



COUNTY BOROUGH OF BRADFORD.

—❧— REPORT —❧—

ON THE

Health of Bradford

FOR THE YEAR 1893,

BY

W. ARNOLD EVANS, M.D.,

MEDICAL OFFICER OF HEALTH

TOGETHER WITH THE REPORT ON THE

Infectious Diseases Hospital

BY

A. E. FOSTER, M.R.C.S., Eng.,

MEDICAL SUPERINTENDENT.



BRADFORD:

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## Sanitary Committee, 1893.

*(Meets Every Wednesday at 5 p.m.)*



THE WORSHIPFUL THE MAYOR.

MR. COUNCILLOR LOUIS WALKER, Chairman.

MR. COUNCILLOR W. E. BOOTH, Deputy Chairman.

MR. ALDERMAN LISTER.

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„	JOWETT	„	SHELDON
„	LAND	„	J. WALKER
„	MILNER	„	WOOD
„	MINTY		

Fever Hospital Committee, 1893.

*(Meets Last Tuesday in Every Month.)*



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„ MINTY

„ POPPLEWELL.

„ ROBINSON.

„ SHAFTOE.

„ SHELDON.

## Staff of Health Department.

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W. ARNOLD EVANS, M.D., Medical Officer of Health.

F. M. RIMMINGTON, F.C.S., Public Analyst.

JAS. CHAMBERS, Chief Inspector of Nuisances.

W. EGLIN, Meat Inspector.

W. C. RHODES, Food and Drugs Inspector.

F. ARMITAGE, Inspector of Workshops.

J. P. GREENWOOD, Sub-Inspector of Nuisances.

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H. SIMPSON,                   "           "

C. SUTCLIFFE, Disinfecting Officer.

J. McTAGGART, Manager of Destructor Works.

H. J. PEACOCK, Statistical Clerk.

G. H. BRAMFITT, Clerk.

H. DRAKE, Junior Clerk.

---

In addition to the above the Medical Officer of Health is assisted in the Inspection of New Buildings by the following officers under the Building Committee:—

T. PRESTON, Chief Building Inspector.

I. INGHAM, Assistant       "           "

GLEDHILL,                   "           "

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*To the Chairman and Members of the Sanitary Committee.*

GENTLEMEN,

It will be seen from a consideration of the Health Report for 1893, that Zymotic diseases have been unusually prevalent during the year. Not only was Scarlatina rapidly spread during the month of July by the agency of infected milk, but Smallpox, which had been occurring at more or less frequent intervals in the early months of the year, assumed an epidemic form in the autumn; an epidemic which was unfortunately aggravated by the fire at the Scholemoor Smallpox Hospital. The saddest incident in connection with the disaster at Scholemoor was the death from Smallpox of the late Councillor Johnson, the Vice-chairman of the Committee, a gentleman who gained the respect of those with whom he worked and was admired by all who knew him.

The epidemics of Smallpox and Scarlatina in conjunction with the large number of deaths from Autumnal Diarrhœa are the chief cause of the total death-rate of 20.9 per 1000 of the population, a rate which for Bradford is comparatively high.

Believe me,

Yours faithfully,

W. ARNOLD EVANS.

# VITAL STATISTICS.

## POPULATION.

THE mean population of the County Borough of Bradford during 1893 was estimated by the Registrar-General to be 221,610. This showed a total increase of 2,348 upon the mean population of the previous year; the natural increase, *i.e.*, the excess of births over deaths, amounted to 1480, or 63 per cent, the remainder, namely 868 or 27 per cent, being accounted for by the balance of immigration over emigration.

The following Table shows the estimated yearly increase of the population since 1883; also the birth-rate, total death-rate and zymotic rate for the same years.

*TABLE I.*  
*Shewing Corrected Population, Birth-rate, and Mortality Rates from 1883-1893.*

YEAR.	Corrected Estimate of Population to middle of each year.	ANNUAL RATE PER 1000 LIVING.		
		Birth-Rate.	Death-Rate.	Zymotic-rate.
1883	199,214	29.88	18.77	1.5
1884	201,347	30.86	21.13	2.6
1885	203,504	30.55	18.62	1.5
1886	205,684	30.55	20.35	2.3
1887	207,887	29.83	21.44	2.9
1888	210,113	29.82	18.66	1.6
1889	212,364	29.53	21.15	2.9
1890	214,634	29.10	23.21	2.3
1891	216,938	28.64	22.12	2.35
1892	219,262	27.18	17.91	1.46
1893	221,610	27.58	20.90	3.22

The detailed information contained in the report of the Census taken in 1891, which has been published since the issue of my report for 1892, enables me to give particulars of the number of people living in Bradford at various ages. The following Table shows the mean population of the years 1881, 1891 and 1893.

TABLE II.

*Shewing the population at certain Age-periods estimated to the middle of the years 1881, 1891 and 1893.*

Year.	Total under 5 Years.	5 to 15.	15 to 25.	25 to 65.	. 65 and upwards.	At all Ages.
1881	26,041	43,268	38,404	82,084	5,728	195,615
1891	23,786	47,488	44,888	93,745	7,031	216,938
1893	23,263	48,406	46,315	96,301	7,325	221,610

A glance at this Table shows that the population under five years of age has lately undergone a serious diminution, that in fact, there was in the year 1893 an absolute decrease of 2778 on the number of persons living under five as compared with the year 1881, in spite of the progressive increase of the total population. The explanation is chiefly to be found in the continued decline in the birth-rate during recent years: but it should also be noted that during the same period there has been an increase in the death-rate of infants under one year of age, as is shown in the figures immediately following.

*Average Death-rate of Infants under 1 year per 1000 Births during the three quinquennial periods 1879-83, 1884-88 and 1889-93.*

1879-83.	1884-88.	1889-93.
164.5	165.0	176.8

The distribution of the population and its density in the various Wards of the Borough is shown in Table III.

TABLE III.

WARDS.	Population.	Acreage.	Persons per Acre.
North ... ..	13,093	372	35·2
South ... ..	13,442	308	43·6
East ... ..	15,961	392	40·7
West ... ..	14,561	166	87·7
Listerhills ... ..	19,150	320	59·8
Great Horton ... ..	15,131	1283	11·8
Little Horton ... ..	15,676	428	36·6
East Bowling ... ..	16,453	557	29·5
West Bowling ... ..	17,669	1004	17·6
Exchange ... ..	4,964	117	42·5
Bradford Moor .. ..	17,945	674	26·6
Manningham ... ..	23,014	457	50·3
Bolton ... ..	8,630	994	8·6
Heaton ... ..	16,499	879	18·8
Allerton ... ..	9,422	2815	3·3
<b>BOROUGH TOTAL ... ..</b>	<b>221,610</b>	<b>10,776</b>	<b>20·6</b>

## MARRIAGES.

From returns kindly forwarded to me by Mr. Crowther, the Superintendent Registrar of the Bradford district, and Mr. Helmsley, the Registrar for the North Bierley district, it is seen that during the past year there were 1944 Marriages solemnized in the Borough. This is a decrease of 115 or 5.5 per cent. upon the number registered during 1892. The annual rate of persons married per 1,000 of the population was therefore 17.4. In London it was 17.2.

*TABLE IV.*

Periods.	Number of Marriages.	Proportion of Marriages to Population.
1881-85	9,752	1 in 92
1886-90	10,709	1 in 98
1891	2,171	1 in 99
1892	2,059	1 in 106
1893	1,944	1 in 114

## BIRTHS.

The births registered in the Borough for the year ending December 30th, 1893, amounted to 6,112, consisting of 3,164 males and 2,948 females, giving a birth-rate of 27.58 per 1,000 of the population. This birth-rate slightly exceeds that for 1892, but with this exception is the lowest yet recorded.

The average birth-rate for the thirty-two great provincial towns was 32.5, and that for London 31.0 per 1,000.

Table V. gives the birth-rates for Bradford and the eight largest towns in England together with the mean rate for the thirty-two provincial towns for the year 1893.



TABLE V.

*Shewing Birth-rates in Bradford and other 8 large towns for 52 weeks, ending December 30th, 1893.*

Towns in order of magnitude of Rates.	Birth-rate per 1,000.
Liverpool ... ..	36·0
Sheffield ... ..	34·8
Manchester ... ..	33·6
Birmingham ... ..	32·7
32 Large Towns ... ..	32·5
Leeds ... ..	32·4
London ... ..	31·0
Bristol ... ..	30·4
Nottingham ... ..	30·2
<b>Bradford</b> ... ..	<b>27·6</b>

The Bradford birthrate is therefore seen to be the lowest on the list and 15 per cent. below the average for the thirty-two great provincial towns of the country.

In Table VI. is shown the distribution of births in the different Wards of the Borough. The lowest birth-rate occurred in Heaton where it was 23·6, and the highest in Bradford Moor, viz., 30·5 per 1,000.

TABLE VI.  
*Shewing the Births and Birth-rate in the Borough of Bradford in each of the 15 Wards in 1893.*

WARDS.	MALES.		FEMALES.		MALES AND FEMALES.			Birth-rate per 1000.		
	Legitimate.	Illegitimate.	TOTAL.	Legitimate.	Illegitimate.	TOTAL.				
North .. ...	169	16	185	157	14	171	326	30	366	27.2
South ...	172	15	187	185	16	201	357	31	388	28.9
East ... .	246	7	253	198	6	204	444	13	457	28.6
West ... ..	174	11	185	154	20	174	328	31	359	24.6
Listerhills ..	233	6	239	221	10	231	454	16	470	24.5
Great Horton	205	4	209	184	3	187	389	7	396	26.2
Little Horton ..	203	26	229	178	25	203	381	51	432	27.5
East Bowling...	238	13	251	223	7	230	461	30	481	29.2
West Bowling..	202	5	207	249	11	260	511	16	527	29.8
Exchange ...	48	9	57	54	9	63	102	18	120	24.2
Bradford Moor	257	13	270	264	13	277	521	26	547	30.5
Manningham ...	336	10	346	322	8	330	658	18	676	29.3
Bolton ... ..	127	4	131	116	3	119	243	7	250	28.9
Heaton ... ..	197	11	208	168	14	182	365	25	390	23.6
Allerton ... ..	142	5	147	110	6	116	252	11	263	27.9
<b>BOROUGH TOTAL</b>	<b>3009</b>	<b>155</b>	<b>3164</b>	<b>2783</b>	<b>165</b>	<b>2948</b>	<b>5792</b>	<b>320</b>	<b>6112</b>	<b>27.58</b>

Table VII. shews the total number of births and the birth-rates in each quarter of the year 1893.

*TABLE VII.*

*Shewing number of Births and Birth-rates in each Quarter of 1893.*

1893.	Males.	Females.	TOTAL.	Birth-rate per 1000 living.
1st Quarter ...	770	721	1491	27.0
2nd ,,	802	771	1573	28.5
3rd ,,	819	733	1552	28.0
4th ,,	773	723	1496	27.8

### Illegitimacy.

A reference to Table VI. shows that 320 out of the total of 6,112 births registered during 1893 were born out of wedlock. This is equal to a rate of 5.2 per cent. of the total births, and is an improvement upon the rate of 5.5 per cent. recorded in 1892.

Table VIII. gives the number of illegitimate births for the past five years.

*TABLE VIII.*

*Shewing the Illegitimate Births and Birth-rate in Bradford during each of the 5 years 1889-1893 inclusive.*

Year.	Illegitimate Births.	Per cent. of Total Births.
1889	407	6.4
1890	359	5.7
1891	362	5.8
1892	329	5.5
1893	320	5.2

The illegitimate birth-rate for the Wards is shown in Table IX. The lowest rate is in Great Horton: the Exchange Ward maintains its unenviable position at the head of the list.

TABLE IX.

*Shewing proportion of Illegitimate Birth in each Ward during 1893.*

WARDS.	* Proportion of Illegitimate Births to Total Births.
North ... ..	1 in 10·7
South ... ..	,, 11·3
East ... ..	,, 31·7
West ... ..	,, 10·5
Listerhills ... ..	,, 26·4
Great Horton... ..	,, 50·8
Little Horton... ..	,, 20·5
East Bowling... ..	,, 21·6
West Bowling ... ..	,, 29·6
Exchange ... ..	,, 6·0
Bradford Moor ... ..	,, 18·9
Manningham ... ..	,, 33·8
Bolton ... ..	,, 32·1
Heaton ... ..	,, 14·0
Allerton ... ..	,, 21·7
BOROUGH TOTAL ... ..	1 in 18·8

\* Illegitimate Births in Workhouse distributed among the Wards.

## DEATHS.

The total number of deaths recorded during the past year was 4,632, of which 2,368 were of males and 2,264 of females. This total includes the deaths of persons in the Public Institutions of the town, who were not natives of Bradford, but takes no account of the deaths of those ordinarily resident in Bradford who died elsewhere.

The total death-rate was 20·9 per 1,000 of the population, but if the deaths in the Public Institutions of these not resident in the Borough be deducted, the death-rate is reduced to 20·77 per 1,000.

The average death-rate in the thirty-two great provincial towns was 21·8 per 1,000, or 4·1 per cent. higher than that of Bradford.

Table X. gives the births, deaths, and rates since the year 1868.

TABLE X.

YEAR.	Estimated Popu- lation in the middle of each year.	Births.	Deaths.	Annual Rate per 1000 living.	
				Births.	Deaths.
† 1868	133,938	4984	3566	38·2	26·6
1869	137,898	5226	3536	37·9	25·6
1870	141,858	5615	3927	39·6	27·7
* 1871	146,987	5582	3754	38·0	25·5
1872	151,770	6002	3962	39·4	25·7
† 1873	156,609	6253	3827	38·6	24·4
1874	163,056	6528	4395	40·0	27·0
1875	168,305	6556	4556	39·0	27·1
1876	173,723	6787	4141	39·2	23·9
1877	179,315	6797	3921	38·0	21·9
1878	185,088	6602	4144	35·8	22·5
1879	191,046	6358	4106	32·7	21·1
1880	197,046	6363	4107	32·3	20·9
* 1881	184,037	6058	3612	33·0	19·6
1882	200,158	6225	4142	31·3	21·3
† 1883	204,807	5953	3741	29·1	18·3
1884	209,564	6216	4255	29·1	20·0
1885	214,431	6218	3791	28·98	17·6
1886	219,411	6285	4187	28·64	19·08
1887	224,507	6202	4458	27·62	19·86
1888	229,721	6266	3922	27·27	17·15
1889	235,056	6272	4492	26·69	19·11
† 1890	240,515	6247	4982	25·97	20·14
* 1891	216,938	6214	4800	28·64	21·98
1892	219,262	5959	3927	27·18	17·91
1893	221,610	6112	4632	27·58	20·90

\* Census years.

† In these years the births and deaths are those registered in 53 weeks.

TABLE XI.

*Comparative Table, shewing the Estimated Population, Birth-rate, Death-rate, and Infantile Death-rate in each of the Ten largest towns of England and Wales (these having a population of over 200,000) for the year 1893.*

	Estimated population to middle of 1893.	Birth-rate.	Death-rate.	Zymotic rate.	Deaths of Infants to 1000 Births.
London ... ..	4,306,411	31·0	21·3	3·1	164
Manchester ...	515,598	33·6	24·9	3·7	203
Liverpool ... ..	510,514	36·0	27·3	3·9	211
Birmingham ...	487,891	32·7	22·0	3·0	198
Leeds ... ..	382,093	32·4	22·3	3·5	206
Sheffield ... ..	333,922	34·8	22·3	3·5	191
Bristol... ..	225,028	30·4	18·9	1·7	141
<b>Bradford ...</b>	<b>221,610</b>	<b>27·6</b>	<b>20·9</b>	<b>3·2</b>	<b>198</b>
Nottingham ...	220,551	30·2	18·5	2·6	170
Hull ... ..	208,709	34·2	21·8	4·1	206

The mortality rates given in this table are however, the *recorded* rates for the towns referred to and in consequence of the great difference in the populations in regard to age and sex require to be corrected before they can safely be used for comparison. The Registrar-General therefore publishes the following table :—

TABLE XII.

*Recorded and Corrected Death-rates per 1000 Persons living in  
33 great Towns in 1893.*

Towns in order of Corrected Death-rates.	Standard Death- rate.	Factor for Correction for sex, and age distri- bution.	Recorded Death- rate, 1893.	Corrected Death- rate, 1893.	Compara- tive Mortality Figure 1893.
England and Wales ..	19.15	1.0000	19.17	19.17	1000
England and Wales } less the 33 Towns.. }	19.45	0.9845	17.90	17.62	919
33 Towns ... ..	17.71	1.0813	21.57	23.32	1216
Croydon ... ..	18.37	1.0424	16.30	16.99	886
Norwich ... ..	19.99	0.9579	19.28	18.47	963
Brighton ... ..	18.94	1.0110	18.42	18.62	971
Portsmouth ... ..	18.73	1.0224	18.22	18.63	972
Halifax ... ..	17.20	1.1133	17.36	19.33	1008
Bristol ... ..	18.33	1.0447	18.93	19.78	1032
Nottingham ... ..	17.81	1.0752	18.46	19.85	1035
Huddersfield ... ..	16.47	1.1627	17.20	20.00	1043
Derby ... ..	17.36	1.1031	18.24	20.12	1050
West Ham ... ..	17.75	1.0788	18.94	20.40	1064
Plymouth ... ..	19.70	0.9720	21.25	20.66	1078
Gateshead ... ..	17.83	1.0740	19.30	20.73	1081
Swansea ... ..	17.53	1.0924	19.62	21.43	1118
Leicester ... ..	17.64	1.0855	20.01	21.72	1133
Cardiff ... ..	17.16	1.1159	19.68	21.96	1146
Birkenhead ... ..	17.42	1.0993	20.54	22.58	1178
London ... ..	17.97	1.0656	21.31	22.71	1185
Newcastle-on-Tyne ...	17.58	1.0892	21.00	22.87	1193
Hull ... ..	18.23	1.0504	21.84	22.94	1197
Sunderland ... ..	18.25	1.0493	22.53	23.64	1233
<b>Bradford ... ..</b>	<b>16.73</b>	<b>1.1446</b>	<b>20.96</b>	<b>23.99</b>	<b>1251</b>
Oldham ... ..	16.72	1.1453	21.01	24.06	1255
Birmingham ... ..	17.33	1.1050	21.98	24.29	1267
Wolverhampton ... ..	18.30	1.0464	23.27	24.35	1270
Leeds ... ..	17.28	1.1082	22.29	24.70	1288
Sheffield ... ..	17.22	1.1120	22.31	24.81	1294
Burnley ... ..	16.67	1.1487	21.88	25.13	1311
Blackburn ... ..	17.05	1.1231	23.28	26.15	1364
Salford .. ..	17.03	1.1244	24.08	27.08	1413
Bolton ... ..	16.90	1.1331	24.12	27.33	1426
Manchester ... ..	16.90	1.1331	24.90	28.21	1472
Preston ... ..	17.42	1.0993	26.37	28.99	1512
Liverpool ... ..	17.26	1.1094	27.34	30.33	1582



The Standard Death-rate in Col. 1, signifies what the death-rate in each town should be, provided the death-rates at the various ages were the same as in England and Wales, during the previous decenium when at all ages the death-rate was then 19·15 per 1000.

The Factor for Correction is the figure by which the Recorded Death-rate should be multiplied in order to correct for variations of age and sex distribution.

The Corrected Death-rate is the Recorded Death-rate multiplied by the Factor for Correction.

The Comparative Mortality figure represents the Corrected Death-rate in each town compared with the Recorded Death-rate at all ages in England and Wales in 1893 taken as 1000.

### Mortality in the Wards.

In Table XII. is shown the mortality rates in the Wards of the Borough. They vary from 25·1 in South Ward to 17·5 and 17·4 per 1000 in Great Horton and Heaton.

TABLE XIII.

WARDS.	Total Death-rate per 1000 living.
North ... ..	23·4
South ... ..	25·1
East ... ..	17·8
West ... ..	23·7
Listerhills ... ..	18·6
Great Horton ... ..	17·5
Little Horton ... ..	20·3
East Bowling ... ..	20·3
West Bowling ... ..	21·4
Exchange ... ..	22·2
Bradford Moor ... ..	20·3
Manningham ... ..	20·2
Bolton ... ..	19·7
Heaton ... ..	17·4
Allerton ... ..	21·2
<b>BOROUGH TOTAL ... ..</b>	<b>20·90</b>

The Mortality occurring in the four quarters of the year is shown in Table XVI. Owing to the unusually large number of deaths from Diarrhœa in the third quarter, the total death-rate was at its maximum at this period. Generally, the third quarter shows the lowest death-rate.

TABLE XIV.

	Zymotic Diseases.	Consumption.	Lung Diseases excluding Consumption.	From all causes.
First Quarter ...	1·4	1·9	5·7	21·3
Second Quarter...	2·6	1·9	3·8	19·3
Third Quarter ...	6·1	1·5	2·3	22·2
Fourth Quarter ..	2·7	1·5	4·7	21·0
Whole Year ...	3·22	1·71	4·11	20·90

### Ages at Death.

INFANTILE MORTALITY.—There were recorded during the year 1893, the deaths of 1,211 infants under twelve months of age. The infantile mortality rate is therefore 198 per 1000 births, which is abnormally high and is chiefly accounted for by the increased number of deaths from Diarrhœa, Atrophy and Debility, and Premature birth as shown in Table XV.

It is a significant fact that the death-rate for illegitimate infants was 309 per 1000 births whilst that for those born in wedlock averaged 191 per 1000 births.

In the thirty-three great towns the Infantile death-rate averaged 181 per 1000 births. The rates varied from 269 and 220 in Preston and Leicester to 141 per 1000 in Bristol and Huddersfield.

TABLE XV.

*Rates of Mortality of Children under 1 year of age, from Chief Infantile Diseases per 1000 Births.*

	1891.		1892.		1893.	
	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.
From all Causes	1126	181	925	155	1211	198
Lung Diseases ...	283	45	188	32	274	44
Convulsions ...	214	34	169	28	173	28
Atrophy and Debility... ..	166	26	153	26	185	30
Premature Birth.	126	20	120	20	143	23
Diarrhoea ... ..	58	9	66	11	187	31
Whooping Cough ... ..	57	9	42	7	46	8
Tuberculous Disease ... ..	35	5	46	8	37	6
Measles ... ..	24	4	14	2	21	3

The Infantile Mortality rate was highest in the South Ward where it reached 302, and lowest in Great Horton, viz., 149 per 1000 births.

TABLE XVI.

*Shewing number of Deaths of Infants under 1 year of age and the Death-rate per 1000 Births in each Ward.*

WARDS.	Death of Infants under 1 year of age.	Death-rate per 1000 Births.
North ... ..	82	230
South ... ..	117	302
East ... ..	78	171
West ... ..	99	276
Listerhills ... ..	80	170
Great Horton ... ..	59	149
Little Horton ... ..	84	194
East Bowling ... ..	87	181
West Bowling ... ..	97	185
Exchange ... ..	31	258
Bradford Moor ... ..	98	179
Manningham ... ..	129	191
Bolton ... ..	40	160
Heaton ... ..	82	210
Allerton ... ..	48	182
BOROUGH TOTAL ... ..	1211	198

TABLE XVII.

*Shewing the proportion of Deaths of Children under 1 year and under 5 in the Borough of Bradford, during the 17 years 1877-93.*

YEARS.	Deaths under 1 year per 1000 Births.	Deaths under 1 year per 100 Deaths at all ages.	Death-rate under 5 years per 1000 living at that age.	Death-rate under 5 years per 100 deaths at all ages.
1877	157	27.1	78.6	44.3
1878	178	25.9	85.7	47.4
1879	152	23.5	74.3	42.4
1880	176	27.2	82.2	48.0
1881	154	25.8	56.4	40.7
1882	174	27.0	71.4	45.9
1883	147	23.4	50.5	36.8
1884	181	34.2	62.1	41.2
1885	144	23.6	49.9	37.7
1886	168	25.1	59.4	41.5
1887	179	24.9	62.0	41.6
1888	153	24.6	50.0	39.0
1889	181	25.3	60.8	42.6
1890	169	21.2	55.8	35.9
1891	181	23.4	57.2	39.0
1892	155	23.5	44.8	37.4
1893	198	26.1	79.5	39.7

Table XVIII. shews the number of deaths at different age periods.

TABLE XVIII.

Age Period.	1.	1 to 5.	5 to 15.	15 to 25.	25 to 65	65 and upwards
Number of Deaths ... }	1211	628	209	272	1527	785
Death-rate per 1000 ... }		27.0	4.3	5.8	15.8	107.1

### Deaths in Public Institutions.

The number of deaths occurring in the Public Institutions of the Borough amounted to 532, consisting of 319 males and 213 females, distributed thus:—

	Males.	Females.	Total.
Children's Hospital ...	11	12	23
Small-pox Hospital (Scholemoor) ...	7	4	11
Fever Hospital (Leeds Road) ...	65	61	126
Infirmery ...	102	47	149
Workhouse ...	134	89	223
	<hr/> 319	<hr/> 213	<hr/> 532

### Infectious Diseases.

The number of deaths due to the chief diseases of an infective character was 713, a serious increase upon the total of 321 for 1892. Although the figures in Table XIX. show an excess in each disease named, it is seen that to Diarrhœa, Smallpox and Scarlatina the chief part of the increase is attributed

TABLE XIX.

*Showing number of Deaths from Zymotic Diseases in Bradford during the year 1884-1893.*

DISEASES.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	Total in 10 years for each Disease.
Small-pox ... ..	...	2	...	...	2	1	...	...	4	113	122
Measles ... ..	94	33	103	124	120	113	208	81	62	68	1006
Scarlet Fever ... ..	33	46	89	98	33	63	46	143	45	71	667
Diphtheria ... ..	10	19	9	13	7	12	8	13	10	17	120
Whooping Cough ... ..	51	108	13	150	38	178	50	133	90	97	908
Typhus Fever... ..	3	3	...	...	...	1	...	2	...	...	9
Typhoid Fever ... ..	49	30	35	32	19	48	31	27	18	48	337
Other or doubtful Fevers	2	4	3	1	7	4	3	5	1	5	35
Diarrhoea ... ..	286	75	235	202	131	205	154	106	91	292	1777
Total Zymotic Diseases } each year ... ..	528	320	487	620	357	625	500	510	321	713	4981

The death-rate from Zymotic diseases amounts to 3·217 per 1,000 of the population, made up as shown in Table XX.

TABLE XX.—Zymotic Diseases, 1893.

DISEASES.	Deaths.	Death-rate per 1000.
Small-pox ... ..	113	<del>0·5</del> 1·510
Measles ... ..	68	·307
Scarlet Fever ... ..	71	·320
Diphtheria ... ..	19	·085
Whooping Cough ... ..	97	·438
Typhus Fever ... ..	...	...
Typhoid Fever ... ..	48	·216
Diarrhoea ... ..	292	1·317
“Fever” ... ..	5	·022
TOTAL ... ..	713	3·217

The Zymotic death-rate was therefore equal to the average for the thirty-three great towns of the country, which is stated by the Registrar General to be 3·2 per 1,000. It varied from 6·0 per 1,000 in Preston to 1·2 per 1,000 in Huddersfield.

A reference to Table XXXV. shows that amongst the Wards the highest death-rate from this class of diseases is that for the West Ward, viz., 4·9 per 1,000; whilst the lowest rate occurs in Listerhills Ward, viz., 1·0 per 1,000.

MEASLES —To this affection 68 deaths were attributed, 66 of which were in children under 5 years of age. It is seen that the great majority of these deaths occurred in the early part of the year.

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
Deaths from Measles	29	31	7	1



DIPHTHERIA.—This disease caused 19 deaths, 13 of which were those of children under 5 years of age. In all 71 cases of this disease came to my knowledge during the year, so that the mortality amongst those affected amounts to 26·7 per cent. This is a notable increase upon the returns for the previous year, when there occurred 48 cases, of which 10 ended fatally.

WHOOPIING COUGH is responsible for 97 deaths, 95 of which were those of children under 5 years of age. During the previous year 90 deaths were attributed to whooping cough.

ENTERIC OR TYPHOID FEVER.—Under the provisions of the Infectious Diseases Notification Act there were reported to me 215 cases of this disease—a marked increase upon the previous year, when 80 cases only were notified. As is usual the greatest prevalence of the disease occurred in the third and fourth quarters of the year. (*See Table XXI*) I am convinced that this large increase was principally due to climatic conditions the prolonged hot summer of this year being generally recognised as the chief cause of the exceptional prevalence of Enteric Fever and Diarrhœal diseases over the whole country. Of the 215 cases notified 48 ended fatally, giving a mortality rate of 22·3 per cent., as compared with 22·5 per cent. for the previous year.

TABLE XXI.  
*Notification of Typhoid Fever.*

YEAR.	1st Quarter.	2nd Quarter	3rd Quarter.	4th Quarter.	Total.
1885	34	27	39	53	153
1886	29	30	48	52	159
1887	19	22	69	43	153
1888	10	14	20	61	105
1889	13	14	88	52	167
1890	37	8	35	64	144
1891	35	27	43	52	157
1892	16	10	34	20	80
1893	17	14	83	101	215

The following Table shews the distribution of the disease in the different Streets and Wards of the Borough.

*Notifications of Typhoid Fever in different streets, 1892.*

NORTH WARD.

- |                    |                         |
|--------------------|-------------------------|
| 1, Bolton Road.    | 1, King Charles Street. |
| 1, Chatham Street. | 2, Wapping Road.        |
| 1, Jermyn Street.  | 1, Wild Boar Street.    |

SOUTH WARD.

- |                      |                         |
|----------------------|-------------------------|
| 1, Birk Street.      | 2, Leeds Road.          |
| 1, Birksland Street. | 1, Mulgrave Street.     |
| 1, Clayton Place.    | 2, Mount Street.        |
| 1, Collier Street.   | 1, Percival Street.     |
| 1, Farrar Square.    | 1, Upper Mossar Street. |
| 1, Harris Street.    | 1, Warwick Street.      |

EAST WARD.

- |                     |                        |
|---------------------|------------------------|
| 1, Boldshay Street. | 1, Orchard Street.     |
| 2, Dallam Street.   | 2, Otley Road.         |
| 1, Exeter Street.   | 1, Sydenham Place.     |
| 1, Hillside Villas. | 1, Undercliffe Street. |
| 1, Mildred Street.  |                        |

WEST WARD.

- |                    |                       |
|--------------------|-----------------------|
| 1, Dyson Street.   | 2, Raven Street.      |
| 1, Houghton Place. | 1, Southfield Square. |
| 3, Infirmary.      | 1, Westgrove Street.  |

LISTERHILLS WARD.

- |                       |                          |
|-----------------------|--------------------------|
| 1, Ann Place.         | 1, Shearbridge Road.     |
| 2, Fitzgerald Street. | 1, Sterling Street.      |
| 1, Marion Street.     | 1, Tumbling Hill Street. |
| 1, Preston Street     | 1, Woodhead Road.        |
| 1, Sawrey Place.      |                          |

GREAT HORTON WARD.

- |                    |                       |
|--------------------|-----------------------|
| 1, Beacon Lane.    | 2, Horton Road.       |
| 1, Beckside Road.  | 2, Legrams Lane.      |
| 2, Daisy Street.   | 3, Stephenson Street. |
| 1, Esmond Street.  | 1, Summerseat Place.  |
| 2, Falcon Street.  | 1, Upper Green.       |
| 2, Halstead Place. | 2, Watmough Street.   |
| 3, High Street.    |                       |

## LITTLE HORTON WARD.

- 1, Berwick Street.
- 1, Clarges Street.
- 1, College Road.
- 1, Crowther Street.
- 1, Gower Street.
- 1, Holme Top Street.
- 3, Jesse Street.

- 1, Manchester Road.
- 1, Mill Lane.
- 3, Moss Street.
- 1, Newall Street.
- 1, Percy Street.
- 1, Workhouse.

## EAST BOWLING WARD.

- 1, Berry Street.
- 5, Bowling Back Lane.
- 1, Granby Street.
- 3, Kaycell Street.
- 1, Marsden Fold.
- 1, Moody Street.

- 1, Newark Street.
- 1, Oliver Street.
- 2, Providence Place.
- 1, Rooley Lane.
- 5, Wakefield Road.

## WEST BOWLING WARD.

- 5, Baxandall Street.
- 1, Birch Lane.
- 1, Carbottom Fold.
- 1, Cloudsdale Street.
- 4, Cotewall Road.
- 1, Dickens Street.

- 1, Glover Street.
- 1, Joshua Street.
- 1, Parkside Road.
- 2, Rydal Street.
- 1, St. Stephen's Road.
- 2, Woodroyd Road.

## EXCHANGE WARD.

- 1, Cross Frederick Street.
- 3, Diamond Street.
- 1, Ebenezer Street.

- 4, Frederick Street.
- 1, George Street.
- 1, Nelson Street.

## BRADFORD MOOR WARD.

- 1, Back Dudley Street.
- 1, Back Peel Street.
- 1, Cartmell Street.
- 3, Cook Street.
- 3, Dross Street.
- 3, Napier Street.
- 1, Parsonage Road.
- 1, Planetrees Road.

- 2, Pawson Street.
- 1, Pump Street.
- 1, Robertshaw Street.
- 1, Sticker Lane.
- 1, Wellington Street.
- 1, Wilberforce Street.
- 6, Woodhall Road.

## MANNINGHAM WARD.

- |                      |                        |
|----------------------|------------------------|
| 1, Alice Street.     | 1, St. Michael's Road. |
| 1, Bilton Place.     | 1, Spring Row.         |
| 1, Mortimer Street.  | 1, Whetley Hill.       |
| 1, Priestman Street. | 3, Young Street.       |

## BOLTON WARD.

- |                      |                  |
|----------------------|------------------|
| 1, Blenheim Road.    | 1, Shann Street. |
| 1, Heaton Grove.     | 3, South Parade. |
| 1, Livingstone Road. | 1, Swann Hill.   |
| 2, Midland Road.     |                  |

## HEATON WARD.

- |                         |                       |
|-------------------------|-----------------------|
| 1, Bishop Street.       | 1, Leamington Street. |
| 4, Children's Hospital. | 3, Quarry Street.     |
| 1, Heaton Road.         | 1, Silk Street.       |
| 1, Heidelberg Road.     |                       |

## ALLERTON WARD.

- |                     |                    |
|---------------------|--------------------|
| 1, Allerton Road.   | 1, Pearson Lane.   |
| 1, Copy Street.     | 1, Pleasant Place. |
| 2, Daisy Hill Lane. | 1, Thornton Road.  |
| 1, Gurlington Road. | 1, Vine Terrace.   |
| 3, Hoxton Street.   |                    |

The three Tables following give the mortality from Typhoid Fever at different ages and at various periods of the year.

TABLE XXIII.

*Shewing number of deaths and percentage mortality from Typhoid Fever during each of the last 9 years.*

YEARS.	No. of Deaths.	Deaths per 100 cases notified.
1885	30	19.6
1886	35	22.0
1887	32	20.9
1888	19	18.1
1889	48	28.7
1890	31	21.5
1891	27	17.2
1892	18	22.5
1893	48	22.3

TABLE XXIV.

*Shewing number of cases notified and number of Deaths from Typhoid Fever in each month of the year 1893.*

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Notification ...	5	5	7	4	1	9	10	28	45	45	39	17
Deaths ...	...	...	3	2	1	3	1	8	6	7	10	7

TABLE XXV.

*Shewing number of cases, deaths and case-mortality from Typhoid Fever during the year 1893.*

AGE.	CASES.		DEATHS.		Death-rate per cent.
	Male.	Female.	Male.	Female.	
Under 5	4	5	1	...	11·1
5—10	20	16	2	2	11·1
10—20	37	28	11	2	20·0
20—30	23	26	8	7	30·6
30—40	15	16	5	1	19·3
40—50	8	7	3	5	53·3
50 and upwards	5	5	1	...	10·0
TOTAL	112	103	31	17	22·3

DIARRHŒA.—The mortality from this disease has been unusually heavy, 292 deaths having been ascribed to it as compared with a total of 91 for the year 1892. Of these deaths, 241 were of children under 5 years of age. Table XXVI. gives the distribution of the deaths in the four quarters of the year.

TABLE XXVI.

*Shewing the number of deaths from Diarrhœa during each quarter of 1893.*

	1st quarter.	2nd quarter.	3rd quarter.	4th quarter.
Under 5 years ... ..	1	42	185	13
Over 5 ,, ... ..	2	6	37	6

TABLE XXVII.

*Shewing number of deaths, and Death-rate per 1,000, from  
Diarrhœa in the various Wards.*

WARD.	Number of Deaths.	Death-rate per 1,000 living.
North ... ..	24	1·8
South ... ..	24	1·7
East ... ..	10	·6
West ... ..	37	2·5
Listerhills .. ..	12	·6
Great Horton .. ..	16	1·0
Little Horton ... ..	27	1·7
East Bowling ... ..	20	1·2
West Bowling ... ..	34	1·9
Exchange ... ..	9	1·8
Bradford Moor ... ..	25	1·3
Manningham ... ..	28	1·2
Bolton .. ..	3	·3
Heaton ... ..	15	·8
Allerton ... ..	8	·8
<b>BOROUGH TOTAL ... ..</b>	<b>292</b>	<b>1·3</b>

It is shown by Table XXVII. that the West Ward, which contains the oldest and narrowest streets in the town, has by far the highest mortality from Diarrhœa, its rate of 2·5 per 1,000 being 92 per cent. higher than that for the whole Borough.

SCARLET FEVER.—During 1893 Scarlet Fever was unusually prevalent, no less than 1,445 cases of the disease having been reported to the Health Department. This exceedingly large number of cases was chiefly due to an epidemic in the

month of July, brought about by the distribution of infected milk. The first half of the year had been more free than usual from Scarlatina, but on July 3rd there was a sudden outburst, 26 cases coming to my knowledge on that day. I immediately set about to investigate the matter, and soon satisfied myself that the milk supply was the only factor common to the houses invaded by the disease. The farm in Bolton Woods, from which the great majority of infected houses procured their milk, was apparently free from infection, no case existing on the premises, and the cattle being in a healthy condition. It was, however, noticed that two boys who had assisted to deliver the milk were missing from their employment, and on visiting them at home I found one in the desquamatory stage of Scarlet Fever, with commencing dropsy; at the time of my visit he was in bed with his younger brother, who had that day commenced with an attack of Scarlatina. The other boy had been detained at home on account of his having a "sore throat," which proved to be a mild attack of Scarlet Fever. All three cases were at once removed to the Hospital at Scholemoor, which at that time was being used for Scarlatina. The milk-cans and all utensils used for the distribution of the milk were scalded and thoroughly cleaned under the supervision of the Food and Drugs Inspector. After the 10th of the month there was a marked diminution in the number of fresh cases coming to my knowledge, until the 17th, when a fresh outbreak occurred, most of the families affected being supplied with milk from a farm contiguous to the one already referred to. I found that in this case the milk was the source of the infection, and had most probably been contaminated on the farm by a boy who assisted in dairy work. I found this boy desquamating on the hands and feet. He was apparently convalescent from a mild attack of Scarlatina, unknown to himself and his parents. The same preventive measures were taken as in the above-mentioned case, but the disease had now become so widely spread that it was not until August was well advanced that the epidemic period could be considered at an end. In addition to the cases actually notified as Scarlet Fever, there were many others of a minor form,



having for their chief symptom a sore throat of a more or less severe character. I am satisfied that many of them were Scarlatinal in nature. Table XXVIII. shows that the milk epidemic commenced on the 31d of July from milk supplied by Mr. H., and that on July 17th the second outbreak of the disease was due to milk supplied by Messrs. B. and Hd. Mr B. was a farmer and close neighbour of Mr. H., Mr Hd. being merely a purveyor, and obtaining his supply from Farmer B.

TABLE XXVIII.

Shewing the number of cases of Scarlatina and houses newly invaded by the disease in the Bolton, Manningham, Heaton, and East Wards, together with their Milk supply from July 1st to August 10th, 1893.

DATE.	Fresh cases and newly invaded houses in the four Wards.								Milk supply of total number of houses newly invaded in the whole of the Borough.			
	Bolton.		Manningham.		Heaton.		East.		Mr. H.	Mr. B.	Mr. Hd.	From other sources.
	Cases.	Houses.	Cases.	Houses.	Cases.	Houses.	Cases.	Houses.				
July 1	...	...	...	..	...	..	...	...	...	...	...	...
" 3	18	7	2	1	2	2	2	...	8	...	...	8
" 4	19	12	6	5	3	3	3	...	10	...	...	14
" 5	16	11	2	2	2	2	2	...	6	...	...	12
" 6	2	2	...	...	...	...	...	...	2	...	...	4
" 7	9	9	1	1	1	1	1	...	4	...	...	10
" 8	5	4	2	2	1	1	1	1	4	...	...	5
" 10	9	7	6	5	3	3	3	...	4	...	...	15
" 11	4	4	9	7	6	4	4	...	1	...	...	16
" 12	6	5	3	2	3	2	2	...	1	1	...	9
" 13	2	2	1	1	2	2	2	...	3	...	...	5
" 14	1	1	3	3	1	1	1	...	2	...	...	6
" 15	1	1	1	1	1	1	1	...	2	...	...	7
" 17	4	2	1	1	4	4	3	3	1	5	2	6

" 18	9	6	1	1	2	2	2	5	3	1	3	5	2	2	4
" 19	4	2	...	...	1	1	6	6	3	...	6	7	7	3	5
" 20	12	12	...	...	2	2	2	1	1	1	1	10	1	6	10
" 21	6	5	1	1	...	...	...	4	3	...	3	3	3	4	5
" 22	3	3	4	2	1	1	1	4	4	...	4	5	5	1	7
" 24	21	16	6	5	9	9	6	10	9	2	9	24	5	7	24
" 25	5	4	8	6	3	3	3	...	...	...	...	13	...	3	13
" 26	6	3	3	3	...	...	...	4	2	1	2	7	1	1	7
" 27	6	6	6	6	6	6	5	3	3	...	3	12	...	...	12
" 28	..	...	...	...	...	...	...	...	...	1	...	6	2	2	6
" 29	3	1	...	...	3	3	3	...	...	...	...	6	...	1	6
" 31	5	5	6	5	2	2	2	2	2	2	2	13	1	1	13
Aug. 1	2	2	1	1	...	...	...	...	...	...	...	4	...	...	4
" 2	...	...	...	...	2	2	2	...	...	...	...	3	...	...	3
" 3	...	...	5	3	1	1	1	...	...	...	...	6	...	...	6
" 4	...	...	1	1	5	5	3	...	...	...	...	6	...	...	6
" 5	2	2	...	...	1	1	1	...	...	2	...	3	..	..	3
" 7 & 8	6	6	2	2	6	6	4	2	2	2	2	15	1	1	15
" 9	1	1	..	...	1	1	1	...	...	...	...	3	...	...	3
" 10	...	...	2	2	2	2	2	...	...	...	...	8	...	...	8

At the commencement of the alarming prevalence of Scarlatina above mentioned a list of customers was obtained from the farmers and milk purveyors whose milk was suspected, from which it appeared that during the period July 3rd to August 10th the three milk dealers already referred to delivered a daily supply at 367 houses, 130 of which during the same time became infected with Scarlatina, equivalent to a rate of 35·4 per cent. of the total number of houses supplied. The proportion of houses infected in reference to each milk supply, is seen from the following table.

TABLE XXIX.

NAME.	Houses Supplied with Milk.	Houses infected with Scarlatina.	Percentage of Houses Infected.
Farmer H. ... ..	156	59	37·8
Farmer B. ... ..	123	41	33·3
Purveyor Hd. ... ..	88	30	34·0
TOTAL ... ..	367	130	35·4

Although the number of cases of Scarlatina has been large it is satisfactory to note that the fatality has been low. Table XXX shows that the total number of deaths was 71, which gives the comparatively low death-rate of 4·9 per cent. of the total number of cases that came to my knowledge. As usual, the highest mortality occurred in children under five years of age.

TABLE XXX.

*Notifications, Deaths, and Death-rate from Scarlet Fever at different Age Periods during 1893.*

AGES.	Notifications.	Deaths.	Death-rate per 100.
Under 1 year ... ..	21	5	20·00
1 year and under 2 ... ..	49	6	12·24
2 years „ „ 3 ... ..	95	10	10·53
3 years „ „ 4 ... ..	121	10	8·26
4 years „ „ 5 ... ..	114	17	14·91
5 years „ „ 10 .. ..	520	13	2·50
10 years „ „ 15 ... ..	236	3	1·27
15 years and upwards... ..	289	7	2·42
TOTALS ... ..	1445	71	4·91

SMALLPOX.—The year 1893 has seen the greatest epidemic of this disease recorded in the history of the borough; in all there occurred during the year 995 cases, 113 of which ended fatally, giving a case-mortality of 11·3 per cent. The following table shows the total number of cases, the number of deaths, and the case-mortality at several age periods.

TABLE XXXI.  
*Smallpox during 1893.*

AGE PERIODS.	CASES.			DEATHS.			DEATH-RATE per 100.		
	Males.	F'males	Total.	Males.	F'males	Total.	Males.	F'males	Total.
0—5	27	34	61	11	12	23	40·7	35·3	37·7
5—10	26	27	53	2	5	7	7·6	18·5	13·2
10—20	84	109	193	3	7	10	3·5	6·4	5·3
20—30	155	140	295	12	10	22	7·7	7·1	7·4
30—40	129	92	221	14	8	22	10·8	8·7	9·9
40—50	55	50	105	12	5	17	21·8	10·0	16·1
50 & up.	33	34	67	8	4	12	24·2	11·7	17·9
TOTAL ...	509	486	995	62	51	113	12·1	10·5	11·3

It is seen that the highest death-rates occur at periods under 10 years of age, the lowest from 10 to 20 years, and that for each decade above this age there is gradual increase in the case-mortality. This is explained by the fact that a comparatively large number of the patients below 10 years had not been protected by vaccination, and that the protective influence of vaccination in childhood had become less and less with advancing age.

Although cases of Small-pox had been occurring irregularly and in small numbers in various parts of the town since May, 1892, it was not until the third week in April, 1893, that an

extensive prevalence of the disease was feared. During the week ended April 22nd, 14 cases were reported, and 20 during the week following. As the special wards at the Fever Hospital for the isolation of patients suffering from Small-pox were now completely filled, the ordinary wards were used for cases of this disease, and the building of a temporary Hospital at Scholemoor commenced. The Scholemoor Hospital was opened on the 4th of July for the reception of patients suffering from Scarlet Fever. Owing to the fact that a large proportion of the cases of Small-pox were occurring in houses situated in the Leeds Road district, it was determined to use the Scholemoor Hospital for the isolation of cases of this disease. Accordingly the temporary Hospital was as quickly as possible cleared of fever cases and devoted exclusively to the treatment of Small-pox, the first case being admitted during the first week in September. Towards the end of the month the epidemic shewed signs of subsiding, but, unfortunately, on October 2nd, one of the wards and administration block were destroyed by fire, the Hospital, consequently, being rendered useless. This disaster necessitated the removal of 45 patients to the Leeds Road Hospital, and in more ways than one was responsible for a further extension of the epidemic. However, the building was reconstructed and again opened for the admission of Small-pox cases on December 4th. Dr. Robinson, of Manchester was appointed Resident Medical Officer. The epidemic rapidly declined.

The measures taken to deal with the epidemic consisted—  
 (1) In immediate isolation in Hospital of each case; (2) Vaccination, and, as far as possible, isolation of all those who had been in contact with any case of the disease; (3) Daily observation by inspectors appointed for the purpose of the occupiers of any infected house for at least 14 days after the removal of any case of the disease; (4) Free vaccination to all who were willing to avail themselves of its protection. In order to secure a more general adoption of vaccination the following placard was posted freely throughout the town : --

## SMALL-POX.

In consequence of the prevalence of Small-pox in Bradford and the surrounding districts, people are earnestly urged to avail themselves of the protection given by VACCINATION. All who have never been Vaccinated should immediately be done, and Re-vaccination is recommended for all persons over Twelve years of age.

The Hours and Places of Attendance of the Public Vaccinators are as follow :

DR. BELL, at 48, Newington Street, City Road, every Wednesday, at 3 o'clock.

DR. FOSTER, at the Vaccination Station, near All Saints' Church, every Thursday, at 3 o'clock.

DR. LODGE, at the Spiritualist Church, Walton Street, Hall Lane, every Thursday, at 3 o'clock.

DR. MUNRO, at the Temperance Hall, Chapel Street, every Thursday, at 2 o'clock.

W. ARNOLD EVANS, M.D.,

Town Hall, May 10th, 1893. Medical Officer of Health.

It was also decided on October 20th to provide vaccination gratuitously to all who would avail themselves of it. I was accordingly instructed to ask the medical practitioners of the town to vaccinate applicants at the expense of the Corporation. The circular appended was therefore issued.

Health Department, Town Hall, Bradford, Oct. 20th, 1893.  
Dear Sir,—I am instructed by the Sanitary Committee to ask you to vaccinate any Inhabitant of the Borough, who may make application to you, and to re-vaccinate any Inhabitant above the age of 12 years who may also apply.

On being furnished with a certified list of the persons vaccinated, the Corporation will pay a fee of 2/6 for each case.

Yours faithfully,

W. ARNOLD EVANS,

Medical Officer of Health.



The following notice was after issued :—

County Borough of Bradford.

SMALL-POX. FREE VACCINATION.

The Sanitary Committee of the Bradford Corporation, with a view to the more effectual suppression of Small-pox, have given authority to the Medical Gentlemen of the Town to vaccinate persons being residents within the Borough, free of charge to such persons who may require the same.

The Committee are advised that Vaccination and Re-vaccination are the most effective means of stamping out the disease ; and they earnestly request the Inhabitants to co-operate with them, without delay, in carrying the above arrangement into effect.

By Order,

W. T. McGOWEN, Town Clerk.

Town Hall, Bradford, 20th November, 1893.

This arrangement continued in force till June 27th, 1894, when the epidemic seemed to have subsided. During the period in which vaccination was gratuitously provided 14,593 people were vaccinated or revaccinated at the public expense, the cost amounting to £1,824 2s 6d.

In reference to the protective influence of vaccination against smallpox more detail will be found in Dr. Foster's report on the Fever Hospital than I can give here. I may, however, point out that as regards vaccination the 935 cases which passed through the Leeds Road Fever Hospital during the year were classified as follows : -

				DEATH-RATE.
All cases	935 :	100	deaths	10·7 per cent.
Vaccinated cases	706 :	36	„	5·1 „
Doubtful	34 :	9	„	26·5 „
Unvaccinated	195 :	55	„	28·2 „

It is therefore seen that the mortality amongst the unvaccinated is 5·5 times greater than that of the vaccinated. The following facts may also be elicited from a consideration of the figures, viz. :--

1.—If the unvaccinated had died only at the rate of those vaccinated there would have occurred, not 55 deaths, but only 10 deaths.

2.—If the vaccinated had died at the rate of those unvaccinated there would have been, not 36 deaths, but 193 deaths.

3.—If all the patients had been vaccinated there would have been only 48 deaths instead of the 100 deaths actually recorded.

4.—If all the patients had been unvaccinated there would have occurred 264 deaths in place of the 100 deaths actually recorded.

It is much to be regretted that the benefits of vaccination are not sufficiently appreciated by a large section of the population. During the past epidemic it was only occasionally, and then in times of panic, that vaccination was largely resorted to. A reference to the table, kindly supplied by Mr. Crowther, in the appendix, shows that out of 5,644 births registered from January 1st., 1892, to December 31st., 1892, only 3,600 had been successfully vaccinated.

TABLE XXXII.

Shewing the number of Notifications from each Disease during 1893 in the different Wards.

WARDS.	Smallpox.	Scarlet Fever.	Typhoid Fever.	Typhus Fever.	Diphtheria.	* Erysipelas	* Puerperal Fever.	* M'branus Group.	* Continued Fever.	Relapsing Fever.	TOTAL.
North ... ..	58	63	7	...	1	2	2	...	...	...	133
South ... ..	274	59	14	...	11	15	1	...	...	...	374
East ... ..	72	116	11	...	10	7	1	3	...	1	221
West ... ..	29	82	9	...	3	25	1	4	3	..	156
Listerhills ... ..	44	83	12	...	6	8	1	...	1	...	155
Great Horton ... ..	20	42	23	...	...	13	2	2	...	..	102
Little Horton ... ..	37	69	15	...	2	12	3	2	...	...	140
East Bowling ... ..	56	75	19	...	5	14	1	1	...	...	171
West Bowling ... ..	29	71	21	...	4	11	2	...	...	..	138
Exchange ... ..	25	19	11	...	2	2	1	..	...	...	60
Bradford Moor ... ..	260	52	30	...	6	14	...	...	...	...	362
Manningham ... ..	50	202	9	...	10	10	3	2	...	...	286
Bolton ... ..	12	275	9	...	6	6	...	1	...	...	309
Heaton ... ..	12	183	13	...	5	4	1	3	1	...	222
Allerton ... ..	17	54	12	...	...	2	...	...	...	...	85
BOROUGH TOTAL ...	995	1445	215	—	71	145	19	18	5	1	2914

\* Notification of these diseases brought into force Feb. 1st, 1891.

## Diseases of the Respiratory System.

PHTHISIS.—The number of deaths caused by this disease was 380, 18 of which were those of persons under 5 years of age and 362 over this age. This is an increase of 39 upon the total for 1892. The death-rate from this disease is 1·71 per 1,000 of the population.

Amongst the Wards the highest death-rate is 2·6 per 1,000 in the Exchange Ward, and the lowest 0·7 per 1,000 in Bolton Ward.

In some trades the death-rate from Phthisis appears to be unusually high. During the past year 22 deaths from Phthisis occurred amongst stone masons and quarrymen, and 88 amongst people engaged in woollen, worsted, silk, and cotton mills. Calculated upon the figures supplied by the Census in 1891, these figures give a death-rate of 9·5 per 1,000 for the former and of 1·8 per 1,000 for the latter. This indicates that the death-rate from Phthisis in stone-masons and quarrymen is 458 per cent. greater than that of the general population.

BRONCHITIS, PNEUMONIA, AND PLEURISY.—The number of deaths registered from these diseases amounts to 915, an increase of 42 upon the total for 1892. Of the total deaths under this heading, 370 were in children under 5 years of age and 545 in persons over 5 years.

The deaths were distributed over the various quarters of the year as follows : —

1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
317	212	126	260

CANCER.—The deaths of 129 persons were attributed to Cancer or other malignant disease, of which 40 were of males and 89 of females.

TABLE XXXIII.

*Synopsis of deaths from Cancer during the Years 1886-1893.*

	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Total Number of Deaths	100	122	129	137	129	142	159	129
Males ... ..	23	29	28	50	52	44	52	40
Females ... ..	77	93	101	87	77	98	107	89

DISEASES OF THE NERVOUS SYSTEM.—To this class of disease there were ascribed 631 deaths, including 225 from Convulsions, 101 from Meningitis, and 133 from Apoplexy. Of the deaths from Convulsions, 218 were under 5 years of age; of those from Meningitis, 68 were under 5 years of age; and from Apoplexy, the number of deaths over 55 years of age was 102.

DISEASES OF THE CIRCULATORY SYSTEM caused 396 deaths, 8 of which were in children under 5 years of age. In 1892 the deaths from these diseases amounted to 340.

DISEASES OF THE DIGESTIVE ORGANS.—From these diseases there were registered 253 deaths as compared with 198 for 1892.

From diseases of the genito-urinary, 111, as compared with 115 for 1892.

From diseases of the joints and skin, 65, as compared with 71 for the previous year.

The number of deaths from violence amounted to 97, of which 84 were attributed to accident or negligence, 1 to homicide, 12 to suicide, of which last 4 were by hanging and 7 by drowning.

Of the violent deaths 20 were in children under 5 years of age, 7 of whom were infants under 12 months accidentally suffocated; to burns and scalds there were attributed 19, and to fracture and contusion, 2 deaths in children under 5 years of age.

## Inquests.

Two hundred and twenty-five inquests were held during the year, as compared with 242 and 219, the numbers for 1891 and 1892 respectively. Twenty-eight of the inquests were upon children under five years of age.

## Uncertified Deaths.

The number of uncertified deaths during the year was 69, equal to a rate of 1.5 per cent. of the total deaths. The average for the 33 great towns was 1.8.

TABLE XXXIV.

*Shewing the mean Death-rate per 1,000 in Bradford and each of its fifteen wards from all causes and from 7 of the principal Zymotic Diseases during the five years, 1889 to 1893.*

WARDS.	Mean Death-rate from 7 principal Zymotic Diseases during five years 1889 to 1893.	Mean Death-rate from all causes during five years 1889 to 1893.
North ... ..	2·7	23·3
South ... ..	2·6	24·0
East ... ..	1·6	18·4
West ... ..	3·2	24·3
Listerhills ... ..	1·4	19·8
Great Horton ... ..	1·9	18·7
Little Horton ... ..	2·3	19·0
East Bowling ... ..	2·8	22·0
West Bowling ... ..	2·8	19·9
Exchange .. ..	2·9	23·4
Bradford Moor ... ..	2·1	20·6
Manningham ... ..	2·4	19·2
Bolton ... ..	1·7	18·2
Heaton ... ..	2·0	16·4
Allerton ... ..	1·8	17·3
<b>BOROUGH TOTAL ... ..</b>	<b>2·35</b>	<b>20·04</b>

TABLE

Showing the Death-rate per 1,000 in Bradford, and in each of its 15 Wards

WARDS.	Seven principal Zymotic Diseases.										
	1882. 6 mo.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
North ... ..	3·4	2·8	2·6	1·4	2·2	2·4	1·4	3·0	3·5	1·7	2·2
South ... ..	3·1	4·7	4·5	3·4	6·2	3·2	2·0	1·8	2·6	2·0	2·1
East ... ..	1·6	1·5	2·7	1·7	2·0	2·4	0·9	1·3	1·4	1·8	1·9
West .. ...	4·2	1·6	3·2	1·5	1·9	5·1	1·7	3·7	3·5	2·3	1·5
Listerhills ...	2·3	1·1	2·2	1·4	1·6	1·7	1·1	2·6	1·2	1·3	0·7
Great Horton...	1·4	0·4	1·7	1·5	1·5	3·4	1·1	2·3	0·7	2·7	1·3
Little Horton..	3·9	1·7	2·9	1·4	2·4	2·1	1·6	3·4	2·0	1·5	1·8
East Bowling...	3·9	1·2	1·9	1·7	2·1	2·6	1·6	2·3	4·0	2·5	1·4
West Bowling	3·6	1·3	3·4	0·9	2·1	2·3	3·1	4·1	1·4	2·0	1·8
Exchange ...	2·7	1·1	2·5	0·7	3·7	2·4	1·8	4·6	3·2	1·1	2·5
Bradford Moor	3·9	1·3	1·9	1·2	2·2	3·1	2·4	2·1	2·0	2·1	1·1
Manningham ...	2·7	0·9	2·1	1·5	1·9	3·0	1·1	2·7	1·9	3·1	0·9
Bolton ... ..	0·6	1·7	1·8	0·8	1·5	3·0	0·5	1·5	1·9	0·7	2·0
Heaton ... ..	2·7	1·1	1·8	1·7	1·2	2·9	0·5	2·9	1·0	2·3	1·1
Allerton ... ..	2·8	0·7	2·2	0·9	1·5	1·8	1·2	1·9	1·1	1·7	1·0
<b>BOROUGH TOTAL</b>	<b>3·2</b>	<b>1·5</b>	<b>2·5</b>	<b>1·5</b>	<b>2·2</b>	<b>2·8</b>	<b>1·6</b>	<b>2·65</b>	<b>2·08</b>	<b>2·35</b>	<b>1·46</b>



LXXV.

from Zymotic Diseases, and from all causes during 1882—1893.

All Causes.												
1893.	1882. 6 mo.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
3·4	24·0	22·3	20·2	17·6	21·2	27·4	20·1	21·7	24·9	25·1	21·6	23·4
4·4	18·3	18·8	19·0	20·4	21·7	24·5	20·1	23·3	25·9	25·3	20·6	25·1
1·6	18·6	16·5	18·8	17·1	18·7	16·3	16·2	17·2	18·9	21·6	16·6	17·8
4·9	20·9	19·3	24·0	18·6	22·7	24·5	18·0	25·8	27·0	24·8	20·0	23·7
1·0	17·7	16·1	18·5	16·8	18·0	16·4	16·3	18·6	21·2	22·4	18·1	18·6
2·7	18·8	17·0	21·9	17·3	16·0	20·7	15·2	18·7	19·0	20·4	17·9	17·5
2·8	16·7	17·7	18·0	17·4	16·0	15·9	16·3	15·6	19·2	21·1	19·0	20·3
3·9	20·0	19·2	22·4	20·5	22·6	22·3	13·4	23·4	24·1	24·5	17·6	20·3
4·5	21·8	25·0	22·2	16·7	19·0	17·3	17·8	18·9	18·8	21·9	18·4	21·4
3·0	19·6	19·7	20·7	17·4	29·7	24·9	27·5	26·1	28·3	19·4	20·8	22·2
2·8	22·6	21·1	21·5	18·3	18·7	22·1	21·2	20·6	20·4	24·6	17·2	20·3
3·3	19·2	15·4	18·3	18·0	18·4	19·1	14·3	17·2	18·7	22·1	17·6	20·2
2·6	16·0	14·6	15·3	13·6	17·0	16·2	13·6	14·4	27·5	15·3	14·3	19·7
2·7	18·9	15·0	17·9	13·8	16·5	18·5	13·7	15·6	15·8	19·1	14·3	17·4
3·2	17·7	16·5	21·1	16·3	16·2	16·1	14·2	14·8	16·6	18·4	15·7	21·2
3·22	21·3	18·3	20·0	17·7	19·1	19·86	17·15	19·11	20·14	22·12	17·91	20·90

TABLE XXXVI.

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Year 1893.

Towns.	Estimated Population middle of 1893.	Births.	Deaths.	Annual Rate per 1,000 Living.			Deaths from Principal Zymotic Diseases.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Principal Zymotic Diseases.										
33 Towns ... ..	10,327,846	328,342	222,178	31.9	21.6	3.2	32,797	732	4,559	3,015	4,423	4,977	2,493	12,598	181	1.8
32 Provincial Towns	6,021,435	195,377	130,642	32.5	21.8	3.3	19,574	526	2,898	1,419	1,158	2,647	1,774	9,152	193	2.4
London ... ..	4,306,411	132,965	91,536	31.0	21.3	3.1	13,223	206	1,661	1,596	3,265	2,330	719	3,446	164	0.9
West Ham ... ..	227,405	8,083	4,288	35.6	18.9	3.4	768	55	36	80	95	154	68	280	170	4.5
Croydon ... ..	108,997	2,522	1,772	26.2	16.3	2.2	240	1	20	11	85	27	12	84	155	...
Brighton ... ..	117,833	2,981	2,165	25.4	18.4	1.8	217	...	13	12	33	56	15	88	169	2.7
Portsmouth ... ..	167,277	4,709	3,039	28.2	18.2	2.8	469	...	113	33	29	37	52	205	164	0.8
Plymouth ... ..	86,781	2,590	1,839	29.9	21.2	2.8	240	...	85	22	14	46	10	63	169	0.5
Bristol ... ..	225,028	6,814	4,249	30.4	18.9	1.7	371	17	25	35	49	77	25	143	141	1.6
Cardiff ... ..	142,435	5,121	2,796	36.1	19.7	3.3	469	...	100	39	98	40	27	165	179	1.0
Swansea ... ..	93,816	3,285	1,836	35.1	19.6	1.8	172	...	17	33	5	30	19	68	170	2.0
Wolverhampton ...	84,298	2,902	1,956	34.5	23.3	2.8	239	1	21	26	5	4	28	154	208	1.0
Birmingham ... ..	487,891	15,916	10,693	32.7	22.0	3.0	1,481	71	50	68	63	320	98	811	198	4.9
Norwich ... ..	104,184	3,210	2,003	30.9	19.3	3.1	317	.	61	20	23	66	37	110	195	1.1

Leicester	...	184,547	6,006	3,683	32.6	20.0	4.0	727	15	52	80	20	113	46	401	220	3.7
Nottingham	...	220,551	6,642	4,061	30.2	18.5	2.6	577	4	25	81	15	59	69	324	170	1.7
Derby	...	97,341	3,123	1,771	32.2	18.2	2.1	201	7	17	14	7	44	22	90	156	0.8
Birkenhead	...	103,817	3,431	2,127	33.1	20.5	2.8	292	1	15	12	16	69	27	152	196	1.1
Liverpool	...	510,514	18,322	13,919	36.0	27.3	3.9	1,987	9	273	231	63	279	269	863	211	3.7
Bolton	...	117,278	3,874	2,821	33.1	24.1	4.7	544	7	166	34	12	77	36	212	199	0.8
Manchester	...	515,598	17,268	12,801	33.6	24.9	3.7	1,911	48	296	138	165	241	129	894	203	1.3
Salford	...	203,431	7,047	4,886	34.7	24.1	4.1	836	22	92	41	58	99	100	427	210	3.3
Oldham	...	136,469	3,896	2,860	28.6	21.0	2.5	338	65	29	16	18	55	26	129	187	1.1
Burnley	...	93,462	3,161	2,039	33.9	21.9	3.8	354	6	27	51	14	34	28	194	223	1.4
Blackburn	...	124,005	3,822	2,879	30.9	23.3	4.1	504	7	144	5	2	33	30	283	241	3.4
Preston	...	110,225	3,855	2,899	35.1	26.4	6.0	661	..	179	27	14	47	51	343	269	3.8
Huddersfield	..	97,549	2,313	1,673	23.8	17.2	1.2	121	...	23	25	3	13	12	45	141	2.9
Halifax	...	91,918	2,253	1,591	24.6	17.4	1.7	157	35	5	3	23	32	13	46	173	4.3
BRADFORD	...	221,610	6,112	4,632	27.6	20.9	3.2	718	18	68	71	19	97	53	292	198	1.5
Leeds	...	382,093	12,349	8,493	32.4	22.3	3.5	1,322	20	311	31	62	166	110	592	206	1.0
Sheffield	...	333,922	11,591	7,428	34.8	22.3	3.5	1,172	5	176	90	61	128	90	622	191	3.5
Hull	..	208,709	7,125	4,545	34.2	21.8	4.1	862	8	128	33	22	80	99	492	206	3.3
Sunderland	...	134,515	4,771	3,022	35.6	22.5	3.4	451	5	17	26	11	24	131	237	188	0.9
Gateshead	...	90,938	3,309	1,750	36.5	19.3	3.5	314	2	71	9	19	53	21	139	170	2.5
Newcastle-on-Tyne	...	196,997	6,624	4,126	33.7	21.0	2.5	500	...	212	23	31	34	25	175	174	0.9

## Sanitation.

Having regard to the fact that Cholera was extensively prevalent on the Continent, and that suspicious cases were not of unfrequent occurrence at some of the ports on our East Coast, the following placard was posted freely over the town :—

### THE PREVENTION OF CHOLERA.

In the event of Cholera appearing in the Borough, the Public can materially assist the Sanitary Authorities in preventing the spread of its infection, by adopting the following precautionary measures :

1.—By boiling all drinking water obtained from wells or springs a few hours before use.

2.—By boiling milk before use, and by keeping all solid food in a cool, well-ventilated place, free from the possibility of contamination. No article of diet should be stored in a bedroom.

3.—By avoiding unripe, overkept, or decaying fruit.

4.—By giving prompt attention to any suspicious case of Cholera. All cases of bowel disorder should be immediately treated by a qualified medical practitioner.

5.—By disinfecting all discharges from sick persons, whether vomited matters or evacuations from the bowels. To effect this, they should be received into a vessel containing a mixture prepared by adding one part of Carbolic Acid to nineteen parts of hot water, and kept in such vessel (which should have a lid) well covered by Carbolic Acid solution for three or four hours. On no account should the discharges be cast into any drain or privy without previous disinfection.

6.—By also disinfecting linen soiled by Diarrhœal or Choleraic discharges. Such linen should be placed when soiled into a covered vessel and steeped in a solution of Carbolic Acid of the strength mentioned above till next day, when it should be

thoroughly washed at home, and not sent to any public wash-house or laundry.

7.—By at once burning infected articles of small value.

8.—By taking care to obtain a free circulation of air in any apartment used as a dwelling or sleeping room, and by excluding all refuse from it.

9.—By keeping the Grids and Gullies in backyards, and all Traps in the house in a clean condition. This can be done by removing from them solid matters, and frequently flushing with clean water.

10.—By giving immediate notice to the Sanitary Inspector or at the Nuisance Office, of any accumulation of manure, vegetable rubbish, or filth of any description.

11.—By observing the utmost cleanliness about house and person. Soap and Limewash should be liberally used.

12.—Notice of any suspicious case of Cholera should at once be given to the undersigned, as special Hospital accommodation is provided for such cases.

Above all things it is desirable to avoid panic, and to remember that measures of cleanliness taken beforehand are of far more importance for the protection of a district against Cholera, than removal or disinfection of filth after the disease has actually made its appearance.

W. ARNOLD EVANS, Medical Officer of Health.

Town Hall, Bradford, September 11th, 1893.

### Disinfecting Station.

During the prevalence of Smallpox the Steam Disinfecter at the station in Hammerton Street was in constant use, and for about eight weeks was working both day and night. The following is the report of the Disinfecting Officer:—

## Houses fumigated with sulphurous acid 1928.

		Articles disinfected :—			
Beds	1477	Carpets	488	Petticoats	332
Mattresses	1472	Rugs	283	Hose	199
Pillows	2813	Coats	636	Dressing Gowns	71
Bolsters	1220	Waistcoats	228	Shawls	375
Blankets	2519	Trousers	272	Cushions	195
Counterpanes	1647	Drawers	144	Mats & Sundries	4707
Bed Furniture	10	Flannel Vests	124		
Curtains	84	Dresses	419		
				TOTAL	19715

Table A shews the number of New Buildings certified as fit for habitation.

TABLE A.

*Shewing number of New Buildings certified as fit for habitation in each of the Wards, and in the whole Borough, during the five years, 1889-93.*

WARD <sup>s</sup> .	1889.	1890.	1891.	1892.	1893.
North ... ..	29	9	...	64	43
South ... ..	92	104	104	69	35
East ... ..	78	77	20	49	98
West ... ..	4	3	...	3	4
Listerhills ... ..	82	173	72	30	17
Great Horton ... ..	27	67	59	37	53
Little Horton ... ..	16	15	40	42	4
East Bowling ... ..	27	31	61	48	60
West Bowling ... ..	162	187	98	59	103
Exchange ... ..	3	2	1	...	...
Bradford Moor ... ..	131	85	98	76	110
Manningham ... ..	76	130	125	116	148
Bolton ... ..	86	41	48	30	20
Heaton ... ..	68	98	31	35	65
Allerton ... ..	57	48	69	16	22
BOROUGH TOTAL ...	938	1070	826	674	782

# REPORT

OF THE

## CHIEF INSPECTOR OF NUISANCES.

TO THE MEDICAL OFFICER OF HEALTH,

SIR,—The following statement shews the nature and amount of work done in the Sanitary Department during the year 1893, including an abstract of work carried out in the previous nine years.

<i>Particulars of work done.</i>	<i>No. of Cases.</i>									
	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Drains opened and cleansed ...	1603	1305	1207	1125	1011	1356	1298	1429	1178	1236
Drains provided for premises which had previously been without drainage ... ..	267	179	97	36	41	17	13	17	32	16
Sink drains disconnected from the sewer or otherwise efficiently trapped ... ..	1791	2783	1149	788	345	623	871	632	508	365
Street Gullies cleansed ... ..	1975	3022	3116	2656	2976	2184	2867	3648	3602	4064
Water Conductors provided and down spouts connected with the drains ... ..	765	700	870	665	828	1062	1251	1143	1127	947
Swine and Swine Styes removed from objectionable situations	133	93	55	45	45	24	30	29	13	31
Fowls, etc., removed from dwelling-houses ... ..	197	122	128	114	99	162	219	114	127	87
Accumulations of offensive matter removed ... ..	227	187	172	193	187	479	596	689	399	257
Filthy Yards and Passages cleansed ... ..	360	334	448	508	416	484	578	1099	561	481
Surface of back yards and defective pavement repaired... ..	160	242	164	125	143	219	270	191	199	287
Defective Water Closets repaired	171	217	162	119	114	236	100	111	137	216

<i>Particulars of work done.</i>	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Stagnant Water removed from Ashpits ... ..	390	291	320	214	251	495	376	345	286	285
Privies and Ashpits repaired and provided with suitable doors and covers .. ..	1364	1328	1017	927	1051	1177	957	779	924	964
Foul Urinals repaired ... ..	36	19	34	25	30	32	35	20	13	46
Filthy Cellar Areas cleansed ...	45	90	85	71	131	80	81	84	74	57
Offensive Manure Pits removed	26	25	38	38	36	46	48	26	27	30
Defective Baths and Wash Basins repaired and disconnected from the drains ... ..	101	173	90	155	124	35	54	25	59	51
Privies and Ashpits removed from objectionable positions and re-constructed on improved sites ... ..	840	759	423	326	334	370	391	265	196	2
New Water Closets erected ...	91	105	97	159	120	156	179	242	321	507
Stagnant Water drained off premises ... ..	124	102	160	101	133	130	132	92	83	132
Filthy Privies cleansed and lime-washed ... ..	1633	963	1542	939	1327	1198	1167	1148	1026	1063
Houses and Cellar Dwellings white-washed .. ..	453	313	321	151	224	295	283	237	258	254
Houses and Cellar Dwellings disinfected ... ..	485	639	949	1081	456	639	532	1081	779	1979
Houses closed as unfit for human habitation .. ..	5	4	3	...	...	5	16	13	8	1
Cellar Dwellings closed as unfit for human habitation ... ..	29	18	15	1	2	15	11	18	9	1
General repairs of houses... ..	129	50	49	27	71	42	34	29	42	36
Improvement and Ventilation of premises by the removal of out-buildings, etc., from back yards .. ..	96	121	101	127	172	197	127	81	92	20
Abatement of Nuisances from over-crowding of houses and cellar dwellings ... ..	4	7	13	15	14	18	41	26	24	24
Foul Wells closed ... ..	..	...	...	...	...	...	...	...	2	...
Offensive businesses discontinued	1	1	...	1	2	...	...	2	2	1



*No. of Cases.*

<i>Particulars of work done.</i>	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Foul Mill Dams cleansed... ..	2	2	2	2	1	1	2	1	1	4
Rag Warehouses cleansed ... ..	...	11	8	14	21	2	6	...	4	2
Tripe Boilers' premises inspected	..	...	72	301	343	209	88	107	86	112
Fellmongers' premises inspected	...	...	...	14	97	194	10	24	34	12
Houses inspected where infectious diseases have occurred...	..	366	1206	1189	399	563	522	1148	1031	2606
Houses re-visited, re-inquiries as to Small-pox outbreak ... ..	...	...	...	...	...	...	...	...	...	2739
Bakehouses inspected ... ..	...	...	...	...	...	11	33	62	43	34
Mill and Workshop Closets inspected... ..	...	...	...	...	...	...	...	1613	269	140

The above particulars represent only those cases where Statutory Notices have been served, and do not include Nuisances prevented or abated on the verbal request of the Inspectors.

The number of persons summoned for non-abatement of Nuisances after Notices given is 28.

### Night Scavenging.

During the year the Contractors have according to the returns of the Sanitary Officers, emptied 85,573 ashpits, and removed therefrom 12,032 loads of soil, and 67,818 loads of rubbish, or a total of 79,850 loads.

With the view of facilitating the carrying out of the work of removal of refuse, permission has been given to the Scavenging Contractors to cart away during the daytime refuse from business premises, and also to remove the contents of ashpits not connected with privies, such permission nevertheless to continue only during the pleasure of the Committee.

Permission has been obtained from the Street Improvement Committee to tip ashes in the valley on the east side of Queen's Road, extending from Tordoff Road to Bolton Road, until the hollow is filled up to the level of Queen's Road, on condition

that the cost of constructing a covered culvert for the stream which flows down the valley from Peel Park, shall be charged to the Sanitary Committee

Of the 60 railway waggons belonging to the Committee, and which are placed at the service of the Night Soil Contractors, 37 have during the year been thoroughly repaired and re-painted, and are now, along with the rest, in good working condition

### Refuse Destruction.

The quantity of Refuse destroyed during the year at Hammerton Street has been 23,244 loads of Ashpit and other Refuse, besides 21 carcasses of beef, 5 calves, 1 horse, 21 sheep, 35 pigs, 18 stones of pork, 1 goat, 3 deer, 339 dogs, 40 cats, 10 hares, 26 couples of rabbits, 7½ cwts. of fat, 22 tons 1 cwt. of fish, 273 tubs of herrings, 762 boxes of kippers, 370 boxes of Finnon haddock, 24 stones of shrimps, 8 stones of sprats, 400 oysters, 524 bags of cockles and mussels, 12 stones of crabs, 6 tubs of apples, 7 tubs of pine apples 28 bags of peas, 14 bags of beans, 12 stones of onions, 1 cart load of cabbages, 1 ton 8 cwts. of potatoes, 5 loads of old books, 4 old beds, and 60 pairs of old mattresses.

The quantity of mortar made and sold is 2,954 tons 19 cwts., as against 3,047 tons last year.

The quantity of Refuse destroyed at Sunbridge Road Destructors is 15,144 loads, besides 2 carcasses of beef, 262 dogs, 43 cats, 16 tins of corned beef, 3 tons 16 cwts. of fish, 16 bags of cockles and mussels, 33 pairs of old mattresses, and 4 old beds.

The amount of mortar ground and sold at these works is 374 tons 10 cwts., as against 480 tons 10 cwts. last year.

The quantity of Refuse dealt with at Southfield Lane Destructors is 10,065 loads of Ashpit and other Refuse, besides 4 pigs, 16 dogs, 45 pairs of old mattresses, and 3 old beds.

The amount of Rubbish destroyed at Cliffe Lane is 8,809 loads of Ashpit refuse, 4 dogs, 5 pairs of old mattresses, and 2 old beds.

### Dangerous and Unfenced Places.

During the year 286 places, including houses and other buildings, have been reported by the Sanitary Officers as being in a dangerous condition. These have been dealt with and made secure from personal danger, either under the direction of the Borough Surveyor or the Chief Inspector of Nuisances.

### Public Urinals.

The number of Public Urinals within the Borough is 33 as against 32 last year, all of which are in fair condition.

A Public Urinal has been erected at School Street, on premises belonging to The Midland Railway Company, subject to the terms of an agreement made by the Corporation and the said Company.

### Burial Grounds.

During the year 230 visits have been made by the Sanitary Officers to the various Grave Yards within the Borough, but no irregularities were observed.

In the operations for the widening of a portion of Cottingley Road, Heaton, by the Street Improvement Committee, an area of about 236 yards was taken off the grave yard connected with the Baptist Chapel at that place, and the whole of the coffins and human remains have been removed therefrom, comprising 122 adults and 94 children, subject to the terms of an order from the Home Secretary, and have been re-interred at Schole-moor Cemetery under the personal supervision of the Sanitary Officers.

### Common Lodging-Houses.

The number of Common Lodging-Houses within the Borough is 42 as against 44 last year.

The houses contain 201 rooms for sleeping purposes, and are registered to accommodate 1,777 persons nightly.

The number of persons who have been accommodated during the year is 382,718, the nightly average being 1,048.

The number of visits paid to these houses during the year by the Sanitary Officers is 1,955, and their reports shew the houses to have been fairly well conducted.

### Canal Boats.

There is still only one Canal Boat registered within the Borough, and this along with 153 others registered with other Authorities, but plying on the Canal within the Borough, has been examined by the Chief Inspector of Nuisances or his Assistant (Mr. Rhodes), with the result that five boats were found to have defective cabins and decks, three were not registered, and one was carrying an offensive cargo, without having provided double bulkheads as required by the regulations.

In all cases the owners were formally cautioned by the Chief Inspector of Nuisances by order of the Sanitary Committee.

### Adulteration of Food and Drugs.

During the year ending December, 1893, 241 samples of food were submitted to the Borough Analyst by the Food Inspector for analysis. Of these 224 were certified by the Analyst as not adulterated, and 17 were found to be adulterated. Four of the offenders were prosecuted before the Justices, and penalties amounting with costs to £4 19s. 6d. were inflicted.

The rest appeared before the Sanitary Committee, and were cautioned.

The following Table shews the nature of articles submitted for analysis, together with the amount of penalties and costs inflicted against the offenders for the year ending December, 1893.

ADULTERATION OF FOOD AND DRUGS for the year ending December, 1893.

NATURE OF FOOD.	Totals.	Pure.	Adulterated.	Summoned.	Convicted.	Censured.	Exposing Mar- garine for sale without being labelled.	Amount of Penalties.		Amount of Costs.		REMARKS.
								£	s.	d.	£	
Milk ... ..	167	158	9	...	...	2	...	...	...	...	...	
Pepper ... ..	17	16	1	...	...	...	...	...	...	...	...	
Lardine... ..	1	1	...	...	...	...	...	...	...	...	...	
Butter ... ..	17	16	1	...	...	...	...	...	...	...	...	
Baking Powder ... ..	4	4	...	...	...	...	...	...	...	...	...	
Soda Water... ..	2	2	...	...	...	...	...	...	...	...	...	
Ginger Beer... ..	1	1	...	...	...	...	...	...	...	...	...	
Margarine ... ..	4	...	...	3	3	...	4	2	1	...	...	
Chocolate ... ..	2	2	...	...	...	...	...	...	...	...	...	
Sauce ... ..	2	2	...	...	...	...	...	...	...	...	...	
Tinned Green Peas ... ..	1	1	...	...	...	...	...	...	...	...	...	
Vinegar .. ...	8	8	...	...	...	...	...	...	...	...	...	
Whiskey ... ..	1	1	...	...	...	...	...	...	...	...	...	
Flour ... ..	1	1	...	...	...	...	...	...	...	...	...	
Preserves ... ..	4	4	...	...	...	...	...	...	...	...	...	
Oatmeal ... ..	1	1	...	...	...	...	...	...	...	...	...	
Lard ... ..	1	1	...	...	...	...	...	...	...	...	...	
Cream of Tartar ... ..	3	3	...	...	...	...	...	...	...	...	...	
Paregoric ... ..	1	1	...	...	...	...	...	...	...	...	...	
Sweet Spirits of Nitre...	2	...	2	1	1	...	...	1	...	18	6	
Milk of Sulphur ... ..	1	1	...	...	...	...	...	...	...	...	...	
Totals ... ..	241	224	13	4	4	2	4	3	1	19	6	

## Dairies, Cow-Sheds, and Milk-Shops.

There are at present within the Borough registered under the Contagious Diseases (Animals) Act, 1878, 230 Cow-Sheds and 1,073 Dairies, Milk-Shops, and Purveyors of Milk as against 993 last year.

During the year 154 applications have been made for registration of premises for the sale of milk, and 30 of these were found upon inspection by the Sanitary Officers to be suitable, and have been registered accordingly.

One milk dealer whose milk vessels were found to be in dirty condition, was summoned before the Justices and a penalty of £5 8s. od, including cost, was inflicted; and several milk dealers for minor offences committed against the regulations appeared before the Sanitary Committee and were cautioned.

During the year periodical inspections have been made by the Sanitary Officers of all Cow-Sheds and Milk-Shops within the Borough, and where the Sanitary condition of any premises were found to be defective, notices were given to the owners and occupiers thereof requiring necessary improvements to be made.

The number of visits paid and inspections made by the officers has been as follows: Cow-Sheds, 804; Milk Shops, 2594; and Milk Vessels, 1,500.

## Inspection of Meat, Slaughter-Houses, Potted Meat and Sausage Manufactories.

There have been 191 seizures of Unsound Meat, Fish, and Fruit. In four cases the offenders were summoned before the Justices, and penalties and costs amounting to £5 9s. od. were inflicted. One appeared before the Sanitary Committee, and was cautioned as to his future conduct.

There have been seized and destroyed 20,326 lbs. of beef, 1,042 lbs of mutton, 1,410 lbs. of veal, 4,156 lbs. of pork, 21 tons 5 cwts. of fish, 71 bags of cockles, 93 bags of mussels, 611

boxes of kippers, 2 barrels of oysters, 52 stones of whiting, 3 bags of whelks, 1 barrel of crabs, 15 boxes of red herrings. 30 boxes of smelts, 1 basket of shrimps, 5 bags of tallow, 20 cwts. of cheese, 12 stones of onions, 100 chickens, 30 hares, 19½ couples of rabbits, 40 pigeons, 18 bags of peas, 6 barrels of pines, and 50 cocoanuts.

The number of Slaughter-houses under the old regulations is 8, the same as last year. The number of Slaughter-houses for which licences have to be applied for annually is 5.

The number of places at which Potted Meat and Sausages are made for sale is 72, the same as last year. These places are regularly visited and reported upon by the Inspectors.

The number of visits paid during the year has been as follows: Private Slaughter-houses, 423; Potted Meat and Sausage Works, 1,210. The Public Abattoirs are visited daily.

### Cattle Diseases.

During the year there has been only one outbreak of Swine Fever within the Borough, 5 animals being affected with the disease, 2 of which died, 3 were killed, and all the carcasses were burned on the owners' own responsibility and the direction of the Sanitary Officers

One case of Farcy occurred, and the animal was slaughtered and the carcass burned in accordance with the Orders in Council.

One dog found to be affected with rabies was destroyed, and the carcass was burned at the Hammerton Street Refuse Destructor Works, together with the carcass of another dog which had been in contact with the diseased animal, both animals being the property of Mr. James Bradley Beanland, farmer, Firth Carr, Heaton.

Yours obediently,

JAS. CHAMBERS.

REPORT  
OF  
INSPECTOR OF WORKSHOPS.

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[FIRST YEAR OF ADOPTION OF SHOP HOURS' ACT, 1892.]

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TO THE MEDICAL OFFICER OF HEALTH.

DEAR SIR,

Out of the total number of "Shops" visited, I found 951 in which young persons were employed, or where sanitary defects existed.

In 46 "Shops" young persons under the age of eighteen were found working over 74 hours per week, the hours extending as far as 100 hours in one case.

These were first offences. In case of second offence a letter from the Town Clerk has hitherto been sufficient.

I have found several breaches of Section Three, that is, of young persons being employed after having during the day been employed in factory or workshop.

Out of the total number of "Shops" visited, not more than a dozen had the required notice posted.

I have found a second offence in some few cases, these have been dealt with in the same way, namely, by letter from the Town Clerk.

I also visited 598 Workshops, a large number of these in cellars and attics, and difficult to ventilate.

The Committee have ordered four of these to be closed.

I found some workshops over stables.



These the Committee ordered to be closed.

Three cases of Overcrowding were dealt with, and necessary alterations made.

Twelve places were found where there was no separate accommodation for the sexes.

A large number of cases where time for limewashing was exceeded, have been dealt with in most cases, my visit was sufficient in others.

Notices were sent which have been complied with

FRANK ARMITAGE.

# APPENDIX.

*TABLE I.—Shewing the amounts of Small-pox in the Bradford Fever Hospital fortnight by fortnight, and the extent in which, during the successive fortnight, Houses in the neighbourhood of the Hospital became newly invaded by Small-pox.*

No. of Cases remaining in Hospital.	Period. Fortnight ending 1893.	Within 1 mile of the Hospital. Houses becoming newly invaded.					The Same in Rates per Cent. of Houses.					
		Total such Houses.	Of which Situated.				Rate on Total Houses.	Rate on Houses 0 to $\frac{1}{4}$ Mile.	Rate on Houses $\frac{1}{4}$ to $\frac{1}{2}$ Mile.	Rate on Houses $\frac{1}{2}$ to $\frac{2}{3}$ Mile.	Rate on Houses $\frac{2}{3}$ to 1 Mile.	Whole of the Borough.
			Under $\frac{1}{4}$ Mile from Hospital.	In Ring $\frac{1}{4}$ to $\frac{1}{2}$ Mile from Hospital.	In Ring $\frac{1}{2}$ to $\frac{3}{4}$ Mile from Hospital.	In Ring $\frac{3}{4}$ to 1 Mile from Hospital.						
4	Jan. 14	3	...	1	2	...	0.01	...	0.02	...	0.00	
7	" 28	1	...	...	...	0.00	...	...	...	0.02	0.00	
10	Feb. 11	4	...	2	2	...	0.02	...	0.02	...	0.00	
12	" 25	2	...	1	1	...	0.01	...	0.01	...	0.00	
14	Mar. 11	2	...	1	1	...	0.01	...	0.01	...	0.00	
19	" 21	5	1	...	4	...	0.02	0.06	0.05	...	0.01	
34	April 8	3	1	...	2	...	0.01	0.06	0.02	...	0.00	
31	" 22	11	3	2	5	1	0.06	0.19	0.05	0.02	0.01	
43	May 6	27	11	7	4	5	0.15	0.70	0.19	0.05	0.11	

91	...	20	...	31	7	7	11	0	0.10	0.51	0.11	0.07	0.02	0.01
97	June	3	...	19	8	4	6	1	0.11	0.51	0.11	0.07	0.02	0.01
108	"	17	...	33	9	16	5	3	0.19	0.57	0.45	0.16	0.06	0.01
82	July	1	...	25	8	10	2	5	0.14	0.51	0.28	0.02	0.11	0.10
67	"	15	...	13	3	6	2	2	0.07	0.19	0.16	0.02	0.04	0.01
86	"	29	...	34	13	9	8	4	0.19	0.83	0.25	0.10	0.08	0.03
66	Aug.	12	..	18	8	5	3	2	0.10	0.51	0.14	0.13	0.04	0.02
58	"	26	..	20	5	7	7	1	0.11	0.32	0.19	0.09	0.02	0.01
60	Sept.	9	...	35	11	16	7	1	0.20	0.70	0.45	0.09	0.02	0.01
19	"	23	...	36	10	20	4	2	0.20	0.63	0.56	0.05	0.04	0.01
85	Oct.	7	...	54	17	26	9	2	0.31	1.10	0.73	0.11	0.04	0.02
161	"	21	...	35	10	11	9	5	0.20	0.63	0.31	0.11	0.11	0.18
129	Nov.	4	...	30	7	12	10	1	0.17	0.45	0.33	0.13	0.02	0.03
180	"	18	..	101	15	46	28	12	0.58	0.96	1.30	0.36	0.26	0.04
122	Dec.	2	..	40	6	12	19	3	0.23	0.37	0.33	0.25	0.06	0.04
82	"	16	..	28	9	13	5	1	0.16	0.57	0.36	0.06	0.02	0.01
38	"	30	...	16	...	8	7	1	0.09	...	0.22	0.10	0.02	0.00
				626	162	242	163	59	3.6	10.4	6.8	2.1	1.00	

TABLE II.

Showing the amount of Smallpox in the Bradford Fever Hospital fortnight by fortnight, and the extent in which, during the successive fortnights, Houses, in quadrants north-east, north-west, south-east and south-west of the Hospital, became newly invaded by Smallpox.

Number of Cases remaining in Hospital.	Period. Fortnight ending.	Within 1 mile of the Hospital. Houses becoming newly invaded.					The same in rates per cent. of houses.				
		Total such houses.	Of which situated in four quadrants of 1/4-mile zones.				Rate on total houses.	Four 1/4-mile quadrants. North-East.	Four 1/4-mile quadrants. North-West.	Four 1/4-mile quadrants. South-East.	Four 1/4-mile quadrants. South-West.
			North-East.	North-West.	South-East.	South-West.					
4	Jan. 14	3	1	1	2	0.01	...	0.01	...	0.03	
7	" 28	1	...	...	1	0.00	...	...	...	0.01	
10	Feb. 11	4	2	1	1	0.02	0.12	0.01	0.02	...	
12	" 25	2	1	...	1	0.01	0.06	...	0.02	...	
14	Mar. 11	2	...	2	...	0.01	...	0.03	...	...	
19	" 25	5	...	3	2	0.02	...	0.04	0.05	...	
24	April 8	3	...	2	1	0.01	...	0.03	0.02	...	
31	" 22	11	...	6	2	0.06	...	0.09	0.05	0.05	
43	May 6	27	2	7	1	0.15	0.12	0.11	0.02	0.29	

97	June 3	...	19	2	5	193	172	3.64	7.06	2.40	5.28	2.93
108	" 17	...	33	5	14							
82	July 1	...	25	...	12							
67	" 15	..	13	1	4							
86	" 29	...	34	...	13							
66	Aug. 12	...	18	...	6							
58	" 26	...	20	2	5							
60	Sept. 9	...	35	9	2							
19	" 23	...	36	4	3							
85	Oct. 7	...	54	8	4							
161	" 21	..	35	8	10							
129	Nov. 4	...	30	7	8							
180	" 18	..	101	46	11							
122	Dec. 2	...	40	10	8							
82	" 16	..	28	2	2							
38	" 30	...	16	4	4							
			626	116	145	193	172	3.64	7.06	2.40	5.28	2.93



REPORT  
OF THE  
MEDICAL SUPERINTENDENT  
OF THE  
FEVER HOSPITAL,  
FOR THE YEAR 1893

---

DURING the past year, 1,315 patients have passed through the wards of this hospital. This is by far the largest number ever recorded, and has never been approached in any previous year.

This great increase has been entirely due to the severe epidemic of small-pox which has prevailed during the year, the number of Scarlet Fever and Enteric Fever patients being far below the average. This may be accounted for by the fact that as the number of small-pox cases increased, the admission of fever patients was restricted, and, finally, early in June the last fever cases were discharged, and the hospital was used entirely for small-pox.

The percentage death-rate has been 10.3 on the total admissions.

Small-pox has been the principal disease treated in the hospital—935 cases having been admitted. This is the most severe epidemic recorded; the last epidemic being in 1874, when 249 patients were admitted to the hospital. At the commence-

ment of the present year the admissions gradually increased in number until the middle of April, when a sudden outburst occurred which continued with almost unabated severity throughout the year. Towards the end of March the recently erected small-pox wards, which could accommodate about 20 patients, became full, and those wards usually reserved for fever patients were opened for the admission of small-pox. The following are the dates on which the different wards were closed for fever and utilized for small-pox, viz.:—Ward IV. was closed for Scarlet Fever on the 28th of January, and Ward III. closed on February 11th. On April 1st, Ward IV. was opened for admission of small-pox cases, and a partition erected in the corridor between this Ward and Ward III. On April 24th the fever patients were transferred from Ward V. to Wards III. and II. on account of an outbreak of measles in Ward V. On May 3rd the fever patients in Ward III. were removed to Ward I. in order to have them as far as possible from Ward IV. This had not been possible before on account of a case of Enteric Fever occupying Ward I. On May 11th the fever patients were moved back to Ward V. Wards III. II. and I. were now opened for small-pox. On May 16th one of the male patients, who was suffering from Scarlet Fever, developed small-pox. Thirteen days previous to this attack all the patients in Ward III. had been moved to Ward I. It was noticed that on the day of their removal a strong wind was blowing directly from Ward IV. to Ward III. I think that in all probability the infection was conveyed by this means, the two Wards being parallel with one another at a distance of 60 feet. Another Scarlet Fever patient was attacked with small-pox on June 3rd. He had been in the same Ward as the previous case and had contracted the disease from him. Early in September the temporary hospital at Scholemoor was opened for small-pox, and fresh cases were admitted there. There was a slight remission of the disease during August and September, and it was hoped that by the removal of patients to Scholemoor it would die out. Unfortunately, on October 2nd, Scholemoor hospital caught fire, and the patients, 46 in number, were conveyed to the Leeds

Road hospital. This was followed by a fresh outburst of the epidemic. During the second and third weeks following, 120 cases were admitted to hospital. The highest point was reached in November, when 205 cases were in the hospital. The Wards were inconveniently crowded at this time, and it was feared that the hospital accommodation would be insufficient. The epidemic now, fortunately, began to abate again, the numbers slowly decreasing to the end of the year, when 38 patients only remained under treatment.

TABLE I.

*Showing Monthly Admissions and Deaths from Smallpox in 1893.*

MONTH.	Admissions.	Deaths.
January ... ..	13	2
February ... ..	9	...
March ... ..	20	...
April ... ..	47	5
May ... ..	95	5
June ... ..	84	9
July ... ..	89	8
August ... ..	81	11
September ... ..	51*	6
October ... ..	216†	24
November ... ..	196	24
December ... ..	34*	6
TOTAL ... ..	935	100

\*Cases now being admitted to Scholemoor Hospital.

†Scholemoor Hospital caught fire October 2nd, and 46 patients transferred to the Fever Hospital in Leeds Road.



The influence of Vaccination on the prevention of small-pox, and also on the mitigation of its severity in those attacked, is shown in a very marked manner in the present epidemic. Out of 935 cases, 229 present no vaccination marks, and of these 64 or 27·9 per cent. died. Of the remaining 706, 704 had been vaccinated, and two had suffered from a previous attack of small-pox. Of the 704 vaccinated cases 36 died, giving a death-rate of 5·1 per cent.

TABLE II.

*Showing number of Admissions, Deaths, and Case Mortality at different age periods of Smallpox Patients presenting no evidence of Vaccination.*

AGES.	MALES		FEMALES.		TOTAL.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths	Mortality per cent.
Under 1	8	4	9	5	17	9	52·9
1—5	27	9	28	12	55	21	38·1
5—10	18	2	14	6	38	8	25
10—15	18	2	21	4	39	6	15·3
15—20	12	1	10	...	22	1	4·5
20—30	21	8	17	4	38	12	31·5
30—40	11	6	9	1	20	7	35·0
Over 40	13	7	10	2	23	9	39·1
TOTAL ...	120	35	109	29	229	64	27·9

TABLE III.

*Showing Admissions, Deaths, and Percentage Fatality at the different age periods in Persons known to have been Vaccinated.*

AGES.	MALES.		FEMALES.		TOTAL.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Mortality per cent.
Under 1	...	...	...	...	...	...	...
1—5	...	...	2	...	2	...	...
5—10	5	...	12	...	17	...	...
10—15	16	...	19	...	35	...	...
15—20	37	..	48	2	85	2	2·3
20—30	132	2	116	5	248	7	2 8
30—40	111	7	75	5	186	12	6·4
Over 40	64	10	67	5	131	15	11·4
TOTAL ...	365	19	339	17	704	36	5·1

Thirty-two patients were admitted who had been vaccinated during the incubation stage of the disease, and of these 18 had not been vaccinated in infancy, two of which died. The remaining 14 had been re-vaccinated during the incubation period, and one ended fatally. In the three fatal cases vaccination had been performed at a late stage of the incubation period. The following table shows that although vaccination during incubation may not prevent an attack of small-pox, yet if performed during the first week it has great influence in lessening the severity of attack.

TABLE IV.

*Giving circumstances of Smallpox attack in persons Vaccinated for the first time during the Smallpox incubation period.*

	Age.	Date of Vaccination.	Date of Commencement of Illness.	Type of Disease.	Result.
H.W.	3	Nov. 14	Nov. 21	Mild Discrete	Recovered
D.E.W.	2	Nov. 2	Nov. 7	" "	"
E.W. ...	3	Oct. 30	Nov. 2	" "	"
A.W.	12 days	Nov. 7	Nov. 8	Semi-confluent	Died
T.C. ...	5	Oct. 20	Oct. 25	severe Confl in't	,
M.A.M.	62	Feb 17	Feb. 23	Discrete	Recovered
W.H.L.	5	Mar. 20	Mar. 24	Mild Discrete	"
N.K. ...	4	May 17	May 25	" "	"
E.V. ..	5	Oct. 16	Oct. 25	" "	"
P.M. ...	4	July 17	July 21	" "	"
S.H. ..	15	May 2	May 6	Confluent	"
E.H. ...	17	May 2	May 5	"	"
J.R.S.	1 month	Oct. 22	Nov. 2	Discrete	"
A.A. ...	11	Oct. 21	Oct. 27	Mild Discrete	"
S.C. ..	16	Aug. 1	Aug. 9	Confluent	"
F.F. ...	6 months	Aug. 11	Aug. 15	Mild Discrete	"
M.H. ...	12	Sept. 25	Oct. 4	Confluent	"
J.P. ..	2 months	Oct. 16	Oct. 23	Discrete	"

TABLE V.

*Giving circumstances of Smallpox attack in persons Re-vaccinated during the Smallpox Incubation Period.*

	Age.	Primary Vaccination Marks.	Date of Re-Vaccination.	Date of onset of attack.	Type of Disease.	Result.
I.W. ...	25	3 faint	Nov. 18	Nov. 25	Discrete	Recov'd
E.M. ...	25	2 fair	Oct. 31	Nov. 3	"	"
M.E.W.	27	2 fair	Nov. 19	Nov. 27	"	"
S.A.W.	42	3 fair	Oct. 30	Nov. 7	"	"
E.F. ...	38	2 good	Oct. 11	Oct. 21	"	"
A.H. ...	46	2 fair	Oct. 24	Nov. 5	"	"
W.S. ...	36	3 good	May 8	May 8	"	"
E.A.H.	38	3 faint	Oct. 17	Oct. 19	Confluent	Died
H.N C.	37	1 faint	Oct. 28	Nov. 6	Discrete	Recov'd
J.W. ...	44	2 fair	Nov. 29	Dec. 2	Semi-confluent	"
F.B. ...	28	2 good	Nov. 27	Nov. 28	Discrete	"
S.E. ...	13	2 fair	Oct. 18	Oct. 20	"	"
I.F. ...	14	4 good	Oct. 5	Oct. 11	"	"
T.B. ...	27	2 good	May 3	May 7	"	"

There were seven cases admitted who had contracted small-pox after re-vaccination, the operation had, however, been performed in each case some years previously. No deaths occurred amongst these patients.

TABLE VI.

*Giving circumstances in reference to Re-Vaccination in persons attacked by Smallpox.*

	Age.	Character of Primary Scars.	Character of Re-Vaccinated Scars.	Age when Vaccinated.	Type of Disease.	Result.
W.A. ...	60	1 faint	...	...	Discrete	Recov'd
J.T. ...	40	2 good	...	13	Semi-confluent	„
W.C. ...	39	2 fair	2 faint	...	Discrete	„
E.H. ..	40	1 fair	2 faint	30	...	„
E.R. ...	40	2 fair	1 faint	14	...	„
M.J.T.	27	4 fair	1 faint	5	...	„
T.B. ...	37	2 faint	...	12	...	„

There were also 10 patients sent in as small-pox who were found on admission to be suffering from other diseases, viz.:—Three chicken-pox, one erythema, one measles, one syphilis, one urticaria, one lichen, one scarlet fever, and one nil. Three of these cases, although isolated and vaccinated soon after admission, developed small-pox; the attack was, however, of a mild discrete character in each case.

It will be a source of great congratulation to know that no member of the hospital staff took the disease, although its members were *constantly breathing the infected atmosphere of the Wards, and most unremitting in their attention to the sufferers.* The total number of the staff amounted to 90, and all were protected by vaccination before being allowed to commence their duties.

A workman, who surreptitiously entered a corridor in connection with a Ward used for small pox, caught the disease and suffered from a mild attack.

Scarlet Fever has been accountable for the admission of only 228 patients, this being the smallest number since 1882, when 213 Scarlet Fever patients were treated in hospital. This was due, as I have stated previously, to the closing of the hospital to fever patients in June. The death-rate from this disease was 7·8 per cent.

TABLE VII.—SCARLET FEVER.

*Showing Admissions, Deaths, and Percentage Fatality for the year 1893.*

Age.	MALES.		FEMALES.		TOTAL.		
	No. Admitted.	No. Died.	No. Admitted.	No. Died.	Total Admitted.	No. Died.	Fatalities per cent.
Under 1	1	...	...	...	1	...	..
1—2	1	...	3	...	4	...	...
2—3	11	1	4	1	15	2	13·3
3—4	9	...	9	3	18	3	16·6
4—5	4	3	9	3	13	6	46·1
5—10	48	2	46	2	94	4	4·2
10—15	24	...	25	...	49	...	...
15—20	13	...	12	2	25	2	8·0
20—25	2	...	2	...	4	...	...
25—30	2	...	2	...	4	...	...
30—40	...	...	...	...	...	...	...
Over 40	1	...	...	...	1	...	...
TOTAL ...	116	6	112	11	228	17	7·8

Eleven cases of Enteric Fever were admitted, and of these four died.

*ENTERIC FEVER.*

*Showing Admissions, Deaths, and Percentage Fatality for the year 1893.*

Age.	MALES.		FEMALES.		TOTAL.		
	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Mortality per cent.
Under 10	...	...	...	...	...	...	...
10—15	2	1	2	...	4	1	25·0
15—20	2	1	..	...	2	1	50 0
20—30	2	..	3	2	5	2	40·0
Over 30	...	...	...	...	...	...	...
TOTAL ...	6	2	5	2	11	4	36·3

Three cases of diphtheria were admitted, and one died.

Twelve cases other than those scheduled in the notification act were admitted, viz.:—Measles three, chicken-pox three, syphilis one, erythema one, urticaria one, lichen one, nil two. No deaths occurred amongst these patients.

## SUMMARY.

YEAR.	SMALL-POX.			ENTERIC FEVER.			SCARLET FEVER.			OTHER DISEASES.			TOTAL.			FROM 1872 TO 1893	
	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Aggregate No. of days spent in Hospital.	Average No. of days for each Patient.
1872	63	6	9.5	48	9	18.7	14	...	...	37	6	16.2	162	21	13.01	4,546	28
1873	94	15	16.0	54	16	29.7	19	1	5.2	36	7	18.9	203	29	14.28	6,211	30½
1874	249	48	19.27	51	11	21.5	58	6	10.34	53	12	22.6	412	76	18.44	11,715	28½
1875	20	2	10.0	44	6	13.5	103	19	18.4	37	3	8.1	204	30	13.59	6,275	30¾
1876	12	...	...	40	5	12.5	35	9	26.0	26	5	19.2	113	19	18.8	2,876	27¼
1877	19	4	21.05	65	13	20.0	72	9	12.5	27	8	29.6	183	34	18.5	5,579	31½
1878	5	1	20.00	55	13	23.6	148	17	11.5	27	3	11.1	237	34	14.3	9,263	39
1879	8	...	...	24	3	12.5	159	14	8.8	23	4	17.39	214	21	9.8	8,414	39



1880	2	1	50.0	60	8	13.3	248	38	15.3	54	1	...	51	51	11.97	16,073	37½
1881	21	2	9.5	61	7	11.5	317	42	13.2	27	...	...	426	51	11.97	16,073	37½
1882	26	3	8.8	88	17	19.3	213	31	14.5	39	5	12.8	366	56	15.32	14,766	40
1883	5	...	...	119	17	14.2	233	17	7.2	23	2	8.6	375	36	9.6	15,949	42½
1884	3	...	...	93	17	18.2	237	11	4.6	29	4	13.7	362	32	8.8	14,215	39½
1885	28	2	7.14	89	6	6.74	456	19	4.16	23	8	34.7	596	35	5.89	21,391	36
1886	4	...	...	83	8	9.63	625	29	4.64	14	2	14.3	726	39	5.37	29,305	40½
1887	3	...	...	79	7	8.86	830	21	2.27	9	5	55.5	921	33	3.58	38,609	42½
1888	16	2	12.5	57	6	10.53	283	12	4.24	11	1	9.9	367	21	5.72	16,479	46
1889	9	1	11.11	90	26	28.89	355	40	11.27	36	6	16.69	490	73	14.90	21,315	43½
1890	...	...	...	59	11	18.64	380	22	5.78	43	12	27.90	484	45	9.30	19,940	41½
1891	...	...	...	76	15	19.6	780	83	10.6	39	10	25.6	897	108	12.04	39,838	44
1892	25	4	16.6	41	11	26.8	587	27	4.6	32	7	21.8	685	49	7.2	29,191	42½
1893	935	100	10.6	11	4	36.3	228	17	7.8	12	1	8.3	1186	122	10.2	34,203	28.8

During the height of the epidemic the strain on the administrative part of the hospital was very great. The laundry, which was in very bad repair, proved inadequate to the needs of the establishment. Plans, however, were prepared for enlarging and re-modelling it. The nurses' dining-room, which had been commenced in the autumn of the previous year, was finished during the summer. The annual cleaning down of the Wards has not been carried out this year, except in Ward V., which was thoroughly cleaned down in August. Arrangements were being made to clean the remaining Wards as soon as they were free from small-pox patients. On October 2nd, however, the fire at Scholemoor necessitated Ward V. being utilized for the reception of small-pox, and as the number of admissions then rapidly increased all the remaining Wards became fully occupied, and all hope of cleaning them down had to be given up for the time. I am pleased to report that the health of the nurses has been very good. One nurse contracted Scarlet Fever in the early part of the year, this being the only case of illness amongst them. In previous years their health has not been good, attacks of fever and sore throat being frequent. I have also much pleasure in stating that they have performed their duties in a very satisfactory manner. Their work has been very arduous, especially in the latter part of the year, when there were a great number of severe cases in the hospital. Mrs. Daly, the Superintendent of Nurses, left in December, having obtained the post of Matron at the Park Hill Fever Hospital, Liverpool.

I have the honour to be,

Yours faithfully,

A. E. FOSTER.





## BRADFORD UNION.—Vaccination Report for the Year 1892.

ABSTRACT OF RETURNS made on the 7th day of February, 1894, by the Vaccination Officers of the Bradford Union, respecting the Vaccination of Children whose Births have been Registered from 1st January, 1892, to 31st December, 1892, inclusive.

Registration— Sub-Districts.	Number of Births registered from 1st Jan., 1892, to 31st Dec., 1892.	Number of these Births duly entered by 7th Feb., 1894, in "Vaccination Register."					Total duly entered in the Register as finally accounted for.	Per centage of cases finally accounted for to total Births.	Number of these Births which on 7th Feb., 1894, remained unentered in the "Vaccination Register" on account (as shewn by Report Book) of				All cases not accounted for in preceding columns.
		Col. 10. "Successfully Vaccinated."	Col. 11.		Col. 13. "Dead Unvaccinated."	Postpone-ment by Medical Certificate.			Removals and Cases not found.				
			"Insus-ceptible of Vaccina-tion."	"Had Small Pox."									
1	2	3	4	5	6	7	8	9	10	11	12	13	
1. Bowling ...	991	658	2	...	136	796	80.3	...	105	...	...	90	
2. Bradford East	1707	1070	2	...	246	1318	77.2	21	195	...	...	173	
3. Bradford West	1638	1090	3	...	212	1305	79.7	9	149	...	...	175	
4. Horton .. ...	1308	782	7	...	157	946	72.3	8	105	...	...	249	
TOTAL ... ..	5644	3600	14	...	751	4365	77.3	38	554			687	



# TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS,

Coming to the knowledge of the Medical Officer of Health, during the year 1893, in the Urban Sanitary District  
of Bradford, classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics.  (a)	POPULATION AT ALL AGES.		Registered Births.  (d)	Aged under 5 or over 5.  (e)	NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.											NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.												
	Census 1891.  (b)	Estimated to middle of 1893.  (c)			1 2 3 4 5 6 7 8 9 10 11											1 2 3 4 5 6 7 8 9 10 11												
					Smallpox. Scarlatina. Diphtheria. Membranous Croup. Typhus. Enteric or Typhoid. Continued. Relapsing Puerperal. Cholera. Erysipelas.											Smallpox. Scarlatina. Diphtheria. Membranous Croup. Typhus. Enteric or Typhoid. Continued. Relapsing Puerperal. Cholera. Erysipelas.												
	FEVERS.											FEVERS.																
North ... ..	12783	13093	356	Under 5 ... .. 5 and upwards	2 56	21 42	...	...	...	...	7	...	...	2	...	2	2 56	2 10	...	...	...	1	...	...	...	...	...	...
South (H) ... ..	13124	13442	388	Under 5 ... .. 5 and upwards	19 255	15 44	5	...	...	...	14	...	...	1	...	15	19 254	3	1	...	...	...	...	...	...	...	...	...
East ... ..	15583	15061	457	Under 5 ... .. 5 and upwards	3 69	31 85	10	3	...	...	11	...	1	...	...	7	3 69	6 15	...	...	...	3	...	...	...	...	...	...
West ... ..	14216	14561	359	Under 5 ... .. 5 and upwards	2 27	27 55	1	3	...	...	9	3	...	1	...	24	2 27	8 20	...	...	...	...	...	...	...	...	...	...
Listerhills ... ..	18696	19150	470	Under 5 ... .. 5 and upwards	1 43	21 62	7	...	...	...	11	1	...	1	...	8	1 43	3 10	...	...	...	...	...	...	...	...	...	...
Great Horton (H) ... ..	14768	15131	396	Under 5 ... .. 5 and upwards	2 18	11 31	...	2	...	...	3	...	...	2	...	12	2 18	1 2	...	...	...	...	...	...	...	...	...	...
Little Horton ... ..	15306	15676	432	Under 5 ... .. 5 and upwards	2 35	24 45	1	1	...	...	14	...	...	3	...	11	2 35	9 18	...	...	...	...	...	...	...	...	...	...
East Bowling ... ..	16068	16453	481	Under 5 ... .. 5 and upwards	6 50	31 44	2	1	...	...	18	...	...	...	1	14	6 50	1 5	...	...	...	...	...	...	...	...	...	...
West Bowling ... ..	17250	17669	527	Under 5 ... .. 5 and upwards	2 27	23 48	1	3	...	...	21	...	...	2	...	11	2 27	4 29	1	...	...	1	...	...	...	...	...	...
Exchange ... ..	4846	4964	120	Under 5 ... .. 5 and upwards	1 24	5 14	...	...	...	...	11	...	...	1	...	2	1 24	1 1	...	...	...	...	...	...	...	...	...	...
Bradford Moor ... ..	17520	17945	547	Under 5 ... .. 5 and upwards	14 246	10 42	1	4	...	...	29	...	...	...	...	14	14 245	2 13	...	...	...	...	...	...	...	...	...	...
Manningham ... ..	22469	23014	676	Under 5 ... .. 5 and upwards	4 46	51 151	2	2	...	...	9	...	...	3	...	9	4 45	5 29	...	...	...	...	...	...	...	...	...	...
Bolton ... ..	8425	8630	250	Under 5 ... .. 5 and upwards	1 11	74 201	...	1	...	...	9	...	...	...	...	6	1 11	11 38	...	...	...	1	...	...	...	...	...	...
Heaton ... ..	16108	16499	390	Under 5 ... .. 5 and upwards	1 11	46 137	...	2	...	1	12	1	...	...	1	4	1 11	8 31	...	...	...	2	...	...	...	...	...	...
Allerton ... ..	9199	9422	263	Under 5 ... .. 5 and upwards	1 16	10 44	...	...	...	...	12	...	...	...	...	2	1 16	1 11	...	...	...	...	...	...	...	...	...	...
<b>BOROUGH TOTALS ... ..</b>	<b>216361</b>	<b>221610</b>	<b>6112</b>	Under 5 ... .. 5 and upwards	61 934	400 1045	13 58	14 4	...	...	8 207	1 4	...	...	1 19	...	4 141	61 931	63 235	1 1	...	...	8	...	...	...	...	...





# TABLE OF DEATHS DURING THE YEAR 1893,

In the Urban Sanitary District of Bradford, classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics.  (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)	MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																												
	At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 60. (g)	60 and upwds. (h)		Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	FEVERS.									Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL.			
													Typhus.	Euteric or Typhoid.	Continued.	Relapsing.	Puerperal.	10	11	12	13														14	15	16
North ... ..	278	82	42	10	20	80	44	Under 5 ... .. 5 and upwards	...	4	...	2	...	...	1	1	...	...	...	...	...	...	6	21	...	...	...	30	44	...	...	...	60	62	124	154	
South ... ..	432	117	69	33	26	127	60	Under 5 ... .. 5 and upwards	22 80	10 9	6	...	...	...	6	...	...	1	...	...	...	1	...	12	19	...	...	1	26	28	3	1	83	61	186	246	
East ... ..	257	78	38	7	20	56	58	Under 5 ... .. 5 and upwards	...	3	...	3	...	...	1	...	...	...	...	...	...	...	3	4	10	...	...	...	30	29	...	...	3	64	64	116	141
West ... ..	462	99	52	23	34	165	89	Under 5 ... .. 5 and upwards	...	3	1	1	...	...	4	...	...	...	...	...	...	2	8	11	34	...	...	3	24	1	6	59	141	151	211		
Listerhills ... ..	324	80	28	10	3	105	88	Under 5 ... .. 5 and upwards	...	1	...	...	...	...	3	...	...	...	...	...	...	...	2	6	8	...	...	3	21	...	1	66	96	108	216		
Great Horton ... ..	251	59	34	9	20	61	68	Under 5 ... .. 5 and upwards	1 8	3	...	...	...	...	6	...	...	1	...	...	...	4	5	12	4	...	...	2	16	...	2	48	67	93	158		
Little Horton ... ..	511	84	46	17	19	172	173	Under 5 ... .. 5 and upwards	...	2	1	2	...	...	3	2	...	...	...	...	...	2	3	4	15	...	...	1	28	...	1	69	182	130	381		
East Bowling ... ..	303	87	51	20	13	67	65	Under 5 ... .. 5 and upwards	...	3	2	...	...	...	8	...	...	...	...	...	...	...	11	6	15	...	...	21	28	...	1	72	70	138	165		
West Bowling ... ..	343	97	65	15	22	78	66	Under 5 ... .. 5 and upwards	...	3	1	...	...	...	3	...	...	1	...	...	...	...	9	13	30	...	...	32	42	...	...	64	80	162	181		
Exchange ... ..	100	31	14	3	3	31	18	Under 5 ... .. 5 and upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	7	...	...	...	12	6	...	1	29	17	45	55		
Bradford Moor ... ..	331	98	43	17	19	75	79	Under 5 ... .. 5 and upwards	...	...	1	...	...	...	6	...	...	...	...	...	...	...	2	22	...	...	3	32	...	...	...	81	95	141	190		
Manningham ... ..	421	129	58	15	29	97	93	Under 5 ... .. 5 and upwards	1	4	1	1	...	...	2	...	...	...	...	...	...	2	15	5	26	...	...	1	39	1	1	93	113	187	234		
Bolton ... ..	154	40	25	9	9	35	36	Under 5 ... .. 5 and upwards	...	8	2	...	...	...	...	...	...	...	...	...	...	1	2	1	2	...	...	...	16	...	...	35	52	65	89		
Heaton ... ..	284	82	45	17	15	66	59	Under 5 ... .. 5 and upwards	...	3	...	3	...	...	1	...	...	...	...	...	...	...	3	13	13	...	...	3	20	...	2	66	73	127	157		
Allerton ... ..	181	48	18	4	10	48	53	Under 5 ... .. 5 and upwards	...	1	...	...	...	...	4	...	...	...	...	...	...	...	6	5	7	...	...	1	11	...	2	33	59	66	115		
<b>BOROUGH TOTALS</b> ... ..	<b>4632</b>	<b>1211</b>	<b>628</b>	<b>209</b>	<b>272</b>	<b>1263</b>	<b>1049</b>	Under 5 ... .. 5 and upwards	<b>23</b> <b>90</b>	<b>48</b> <b>23</b>	<b>13</b> <b>6</b>	<b>12</b> <b>...</b>	<b>...</b> <b>...</b>	<b>...</b> <b>...</b>	<b>1</b> <b>47</b>	<b>3</b> <b>2</b>	<b>...</b> <b>...</b>	<b>...</b> <b>5</b>	<b>...</b> <b>...</b>	<b>...</b> <b>...</b>	<b>...</b> <b>...</b>	<b>4</b> <b>6</b>	<b>66</b> <b>2</b>	<b>95</b> <b>2</b>	<b>241</b> <b>51</b>	<b>...</b> <b>21</b>	<b>...</b> <b>...</b>	<b>18</b> <b>362</b>	<b>370</b> <b>545</b>	<b>5</b> <b>323</b>	<b>18</b> <b>76</b>	<b>922</b> <b>1232</b>	<b>1830</b> <b>2793</b>				

