rate for 1891 was a little higher than either that for 1890 or for the previous five years. In 1890 the rate had been 0.04 below that of the preceding quinquennium, in 1891 it was 0.09 above that of the quinquennium, not a very large amount in either case. Probably a few persons suffering from consumption had their death accelerated by attacks of the epidemic disease. The first quarter of the year had a death rate from this cause of 1.88, the second, or influenza quarter, of 2.00, and the third and fourth quarters of 1.55 and 1.71.

When we turn to bronchitis, pneumonia, and pleurisy, the effect of the influenza epidemic is more marked, although somewhat less so than in the year 1890. In the 52 weeks of 1891, there were 1,932 deaths from this group, equivalent to a death rate of 5·25 per 1,000 per annum. This death rate was 0·08 below that of 1890, and 1·32 above that for the quinquennium. From other diseases of the air passages, including laryngitis, asthma, emphysema, empyema, pulmonary congestion, and others not belonging to either of the groups just mentioned, but excluding croup, the rate was 0·33 in 1891 against 0·30 in 1890, and 0·27 in the preceding five years. Taking the whole of these groups of lung affections together, the

Table 2.

Shewing the Death Rates in the Nine Largest Towns of the United Kingdom, for the 52 weeks of 1891, and each of the 13 week periods.

		First quarter of 1891.	Second quarter of 1891.	Third quarter of 1891.	Fourth quarter of 1891.	52 Weeks.
London	-	24·0	25·3	17·4	20·5	21·4
Edinburgh	-	22·9	22·7	16·1	25·5	21·6
Birmingham	-	24·4	30·5	16·8	19·5	22·2
<i>Leeds</i>	-	<i>24·3</i>	<i>28·4</i>	<i>18·6</i>	<i>20·4</i>	<i>22·9</i>
Sheffield	-	23·1	35·4	18·7	19·8	23·9
Glasgow	.	28·3	24·2	19·1	27·0	25·3
Manchester	-	28·4	33·7	19·9	24·2	26·5
Dublin	-	30·8	23·9	21·6	29·8	26·5
Liverpool	-	27·5	38·2	22·4	26·2	27·0

death rate in 1891 was 0·08 above that of the preceding year ; a difference too trifling for any value to be attached to it, and 1·47 above the rate due to these diseases for the five years immediately before the influenza outbreak. The increase in lung diseases alone thus accounted for 1·47 of the 1·75 of the total increase from all causes. This calculation excludes deaths certified as due to influenza.

There is nothing therefore to make us feel alarmed at in the fact of our death rate being above that of the pre-influenza quinquennium. When we compare our own rate with that of the 28 large towns, we find that while ours has been 22·91, that of the 28 large towns has been 22·55, a difference of 0·36 against us. When, however, we restrict our attention to the towns of the United Kingdom which have a population of more than 250,000, we find that Leeds stands fourth on the list of the nine such towns, London with a rate of 21·4, maintaining its character as the healthiest of large towns, Edinburgh coming next with a death rate of 21·6, then Birmingham 22·2, next to which comes Leeds 22·9, followed by Sheffield, Glasgow, Manchester, Dublin, and Liverpool, with the rates given in the annexed table.

AGE MORTALITY IN BOROUGH.

We have seen that the general mortality from all causes was 22·9 as against 22·7, the corrected mortality for 1890. Although in regard to the population at all ages we have got beyond the "dead reckoning" mentioned in my last annual report, we have not done so in regard to the number of persons living at the various age periods. We have, therefore, to assume again that the proportion of persons living at certain ages bears the same ratio to the estimated population of 1891 as was found to exist between the number of persons living at these groups of ages at the time of the 1881 census, and the total population then enumerated. We deal, therefore, with two dead reckonings, one for three months for the estimate of the whole population, the error in which cannot probably be very great, and one for ten years and a quarter in which the error may of course be considerable.

TABLE 3.

Showing the births and deaths registered in the Borough of Leeds in the four periods of thirteen weeks ended April 4th, July 4th, October 2nd, and January 2nd, 1891; showing also the deaths registered in the same periods at certain groups of ages.

1	2	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.						
		3	4	5	6	7	8	9
1891.	Regis- tered Births.	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.
I. Quarter..	3,148	2,232	492	441	112	91	602	494
II. do. ..	3,319	2,605	573	471	99	112	711	639
III. do. ..	3,032	1,716	620	204	81	101	400	310
IV. do. ..	3,039	1,876	531	275	77	88	522	383
52 weeks ..	12,538	8,429	2,216	1,391	369	392	2,235	1,826

TABLE 4.

Showing the rates per 1,000 on the estimated population of 369,099 of the births and the deaths at all ages, and the mortality per 1,000 living at the several groups of ages. (*See text.*)

1	2	DEATH RATES.						
		3	4	5	6	7	8	9
1891.	Birth-rate.	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwds.
I. Quarter..	34.2	24.3	170	43.3	5.4	5.2	16.8	100.4
II. do. ..	36.1	28.3	198	46.2	4.8	6.4	19.9	130.0
III. do. ..	33.0	18.7	214	20.0	3.9	5.8	11.2	63.0
IV. do. ..	33.0	20.4	183	27.0	3.7	5.1	14.6	77.8
52 weeks ..	34.1	22.9	191	34.1	4.4	5.7	15.6	92.8

BIRTHS AND INFANT MORTALITY.

It is never fair to estimate the mortality of the Borough without taking into account the birth rate. In 1890 our birth rate was 33.4, in 1891 it has been 34.1. We have therefore had a larger number of children under one year of age in the year we are considering than in the previous year.

In table 4 the death rate in children under one year of age is given as 191 against 183 in the preceding year. Referring the 2,216 deaths upon which this death rate is based to the number of births in the same year it is reduced from 191 to 177, against 173 last year. Taking the deaths however in each period of three months and placing them against the average number of births in that and each of the four previous quarters, the average death rate in children under one year of age would seem to have been 177 per 1,000 against 175 estimated in the same way for the previous year.

TABLE 5.
Mortality in Children under one year of age during the
52 weeks of 1891.

	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	YEAR.
Calculated per 1,000 of the population under one, estimated to the middle of 1891 on the supposition that the whole population of the borough had increased at G.P. at the rate of 1 per per cent. per annum, which was the rate of increase between 1881 and 1891, and that children at this age bear the same proportion to the population as in 1881... ..	170	198	214	183	191
Deaths under one per 1,000 births registered in same period	156	173	205	175	177
Deaths per 1,000 registered births averaged during the same period, and the four similar periods preceding it	159	182	198	170	177

OTHER AGE GROUPS.

Between the ages of 1 and 5 the estimated mortality was 34·1, as against 29·5 in 1890. Between 5 and 15, and 15 and 25, the rates of mortality were the same in both years, 4·4 and 5·7. Between 25 and 60 years, the death-rate was nearly 1 per 1,000 less, 15·6, against 16·5. The death-rate of those over 60 is also decreased. There is, however, the possibility of a fallacy in this respect. The number of persons over 60 in any one year is supposed to be increased next year in proportion to the increase of population. Were there no deaths at that period the population at that age would be actually increased by the addition of the survivors of those

aged 59 the previous year, but the imagined population of 1890 was diminished by the deaths of 1,886 persons over the age of 60, so that the 1,826 deaths in the year we are considering occurred perhaps in a diminished population. I am unable to speak with certainty upon this matter, as I have not at hand age statistics for any previous year earlier than 1890. I prefer, therefore, to leave it for the present.

SPECIAL DISEASES.

Tuberculosis.

In my report for last year I made some remarks upon the subject of tuberculosis, and gave you upon page 19 a table showing the deaths in each quarter of the year from each of certain groups of diseases of this nature. Our death rate from general tuberculosis in 1891 was 0.23 against 0.25 in the previous year. From phthisis

TABLE 6.
Mortality from Tuberculosis.

1891.	General Tuber- culosis.	Phthisis.	Hydro- cephalus.	Tuberculous Meningitis.	Tuberculous Peritonitis.	Tabes Mesen- terica.	Scrofula.	TOTAL.
I. Quarter . .	14	173	6	19	1	21	1	235
II. do. . .	22	188	3	28	8	23	5	277
III. do. . .	21	139	4	13	8	30	..	215
IV. do. . .	27	157	5	12	8	28	3	240
Year (52 weeks) . .	84	657	18	72	25	102	9	967
Annual death rate, 52 weeks of 1891 . .	0.23	1.79	0.05	0.20	0.07	0.28	0.02	2.63

it had increased from 1.66 to 1.79 in 1891. From hydrocephalus and tuberculous meningitis together there was a slight decrease from 0.30 to 0.25; from tuberculous peritonitis a slight increase from 0.04 to 0.07; from tabes mesenterica there was also a slight increase from 0.25 to 0.28. Deaths from scrofula nominally caused the same mortality in both cases. The death rate, however, carried to four places in 1890 was 0.0163, and in 1891, 0.0245. Altogether the deaths in the fifty-two weeks of 1891 amounted to 967 against 928 in the fifty-three weeks of the previous year. Corrected on the return of the recent census, these numbers correspond to 2.63 in 1891, and 2.52* in 1890.

PNEUMONIA.

There were 369 deaths ascribed to Pneumonia in the 52 weeks of 1891, against 610 in the 53 of 1890. The age distribution of the fatal cases is given in the table. Reduced to death rates upon the population living at those ages estimated as already described, they are as follows: under 1, 4.1; 1 to 5, 1.9; 5 to 15, 0.2; 15 to 25, 0.4; 25 to 60, 0.9; 60, 3.0.

The percentage of deaths ascribed to pneumonia at these several ages, to deaths from all causes was as follows:—Under one, 2.12; from one to five, 5.75; from five to fifteen, 5.69; fifteen to twenty-five, 6.89; twenty-five to sixty, 6.00; sixty and upwards, 3.29 per cent. of all deaths recorded at that age.

Of the 369 cases, 219 were of the male sex, 150 of the female. In 359 "case-houses" examined, 242 or 67.4 per cent. were back to back or salt pie, and 117 or 32.6 per cent. had a through draught.

In 339 cases in which the duration of the disease was ascertained, the patient had been ill an average of 17.9 days before the death came to our knowledge. Of these 339, 19 were attending school.

The inmates in 346 houses were 2,165, the number of rooms was obtained in a larger number of houses, and amounted to 1,468

*Not .51 as was printed before the census returns were available.

in 354 houses. Omitting, however, the 8 houses in which the number of inmates was not ascertained, and 2 in which the population, but not the rooms, have been recorded, 2,110 inmates lived in 344 houses containing 1,428 rooms, or just above 6 inmates to a house and less than $1\frac{1}{2}$ to a room.

Of 359 death-houses thoroughly examined, 9 houses had no sink, in 8 the sink waste went directly into the drain, in 221 the connection to the drain was through a trap, in the remaining 121, the sink waste was disconnected from the drain, in 12 of these, there was some other direct connection between the house and the drain. So far therefore as disconnection from the drain was concerned, this had been effected in 109 of the 350 houses supposed to be drained, 31.1 per cent., and the houses of 241 patients, or 68.9 per cent., were in direct communication with the drain. Of the 109 whose houses were completely disconnected, about one information as to the state of the house was not complete, in 4 the house was dirty, in 1 damp and dilapidated, in 1 over crowded, in 13 there was a midden or trough closet within three yards, and in 9 there was no sink, leaving only 80 out of 358 or 22.3 per cent. in which we could say the sanitary condition was satisfactory.

Closets. Of 359 death-houses, 12 had more than one convenience. Of the remaining 347, 10 had properly constructed water closets inside, 13 had water closets inside of which the soil pipe was imperfectly ventilated, 72 had the use of outside closets, 103 of trough water closets, 41 of midden privies, and 8 of pails. Other information will be found in the notes to the table.

These cases of pneumonia deal only with deaths stated to be due to "pneumonia," "croupous," and "lobar" pneumonia. It has been found, however, more convenient since the beginning of the present year, to include all diseases of which pneumonia forms an important complication. In every case as soon as we hear of a death we flush the drains, and if we find any of the more serious sanitary defects, take measures to have them remedied.

TABLE 7.

Pneumonia.—Deaths and Death Houses. Fifty-two Weeks ended January 2nd, 1892.

DISTRICT.	AGES OF CASES.						SEX.		NO. OF DAYS ILL WHEN HEARD OF.	AT SCHOOL.	HOUSES		DENSITY OF POPULA- TION.	DRAINAGE.										CLOSETS.																	
											THROUGH.			BACK TO BACK, &c.		INMATES.		ROOMS.		DISCONNECTED.		NOT DISCONNECTED.		INSIDE.				OUTSIDE.				W. C.				T. W. C.		M.		P. H.	
																								0-1	1-5	5-15	15-25	25-60	60+	M.	F.										
NORTH	6	11	4	4	32	8	41	24	175	3	42	21	494	270	21	42	41	3	18	1	5	...	4	8	45	12	11	1	2	1	16	41	7	1							
WEST	14	13	6	8	29	12	41	41	192	5	52	28	498	375	19	61	53	3	24	3	5	...	15	1	59	9	14	...	14	11	26	15	24	3							
SOUTH	1	9	...	5	15	7	25	12	172	1	30	6	212	122	12	24	23	...	11	1	3	...	3	...	24	3	4	...	2	...	6	18	6	5							
HUNSLY	11	22	1	4	23	7	41	27	155	3	47	19	347	237	25	41	41	3	20	...	9	...	8	...	50	6	13	...	...	2	15	19	30	...							
HOLBECK	4	8	3	2	8	5	12	18	138	3	24	6	150	94	8	22	19	2	5	3	...	5	2	...	...	19	6	...	...	...	4	9	17	...							
WORTLEY	6	7	2	4	12	9	23	11	240	2	26	12	181	127	9	29	28	3	6	...	5	2	...	...	35	3	3	1	...	1	4	8	25	...							
KIRKSTALL	1	3	4	...	9	6	14	9	158	3	12	10	110	107	9	13	11	1	11	...	4	...	5	...	18	3	13	...	5	2	3	1	13	...							
BRAMLEY	3	5	1	...	3	3	10	5	236	...	4	11	75	61	11	4	3	2	9	...	...	...	1	...	12	1	1	...	...	...	...	15	...	...							
CHAPELTOWN	1	2	...	...	3	2	5	3	158	...	4	4	37	32	3	5	5	1	2	...	2	...	...	...	4	1	1	...	...	1	2	...	5	...	...						
WHITEKIRK	...	...	...	...	...	1	1	...	600	...	1	...	6	3	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...						
TOTALS	47	80	21	27	134	60	219	150	1779	19	242	117	2110	1428	117	242	225	18	106	8	33	2	26	9	266	44	69	2	23	18	76	111	143	9							

T.—Trapped and then going directly into drain. C.—Cut off over an outside gully. T.C.—Same, plus an inside trap. D.—Directly connected with sewer. F.V.—Soil pipe continued full size above the eaves. T.W.C.—Trough water closet. M.—Midden. See text.

In the columns "disconnected" and "not disconnected" for 11 and 4 in Bramley read 12 and 3, and in total for 117 and 242 read 118 and 241. See note.

NOTES TO PNEUMONIA TABLE.

The information in this table refers to "case-houses," the information about the same house being repeated for every patient, except as stated below.

Duration of Illness. Information as to symptoms is wanting for the following 30 cases:—8 in the North; 4 in the West, 4 in the South, 1 in Hunslet, 6 in Wortley, 2 in Kirkstall, 1 in Bramley, 1 in the General Infirmary, 1 in the Leeds Workhouse, and 2 in Hunslet Workhouse.

Houses. Ten case houses were not examined at all, 1 in the North, 1 in the West, 1 in the South, 2 in Wortley, 1 in Kirkstall, and 4 public institutions. The 242 houses under the heading "back-to-back houses, &c.," include 231 back-to-back houses and 11 "salt pies," that is, houses built the same shape as back-to-back ones, without any house behind them. The 11 latter occur:—1 in the West, 5 in the South, 2 in Hunslet, 2 in Holbeck, and 1 in Wortley district.

Density of Population. The 2,110 inmates include the patients, and refer only to 344 houses. The number of inmates for each house is not repeated for each patient, and the same remark applies to the rooms.

Drainage—Sinks. Nine "case-houses":—1 in the North, 1 in West, 1 in South, 3 in Hunslet, 1 in Holbeck, 1 in Wortley, and 1 in Bramley, had no sink or other inside drainage. There were seven extra sinks in five houses, making 2 extra T.C. in the West, and 1 in Kirkstall, and 2 extra T. in the West, 1 in North, and 1 in Hunslet. The nine without drainage are included in the table amongst the disconnected.

Other Inside Drainage. Every exit of waste water from the house to the drain, other than the sink, is included in these four columns, but many houses had no other inlet to the drain. This column consequently will not balance the number of houses.

Outside Drainage. The last remark applies also to these four columns.

Closets. Twelve case-houses had 21 extra conveniences, making extra in the North Ward 5 T.W.C., in the West 7 water closets F.V., 1 not F.V., and 4 outside, and 1 pail. In Kirkstall 1 water closet F.V. and 1 not F.V., and in the South 1 T.W.C.

The 369 deaths occurred in 366 houses. Nine of these were not examined, 230 were back-to-back, 11 were salt pie, 116 were through. Of the examined houses 109 had the drainage completely disconnected, and 239 had not, and 9 had no drainage.

SMALLPOX.

During autumn a limited outbreak of smallpox occurred in the Borough, and showed for a time some little tendency to spread. It will be remembered that, during the year of 1890, no case of smallpox within the Borough of Leeds came to our knowledge. Towards the close of April, 1891, through the courtesy of the medical attendant, a case of smallpox of a mild character was reported in the Headingley Ward, in a street, the opposite side of

which was in the West Ward. Isolation was efficiently carried out at home and other inmates of the house vaccinated, but before these measures had been taken the patient's wife had already received the infection. Although the latter is said to have been successfully vaccinated on April 21st (her medical attendant states she had never been vaccinated before) this had apparently not been done early enough to prevent her incurring the infection. Her physician thought, however, that the vaccination had modified the course of her symptoms, which were even milder than those of her husband.

These patients were strangers in the town, and were staying with a relative. They came from Birmingham on the 25th of March, 1891, and the first symptoms of the man's illness occurred on the 12th of April. A rash appeared on the 15th, which their medical man describes as consisting of papules on the 17th. This would seem to indicate that the infection had been contracted between the 31st of March and the 4th of April, probably about the 1st or 2nd of April. Every movement of the patient himself was carefully traced by Inspectors Hammond and Smith, during the week in which the disease was probably contracted. On Saturday, the 28th, he had visited the workplace of a tailor in the town. On the 31st he called there again to try on his clothes, which were sent to him on the 4th of April, and first worn on the 5th.

Four persons were employed at this workplace at the time of our visit, which was not of course until after the case had been reported to us on the 22nd of April. They were, the tailor's son whom we may call Z, A. B. a journeyman, lodging in Valley Street, C. D., another lodging in Clifton Street, and a third E. F. lodging in Dyer Street. The latter had commenced working for the tailor on the 21st of April. The houses of A. B. and C. D. were visited, but no evidence of infectious disease in any of them could be obtained. A. B. and C. D. had been working with this tailor for some two or three years.

There were two reasons for paying special attention to this workshop. (1) That the patient had been there on the 28th and 31st of March, and there was the possibility that he might himself have contracted the disease at the shop. (2) That not only had he been there frequently, but as one member of the firm had been at his house after the disease had appeared, there was the possibility that infection might arise at this as a new centre. Careful watching, however, of all the inmates and workpeople gave us no reason to suppose that the disease was carried in any way from the first patient to any other part of the town.

The difficulties, however, of preventing the spread of infection in this way are illustrated in this very case. Here we had a person exposed, in some way or ways unknown, to the infection of smallpox, probably between the 28th of March and the 4th of April, most likely as we have seen about the 1st or 2nd of April. Now putting aside visits entirely forgotten by the patient, there were the two visits on the 28th and 31st to the tailor, and on the 4th to a house in Spencer Place. Then on the 7th of April, having already, though unknown to himself, contracted the disease, he sent a pair of trousers to the tailor for alteration, and they were returned to him on the 11th, the day before the symptoms of his illness appeared. On Sunday, the 12th, he felt as we have said ill. On the 15th he had some rash, and on the 16th a tram conductor called at his house, and received a parcel of cast off clothing formerly worn by the patient. On the 17th a medical man was called in, who at once suspected smallpox. On the 18th, the tailor's son Z, called upon the patient, was with him half-an-hour, and noticed a very distinct rash on the face. On the 20th, the disease having in the meantime been pronounced by his medical attendant to be smallpox, the patient sent a piece of cloth to the same tailor to be made up into a suit. Fortunately, a few days later, we were on the track of the case, and prevented any further risk of infection.

I have to repeat that it was to the courtesy of the medical man in attendance, and to that of the physician whom he called in, that we were indebted for any information about the case at

all. The medical man was kind enough to call at the office, but at first was only willing to communicate information about the case on condition that we should guarantee that removal would not be insisted upon. This, in the absence of all information as to isolation, we of course declined to do. Isolation, however, was afterwards carried out entirely to our satisfaction, and I do not think there is any reason to suppose that these two cases led to others in the Borough.

The next case that came to our knowledge was heard of on the 11th of May. It was that of a young woman, D. H.,* of twenty-two, in the North-East Ward. She worked as a card minder in a flax mill in Hunslet (South Ward). Her illness commenced on the 5th of May, when she left her work and went to bed. The eruption appeared on the 8th, and she was removed on the 11th, having been in bed during the interval. We obtained the names and addresses of those working next her in the same room, and found that no inmate of the houses at which either of them lived had been recently ill. We also ascertained by repeated visits at the flax mill, that no one had been recently away for illness, and that no one with a rash had been working there. These observations and inquiries we kept up for upwards of a fortnight after the patient's removal. From May the 11th, to May 25th, the three other inmates of the house, G. H., F. H. and E. H., were isolated in the sanatorium. The house, which consisted of two rooms, was stoved by the fumes of burning sulphur, and all moveable articles of clothing, bedding, and the like, taken away, some on the 12th, and some on the 14th of May, to the disinfecting station at Burmantofts, where they were subjected to a temperature of upwards of 230° Fahrenheit in the steam disinfecter, for more than half-an-hour. The house was then limewashed from top to bottom, and the entire process of disinfection, including the limewashing, was finished before the family returned.

Our information is incomplete as to the movements of this patient between the 22nd and the 26th day of April. There was another member of the family, C. H., who usually stayed at this

* Returned by Mr. Pearson as having two good vaccination marks.