County

Borough  of Bolton

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR

1933.

BOLTON:
ROBT. WHEWELL & SON, 5-13, FOLDS ROAD,
1934.

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PUBLIC HEALTH DEPARTMENT,

BOLTON.

29th June, 1934

To the Chairman and Members of the Public Health Committee.

LADIES AND GENTLEMEN,

I have the honour to submit the report for 1933, the Sixty-second Annual Report on the health of Bolton.

The health of the town was satisfactory during the year under review. The death-rate was 14·1 per 1000 of the population, an increase of 1·6 per 1000 of the population compared with the previous year. The increase was mainly due to an influenza epidemic in the first quarter of the year. The infantile mortality rate was 78. The birth-rate of 11.9 constitutes a new record of infertility in our population. The lowest birth-rate previously recorded in Bolton was 13·2 (1932).

During the year there were 2,499 deaths and 2,123 births giving a natural decrease in the population of 376.

A table is again reproduced giving vital statistics for the wards of the town. In relation to this table it must be remembered that the ward vital statistics are calculated on very small figures and that as a result, big ranges of possible error are introduced. The unusual transfer of families from one ward to another brought about by municipal housing activity makes the estimate of the ward populations inaccurate. For these reasons the table has a very limited value.

There was a considerable epidemic of scarlet fever during the year and ten deaths occurred. One case of mild small-pox was notified. The infection appeared to have been acquired whilst the patient was on holiday in a Lancashire coast resort.

The epidemic disease during the year overtaxed the resources of the Isolation Hospital. In the event of a serious epidemic of diphtheria or cerebro-spinal fever, the local authority would have considerable difficulty in fulfilling its obligations in the existing fever hospital. The Public Health Committee have given serious consideration to the question of more adequate provision for the treatment of infectious diseases. It is hoped that in the near future there will be modernised and additional accommodation for patients, and improved arrangements for the housing and the training of the nursing staff.

The work of dealing with insanitary houses in relation to the Housing Acts has proceeded during the year and some progress has been made. The problem of houses let in lodgings remains very difficult of solution. The byelaws which came into operation in 1932 are proving helpful in many ways, but it is difficult to anticipate that any byelaws will convert houses let in lodgings into satisfactory homes for rearing of children into healthy citizens.

The maternal mortality remains high. There is no apparent reason for this regrettable fact.

During the year the Ministry of Health caused an inspection of the Bolton Health Services to be made. The communication from the Ministry of Health relating to the findings of the Surveying Officers is reproduced on page 23 of this report.

Three of our Sanitary Inspectors left us during the year and Messrs. Slater, Farries and Maddocks were appointed to fill the vacancies.

Public acknowledgement should again be made of the loyal service of the Public Health Staff.

To you Mr. Chairman, Ladies and Gentlemen, I would again acknowledge the constant courtesy and consideration which I have experienced at your hands.

I am, Ladies and Gentlemen,

Your obedient Servant,

R. M. GALLOWAY,

Medical Officer of Health
and School Medical Officer.

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COUNTY BOROUGH OF BOLTON.

Public Health Committee.

THE MAYOR, ALD. E. MONKS, J.P.

Chairman—ALD. T. HALSTEAD, J.P.

Vice-Chairman—COUNC. H. D. SCOWCROFT.

ALD. SIR T. E. FLITCROFT, J.P.
" B. KIRKMAN, J P.
COUNC. T. BAILEY.
" F. BENTLEY.
" H. CROMPTON.
" MRS. A. E. DOWLING.
" W. M. FARRINGTON.
" E. D. JONES.
" T. H. LEE.
" J. S. LOMAX.
" SIR F. R. MALLETT.
" DR. R. D. MOTHERSOLE.
" J. PARKINSON.
" T. PROFIT.
" J. SHUTTLEWORTH.
" W. W. TONG, M.SC.TECH.
" MRS. H. WRIGHT.

Public Health and Medical Inspection Staff.

WHOLE-TIME OFFICERS.

School Nurses—
1. Miss R. Boddington, 3 years' Cert.
2. Miss J. Robbins, 3 years' Cert.
3. Miss D. Walmsley, Cert. Midwife and 3 years' Cert.
4. Miss F. G. Leech, Cert. Midwife and 3 years' Cert.
5. Miss E.A.Aspinall, Cert.Midwife and 3 years' Cert.

Health Visitors—
1. Miss A. Marsh, 3 years' Cert.
2. Miss E. Tanner, 3 years' Cert.
3. Mrs. E. Blackburn, 3 years' Cert.
4. Mrs. J. Martin, Cert. Midwife, 3 years' Cert. and Cert. for Health Visitors (Board of Education)
5. Miss E. M. Halliday, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.
6. Mrs. A. Butler, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.
7. Miss L. Milner, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.

Matron: Haslam Maternity Home—Miss L. E. Evans.

Matron: Borough Fever Hospital—Miss E. Bateman.

Sanitary Inspectors—
1. E. Sumner, Cert. R.S.I.
2. T. Ormrod, Cert. R.S.I.
3. C. J. Dawson, Cert. R.S.I.
4. T. Isherwood, Cert. R.S.I.
5. H. Whitaker, Cert. R.S.I. (Food Inspector).
6. J. H. McAdam, Cert. S.I.B. (Smoke Inspector).
7. J. H. Willett, Cert. R.S.I.
8. J. A. Slater, Cert. S.I.B.
9. I. M. G. Farries, Cert. S.I.B.
10. L. F. A. Maddocks, Cert. S.I.B.

Chief Clerk—H. Daniels. Cert. R.S.I.

Veterinary and Chief Meat Inspector—R. P. Holmes, F.R.C.V.S.

Public Analyst and Bacteriologist—H: Hurst, B.Sc., F.I.C.

Assistant Medical Officers of Health and Assistant School Medical Officers—
Isabella Sim, M.B., Ch.B., D.P.H.
J. Litt, M.B., Ch.B., D.P.H., M.R.C.V.S.

Assistant Medical Officer of Health and Maternity and Child Welfare Officer—
Mary E. Boullen, M.B., Ch.B., D.P.H.

Tuberculosis Officer and Deputy Medical Officer of Health—
D. A. Woodeson, M.B., Ch.B., D.P.H.

Medical Officer of Health and School Medical Officer—
R. M. Galloway, M.D. D.P.H.

Public Health and Medical Inspection Staff—Continued.

PART-TIME OFFICERS.

Public Vaccinators and District Medical Officers—

Public Vaccinators.	District (Wards) and Estimated Population.	
Dr. L. F. Evans ...	Bradford, Exchange, Derby, Rumworth and Deane (49,067)	District M.O. for Bradford and Exchange
Dr. A. B. Platt ...	West and Heaton (28,499)	Also District M.O.
Dr. H. Spinks ...	Astley Bridge, East and North (22,846)	do.
Dr. A. A. G. Dickey...	Halliwell and Smithills (29,645)	do.
Dr. C. H. Dawson ...	Breightmet, Church and Tonge (24,358)	do.
Dr. E. C. Racker ...	Lostock (1,000)	do.
Dr. A. W. Smith ...	Darcy Lever and Great Lever (15,379)	do.
Dr. J. H. Marsh ...	Hulton (6,456)	

Dr. W. R. Hill is the District Medical Officer for Derby and Rumworth Wards, and

Dr. R. W. Higson is the District Medical Officer for Deane and Hulton Wards.

Medical Officer: Child Welfare Centres—Madge E. Johnson, M.B., Ch.B.

Artificial Sunlight Operator—Miss M. Charnock, C.S.M.M.G.

Masseuse—Miss M. L. Bruckshaw, C.S.M.M.G.

SECTION I.

Natural and Social Conditions.

SUMMARY OF NATURAL FEATURES —AND— VITAL AND MORTAL STATISTICS, 1933.

COUNTY BOROUGH OF BOLTON.

Position	Lat. 53° 35′ N., Lon. 2° 27′ W.
Elevation above sea level	230-ft. to 1,450-ft.
Geological Formation : Boulder Clay and Sand over Coal Measures.	
Rainfall (Av. 1887-1933, 44·24″)	31·802″
Area in Acres (Land and Inland Water)	15,280
Population (Census 1921)	178,683
,, (Census 1931)	177,250
,, (Mid-yearly estimated population 1933) ...	177,000
Density	11·5
Inhabited Houses (Census 1921)	41,828
,, ,, (Census 1931)	46,615
Private Families or Separate Occupiers (Census 1921) ...	42,635
,, ,, ,, ,, (Census 1931) ...	47,706
New Houses Certified 1933	1,018
Estimated No. of Houses in the Borough at 31st December 1933	49,607
No. of inhabited Houses according to the Rate Books ...	48,830
Rateable Value at 31st March, 1934	£1,002,138
Sum represented by a Penny Rate (1933-1934) ...	£3,942-17s.-7d.
Births	2,123
Birth-rate	11·9
Deaths	2,499
Death-rate (Crude)	14·1
Death-rate (Registrar General's)	14·1
Average Death-rate (1924-1933)	13·6

SUMMARY—Continued.

Infantile Mortality	78
Neo-natal Death-rate	32·9
Puerperal Death-rate (per 1,000 live births)	8·47
Epidemic Death-rate (seven chief diseases)...	·31
Diarrhœa & Enteritis (under 2 years), Death-rate per 1,000 Births	8·0
Phthisis Death-rate	·50
Other forms of Tuberculosis, Death-rate	·13
Respiratory Death-rate	1·76

118 COUNTY BOROUGHS AND GREAT TOWNS—

Birth-rate	14·4
Death-rate	12·2
Infantile Mortality	67
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	9·4

ENGLAND AND WALES—

Birth-rate	14·4
Death-rate	12·3
Infantile Mortality	64
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	7·1

Birth-rates, Death-rates and Infantile Mortality in Wards, 1932 and 1933.

(Rates calculated on the 1931 Census population.)

Ward.	Census Population 1931.	Birth-rate.		Death-rate.		Infantile Mortality.	
		1932.	1933.	1932.	1933.	1932.	1933.
Astley Bridge ...	8,525	11·9	13·4	11·6	13·2	49	43
Bradford	15,711	15·2	13·4	12·8	16·6	91	113
Church	7,226	12·0	8·5	15·2	14·5	45	64
Darcy-Lever-cum-Breightmet...	5,297	13·7	14·3	14·5	12·6	82	92
Deane-cum-Lostock	5,873	12·7	10·5	11·4	10·7	13	48
Derby...	16,618	15·7	11·4	13·6	13·1	103	100
East	8,080	14·7	12·7	14·9	18·9	75	106
Exchange	2,629	10·6	11·2	14·4	19·4	105	151
Great Lever	13,712	11·9	9·6	11·5	13·4	60	75
Halliwell	19,464	12·2	9·5	11·6	14·1	75	77
Heaton	4,420	7·4	11·3	9·2	12·6	30	60
Hulton	6,456	9·6	12·2	10·8	13·4	48	75
North	6,241	10·0	10·7	10·8	11·3	79	74
Rumworth	9,236	12·0	9·8	11·3	10·3	90	54
Smithills	10,181	10·1	10·8	11·4	12·0	97	45
Tonge...	13,502	17·5	12·7	12·6	13·8	54	58
West	24,079	14·8	15·9	13·4	15·8	56	83
Whole Borough ...	177,250	13·3	11·9	12·5	14·9	71	78

Population.

The Registrar-General's estimate of the population of Bolton for 1933 was 177,000.

Birth-rate.

Bolton had 2,123 births in 1933. The birth-rate was 11·9, the lowest ever recorded in Bolton.

Death-rate.

Bolton had 2,499 deaths in 1933 giving a death-rate of 14·1.

During the year 651 persons whose usual place of residence was in the area of this county borough died outside the borough; of these, 566 died in Townleys Hospital or Fishpool Institution and 47 died in Mental Hospitals.

Non-residents who died in the area numbered 139, of whom 113 died in Bolton Royal Infirmary.

183 Boltonians died in Bolton Royal Infirmary.

SUMMARY OF THE PRINCIPAL CAUSES OF DEATH, 1933.

	No. of Deaths.	Per cent. of total Deaths.
INFECTIOUS AND PARASITIC DISEASES	344	13·77
Measles	14	·56
Scarlet fever	10	·40
Whooping cough	9	·36
Influenza	165	6·60
Pulmonary tuberculosis	90	3·60
Other forms of tuberculosis	24	·96
Other infectious and parasitic diseases ...	32	1·28
CANCER AND OTHER TUMOURS	243	9·72
Cancer	235	9·40
Tumours...	8	·32
RHEUMATISM, DISEASES OF NUTRITION, ETC.	81	3·24
Rheumatic fever	24	.96
Chronic rheumatism, osteo-arthritis ...	6	·24
Diabetes	36	1·44
Exophthalmic goitre	10	·40
Other general diseases	5	·20
DISEASES OF THE BLOOD & BLOOD FORMING ORGANS	20	·80
Anæmia, chlorosis	11	·44
Leukæmia, aleukæmia	9	·36

DISEASES OF THE NERVOUS SYSTEM & SENSE ORGANS	204	8·16
Meningitis	6	·24
Locomotor ataxy	2	·08
Other diseases of the spinal cord ...	7	·28
Cerebral hæmorrhage	103	4·12
Apoplexy...	4	·16
Cerebral embolism	4	·16
Cerebral thrombosis...	20	·80
General paralysis of the insane	7	·28
Infantile convulsions...	8	·32
Disseminated sclerosis	9	·36
Diseases of the mastoid sinus	10	·40
Other diseases	24	·96
DISEASES OF THE CIRCULATORY SYSTEM	679	27·17
Heart diseases	485	19·4
Aneurysm	5	·20
Arterio-sclerosis	163	6·52
Abnormalities of blood pressure	15	·60
Other diseases	11	·44
DISEASES OF THE RESPIRATORY SYSTEM	313	12·53
Bronchitis	136	5·44
Pneumonia	152	6 08
Congestion of lungs, etc.	9	·36
Asthma	9	·36
Other diseases	7	·28
DISEASES OF THE DIGESTIVE SYSTEM	109	4·36
Ulcer of the stomach or duodenum ...	19	·76
Diarrhœa and enteritis	28	1·12
Appendicitis	11	·44
Hernia and intestinal obstruction ...	8	·32
Cirrhosis of the liver	6	·24
Diseases of the gall bladder and ducts ...	17	·68
Other diseases	20	·80
DISEASES OF THE GENITO-URINARY SYSTEM	123	4·92
Nephritis	92	3·68
Diseases of the prostate	15	·60
Other diseases	16	·64
THE PUERPERAL STATE	18	·72

CONGENITAL MALFORMATIONS	19	·76
DISEASES OF EARLY INFANCY	54	2·16
Congenital debility	8	·32
Premature birth	33	1·32
Injury at birth	6	·24
Other diseases	7	·28
OLD AGE	174	6·96
DEATHS FROM VIOLENCE	95	3·80
Suicide	29	1·16
Accidents	59	2·36
Other violent deaths...	7	·28
MISCELLANEOUS CAUSES	23	·92

The six principal certified causes of death were :

		Proportion per 1000 deaths
1.	Diseases of the Heart and Circulatory System ...	271
2.	Bronchitis, Pneumonia and other Respiratory Diseases	125
3.	Cancer, Malignant Disease	97
4.	Diseases of the Nervous System	81
5.	Old Age	69
6.	Influenza	66

Infantile Mortality.

The death-rate in children under one year is regarded as a very valuable index of the sanitary condition and the educated motherhood of a town. The death-rate of infants is expressed as the number of deaths under 1 year old per 1000 births, and is called the infantile mortality-rate.

The infantile mortality-rate in Bolton in 1933 was 78.

The infantile-mortality rate amongst the legitimate children was 71 ; and amongst the illegitimate 265.

In the following table is given the average infantile mortality for five year periods from 1876 to 1920, and for each year from 1921 to 1933.

Quinquennium.		Average rate.	Year.		Rate.
1876-1880	...	171	1921	...	96
1881-1885	...	169	1922	...	93
1886-1890	...	173	1923	...	85
1891-1895	...	185	1924	...	92
1896-1900	...	173	1925	...	87
1901-1905	...	157	1926	...	101
1906-1910	...	134	1927	...	75
1911-1915	...	128	1928	...	64
1916-1920	...	100	1929	...	103
			1930	...	69
			1931	...	78
			1932	...	71
			1933	...	78

The part of the infantile mortality-rate which is due to deaths of infants under four weeks is called the neo-natal mortality-rate. These deaths result very largely from causes at work before the birth of the child. Of the 78 babies who died in 1933 for every 1000 babies born. 32 died in the first four weeks of life.

Maternal Deaths.

I regret to say that Bolton maternal death-rate remained high in 1933. The figure was 8·47.

I can offer no explanation for the continued high death-rate amongst Bolton mothers. We are providing all the proved means for the protection of motherhood.

Puerperal Mortality in Boroughs of Lancashire in 1933.

Rochdale	...	...	2·8	Blackpool	...	...	4·9
Liverpool	...	...	3·4	St. Helens	...	...	5·6
Bootle	...	...	3·6	Bury	...	...	6·3
Southport	...	...	3·9	Wigan	...	...	6·3
Preston	...	...	4·0	Burnley	...	...	6·5
Blackburn	...	...	4·1	Oldham	...	...	7·8
Manchester	...	...	4·8	**Bolton**	...	...	**8·4**
				Barrow-in-Furness		...	8·9

CANCER.

The number of deaths ascribed to cancer during the year was 235, of which 116 occurred in males and 119 in females.

The most alarming feature in the mortal statistics of the last thirty years is the increase in the number of deaths ascribed to cancer. In the last thirty years the number of cancer deaths in Bolton has doubled. The same feature characterises the figures for England and Wales generally.

The question which specially concerns the individual is whether he is more likely to develope cancer now than if he had lived thirty years ago. The answer is difficult to give. There are two factors which complicate the issue. Firstly, the proportion of older people in the population is greater now than it was thirty years ago because of the fall in the general death-rate and because of the reduction in the mortality in early life. Cancer is, in the main, a disease of the later years of life and the fact of the increase in the average age of the population would in itself account for an increase in the number of cases of cancer. Secondly, increased accuracy in diagnosis and certification may be responsible for a part of the increase in the number of deaths attributed to cancer. In this connection the death-rate from senility and old age is shown alongside the cancer death-rate in the table facing. It has been suggested that some of the deaths formerly attributed to senility should more properly have been ascribed to cancer. It is sometimes found that a high cancer death-rate is associated with a low rate from senility. The table facing shows that in Bolton the old age death-rate has tended to fall as the cancer death-rate has increased.

If the possibility of the individual dying from cancer has increased during the last thirty years, it is certain that the increase is very much smaller than the bigger number of deaths attributed to cancer would suggest.

The following table shows the number of deaths from cancer, the cancer death-rate, and for purposes of comparison, the senility-rate in Bolton for the years 1901 to 1933.

Deaths from Cancer in Bolton in the years 1901-1933.

Year.	No. of deaths. Males.	Females.	Total.	Cancer Death-rate.	Senility Rate.
1901	26	71	97	·57	1·29
1902	51	73	124	·73	1·19
1903	32	72	104	·60	1·40
1904	45	88	133	·77	1·32
1905	57	76	133	·76	1·17
1906	40	74	114	·65	1·45
1907	45	75	120	·68	1·33
1908	53	69	122	·80	1·38
1909	90	84	144	·83	1·29
1910	58	92	150	·83	·98
1911	67	84	151	·83	1·31
1912	80	88	168	·82	1·02
1913	72	110	182	·98	·79
1914	77	96	173	·93	·72
1915	78	103	181	1·04	·86
1916	60	100	160	·94	·94
1917	73	93	166	1·01	1·11
1918	85	102	187	1·16	1·05
1919	72	104	176	·99	·91
1920	96	107	203	1·10	·71
1921	86	128	214	1·17	·63
1922	88	104	192	1·05	·58
1923	101	113	214	1·17	·53
1924	123	121	244	1·34	·70
1925	108	132	240	1·33	·54
1926	109	127	236	1·33	·66
1927	116	116	232	1·30	·56
1928	119	126	245	1·35	·61
1929	113	91	204	1·12	·65
1930	107	133	240	1·32	·49
1931	109	144	253	1·41	·45
1932	105	126	231	1·29	·56
1933	116	119	235	1·32	·98

The above death-rates are crude death-rates. This means that they are not corrected for the changes in the age and sex distribution of the population.

The following table shows the age and sex distribution of all persons who were certified as having c of cancer in Bolton in 1933. The table shows also the localization of the disease.

DEATHS FROM CANCER, 1933.

Age and Sex Distribution, and Localization of Disease.

Lesion	Sex		AGE																
	M.	F.	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	8 t 8
Buccal Cavity																			
Mouth	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...
	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pharynx	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tongue	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	1	...	...
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Tonsil	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Sites	5	...	...	...	...	...	...	...	...	1	2	...	1	...	...	1	...	...	...
	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Total Buccal Cavity ...	22	...	...	...	...	...	...	...	...	1	2	...	1	2	2	9	3	2	...
	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	..
Digestive Organs																			
Œsophagus	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	..
	...	5	...	...	...	...	...	...	...	...	...	...	...	1	2	1	...	1	..
Stomach and Duodenum ...	21	...	...	...	...	...	...	1	1	...	2	1	3	2	5	2	2	...	1
	...	20	...	...	...	...	...	...	1	...	...	1	...	4	5	2	4	2	.
Rectum	9	...	...	...	...	...	...	...	...	...	...	...	2	1	2	2	1	1	..
	...	2	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	..
Liver and Biliary Passages	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	..
	...	6	...	...	...	...	...	...	1	...	...	...	...	...	1	2	2	...	..
Pancreas	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	..
	...	4	...	...	...	...	...	...	...	...	...	...	2	...	1	1	...	...	.
Other Digestive Organs ...	14	...	...	...	...	...	...	...	...	...	...	...	2	3	4	4	1	...	.
	...	12	...	...	...	...	...	...	...	...	...	...	1	1	...	3	4	2	.
Total Digestive Organs ...	54	...	...	...	...	...	...	1	1	...	2	1	8	8	11	10	8	2	.
	...	49	...	...	...	...	...	...	2	...	...	2	3	6	10	9	10	5	

DEATH FROM CANCER, 1933.—*contd.*

Lesion	Sex		AGE																	
	M.	F.	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwds
atory Organs	12	...	...	...	...	...	...	...	...	...	2	3	...	2	2	2	1	...	...	...
	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	1
Genital Organs																				
terus	...	24	...	...	...	...	...	...	1	...	4	3	5	3	3	3	...	1	1	...
ther	...	4	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	1	...	...
l Female Genital Organs...	...	28	...	...	...	...	1	...	1	...	4	4	5	4	3	3	...	2	1	...
... ...	...	26	...	...	...	...	...	...	...	3	3	2	3	4	2	3	2	3	1	...
enito—urinary Organs																				
ladder	7	...	...	...	...	...	...	...	...	...	...	...	2	2	...	2	1	...	...	...
rostate	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...	...
ther Sites	5	...	...	...	...	...	...	...	...	...	2	...	2	1	...	...	...	...	...	...
Male Genito—urinary rgans	16	...	...	...	...	...	...	...	...	...	2	...	4	3	1	4	1	1	...	...
	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	10	...	...	...	...	...	...	1	...	...	1	...	2	1	3	2	...	...	...	...
or Unspecified Organs	...	10	1	...	1	...	...	...	1	...	...	...	2	1	1	1	1	...	...	1
Males	116	...	...	...	...	...	...	2	1	1	9	4	15	16	21	27	13	5	2	...
Females	...	119	1	...	1	...	1	...	4	3	7	8	13	16	16	17	15	11	3	3
TOTAL both sexes ...	235		1	...	1	...	1	2	5	4	16	12	28	32	37	44	28	16	5	3

DEATHS FROM INFECTIOUS DISEASES.

The deaths attributed in Bolton to the various epidemic diseases are shown in the following table for the years 1925 to 1933.

Causes of Death from Epidemic Diseases.

	1925	1926	1927	1928	1929	1930	1931	1932	1933
Smallpox...	—	—	—	—	—	—	—	—	—
Scarlet Fever...	3	1	—	1	4	3	2	1	10
Diphtheria and Memb. Croup	3	14	10	16	8	3	2	3	6
Enteric and Continued Fever	1	1	4	1	1	1	—	—	—
Measles	18	16	21	17	11	4	24	9	14
Whooping Cough	32	37	1	9	85	8	14	11	9
Diarrhœa and Enteritis under 2 years of age...	44	47	20	17	18	27	17	12	17
Erysipelas	9	6	11	9	5	14	7	3	7
Puerperal Sepsis	8	5	4	3	6	6	3	3	5
Cerebro-spinal Fever	1	2	3	4	—	2	7	5	3
Encephalitis Lethargica ...	13	14	10	11	5	4	6	3	2
Influenza	98	68	147	55	208	42	110	46	165

The seven principal epidemic diseases are:—Smallpox, Scarlet Fever, Diphtheria, Enteric Fever, Measles, Whooping Cough, and Epidemic Diarrhœa (under two years of age). These diseases caused 56 deaths in Bolton in 1933. This is a death-rate of ·31 per thousand inhabitants, and this death-rate is known as the zymotic death-rate. Bolton's death-rate from the above diseases for the years 1921-33 is as follows:—

1921	...	·62	1927	...	·31
1922	...	·65	1928	...	·33
1923	...	·40	1929	...	·69
1924	...	·47	1930	...	·25
1925	...	·55	1931	...	·32
1926	...	·65	1932	...	.18
			1933	...	·31

The increase in the zymotic death-rate of 1933 as compared with that of 1932 is mainly due to the increase in the number of deaths from Scarlet Fever. Influenzal deaths (which are not included in the zymotic death-rate) numbered 165 as compared with 46 in the previous year.

Deaths from Tuberculosis.

There were in 1933 in Bolton 114 deaths due to tuberculosis in all its forms. Of these deaths, 90 were due to tuberculosis of the lungs.

The tuberculosis death-rate for 1933 of ·64 is the lowest rate which has ever been recorded in Bolton.

DEATHS AND DEATH-RATES FROM TUBERCULOSIS IN BOLTON IN PREVIOUS YEARS.

Year.	Pulmonary Tuberculosis.		Non-pulmonary Tuberculosis.		Tuberculosis (all forms).	
	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate
1916	181	1·07	62	·36	243	1·43
1917	189	1·15	62	·37	251	1·53
1918	198	1·23	55	·34	253	1·57
1919	173	·97	37	·20	210	1·18
1920	154	·83	32	·17	186	1·00
1921	161	·88	37	·20	198	1·08
1922	138	·75	40	·21	178	·97
1923	157	·86	47	·25	204	1·11
1924	162	·89	42	·23	204	1·12
1925	151	·83	34	·18	185	1·02
1926	135	·76	29	·16	164	·92
1927	149	·83	33	·18	182	1·02
1928	120	·66	20	·11	140	·77
1929	121	·66	24	·13	145	·79
1930	114	·62	36	·19	150	·82
1931	118	·65	20	·11	138	·77
1932	108	·60	26	·14	134	·75
1933	90	·50	24	·13	114	·64

Birth-rate, Death-rate and Infantile Mortality in chief Lancashire Manufacturing Towns.

(Figures taken from the Summaries of the Registrar-General). 1932 and 1933.

	Birth-rate.		Death-rate.		Infantile Mortality.	
	1932	1933	1932	1933	1932	1933
England and Wales	15·3	14·4	12·0	12·3	65	64
County Boroughs and Great Towns, including London ...	15·4	14·4	12·2	12·6	70	68
Warrington	17·3	16·0	12·2	12·4	88	73
Barrow-in-Furness	14·4	13·3	12·6	12·5	77	65
Preston	14·9	14·6	13·1	13·4	83	88
Manchester	15·5	14·7	13·2	13·6	86	75
Bootle	22·9	21·4	13·3	13·9	86	89
Salford	15·7	15·2	13·3	13·9	97	80
Bury	12·7	12·6	13·6	13·9	85	52
St. Helens...	20·1	18·0	11·4	14·0	89	116
Bolton	**13·4**	**12·0**	**12·6**	**14·1**	**70**	**78**
Blackburn	12·6	12·0	12·7	14·4	67	71
Wigan	17·8	16·6	13·0	14·4	91	110
Liverpool	21·1	19·7	13·2	14·5	91	98
Burnley	12·0	12·1	13·0	14·9	86	75
Oldham	12·9	12·2	14·1	15·0	83	72
Rochdale	12·5	11·4	14·1	15·0	72	89

In 1933, of the above 15 towns, Bolton has the second lowest birth-rate the seventh highest death-rate, and the eighth lowest infantile mortality-rate.

SECTION II.

1. General Provision of Health Services.

GENERAL PROVISION OF HEALTH SERVICES IN BOLTON.

The following information regarding these services is given in compliance with the instruction of the Ministry of Health.

1.—Professional Nursing in the Home.

The Bolton District Nursing Association provides nursing in the home for all cases of illness other than certain infectious diseases and maternity nursing.

There is a scale of charges but necessitous cases are nursed free. The District Nursing Association co-operates with the Royal Infirmary in the Provident Contributory Schemes organised amongst work people.

The Bolton Corporation makes an annual grant of £200 to the funds of the Association. The Public Health Committee pays for any home nursing of the following diseases:—puerperal pyrexia, puerperal fever, measles, whooping cough, epidemic diarrhœa, and ophthalmia neonatorum.

2.—Midwives.

66 Midwives notified their intention of practising in Bolton in 1933.

The Local Authority neither employs nor subsidises any midwives.

3.—Laboratory Facilities.

The Local Authority employs a fully qualified whole-time analyst and bacteriologist and provides an adequately equipped laboratory. A full account of the work done by this department is given in this report.

4.—Legislation in Force.

Local Acts, General Adoptive Acts, Byelaws and Regulations in Force in Bolton.

Local Acts.

Bolton Improvement Act, 1854.
Bolton Improvement Act, 1865.
Bolton Corporation Act, 1872.

LOCAL ACTS.—*continued.*

Bolton Improvement Act, 1877.

Local Government Board's Provisional Orders Confirmation (Abergavenny Union, &c.) Act, 1879.

Bolton Improvement Act, 1882.

Local Government Board's Provisional Orders Confirmation (No. 15) Act, 1893.

Bolton Tramways and Improvement Act, 1897.

Bolton Corporation Act, 1901.

Bolton Corporation Act, 1905.

Bolton Corporation Act, 1922.

Bolton Corporation Act, 1925.

GENERAL ADOPTIVE ACTS.

Part III.—Public Health Acts Amendment Act, 1890. (Adopted—6th May, 1891).

Part IV.—Public Health Acts Amendment Act, 1890. (Adopted—6th July, 1910).

BYE-LAWS AND REGULATIONS.	DATE MADE.
Slaughter-houses	13th Feb., 1867.
Common Lodging-houses	2nd Feb., 1898.
Dairies, Cowsheds and Milkshops ...	5th July, 1899.
Management, etc., of High Street Baths	4th Feb., 1903.
Means of Escape in Case of Fire ...	10th Sept., 1908.
Tents, Vans, Sheds and Similar Structures	21st Jan., 1926.
Nursing Homes	20th Mar., 1930.
Houses Let in Lodgings	25th Apl., 1932.

5.—MATERNITY AND NURSING HOMES.

Nursing Homes Registration Act, 1927.

	Maternity Homes and Nursing Homes	Maternity Homes only	Nursing Homes only
No. of Homes on the register when the Act came into operation ...	—	3	—
No. of applications for registration	3	1	2
No. of Homes registered	3	1	2
No. of Homes on the register on 31st December, 1933	1	1	1

No orders have been made refusing or cancelling registration.

No applications have been made for exemption from registration.

Since the Act became operative six homes have been closed voluntarily and the registration cancelled.

The three homes on the register at the end of the year provided accommodation for patients as follows :—

Maternity patients	6
Other patients	32

Byelaws made under the Act of 1927 were approved and adopted by the Council on the 5th February, 1930, and these were allowed by the Ministry of Health on the 20th March, 1930.

6.—Maternal Mortality.

All maternal deaths are enquired into by the Medical Officer for Maternity and Child Welfare, Dr. Mary E. Boullen. She interviews in every case both doctor and midwife and, if the patient has had hospital treatment, a written report is obtained from the Medical Officer or Officers having charge of the case.

7.—Institutional Provision for Unmarried Mothers, Illegitimate Infants and Homeless Children.

There are no Special Institutions in Bolton for the care of the unmarried mother and her child. Unmarried mothers are admitted to Haslam Maternity Home and Townleys Hospital for confinement. The Public Assistance Committee make provision for homeless children in Townleys Hospital and later in the Hollins Homes.

Religious organisations have homes in Manchester, Bury and Prestwich, to which Bolton girls are admitted before the birth of the baby and where they may remain some time after confinement.

8.—Institutional Provision for the Care of Mental Defectives

The institutional care of mental defectives is dealt with by the Lancashire Mental Deficiency Act Committee. The quality of the provision made is quite satisfactory, but in quantity it is lamentably inadequate. There are at the present time in Bolton mental defectives whose condition is such as to make life almost impossible for their families, cases which are most urgently in need of institutional care, but which have to remain at home because the institutional provision for these cases is very inadequate.

9.—Ambulance Facilities.

Two motor ambulances are kept at the Borough Isolation Hospital and are available for all infectious cases.

For non-infectious and accident cases, the County Borough of Bolton has provided four motor ambulances. These ambulances are available for the moving, within the area of the County Borough of Bolton, of all cases of sickness and accident for the moving of which an ambulance is necessary. A small charge is made if the circumstances of those requiring the use of the ambulance justify such charge.

The Public Assistance Committee has four motor ambulances which deal with all cases needing removal to or from their institutions.

In addition to the above the Bolton Royal Infirmary has a motor ambulance for the removal of cases from the Infirmary to its Auxiliary Hospitals, and for the removal of cases to addresses outside the area of the County Borough.

10.—Health Education.

The educational work of the department was carried on through the medium of Welfare Centres, Clinics, various meetings in the town, and by the distribution of the Journal "Better Health." In addition a "Health Campaign" was organized from January 11th to January 21st, 1933, with the threefold objects of: firstly, focussing attention on some of the health facilities that are provided for Bolton folk; secondly, increasing public intolerance of dirt, whether in air, water, food or home; and thirdly, emphasizing that communal health must ultimately depend on the effort of the individual. A hand book was issued, an exhibition organized, and upwards of a hundred addresses given during the ten days of the Campaign. Considerable interest was evinced in the meetings and in the Campaign generally.

11.—Local Government Act, 1929.

All the Institutions and Services (other than vaccination and infant life protection) previously administered by the Guardians are now administered by the Public Assistance Committee.

During the year a general survey of the Bolton Health Services was made by officers of the Ministry of Health. The survey was a general one as described in paragraph 14 of Circular 1072, and was for the purpose of satisfying the Minister that a reasonable standard of efficiency in discharge of the functions relating to Public Health Services was being maintained (vide Sec. 104 L.G.A., 1929.)

As a sequel to the Survey, the Local Authority received the following communication from the Ministry of Health :—

MINISTRY OF HEALTH,
WHITEHALL,
S.W. 1,

6th February, 1934.

Sir,

I am directed by the Minister of Health to state that he has had under consideration the report made by his officers after the recent general survey of the public health services of the Town Council. The report indicates that in more than one direction there is need and opportunity for re-organisation and development from which these services would benefit.

It will be readily agreed that if the various services are to be administered efficiently and economically, it is important not only that the best possible use should be made of the Council's own resources, but that there should be effective co-ordination of the services provided by the Council with similar services provided by other agencies for the benefit of the Borough. Substantial opportunities have been presented by the transfer to the Council of the poor law medical services formerly provided by the late Board of Guardians, and it may assist the Council in their consideration of the policy to be adopted if this matter is dealt with here in some detail in the light of the information obtained during the survey.

One of the important objects of policy contemplated by the Local Government Act, 1929, is the separation from the poor law of those services which can lawfully be provided by the Council under other Acts. The provision of hospital accommodation for the sick is one of the chief services coming within this category, and the method of attaining the object of the Act in regard to this service which has been adopted by many Local Authorities has been the appropriation of transferred poor law infirmaries for use as general hospitals under the Public Health Acts. In Bolton the separation of the Townleys Hospital from the Poor Law Institution was marked in the eyes of the Guardians and the Minister by its recognition as a separate Poor Law Hospital, and its early appropriation as a public health hospital would have appeared naturally to follow upon the transference of the poor law functions to the Council. The Minister is advised that such appropriation presents no difficulty, and he trusts that the Council will give early consideration to this question.

Apart from the question of policy, there are a number of practical advantages which can most readily be secured by the appropriation of the hospital and its assimilation with the public health services of the Council.

(1) The high standard of work performed at the Townleys Hospital and the reputation which this hospital has deservedly obtained render it all the more important that it should form an integral part of the Council's medical services.

(2) In regard to maternity accommodation, it appears to the Minister that the existence of two maternity departments in more or less watertight compartments (the Haslam Maternity Home and Townleys Hospital) is anomalous, and that they could be used to better advantage if the latter were administered apart from the Poor Law. A more intimate co-operation between the medical and nursing staffs of these two institutions would in this way be rendered possible, and the Council's maternity and child welfare scheme could be strengthened by the development of post-natal and gynæcological work at the Townleys Hospital.

(3) In regard to tuberculosis the Minister understands that arrangements have been made for the Tuberculosis Officer to visit the tuberculous patients at Townleys Hospital, though he has not been appointed a consultant at that hospital. It is clear, however, that the clinical classification of tuberculous patients and the institutional allocation of those requiring in-patient treatment would be simpler if the care of all these patients devolved upon the same Committee and if the accommodation for the treatment of tuberculosis at the Townleys Hospital could be reckoned as part of the resources of the Committee for that purpose. Moreover, the X-ray facilities at the Hospital could be suitably utilised in connection with the work at the tuberculosis dispensary.

(4) Co-operation with the Venereal Diseases service would be facilitated and the in-patient accommodation required for the purposes of that service might be provided at the Townleys Hospital.

The Minister understands that hitherto the Medical Officer of Health has not been called upon to advise the Council in regard to the poor law medical services which have been transferred to them. The Council will be aware of the position assigned to the Medical Officer of Health by Article 165(2) of the Public Assistance Order, 1930, and in so far as such services must needs continue to be provided under the Poor Law, it appears to the Minister that the relationship of the Medical Officer of Health to the Committee administering those services should be no less intimate, and his position as medical administrator no more restricted, than if these services were being provided under the Public Health Acts. The unification of medical work which was aimed at by this provision is, however, rendered more simple in Bolton by the practicability of appropriating the Poor Law Hospital directly to the public health side of the Council's work, and this appears to the Minister to be the primary point to which the Council's attention should be directed.

The Minister is glad to recognise the good work which has been and is being carried out at the Townleys Hospital and he wishes to make it clear that, while it is his view that improvements both in the utilisation of the hospital and in the working of the Council's health services can be secured by the unification which he has suggested, these arrangements would not in any way interfere with the responsibilities of the medical officers of the hospital for the care of their patients.

As illustrating the need for co-ordination of municipal and voluntary services, the Council will appreciate that in considering the question of hospital accommodation for the inhabitants of the Borough it is important to take account of all the resources available, including those of the voluntary hospital. For this purpose consultation with the voluntary hospital, in accordance with the intention of Section 13 of the Local Government Act, 1929, should receive the Council's consideration.

In regard to the health services generally, the survey report indicates that the character of the premises in Howell Croft North constitutes a serious obstacle to the efficient working of the Public Health Department and of the Tuberculosis and Venereal Diseases services. It is understood that the seriousness of this defect has already been recognised by the Council and that new provision is in progress.

Apart from this question of accommodation, the Minister is advised that further action is required in the Tuberculosis and Venereal Diseases services in order to secure a good standard of service.

(1) It would appear that at present the work at the tuberculosis dispensary is handicapped owing primarily to the insufficiency of the time available to the Tuberculosis Officer for such important purposes as the examination of contacts, visits to the homes of patients, and consultations with general practitioners, and to the insufficient time available to the Tuberculosis visitor for carrying out home visits. It is understood that the Tuberculosis Officer at the present time has a number of other duties not connected with tuberculosis, and generally it would appear that the scope of the tuberculosis work in the Borough is such as would warrant the employment of a whole-time Tuberculosis Officer.

(2) The Minister is informed that the three Medical Officers of the Council who are now engaged in holding clinics for venereal diseases are already heavily occupied with other official duties, and it appears to him that a satisfactory service is not likely to be secured under the present arrangements.

The Minister will be glad if his officers can have an opportunity of discussing with representatives of the Council the possibility of securing improvements in these two services, and he suggests that an early opportunity should be taken for representatives of the Council to call at

this office for this purpose. A memorandum is enclosed dealing with further points arising out of the survey, and if there are any other matters in this letter or in the memorandum upon which the Council would wish to confer with officers of the Department, the Minister will be pleased to make arrangements for that purpose.

In conclusion, the Minister desires me to express his appreciation of the assistance given to his officers during the survey. He will be glad in due course to be informed of the result of the Council's consideration of the matters referred to above and in the memorandum.

I am, Sir,

Your obedient Servant,

J. N. DARK.

The Town Clerk,
Town Hall,
Bolton.

MEMORANDUM.

Disposal of Refuse.

The Minister thinks it desirable to arrange for the Public Cleansing Inspector of the Department to visit Bolton and make some investigations in connection with this service. The visit will take place as soon as the Inspector's other engagements will permit.

Sanitary Inspection.

It is suggested that consideration might be given to the appointment of a Chief Sanitary Inspector, who whilst keeping the Medical Officer of Health in touch with the work of the Inspectors, would obviate the necessity for his always dealing personally with the several Inspectors and their individual reports.

Protection of Food Supplies.

It is desirable that the Medical Officer of Health should consult with the Public Analyst from time to time in regard to the foods to be sampled and the number of samples of each to be taken for analysis.

The number of milk samples taken in 1931 was, relatively to population, less than 50 per cent. of the average for England and Wales and it is suggested that the number should be increased in future.

It is also suggested that the testing of milk for tubercle bacilli should be extended to samples of raw milk from outside the Borough.

TUBERCULOSIS.

(*a*) The use for dispensary patients of the X-ray facilities available at the Townleys Hospital would permit of the more extensive employment of this important aid to diagnosis, without the additional expense involved in any increase of work under the present arrangements.

(*b*) It is suggested that the work of the dispensary service and of the Wilkinson Sanatorium might be more closely co-ordinated if arrangements could be made for the Tuberculosis Officer to be attached to the Sanatorium in an honorary capacity for this purpose.

ORTHOPÆDICS.

More comprehensive arrangements are desirable which would provide for patients suffering from the crippling forms of tuberculosis, and more fully than at present for children under school age. It is understood that facilities for school children have already been provided by arrangement with the Royal Infirmary, and action might well be taken for the extension of these arrangements to the other classes of patients. In the meantime it is suggested that there should be closer medical supervision in connection with the massage and other work at present carried out for children under school age.

INFECTIOUS DISEASES.

It is understood that the Council have no hospital provision for smallpox apart from their ordinary Infectious Diseases Hospital. Arrangements should be made whereby accommodation for smallpox will be available when required in a suitable hospital used at the time solely for smallpox.

It was observed that in some wards at the Isolation Hospital there were more beds than could be accommodated if a sufficient space were allowed for each patient. The Council will appreciate that in the interests of the patients it is very desirable that there should not be any overcrowding in the wards.

The Minister is advised that there is especially a deficiency of single-bed wards and of staffing accommodation at this Hospital, and he understands that the adequacy of the accommodation provided for infectious disease is now under consideration.

TOWNLEYS HOSPITAL.

It is noted that the Hospital has at times been overcrowded. If overcrowding frequently occurs, the Council will no doubt consider what steps should be taken to remedy it.

Maternity and Child Welfare.

The Minister is glad to learn that the ante-natal supervision of women is increasing; that dental treatment has been included in the facilities afforded; and of the extent of lying-in accommodation which has been provided.

It is suggested that the work of supervision of midwives might benefit by the appointment of an Assistant Inspector of Midwives, and the assignment of more time to this work. Such duties might with advantage be combined with those of a Superintendent of Health Visitors. Attention is called to paragraph 91 of the Report of the Departmental Committee on Midwives in which stress is laid on the importance of appointing as Inspectors of Midwives persons who have had prolonged experience in the actual practice of midwifery.

In regard to the Infant Welfare Centres it is suggested that a strengthening of supervision by the municipal staff should promote the more effective organisation of the work, particularly in such matters as avoidance of overlapping in visiting between voluntary and municipal visitors, the preparation of children for weighing, the keeping of records and the collective instruction of mothers. In general, more suitable premises are needed as opportunity permits.

There is a need for increased home visiting of children between the ages of 1 and 5, and in order to provide for adequate medical supervision of the health of these children the Council should consider the desirability of holding separate sessions for them at some or all of the Centres.

Lunacy and Mental Deficiency.

As the Council is a member of the Lancashire Mental Hospitals Board the question of the adequacy of the Lunacy and Mental Deficiency services must be considered in relation to the whole area covered by that Board. For that reason no further reference to the Mental Health services is made in this memorandum.

WELFARE OF THE BLIND.

(1) Supervision.

In order that the Council may have the benefit of technical advice in exercising supervision over the services for the welfare of the blind, it is suggested that they should consider the desirability of employing the Regional Supervisor of the Northern Counties Association for the Blind for the purpose of periodically inspecting and reporting to the Council on these services.

(2) REGISTRATION.

(*a*) The register should be overhauled and the cards be completed with up-to-date information.

(*b*) The register should also be analysed so as to show the main classifications of the blind, e.g., under school age, of school age, trainable, employable, unemployable, etc. Such an analysis will enable the Council and their officers more readily to ascertain whether the individual requirements of the blind are being met.

(3) HOME TEACHING.

(*a*) Owing to their other duties, the visits paid by the two Home Teachers to blind persons are too infrequent and there is a need for the appointment of an additional Home Teacher who, it is suggested, should be a sighted woman.

(*b*) The Council should consider the adoption of a more detailed and informative form of weekly report for use by the Home Teachers.

(4) UNEMPLOYABLE BLIND.

It is understood that the investigation into the means of applicants for financial assistance and the payment of grants is carried out by the Home Teachers, one of whom is totally blind and the other only partially sighted. In the circumstances it is recommended that the Council should consider whether some other arrangement cannot be made for carrying out these duties.

(5) WORKSHOPS.

The Council should consider the following matters :—

(*a*) The discontinuance of the present system of paying fixed weekly wages to the workers at the Bolton Workshops for the Blind, and the adoption of a method of remuneration which will encourage the workers to maintain and improve their output.

(*b*) The provision of suitable dining room accommodation for both sexes, and of supplies of hot water and more adequate lavatory and washing accommodation, at the Marsden Road Workshops.

(*c*) The desirability of consulting the Superintendent of the Fire Brigade as to the adequacy of the means of escape at the Marsden Road Workshops in case of fire.

(6) WOODLANDS HOSTEL.

It is observed that there is a staff of 5 whole-time and 1 part-time employees to care for the 16 blind women in this Hostel, and the Council should consider whether economies cannot be effected here without prejudicing the services rendered.

CLINICS, TREATMENT CENTRES, ETC.

12.—The following table gives particulars of all clinics and treatment centres administered by the Council of the County Borough of Bolton.

Name of Clinic or Centre	Situation.	Day and Time.	Nature of Accommodation.	By whom provided.
Infant Welfare Centres.				
1. Tipping Street.	The Friends' School Room, Tipping Street.	Monday, 3·0 p.m.	2 Rooms.	Grant to the Mother and Child Welfare Association by the Bolton Public Health Committee. The Mother and Child Welfare Association provides the accommodation. Medical supervision, Health Visitors, Drugs, etc., are provided by the Public Health Committee.
2. Chalfont Street.	Chalfont Street Methodist School.	Monday, 3·0 p.m.	2 Rooms.	
3. Halliwell.	Halliwell Road Free Church, Halliwell Road.	Tuesday, 3·0 p.m.	5 Rooms.	
4. Grecian Crescent.	Victoria Wesleyan School, Grecian Crescent.	Tuesday, 3·0 p.m.	2 Rooms.	
5. Kensington.	Girls' Club, Kensington Street.	Wednesday, 3·0 p.m.	4 Rooms.	
6. St. Chad's.	St. Chad's School, Belvoir Street.	Wednesday, 3·0 p.m.	3 Rooms.	
7. Saviour's.	Saviour's Church House, Deane Road.	Thursday, 3·0 p.m.	2 Rooms.	
8. Daubhill.	Daubhill Methodist School, Derby Street.	Thursday, 3·0 p.m.	3 Rooms.	
Ante-natal Clinics.				
1. St. George's Road.	Mother and Child Welfare Association, 70 St. George's Road.	Tuesday, 3·0 p.m., and Thursday 10·30 a.m.	2 Waiting Rooms, Lecture Room and Doctor's Room.	Do. do.
2. Haslam Maternity Home.	"Ravenswood," Chorley New Road.	Wednesday, 10·30 a.m. Friday, 10·30 a.m. and 2·0 p.m.	2 Waiting Rooms and Doctor's Room.	Bolton Public Health Committee.
3. Dental Clinic for expectant mothers.	School Clinic, Charles Street.	Tuesday, 6·0 p.m. (By arrangement.)		
Artificial Sunlight Clinic. St. George's Road.	Mother and Child Welfare Association, 70 St. George's Road.	Mon., Wed. and Fri., 10·30 a.m.	Waiting Room, Examination Room and Treatment Room.	Premises—The Mother and Child Welfare Association. Medical supervision and operator—Bolton Public Health Committee.
Massage Clinic. Flash Street.	Special School, Flash Street.	Mon., Wed., Thurs. and Fri., 10·0 a.m. and 2·0 p.m.	2 Rooms.	Premises—Bolton Education Committee. Masseuse—Bolton Public Health Committee.
School Clinic. Charles Street.	Charles Street.	**Minor Ailment Clinic.** Mon. to Fri., 9·0 a.m. and 2·0 p.m. Saturday, 9·0 a.m. **Dental Clinic.** Mon. to Fri., 9·30 a.m. and 2·30 p.m. Saturday, 9·30 a.m. **Ophthalmic Clinic.** Monday and Friday, 9·30 a.m.	2 Waiting Rooms, Treatment Room, Doctor's Room, 2 Dental Surgeries, Dental Rest Room, Ophthalmic Surgeon's Room, Dark room, Storeroom and Bathroom.	Bolton Education Committee.
Throat Clinic.	Bolton Royal Infirmary.	By arrangement.		Bolton Education Committee.
X-ray Clinic.	Bolton Royal Infirmary.	By arrangement.		Bolton Education Committee.
Orthopædic Clinic.	Bolton Royal Infirmary.	2nd Wednesday in month (By arrangement.)		Bolton Education Committee.
Tuberculosis Dispensary. Bolton Tuberculosis Dispensary.	Public Health Offices, Howell Croft, North.	Every week-day except Saturday, 9·30 a.m. Wednesday, 2·0 p.m.	Waiting Room, Doctor's Room and Dispensary.	Bolton Public Health Committee.
Venereal Diseases Clinic. Bolton V. D. Clinic.	Public Health Offices, Howell Croft, North.	**For Males.** Monday, 10·0 a.m. and 6·0 p.m. Tuesday, 7·0 p.m. Wednesday, 10·0 a.m. and 6·0 p.m. Thursday, 10·0 a.m. Friday, 10·0 a.m. and 6·0 p.m. **For Females.** Monday, 2·30 p.m. Tuesday, 9·30 a.m. Wednesday, 2·30 p.m. Thursday, 6·0 p.m. Friday, 2·30 p.m. Saturday, 10·0 a.m.	Waiting Room, Clerk's Room and 2 Treatment Rooms.	Bolton Public Health Committee.
Day Nursery.	41, Arkwright Street.	Mon. to Fri., 7·0 a.m. to 5·30 p.m. Saturday 7·0 a.m. to 1·0 p.m.	Office, Reception Room, Toddlers' Room, Babies' Room, Staff Room, Kitchen, Verandah, Bathrooms, Staff Bedrooms and usual Offices.	Bolton Day Nursery Association. Grant of £575 per annum by Bolton Public Health Committee, and £10 10s. 0d. by the Public Assistance Committee.

SECTION III.

Sanitary Circumstances.

AIR.

The following report of the Smoke Inspector is for the period of twelve months ending on the 31st December, 1933.

"For the first 4½ months of the year no smoke observations were taken, owing to absence on account of illness, and on account of the Inspector being engaged on inside office work during convalescence.

From the 8th May onwards 259 smoke observations were made, with the following results.

No. of Observations.	Result.
90	No black smoke.
34	½ min. ,,
50	1 ,, ,,
31	1½ ,, ,,
22	2 ,, ,,
3	2½ ,, ,,
3	3 ,, ,,
3	3½ ,, ,,
4	4 ,, ,,
2	4½ ,, ,,
1	5½ ,, ,,
1	11¾ ,, ,,
1	14 ,, ,,
14	Smoke other than black. (Ash, soot, etc.)

This last group may be further subdivided as follows :—

No. of Observations.	Result.
5	Ash emitted.
2	Soot emitted.
1	Yellow smoke emitted
6	Dense medium smoke emitted.

As a result of these observations, 16 legal notices were served calling upon the firms in question to abate the nuisance caused.

In four cases prosecution was decided upon by the Committee.

The cases were heard at the Borough Police Court, Bolton, and in each instance a fine of 20/- was imposed.

It will be observed that this penalty inflicted by the Bench is not sufficient to act as a strong deterrent, and any beneficial effect which might result from the prosecutions will be the result of the publicity accorded to the cases particularly in the local press.

The difficulties of the state of trade at the present time appears to prejudice the general public against the policy of smoke abatement, and the following course of action is being pursued parallel with active efforts to secure evidence of any infringement of the law regarding the emission of black smoke.

Every plant in the Borough is being visited, and up-to-date details obtained with regard to boilers installed, methods of stoking, types of grate fitted, and an approximate figure obtained for the amount of fuel that is being consumed.

This latter figure has not previously been available, and in comparison with the coal burnt by domestic users, it should illustrate the handicap under which an industrial town labours in its efforts to clean its atmosphere.

The visiting of stokeholds and of the engineers of mills, etc., keeps the department in touch with the people responsible for the production of industrial smoke, and should have a beneficial effect.

Occasionally, it is possible to offer some suggestion which will help to reduce the amount of smoke emitted, and in any case, evidence of machinery which is able to instigate legal action against offenders will doubtless secure increased efforts to reduce the density of smoke that is being produced."

WATER.

The water supply of the Borough is derived from moorland drainage grounds which have been cleared of farms and, with one or two exceptions, of public footpaths.

The collected water is stored in reservoirs and purification effected by lime treatment followed by sand or mechanical pressure filtration.

Bacteriological examination of the whole of the supply is made weekly, and a chemical examination monthly. The water being of an acid nature before treatment, a careful watch is kept on reaction and plumbo-solvency.

Generally speaking, the water, after filtration, is of excellent quality, the agar counts being low, and B. Coli absent in 100 ccs.

After heavy rains, however, B. Coli. may be found in 50 ccs., and very infrequently in 10 ccs., as shown by the figures appended, which have been averaged from examinations made throughout the year 1933.

Summary of Results. (Filtered Waters.)

CHEMICAL EXAMINATION.

Total Solids	10·27	Parts per	100,000
Free Ammonia	0·003	do.	do.
Albumenoid Ammonia ...	0.002	do.	do.
Nitrogen as Nitrates ...	0·008	do.	do.
Nitrogen as Nitrites ...	none		
Chlorine	1·02	do.	do.
Acidity	none		
Hardness	4·02	Degrees	
Oxygen Absorbed (3 hours)	0·006	Parts per	100,000.

BACTERIOLOGICAL EXAMINATION.

Agar Count per 1 cc. 15

B. COLI.

Positive in 10 ccs.	0
Positive in 50 ccs. Negative in 10 ccs.	8·5%
Positive in 100 ccs. Negative in 50 ccs.	35.0%
Negative in 100 ccs....	56·5%

There was an adequate internal water supply in all houses to which the Bolton Corporation was under obligation to afford supplies.

6 miles, 1,541 yards of cast iron water mains, varying from 3" to 12" in diameter, were laid within the Borough, and 1 mile, 1,085 yards of mains were re-laid with mains of larger diameter.

DRAINAGE AND SEWERAGE.

The Borough Engineer reports—" Many extensions have been made to the sewerage system during the past year for taking the drainage of Johnson Fold and Top o'th' Brow Housing Schemes and developments carried out by private builders.

These extensions have been constructed of glazed earthenware pipes of 9" and 12" and 15" diameter, and concrete tubes were of large diameter, all jointed with Portland cement and bedded in concrete. Manholes are constructed of brickwork in cement mortar at all changes of gradient and direction, and at all termini, at distances not exceeding 100 yards, the sewers being ventilated by means of open cast-iron manhole covers.

The sewers generally have ample fall; the drainage of the town is all by gravitation and taken by means of six intercepting sewers of brick and concrete construction in the larger diameters, and glazed earthenware pipes of 18" and downwards for the smaller diameters.

Two sewers have been relaid in Dorset Street and Back Grecian Street, with the necessary manholes for access and ventilation, and 23 manholes have been constructed on many of the old sewers for the better control.

The Great Lever Intercepting Sewer has now been completed, which now takes the drainage of the major portion of the Great Lever district to be treated at Hacken Sewage Works of the Bolton Corporation, instead of to the Farnworth Urban District Council's Works.

The reconstruction of the Tonge and Bradshaw Brook Intercepting Sewers is well in hand. Many lengths of these are now in operation. The total estimated cost is £176,000. Wherever possible, a separate system of drainage is carried out, the surface water sewers discharging into the various streams flowing through the district.

The Sewage Work's Manager reports that no important extension of the sewage works has taken place during the year.

CLOSET ACCOMMODATION.

The position of Bolton as regards closet accommodation at the close of 1920 and the close of 1933 is shown in the following table.

	Dec. 31st, 1920.	Dec. 31st, 1933.
Fresh-water closets ...	11,062 ...	... 34,155
Waste-water closets ...	15,219 ...	... 14,905
Pail closets	6,302 ...	... 478
Privy Middens	10,540 ...	... 678

44 privy middens, 15 pail closets and 5 waste-water closets were replaced by fresh-water closets in 1933.

Only 18 privy middens and 16 pail closets now remain that are capable without hindrance of being converted to the fresh-water carriage system.

There are, in addition to the above, 660 privy middens and 462 pail closets existing where the absence of sewer, the possession of a fresh-water closet indoor, or being in scheduled clearance and improvement areas and projected street and town improvement schemes prevent or obstruct their conversion.

Where there is a fresh-water closet indoor, and a privy midden or pail closet outside, every effort is made to induce the owner of the property to provide a dustbin of approved size and construction in lieu of the privy or pail closet.

During the year two new public conveniences were provided. A well equipped underground lavatory for women was opened in Nelson Square and a convenience for men was opened in Manchester Road,

In the following table is set forth the nature of the closet accommodation in the various wards of the Borough.

Closet Accommodation, 1933.

	No. of Closets Converted or Demolished, 1933.				F.W.Cs. provided in lieu of any other type and additions in new and old houses, 1933.	Present Closet Accommodation, 1933.				Per Cent. on	
	P.M.	Pail.	W.W.C.	F.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough...	18	23	4	13	63	141	312	10779	18379	1·5	98·5
Great Lever	4	...	...	...	89	97	15	1104	2661	2·9	97·1
Tonge	1	...	...	...	51	43	28	762	3599	1·6	98·4
Astley Bridge	2	...	...	...	210	27	9	437	2253	1·3	98·7
Smithills	4	...	1	...	466	34	62	698	2593	2·8	97·2
Hulton	22	...	...	...	73	118	4	589	1179	6·5	93·5
Darcy Lever-cum-Breightmet	...	...	3	...	51	110	24	177	1146	9·2	90·8
Deane-cum-Lostock	...	...	...	...	14	81	10	210	1231	5·9	94·1
Heaton	...	...	...	...	66	27	14	149	1114	3·1	96·9
Extended Borough	51	23	8	13	1083	678	478	14905	34155	2·3	97·7

PUBLIC CLEANSING.

The work of street cleansing and watering, gully cleansing, snow removal, refuse collection and disposal is carried out by the Corporation Cleansing Department's own staff.

The Cleansing Superintendent has furnished me with the following information.

Street Cleansing.

Total mileage of streets cleansed.....347¾.

1½	Miles	are cleansed	three times	daily.
5¼	,,	,,	,,	twice daily.
3½	,,	,,	,,	daily.
2	,,	,,	,,	three or four times per week.
10	,,	,,	,,	twice weekly.
276	,,	,,	,,	weekly.
49½	,,	,,	,,	less than once weekly.

During the Summer-time the streets are watered as and when required

Gully Cleansing.

About 80% of the street gullies are cleansed mechanically by vacuum gully-emptiers.

Refuse Collection.

House refuse is collected by motor and horse-drawn wagons fitted with covers.

Bins in the centre of the town are emptied daily.
Bins from dwelling-houses are emptied weekly.
Dry ashpits, once every 2 to 3 weeks.
Privies, from 6 to 8 weeks.
Pails, once to three times a week.

Refuse Disposal.

The disposal of refuse is by means of incineration, salvage, tipping and rail for agricultural purposes.

Incineration	45·1%
Salvage and Incineration	13·8%
Controlled Tipping	35·3%
Crude Tipping	1·1%
Agricultural Purposes	4·7%

Dry house refuse is disposed of either by means of incineration, where all the refuse is reduced to clinker which is afterwards used for mortar-making or for clinker ashphalt for road-making, or by means of salvage and incineration. The refuse is separated by a Petrie & McNaught Salvage Plant which screens the refuse. The cinders from this are sold to be burned again, mostly for greenhouse fires. The fine dust is used for a covering for our tips or as a top dressing. Tins, &c. are picked out, pressed, and sold along with dry non-ferrous metal, clean paper, etc.

Cleansing of Cesspools.

The method of emptying cesspools varies according to conditions and situations, but they are mostly emptied by means of buckets direct into a motor or horse-drawn tank. The refuse is either taken to the depôt to be treated for agricultural purposes or in some cases is discharged into the sewers.

SANITARY INSPECTION.

The nature and extent of the work done by the Sanitary Inspectors is shown in the following statement :—

General Inspections.

Houses	12014
Newly-infected houses	1580
Schools	1
Common lodging-houses	749
Houses let in lodgings	1385
Factories	95
Workshops	209
Workplaces	98
Offensive trades	33
Dairies, Cowsheds, and Milk-shops	462
Conversion of Closets	240
Drains...	458
Miscellaneous...	1718

NUISANCES FOUND.

Houses, workshops, cowsheds, etc., needing limewashing	805
Houses overcrowded	46
House roofs, walls, floors, etc., in bad repair	1188
Insan. or insufficient closet accommodation	81
Ashpits or pails in bad repair	90
Defective or choked drains	222
Yards in bad repair	199
Animals kept as a nuisance...	23
Miscellaneous	1121

ACTION TAKEN.

Letters written	871
Informal notices served	661
Verbal notices	500
Legal notices served	209

DISINFECTIONS.

Houses disinfected	1498
Rooms disinfected	3429
Articles disinfected	1396
Beds disinfected	7060
Articles destroyed	135

COMPLAINTS.

From Public	54
From Factory Inspector	16
Reports on complaints to Factory Inspector	19

PLACES UNDER INSPECTION.

Common lodging-houses	35
Houses let in lodgings	67
Factories	350
Factory Chimneys	263
Workshops and Workplaces	802
Bakehouses	326
Outworkers' Premises	9
Offensive trades	23
Slaughterhouses	32
Cowsheds	353
Milk-shops	499
Public Sanitary Conveniences	27
Travelling Vans	150

PREMISES CONTROLLED BY BYE-LAWS OR REGULATIONS.

Common Lodging-Houses.

The number of registered common lodging-houses in Bolton is 35. In 1926 there were 38.

The ward distribution of these common lodging-houses and the accommodation they afford is as follows:

Ward.	Houses.	Rooms.	Beds.
Exchange	9 ...	54 ...	184
East	21 ...	135 ...	703
Church	2 ...	17 ...	186
Derby	2 ...	16 ...	74
West	1 ...	17 ...	84

ACCOMMODATION FOR THE SEXES.

Description.	Houses.	Males.	Females.	Couples.
Males only	24	980	...	...
Females only	1	...	56	...
Males and Females	1	27	8	...
Females and Couples ...	3	...	23	19
Males and Couples	3	45	...	7
Males, Females and Couples	3	34	18	14
	35	1,086	105	40

The demand for common lodging-house accommodation has greatly diminished in the past few years and is still steadily falling.

All the common lodging-houses in Bolton are visited by the Sanitary Inspectors once a month between the hours of 11 p.m. and midnight, for the purpose of seeing that all is in order.

The Inspectors report that of the accommodation available in the common lodging-houses the average amount occupied is about 50% at the present time.

Prices for beds vary to the following extent:

Single beds from 6d. to 1/2, the latter price being for cubicles.

Double beds 1/2 and 1/4.

Houses Let in Lodgings.

Byelaws relating to houses let in lodgings or occupied by members of more than one family made in 1898 were repealed in 1932. These byelaws had become obsolete, mainly on account of the exemption clauses in the matter of rateable value and rent payable placing the houses let in lodgings outside their scope.

The Council have approved and adopted new byelaws containing no exemption clause as regards rateable value or rent and these have been approved by the Ministry of Health.

The byelaws provide amongst other matters, for :—

(*1*) fixing the number of persons who may occupy a house,
(*2*) the registration and inspection of such houses,
(*3*) enforcing drainage and promoting cleanliness and ventilation,
(*4*) securing the adequate lighting of every room,
(*5*) requiring provision adequate for the use of and readily accessible to each family of—

(i) closet accommodation,
(ii) water supply and washing accommodation,
(iii) accommodation for the storage, preparation and cooking of foods.

None of the houses so let in Bolton were built for use as lodging-houses and generally they were intended for the use of one family only.

The byelaws do not apply to any house in which the landlord resides and not more than one family is lodged.

These lodging-houses are largely occupied by families who have no furniture of their own and who cannot afford the responsibility of separate tenancy.

Constant supervision by the Sanitary Inspectors is essential, as this sub-letting of houses has a definite tendancy to create slums. When necessary structural alterations have been effected to attain the byelaw standard the premises are in most cases visited weekly for evidence of overcrowding, uncleanliness or the lack of ventilation.

It is the duty of the landlord who lets a lodging-house to give notice to the local authority of such letting. Up to the present time, 128 notifications have been received but only 67 have as yet been placed on the register. These houses are chiefly in West, Exchange and East wards. 70% of the rooms in the registered houses in Bolton are used as combined rooms, i.e., used partly as sleeping apartments and partly as living rooms.

The majority of the rooms are let furnished (80%).

As a result of action taken by the Public Health Department, 26 houses previously let in lodgings are not now used for the purpose and those now remaining on the register have been improved in the matter of convenience and the provision of ventilated food stores.

There is no control over the rents that can be charged by the landlord. There are instances where exhorbitant charges are being made which generally bear no relationship with the accommodation afforded.

The charges made vary considerably. The lowest rent paid is 4/- and the highest 15/-.

Only in 25 houses does the landlord of the registered houses reside on the premises.

The 1931 census showed that there were 406 families in Bolton living three or more families per house.

The most unfavourable conditions in our town for the rearing of families can be found in houses let in lodgings.

Vans.

The number of living vans in Bolton at the close of 1933 was 24 the same as last year.

Particulars of the location and occupation of the vans are set forth below:—

Situation.	No. of Vans.	Occupants.	
		Adults	Children
Fern Street	4	5	1
31, Bridgeman Street...	2	3	—
Cheetham Court	1	1	2
Corner of Bridge St. and St. George's St. ...	7	12	2
Land adjoining Tonge Moor House ...	2	3	1
Radcliffe Road (200 yards from Long Lane)	1	3	1
Rear of 405, Radcliffe Road	1	2	—
Field adjoining Withins Lane	1	1	—
Adjoining Capitol Bleachworks	1	2	—
Back Darley Street	2	2	—
Cotton Street	1	2	—
Shurmer Street	1	2	—
	24	38	7

Offensive Trades.

Offensive trades are being carried on in 23 different premises in Bolton. The nature of these trades and their distribution in the wards of the town is shown in this table:

OFFENSIVE TRADES.

Trade.	Added Area.	West.	Halliwell.	Bradford.	Derby.	East.	Church.	North.	Rumworth.	Exchange.	TOTAL.
Tripe Boilers	1	...	...	2	...	...	1	...	...	...	4
Fellmongers and Tanners ...	...	1	...	1	...	...	...	...	...	...	2
Hide and Skin Depots	...	...	...	...	...	...	...	...	...	1	1
Gut Scraping	...	...	...	1	...	...	...	...	...	...	1
Blood Boiler	...	...	...	...	...	...	1	...	...	...	1
Soap Works...	1	...	...	...	...	...	...	...	...	...	1
Chemical Works	...	...	...	...	...	1	1	...	...	...	2
Muriatic Acid Works	1	...	...	...	...	...	...	...	...	...	1
Tar and Ammoniated Sulphate Works	1	...	...	...	...	...	...	...	...	...	1
Brick Works	6	...	1	...	...	...	...	...	1	...	8
Knackers' Yard	...	...	...	...	...	...	1	...	...	...	1
Total Offensive Trades	10	1	1	4	...	1	4	...	1	1	23

No serious nuisance has arisen in connexion with any of the aforesaid trades.

Slaughterhouses.

Most of the slaughtering in Bolton continues to be carried out in the private slaughterhouses, and consequently the inspection of meat necessitates a considerable amount of travelling between the different premises. These conditions must prevail until such time as a modern abattoir is constructed and equipped to deal with the whole of Bolton's meat supply.

There has been no change in the number of private slaughterhouses.

The present public abattoir has accommodation for the slaughtering of a very limited number of all classes of animals. During the year the Markets Committee have given consideration to schemes for the provision of a modern abbattoir.

The 16 private slaughterhouses are used as follows :—

For Cattle, Sheep and Pigs ...	8 Slaughterhouses
For Cattle and Pigs	1 Slaughterhouse
For Cattle only	1 Slaughterhouse
For Pigs only	6 Slaughterhouses

During the year 2,257 visits were paid by the Veterinary Inspector and the Meat Inspector to the abattoir and private slaughterhouses.

Knackers' Yard.

During the year, 27 visits of inspection were paid to the local Knackers' Yard. The provisions of the Protection of Animals Act, 1911, were found to be carried out satisfactorily.

Factories and Workshops.

In accordance with the provisions of Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required to make to the Secretary of State for the Home Office the following report which gives in addition to other information, the total number of defects found and notices served.

1.—INSPECTION.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories ... ... (Including Factory Laundries)	95	4	—
Workshops ... ... (Including Workshop Laundries)	209	1	—
Workplaces ... ... (Other than Outworkers' premises)	98	1	—
Total	402	6	—

2.—DEFECTS.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found	Remedied	Referred to H.M. Inspector	
*Nuisances under the Public Health Acts:—**				
Want of cleanliness	12	12	—	—
Want of ventilation	3	3	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	3	3	—	—
Sanitary accommodation { insufficient	3	3	—	—
Sanitary accommodation { unsuitable or defective	4	4	—	—
Sanitary accommodation { not separate for sexes	2	2	—	—
Offences under the Factory and Workshop Acts:—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Other offences ... ... (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order 1921).	—	—	—	—
Total	27	27	—	—

*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

There was no outwork found to be carried on in unwholesome premises during the year.

SECTION IV.

Housing.

HOUSING.

The work of eliminating insanitary houses has been continued during the year. The Department has received the co-operation of many property owners in the town in the task of bringing up to byelaw standards, working class houses which were built before the introduction of byelaws.

The Housing (Financial Provisions) Act, 1933 came into operation in the period under review. By this Act of Parliament further subsidies to Local Authorities towards the building of new houses—apart from the provisions of the Housing Act, 1930—were terminated. It was anticipated that "private builders, housing companies, public utility societies and private investors would all take a share in the ownership of working class houses, and would secure a large volume and variety of production at competitive rents." The work of the Local Authority in relation to new houses is now confined to building houses equivalent in number to the insanitary houses demolished individually or in clearance or improvement areas. In Bolton, as in many parts of the country, the main housing difficulties result from an excess of families over houses. The building of new houses by the Local Authority equal in number to insanitary houses demolished obviously does not cure this shortage of houses. Under existing legislation it is to the other agencies mentioned above that we must look for the additional houses at competitive rents which are needed to ease the housing problem of our poorer citizens.

The provisions of the Housing Act, 1930, have been carried on in co-operation with the Department of the Borough Engineer and with the Housing Department. In the consideration of individual houses unfit for habitation and of insanitary areas, the responsibility of advising the Public Health Committee is shared with the Architectural Section of the Borough Engineer's staff. The rehousing of the occupants of demolished houses is left entirely to the Housing Department. The process of transfer of tenants from insanitary dwellings to new Corporation houses has not been without difficulty. The furniture and personal belongings of many of the tenants from demolished houses are bug-infested. To prevent infestation of the new houses the Housing Director initiated methods for treating the furniture before its admission. Formalin spraying of furniture and the stoving of all suitable articles was first tried and found to be of very little use. Fumigation with sulphur dioxide gas was also found to be unsatisfactory. The Housing Committee have now organised a scheme whereby the furniture from insanitary houses is collected and specially treated with hydrocyanic acid gas before going to the new house. The Housing Director reports that this method has given very satisfactory results. The Housing Committee have agreed to a scheme for the provision of furniture to tenants in certain cases. The furniture is supplied at actual cost plus 5% and payment is collected weekly with the rent. In connection with the rehousing of dwellers from insanitary areas the

Housing Committee have also elaborated a scheme of rent rebate (within certain limits) based on income in order to bridge the gap between the low rents paid for the unfit house and rent of the Council house.

Although progress has been made during the year there are still areas which hinder the growth of children into wholesome citizens. There is still the problem of houses let in lodgings to which reference is made on page 43.

The number of new houses completed in 1933 was 1,018 as compared with 751 in 1932.

The number of new houses completed in Bolton in each year since 1921 is as follows :

Year.	Private Enterprise.	Municipal Schemes.	Total.
1921	34	191	225
1922	18	462	480
1923	111	30	141
1924	351	3	354
1925	502	179	681
1926	610	251	861
1927	571	510	1,081
1928	319	160	479
1929	551	228	779
1930	204	492	696
1931	213	465	678
1932	240	511	751
1933	479	539	1,018

The following table shows the number of houses and the number of inhabitants per house in Bolton in certain years since 1901.

		Houses.	Inhabitants per House.
Census	1901	36,177	4·64
,,	1911	41,585	4·34
,,	1921	42,475	4·28
,,	1931	47,433	3·73
Estimated	1932	48,589	3·65
,,	1933	49,607	3·56

The following table gives particulars as to numbers and situation in Wards of houses which were completed and certified during 1933, of all houses which were in course of construction during 1933, but which were unfinished at its close, and of all houses for which plans had been passed during 1933, but whose construction had not been begun when this year ended.

New houses certified, 1933.

Erected by the Local Authority	...	539
Erected by other bodies or persons	...	479

Ward.	Number.
Old Borough	32
Tonge	50
Astley Bridge	208
Great Lever	87
Smithills	463
Hulton	51
Darcy Lever-cum-Breightmet	47
Deane-cum-Lostock	14
Heaton	66
Total	1,018

Houses in course of construction on 31st December, 1933.

			Number.
By the Local Authority	...	...	435
By other bodies or persons	...	...	297
Total	...	...	732

Houses for which plans had been approved but construction had not been commenced on 31st December, 1933.

			Number.
By the Local Authority	...	...	—
By other bodies or persons	...	...	214
Total	...	...	214

Housing Act, 1930.

The following figures show the progress that has been made from the date on which the Act became operative until the time of writing (30th June, 1934).

Unfit houses demolished in clearance areas ...	18
Number of persons displaced from such houses ...	80
Individual unfit houses (Sec. 19) demolished ...	97
Number of persons displaced from such houses ...	326
Number of houses made fit as a result of statutory notice	939
Insanitary houses demolished in anticipation of formal procedure	25
Insanitary houses closed (but not demolished) on an undertaking of the owner not to use for habitation	18
Number of houses made fit as a result of informal notice preliminary to formal notice	2,766

Housing Statistics, 1933.

1. Inspection of Dwelling-houses during the year.

(1) (*a*)	Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	2,648
(*b*)	Number of inspections made for the purpose ...	11,847
(2) (*a*)	Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	1,305
(*b*)	Number of inspections made for the purpose ...	3,578
(3)	Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	160
(4)	Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	1,096

2.—Remedy of Defects during the year without Service of Formal Notices.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	782

3.—Action under Statutory Powers during the year.

A. *Proceedings under Sections 17, 18 and 23 of the Housing Act, 1930.*

(1)	Number of dwelling-houses in respect of which notices were served requiring repairs ...	180
(2)	Number of dwelling-houses which were rendered fit after service of formal notices	
	(*a*) by owners	166
	(*b*) by Local Authority in default of owners... ...	15

B. *Proceedings under Public Health Acts.*

(1)	Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	1
(2)	Number of dwelling-houses in which defects were remedied after service of formal notices..	
	(*a*) by owners	1
	(*b*) by Local Authority in default of owners... ...	—

C. *Proceedings under Sections 19 and 21 of the Housing Act, 1930.*

(1)	Number of dwelling-houses in respect of which Demolition Orders were made	40
(2)	Number of dwelling-houses demolished in pursuance of Demolition Orders	36

D. *Proceedings under Section 20 of the Housing Act, 1930.*

(1)	Number of separate tenements or underground rooms in respect of which Closing Orders were made	—
(2)	Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit	—

4.—NUMBER OF HOUSES OWNED BY THE LOCAL AUTHORITY UNDER THE HOUSING ACTS 3,854

SECTION V.

Inspection and Supervision of Food.

MILK.

The Milk and Dairies Order, 1926.

Cowkeepers, Dairymen and Purveyors of Milk.

Cowkeepers on register (1932)	124
„ added to register (1933)	1
„ discontinued (1933)	1
Total ...	124

Cowsheds on register (1932)	353
„ added to register (1933)	2
„ discontinued (1933)	2
Total ...	353

The following statement shows the number of cowkeepers, cowsheds, number of cows provided for, and the average number of cows in sheds in the respective districts on 31st December, 1933 :—

Number of District	Cowkeepers	Cowsheds	Number of Cows provided for	Average number of Cows in sheds
1	15	43	387	288
2	31	87	907	712
3	16	37	372	324
4	19	62	515	390
5	11	31	290	227
6	8	19	154	102
7	24	74	671	637
Totals	124	353	3,296	2,680

Number of dairies and premises of milk purveyors on register (31st December, 1933) 615

Milk (Special Designations) Order, 1923.

The following licences were granted during the year 1933 under this Order :—

Producer's Licence to use the designation " Certified " ...	2
(Licences issued by Ministry of Health).	
Dealer's Licence to use the designation " Certified " ...	1
Producer's Licence to use the designation " Grade A " ..	4
Dealer's Licence to use the designation " Grade A " ...	1
Dealer's Licence to use the designation " Pasteurized " ...	1
(Licence is in respect of a Pasteurizing establishment.)	
Supplementary Licence to use the designation " Pasteurized "	1

" Certified " Milk.

Licences to produce " Certified " Milk have been granted by the Ministry of Health to two dairy farmers in the Borough.

In accordance with the provisions of the Order with regard to producers of " Certified " Milk, every animal in each herd has been submitted to veterinary examination and to the prescribed double intra-dermal tuberculin test twice during the year.

" Grade A " Milk.

Licences to produce " Grade A " Milk have been granted by this department to four dairy farmers in the Borough.

In compliance with the provisions of the Order every animal of the herds has been submitted to a veterinary examination once in every three months, and all farms have been frequently visited for the purpose of examining recently purchased cows before being admitted to the herds.

In carrying out the provisions of the Milk and Dairies Acts and Orders all farms and premises dealing with milk have been frequently visited by the Veterinary Officer and Sanitary Inspectors. The Veterinary Officer paid 259 visits to farms during the year, when 736 cowsheds were inspected, and 5,893 cows examined.

During the year 18 mixed samples of milk, involving groups of cows, were taken and submitted to the biological test. Four of these samples were found to contain tubercle bacilli, and 14 were reported negative.

22 samples of milk were taken from individual cows and submitted to the biological test. Four of these samples were found to contain tubercle bacilli, and the remaining 18 were reported negative.

Of the 22 individual samples, 17 were taken as a result of obtaining the 4 positive mixed samples when the individual cows giving tuberculous milk were discovered: the remaining 5 individual samples were taken from cows with suspected tuberculosis of the udders and were found to be negative.

The cows from which the positive milk samples were obtained have been slaughtered and dealt with under the provisions of the Tuberculosis Order.

The Examination of Milk.

The Borough Analyst reports as follows on the samples of milk submitted to him for examination.

Chemical Analysis.

Total examined	Genuine	Adulterated
164	151	13

All the samples were examined for preservatives and colouring matter. These were found to be absent in all cases.

The satisfactory quality has been maintained, the average being (exclusive of skimmed milk) for the year:—

Milk fat.	Non-fatty solids.	Water.
3·70%	8·78%	87·52%

Minimum limit:—Milk fat, 3·00%; Non-fatty solids, 8·50%

The following table shows the monthly variation:

Month.	No. of samples.	Milk fat.		Non-fatty solids.	
January	1	3·80	3·38%	8·65	8·72%
February	0	...		...	
March	7	3·32		8·73	
April	1	2·90	3·60%	9·20	8·73%
May	13	3·69		8·86	
June	25	3·59		8·65	
July	0	...	3·76%	...	8·82%
August	9	3·78		8·94	
September	29	3·75		8·79	
October	25	3·89	3·76%	8·84	8·79%
November	43	3·73		8·78	
December	11	3·58		8·68	

Bacteriological Examination.

Vended Milk. (Bottled.)

No Ministry of Health Standard of Purity.

No. of samples examined...	4	
Average Agar count per 1 c.c.	36,863	
No. of samples with B. Coli in 1/100 c.c.	2	or 50·0%
,, ,, ,, 1/10 c.c. absent in 1/100 c.c.	1	or 25·0%
,, ,, ,, 1 c.c. ,, 1/10 c.c.	1	or 25·0%
,, ,, ,, absent in 1 c.c.	0	

The above 4 samples contained total bacteria per 1 c.c. as follows :—

Under 1,000	0
1,000 to 5,000	1
5,000 to 10,000	1
10,000 to 20,000	0
20,000 to 30,000	0
30,000 to 50,000	1
50,000 to 100,000	1

"Grade A" Milk.

Ministry of Health Standard :—

Agar count not to exceed 200,000 per 1 c.c.

B. Coli absent in 1/100 c.c.

Number of samples examined	55	
Average Agar count per 1 c.c.	2,269	
No. of samples with B. Coli in 1/100 c.c.	3	or 5·5%
,, ,, ,, in 1/10 c.c. absent in 1/100 c.c.	8	or 14·5%
,, ,, ,, in 1 c.c. ,, 1/10 c.c.	5	or 9·1%
,, ,, ,, absent in 1 c.c.	39	or 70·9%

The above 55 samples of "Grade A" Milk contained total bacteria per 1 c.c. as follows :—

Under 1,000...	27
1,000 to 5,000...	21
5,000 to 10,000...	4
10,000 to 20,000...	3
20,000 to 200,000...	0
Over 200,000	0

"Certified" Milk.

Ministry of Health Standard:—

Agar count not to exceed 30,000 per 1 c.c.

B. Coli absent in 1/10 c.c.

No. of samples examined...	65
Average Agar count per 1 c.c.	2,445
No. of samples with B. Coli in 1/100 c.c.	0
" " " in 1/10 c.c. absent in 1/100 c.c.	1 or 1·5%
" " " in 1 c.c. " 1/10 c.c.	2 or 3·0%
" " " absent in 1 c.c.	62 or 95·5%

The above 65 samples of "Certified" Milk contained total bacteria per 1 c.c. as follows:—

Under 1,000	26
1,000 to 5,000	33
5,000 to 10,000	4
10,000 to 20,000	1
20,000 to 30,000	1
Over 30,000	0

"Pasteurized" Milk.

N.B.—This milk although really Pasteurized, is sold as ordinary bottled milk without guarantee.

Ministry of Health Standard:—Agar count not to exceed 100,000 per 1 c.c.

No. of samples examined	17
Average Agar count per 1 c.c.	2,409
No. of samples with B. Coli in 1/100 c.c.	0
" " " in 1/10 c.c. absent in 1/100 c.c.	1 or 5·9%
" " " in 1 c.c. " 1/10 c.c.	7 or 41·2%
" " " absent in 1 c.c.	9 or 52·9%

The above 17 samples of "Pasteurized" Milk contained total bacteria per 1 c.c. as follows:—

Under 1,000...	5
1,000 to 5,000...	10
5,000 to 10,000...	2

Tuberculosis Order of 1925.

This Order with its amendment Order of 1931 requires certain suspected forms of the disease to be reported to the Local Authority namely :—tuberculosis of the udder, induration or other chronic disease of the udder, tuberculous emaciation, and chronic cough accompanied by definite clinical signs of tuberculosis. Cattle which on veterinary examination are found to be giving tuberculous milk or to be suffering from one of the forms of tuberculosis specified above are required to be slaughtered, compensation being paid to the owner.

The following table shows the number of animals examined under the Order, the number of animals slaughtered, and the form in which they were diseased :—

Total Number of animals examined	Number of animals slaughtered	Number with tuberculosis of udder	Number giving tuberculous milk	Number with tuberculous emaciation	Number with chronic cough and definite signs of tuberculosis
589	16	4	...	6	6

MEAT.

Public Health (Meat) Regulations, 1924.

These regulations provide for proper control of shops and stalls, and the transport, and handling of meat. Notice of slaughter, and notification of disease, are required by these regulations.

The following notices were received :

Written notice of regular slaughtering on fixed days.	13
Notifications of slaughtering at other than fixed days.	273

267 notices were received of diseased or unsound meat. Of these notices, 160 related to cattle, 10 to sheep, 88 to pigs and 9 to calves.

Frequent visits of inspections are made to shops, stalls and other premises. Meat carriers' vehicles are regularly inspected, to ensure general cleanliness in the distribution of the meat within the Borough.

The following table shows the total number of animals slaughtered in the Borough during the year; the number and percentage of animals affected with disease; the number and percentage of animals affected with tuberculosis only; and the number of cows affected with tuberculosis of the udder.

	Total Number of Animals Slaughtered	Animals affected with Disease (including Tuberculosis)		Animals affected with Tuberculosis		Cows affected with Tuberculosis of the Udder
		Number	Per-centage	Number	Per-centage	Number
CATTLE	10,008	1,914	19·12	901	9·0	21
CALVES	1,010	22	2·17	10	1·0	—
SHEEP	59,616	718	1·2	—	—	—
PIGS	10,440	545	5·2	477	4·57	—

Carcases Found to be Affected with Disease.

Disease or Defect.	Examined				Action taken		Examined	Action taken		Examined	Action taken		Examined	Action taken	
	Cows	Bullocks	Heifers	Bulls	Whole carcase destroyed	Parts and Organs destroyed	Calves	Whole carcase destroyed	Parts and Organs destroyed	Sheep	Whole carcase destroyed	Parts and Organs destroyed	Pigs	Whole carcase destroyed	Parts and Organs
Tuberculosis	777	90	9	25	128	773	10	8	2	...	...	...	477	16	4
Pneumonia	...	...	...	...	...	...	3	3	...	...	...	...	1	1	
Pleurisy	4	5	1	2	...	12	...	...	...	2	...	2	3	...	
Mastitis	64	...	...	...	...	64	...	...	...	...	...	...	...	...	
Nephritis	8	...	...	...	...	8	...	...	...	1	...	1	...	...	
Pericarditis	1	1	1	...	...	3	...	...	...	...	...	...	2	...	
Abscess	8	7	...	...	...	15	...	...	...	1	1	...	3	1	
Bacterial Necrosis ...	14	6	1	...	...	21	..	...	...	...	...	...	...	...	
Actinomycosis	1	2	...	...	...	3	...	...	...	...	...	...	...	...	
Echinococcus	114	10	1	...	...	125	...	...	...	...	...	...	...	...	
Distomatosis	242	402	10	21	...	675	...	...	...	578	...	578	...	...	
Decomposition	2	...	...	...	1	1	1	1	...	22	22	...	3	3	
Angioma	63	...	...	...	...	63	...	...	...	...	...	...	...	...	
Emaciation	...	...	...	...	...	...	...	...	...	...	...	...	4	4	
Johne's Disease	8	...	...	...	5	3	...	...	...	...	...	...	...	...	
Traumatism	1	...	...	...	1	...	...	...	...	1	1	...	1	1	
Œdema	6	...	...	...	6	...	2	2	...	29	29	...	1	1	
Fevered	2	..	...	...	2	...	...	...	...	...	...	...	...	...	
Cirrhosis	...	2	...	...	...	2	...	...	...	...	...	...	18	...	
Cysticercus Tenuicollis ..	...	...	...	...	...	...	...	...	...	84	...	84	26	...	
Immaturity	...	...	...	...	...	...	3	3	...	...	...	...	...	...	
Joint Ill	...	...	...	...	...	...	1	1	...	...	...	...	...	...	
Arthritis	1	...	...	...	...	1	...	...	...	...	...	...	...	...	
Enteritis	1	...	...	...	1	...	...	...	...	...	...	...	...	...	
Septicæmia	1	...	...	...	1	...	2	2	...	...	...	...	4	4	
Swine Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	2	2	
Total	1318	525	23	48	145	1769	22	20	2	718	53	665	545	33	1

Number of Organs Destroyed for Tuberculosis and Other Conditions in the Different Classes of Animals during 1933.

	Cattle.	Calves.	Sheep.	Pigs.	Total.
LUNGS:					
Tuberculosis	813	10	...	207	1,030
Other conditions ...	171	12	54	21	258
HEARTS:					
Tuberculosis	314	8	...	142	464
Other conditions ...	20	12	52	17	101
BOWELS:					
Tuberculosis	366	8	...	103	477
Other conditions ...	19	12	52	15	98
STOMACHS:					
Tuberculosis	320	8	...	103	431
Other conditions ...	18	12	52	16	98
SPLEENS:					
Tuberculosis	315	8	...	93	416
Other conditions ...	17	12	52	16	97
LIVERS:					
Tuberculosis	521	9	...	169	699
Other conditions ...	883	12	662	89	1,646
KIDNEYS:					
Tuberculosis	12	...	...	4	16
Other conditions ...	20	...	...	10	30
HEADS:					
Tuberculosis	453	8	...	432	893
Other conditions ...	20	11	52	2	85
TOTALS	4,282	142	976	1,439	6,839

Weight of Unsound Meat Destroyed.

	Number	tons.	cwts.	qrs.	lbs.
Beef Carcases ...	145	30	19	2	26
„ Fore Quarters ...	16	1	1	1	20
„ Hind Quarters ...	1	...	1	1	0
„ Offals ...	...	27	8	1	13
Mutton Carcases ...	53	...	13	3	18
„ Offals ...	...	...	9	0	27
Pork Carcases ...	33	1	15	0	19
„ Offals ...	...	2	16	0	25
Veal Carcases ...	20	...	9	1	6
„ Offals ...	...	...	2	0	22
Imported	...	...	8	0	24
Total Weight ...	—	66	5	0	4

Disposal of Unsound Meat Voluntarily Surrendered.

All unsound meat is disposed of in the Corporation destructor. The Public Health Department pays £4 per ton by way of compensation.

OTHER FOOD STUFFS.

The following food stuffs and provisions were destroyed as unsound:

	tons.	cwts.	qrs.	lbs.
Fish	1	1	2	19
Poultry and Rabbits ...	...	7	1	0
Fruit and Vegetables ...	14	12	0	1
Canned Foods and Provisions	...	3	3	26
	16	4	3	18

Merchandise Marks Act, 1926.

Under this Act, Orders in Council are made which provide for the compulsory marking of certain imported goods. Imported goods which come within the provisions of the Act must be marked "Foreign" or the country of origin indicated. Goods from the Dominions or Colonies are required to be marked "Empire" or with the name of the exporting Dominion.

Orders have been made at various dates in respect of honey, fresh apples, currants, sultanas and raisins, eggs in shell and dried eggs, oats and oat products, raw tomatoes, chilled salmon and butter.

The provisions of these Orders have been carried out in accordance with the instructions of the Ministry of Agriculture and Fisheries. It has been necessary to administer cautions on many occasions. One trader was prosecuted and fined 10/- for a breach of this Act.

Sale of Food Order, 1921.

Throughout the year the provisions of this Order concerning imported meat have been strictly enforced. With the exception of a few minor cases of neglect, the requirements of the Order have been well observed.

Diseases of Animals Acts, 1894 to 1927.

The following is a brief account of the principal Orders under which work has been carried out.

Tuberculosis Order, 1925 and 1931.

See page 64.

The Anthrax Order of 1928.

On the 30th July, a suspected case of anthrax was reported on one of the farms in the Borough. Examination of blood smears from the carcase revealed the presence of anthrax.

On the 17th October, a suspected outbreak of anthrax was reported on one of the farms in the Borough. Two cows died, and examination of blood smears from the carcases revealed the presence of anthrax.

In each out-break, blood specimens were sent to the laboratory of the Ministry of Agriculture and Fisheries, and the disease was confirmed.

Restrictions were imposed on the premises in each case, and the anthrax carcases removed to the Corporation Destructor and burned. The infected premises were cleansed and disinfected in accordance with the provisions of the Order.

During the year three suspected cases of anthrax were reported on other farms in the Borough, but on investigation were found to be negative.

Foot and Mouth Disease.

No out-breaks of this disease have occurred in the Borough during the year. A considerable amount of work has been done in carrying out the provisions of the Foot and Mouth Disease Orders relating to animal feeding stuffs and to packing materials.

Parasitic Mange Orders of 1911 and 1918.

Two suspected cases of mange in horses were notified. Microscopical examination of skin scrapings taken from each case proved negative.

Swine Fever Order of 1908.

Four suspected cases of swine fever were reported by occupiers of piggeries in the Borough during the year. The premises were visited and on investigation each case was found to be negative.

Lancashire Swine Fever Order of 1933.

Owing to the serious increase in the prevalence of swine fever in Lancashire, the Ministry of Agriculture and Fisheries made an Order applying swine fever restrictions to the whole of the County of Lancaster. The Order came into operation on the 28th December, 1933, from which date all movements of swine in the Borough have been controlled by licences granted by this department.

Animals (Landing from Ireland, Channel Islands, and Isle-of-Man) Order of 1923.

The following Irish animals were received on licence in the Borough during 1933 :—

Cattle	5,184
Sheep	11,725
Pigs	5,116
Total ...	22,025

In accordance with the provisions of the Order relating to these imported animals, 1,021 cattle and 1,834 sheep were moved to slaughter-houses under further licences granted by this department within the prescribed detention period of six days.

Importation of Canadian Cattle.

During the year 138 Canadian fat cattle were licensed to slaughter houses in the Borough.

Inspection of Markets.

During the year the Cattle Market has been visited each week when sales were being held for the purpose of inspecting the animals exposed for sale, and afterwards, in order to supervise the disinfection of the premises.

The following table shows the number of animals examined at the Cattle Market during 1933. The figures for the previous year are given for comparison :—

Year	Number of Visits	Authorised Market	Cattle Market				
		Irish Dairy Cattle	Cattle	Calves	Sheep	Pigs	Total
1933	98	17	1,097	1755	23	315	3,207
1932	96	178	1,346	1476	20	232	3,074

General Food Inspection.

The following Table shows the number of visits paid to shops, stalls and stores :—

INSPECTION OF SHOPS, STALLS AND STORES.

	VISITS.		VISITS.
Beef Butchers ...	1,619	Provision Dealers ...	1,480
Pork Butchers ...	866	Fruiterers	1,374
Wholesale Meat Stores	290	Fishmongers	839
Food Preparation Premises	483	Street Hawkers ...	564

Slaughter of Animals Act, 1933

This Act, which came into operation on the 1st January, 1934, makes changes in the law relating to the slaughtering of animals in slaughter-houses and knackers' yards. It also places an obligation on the Local Authority to licence slaughtermen.

In general, animals to be slaughtered in a slaughter-house or knackers' yard must be stunned by a mechanically propelled instrument. This includes electrical methods for stunning.

Sheep are *excluded* from the provisions of this Act, unless the Local Authority, by resolution, decides that they shall be included. Goats are *included* in the provisions of the Act unless they are exempted by a special resolution of the Local Authority.

The Act further provides that Local Authorities shall grant licences to slaughter, to suitable persons of the age of 18 years or upwards. Such licences are to be renewed at the discretion of the Local Authority, but a licence shall not be in force for a period exceeding three years. No animal after the 1st January, 1934, is to be slaughtered except by a licensed slaughterman.

On the 31st December, 96 licences had been granted to slaughtermen by the Bolton Corporation. A fee of two shillings is charged for each licence. Licences are available for one year and remain in force for that period in the district of any Local Authority in England and Wales.

Rats and Mice (Destruction) Act, 1919.

During the National Rat Week, a copy of the Ministry's Advisory Leaflet, No. 49, on the destruction of rats and mice was distributed to the occupiers of over 250 premises within the Borough which are liable to infestation.

Efforts to exterminate these pests have been continued throughout the year. Frequent visits have been paid to all premises peculiarly liable to infestation, and also to premises from which complaints have been received. Suitable advice and assistance has been given.

As in previous years, rat catchers have been employed with dogs and ferrets on the markets and at the Wellington Yard Destructor with satisfactory results.

SECTION VI.

Annual Report of the Public Analyst and Bacteriologist.

Annual Report of the Public Analyst and Bacteriologist

for the year ended December 31st, 1933.

The following is the report on the work carried out in the Borough Laboratory during 1933. The details of the work in connection with milk have been printed for convenience in the section dealing with milk (page 59). The detailed report of water examinations is given on page 35.

SUMMARY.

	Number of Samples.
Food and Drugs	398
Bacteriological Examinations (Public Health Dept.) ...	1,431
Bacteriological Examinations of Milk	141
Water Analyses for the Waterworks Department ...	660
Gas Examinations	288
Fertilizers and Feeding Stuffs	8
Examinations for the Public Assistance Department ...	60
Miscellaneous Analyses	130
	3,116

PUBLIC HEALTH COMMITTEE.

FOOD AND DRUGS.

	Total.	Genuine.	Adulterated.	Percentage Adulterated
Milk	164	151	13	7·9
Condensed Milk ...	3	3	...	...
Cream	12	12	...	...
Butter	14	14	...	...
Margarine	17	17	...	...
Cheese	2	2	...	...
Lard	11	10	1	9·1
Tea	15	15	...	...
Coffee	14	14	...	...
Cocoa	3	3	...	...
Sugar	11	11	...	...
Jam and Marmalade ...	7	7	..	...
Meat Products ...	21	21	...	...
Cereals	8	8	...	...
Condiments and Spices	21	19	2	9·5
Cakes	4	4	...	...
Sweets	19	19	...	...
Beverages (Cordials)...	8	8	...	...
Drugs	19	19	...	...
Miscellaneous ...	25	25	...	...
	398	382	16	4·02

MILK—See page 61.

BUTTER.

14 samples have been examined. All were genuine and of good quality. In no case was the maximum legal limit for water (16·0%) exceeded, and in no case was preservative found.

CONDENSED MILK.

Three samples have been examined. These were submitted with a view to ascertaining their suitability as food for human consumption. They were of satisfactory bacteriological purity.

CREAM.

12 samples have been examined. Several of these were of the tinned variety with a milk fat content of only 20·0%. All were free from preservatives and thickening agents.

MARGARINE.

17 samples have been examined. All were sweet and wholesome, whether of animal or vegetable origin. All were examined for preservatives but in no case was any preservative found.

CHEESE.

Two samples were examined. These were whole meat of satisfactory quality. (43·3% milk fat).

COFFEE.

14 samples were examined. These were of satisfactory quality without admixture of any kind.

MEAT PRODUCTS.

21 samples were examined with special regard to preservatives. These were proved to be absent in every case.

LARD.

11 samples were examined. One sample was found to consist of beef fat 45·0% and cottonseed oil 55·0%.

SWEETS.

19 samples were examined. These were specially examined for arsenic and deleterious ingredients. In no case did the arsenic content exceed 1/200th of a grain per pound, and in no case was any injurious substance detected.

CAKES.

Four samples were examined. These were free from boron preservatives.

CONDIMENTS AND SPICES.

21 samples were examined. 19 of these were genuine. One sample sold as Table Vinegar was found to consist entirely of dilute pyroligneous acid and was furthermore 10 8% deficient in acetic acid. One sample of mustard pickles was found to contain 0.14% of boric acid.

DRUGS.

19 samples were examined. These were of good quality and complied with the requirements of the British Pharmacopœia.

MISCELLANEOUS.

25 samples were examined.

SUGARS.

11 samples were examined. All were of excellent quality.

PRESERVATIVES.

All samples were examined for preservatives where such might reasonably be expected to be present.

	No. examined.	No. containing Preservative.	Amount and nature of Preservative.
Milk	164	0	...
Cakes	4	0	...
Condiments and Spices	21	1	0·14% boric acid.
Meat Products ...	21	0	...

COLOURING MATTER.

	No. examined.	No. containing colouring matter.
Milk	164	0

Bacteriological Examinations.

(Public Health Dept.)

	Total.	Positive.	Negative.	Doubtful.
Tuberculosis	481	128	353	...
Diphtheria	946	162	775	9
Fever B. Typhosus ...	4	1	3	...
Para typhoid A.	1	...	4	...
Para typhoid B.	1	1	3	...

Bacteriological Examination of Milk—See page 62.

Miscellaneous Examinations.

12 Urines.
17 Waters.
9 Pathogenic specimens other than those previously tabulated.
12 Atmospheric Pollutions.
4 Milks.
25 Bath waters.
11 Coals.
7 Deposits.
3 Meat Products
2 Teas.
1 Pea Nuts.
1 Ice Cream.
1 Sewer Gas.
1 Stains on Garment.

Bath Waters.

Since the installation in April, 1930, of a chlorine plant at Bridgeman Street Baths the water has been uniformly excellent, and gives better bacteriological results than that of Moss Street and High Street, where sodium hypochlorite treatment is used.

Average Agar Counts and B. Coli Contents.

	High Street.	Moss Street. Ladies.	Moss Street. Gents.	Bridgeman Street. Ladies.	Bridgeman Street. Gents.
Agar Counts per 1 c.c.	6,984	3,723	2,376	63	44
B. Coli.					
−in 10 c.c.s. ...	40·0	60·0	80·0	100·0	100·0%
+in 10−in 5 c.c.s. ...	20·0	20·0	20·0	0	0%
+in 5−in 2 c.c.s. ...	0	0	0	0	0%
+in 2−in 1 c.c. ...	0	0	0	0	0%
+in 1−in 1/10 c.c. ...	40·0	20·0	0	0	0%
+in 1/10−in 1/100 c.c.	0	0	0	0	0%
+in 1/100 c.c. ...	0	0	0	0	0%

Fertilizers and Feeding Stuffs.

Four feeding meals have been examined; of these, three did not agree with warranty.

1. Oil 21·7%-excess of warranty.
2. Phosphoric Acid-17·3% deficient.
3. Oil-11·7% deficient.

Waterworks Committee.

The water comprising the town's supply is examined bacteriologically weekly, and chemically monthly. The findings show that generally speaking the water is of excellent quality. For details see page 35.

Routine Water Examinations	657
Deposits	1
Sponge	1
Slag Wool	1

Gas Committee.

The gas has been examined regularly for total sulphur, ammonia and sulphuretted hydrogen.

Watch Committee.

Three samples were examined in connection with a suspected poisoning case.

Streets Committee.

5 Paints.
4 Lubricating Oils.

Public Assistance Committee.

35 Milks.
24 Margarines.
1 Vomit.

The average composition of these milks was :—

Milk fat	3·77%
Non-fatty solids	8·71%
Water	87·52%

These figures are quite satisfactory.

The Margarines satisfied the Committee's requirements of percentage of animal fat.

CLEANSING COMMITTEE. 4 Fish Meals.

HOUSING COMMITTEE. 9 Paints.

HOMES AND WORKSHOPS FOR THE BLIND. 1 Skip and Cops.

CORONER. 1 Viscera.

ROYAL INFIRMARY.

4 Milks for Bacteriological and Chemical Examination.
2 Urines.

Sale of Food and Drugs Acts.

ADMINISTRATIVE RETURN OF ACTION TAKEN WITH REGARD TO SAMPLES NOT REPORTED TO BE GENUINE.

Article.	Result of Analysis.	Action taken.
Milk	8·7% deficient in fat	Fined £1 and 10/6 costs.
Milk	9·3% " "	No legal action taken on account of the disturbance caused to the herd by the reconstruction of the cowshed.
Milk	3·3 % " "	No action taken.
Milk	3·33 % " "	No action taken.
Milk	5·5 % added water	The producer has been prosecuted.
Milk	3·9 % " "	Fined £1 and 10/6 costs.
Milk	2·6 % " "	Withdrawn on payment of 4/- costs.
Milk	5·1 % " "	Warning letter sent.
Milk	4·6 % " "	Warning letter sent.
Milk	0·1 % " "	No action taken.
Milk	4·9 % " "	No action taken.
Milk	2·2 % " "	No action taken.
Milk	3·7 % deficient in fat	Warning given.
Table Vinegar	10·8 % deficient in acetic acid	Fined 5/- and 10/6 costs.
Lard ...	55·0% cottonseed oil ... ... 45·0% beef fat	Fined 5/- and 10/6 costs.
Mustard Pickles...	Contained 0·14% or 9·8 grains of boron preservative	Fined 4/- and 10/6 costs.

Offences other than adulterations.—Nil.

SECTION VII.

Prevalence of, and Control over, Infectious Diseases.

ACUTE INFECTIOUS DISEASES.

(Notifiable.)

The infectious diseases compulsorily notifiable in Bolton are the following :—

Smallpox.
Scarlet Fever.
Diphtheria & Membranous Croup.
Enteric or Typhoid Fever.
Pneumonia (Acute Primary and Acute Influenzal.)
Cholera.
Plague.
Puerperal Fever.
Puerperal Pyrexia.
Cerebro-spinal Fever.
Acute Poliomyelitis.
Acute Polio-encephalitis.
Acute Encephalitis Lethargica.
Typhus Fever.
Relapsing Fever.
Continued Fever.
Dysentery.
Ophthalmia Neonatorum.
Erysipelas.
Malaria.
Tuberculosis (Pulmonary and other forms.)

Prevalence and Mortality.

Below are shown the number of cases of notifiable diseases notified in Bolton in 1933 and the number of deaths resulting from each of these notifiable diseases.

Notifiable Diseases during the year 1933.

Disease.	Total Cases Notified.	Total Deaths.
Smallpox...	1	...
Scarlet Fever...	1412	10
Diphtheria	108	6
Enteric Fever (including Paratyphoid)	3	...
*Pneumonia	186	152
Puerperal Fever	2	5
Puerperal Pyrexia	7	...
Cerebro-spinal Fever ...	1	3
Acute Poliomyelitis ...	2	1
Encephalitis Lethargica ...	3	2
Dysentery	1	...
Ophthalmia Neonatorum ...	18	...
Erysipelas	50	7
Tuberculosis (all forms) ...	148	114

* The cases notified are Acute Primary and Acute Influenzal but the deaths include all forms of Pneumonia.

By notification-rate of any disease is meant the number of cases notified per thousand inhabitants.

The following table shows how Bolton stands in regard to notifiable infectious diseases when compared with England and Wales.

NOTIFICATION-RATES IN 1933.

	Bolton.	England and Wales.
Smallpox	·00	·02
Scarlet Fever	7·97	3·21
Diphtheria	·61	1·18
Enteric Fever	·01	·04
Puerperal Fever	·01	·05
Puerperal Pyrexia	·03	·14
Erysipelas	·28	·45

Smallpox.

One case of Smallpox was notified. The patient was a child, and the infection was acquired whilst on holiday. A ward block of several rooms in Hulton Lane Hospital was cleared for the exclusive use of the patient and the necessary staff.

Scarlet Fever.

An epidemic of Scarlet Fever occurred during the year, 1,412 cases being notified. 832 cases were admitted to the Hulton Lane Hospital. 10 cases of scarlet fever died.

The number of cases of Scarlet Fever notified in Bolton in each year since 1923 was as follows :—

Year.	No. of cases notified.
1923	642
1924	269
1925	232
1926	245
1927	276
1928	840
1929	717
1930	452
1931	365
1932	589
1933	1,412

Immunization Against Scarlet Fever.

Some very striking results were obtained by Dr. Litt working amongst children in schools where the incidence of scarlet fever had been high. The scarlet fever was causing a certain amount of alarm and was responsible for a large amount of sickness. It was decided to offer to immunize children in the schools. A Burroughs Wellcome immunizing product was employed. 25% of the children in the schools concerned were immunized. Three injections of scarlet fever toxin were given at fortnightly intervals. The first dose was 1,000 skin test doses, the second dose 5,000 skin test doses, and the final dose varied from 10,000 up to 20,000 skin test doses. No Dick tests were carried out either before or after immunization. The approximate number of children on the school rolls was 2,046. 538 children were given the immunizing doses.

Ninety cases of scarlet fever occurred in the three schools concerned, in the six months before the last immunizing injection was given. These dates in the three schools were June 29th, September 27th, and November 23rd. From those dates to the time of writing, the total number of cases which have occurred in the three schools is 75. None of these cases occurred in children who had received three injections. One case occurred in a child who had received two injections, and two cases in children who had received one injection only. Amongst approximately 1,400 children who had neither had scarlet fever nor been completely immunized, 75 cases of scarlet fever occurred. Amongst 538 children who were immunized no cases of scarlet fever occurred.

Encephalitis Lethargica.

Three cases were notified during 1933 as suffering from encephalitis lethargica. One of these cases died and there was one other death registered as being due to encephalitis lethargica, which had not been notified during life.

Ophthalmia Neonatorum.

The number of cases notified during the year was 18, compared with 22 in 1932.

Five of the cases notified were seen by an eye specialist, and in two cases a district nurse attended daily.

In no case was there impairment of vision.

All cases not in hospital are visited daily by one of the health visitors.

Particulars of the cases notified in 1933 are as follows :—

Cases.			Vision.			Deaths
Notified	Treated		Un-impair'd.	Impaired	Total Blind-ness	
	At home	In hospital				
18	13	2 as out-patients 3 as in-patients	17	—	—	1

Puerperal Fever.

Two notifications of puerperal fever were received during 1933. The cases made good recovery.

The following table asked for by the Ministry of Health, gives detailed information regarding all cases of notifiable infectious disease in Bolton during 1933.

NOTIFIABLE DISEASES DURING THE YEAR 1933.

Disease.	Cases Notified.													Cases admitted to Borough and other Hospitals.	Deaths.												
	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	65 and over	At all Ages.		Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	65 and over	At all Ages.
Smallpox	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	4	19	45	89	100	595	336	76	122	20	6	...	1412	832	...	3	2	1	1	1	...	1	1	...	...	...	10
Diphtheria	...	4	3	3	5	45	27	7	12	2	...	...	108	85	...	...	1	...	1	1	3	...	...	...	...	...	6
Enteric Fever...	...	...	...	...	...	...	1	...	1	1	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	4	1	...	...	5
Puerperal Pyrexia ...	...	...	...	...	...	...	...	...	5	2	...	...	7	2	...	...	...	...	...	...	...	...	...	...	...	...	...
*Pneumonia	16	12	10	10	14	13	11	8	15	16	38	23	186	...	31	27	7	3	2	4	3	2	4	13	32	24	152
Cerebro-spinal Fever ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	1	...	...	...	3
Acute Poliomyelitis ...	1	...	..	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Encephalitis Lethargica	...	...	...	...	...	...	...	...	3	...	...	...	3	...	...	...	...	...	...	...	...	...	2	...	...	...	2
Dysentery	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	18	...	...	...	...	...	...	...	...	...	..	...	18	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	1	2	5	2	29	11	50	1	...	1	...	...	...	1	...	1	...	...	2	2	7
Tuberculosis :																											
a. Pulmonary	...	...	...	...	...	1	...	5	45	24	37	1	113	101	...	...	...	...	...	...	...	4	38	20	25	3	90
b. Non-pulmonary ...	2	1	3	...	2	8	5	1	8	2	3	...	35	21	4	2	1	...	1	3	...	2	7	4	...	...	24

* The cases notified are Acute Primary and Acute Influenzal, but the deaths include all forms of Pneumonia.

The incidence of notifiable infectious disease in the towns of Lancashire is shown in the following table which shows how Bolton stands as compared with these towns, in regard to notifiable infectious diseases.

Notification-Rates per 1,000 Population in 1933 in Chief Lancashire Manufacturing Towns.

(Figures compiled from the Registrar-General's Quarterly Returns.)

	Total Rate	Scarlet Fever	Diphtheria	Enteric Fever	Puerperal Fever	Puerperal Pyrexia	Ophthalmia Neonatorum
Barrow-in-Furness...	1·84	·95	·77	·07	—	·04	·01
Bury	3·11	1·06	1·64	·01	·12	·07	·21
Wigan	3·20	2·79	·29	—	·02	·08	·02
Preston	3·23	2·72	·20	·04	·09	·13	·05
Manchester	4·11	2·36	1·33	·01	·16	·12	·13
Oldham	4·22	2·93	·97	—	·02	·20	·10
Warrington	4·33	2·61	1·55	—	·02	·10	·05
Rochdale	4·36	1·99	2·25	—	·03	·05	·04
St. Helens	4·76	2·61	1·88	·10	·01	·11	·05
Blackburn	5·57	4·47	·89	·00	·04	·08	·09
Salford	6·44	2·63	3·44	·03	·09	·17	·08
Bolton	**8·71**	**7·96**	**·60**	**·01**	**·01**	**·03**	**·10**
Burnley	9·94	7·81	1·63	·02	·04	·34	·10
Liverpool...	10·70	6·14	3·39	·08	·05	·35	·69
Bootle	10·90	8·07	2·01	·10	·03	·58	·11

Note—The Total Rate is the total of the above six notifiable diseases.

The rates have been calculated on the adjusted population at the middle of 1933.

INFECTIOUS DISEASES NOT NOTIFIABLE.

Influenza.

Influenza caused 165 deaths in Bolton in 1933. The average for the last 10 years is 102.

Amongst the 165 deaths attributed to influenza, pneumonia complicated 87 cases and other respiratory disease complicated 44 cases. In 19 cases other complications occurred. 15 deaths were attributed to influenza alone.

100 of the influenzal deaths occurred in January and 34 in February.

Bolton's influenza deaths from 1921 to 1933 are shown below :—

	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Deaths	45	122	94	88	98	68	147	55	208	42	110	46	165

Whooping Cough.

Nine deaths were due, in Bolton, in 1933 to whooping cough. In 1932 the number was 11.

The mortality from whooping cough in Bolton and in England and Wales is shown below :—

Year.	Bolton.		England & Wales.
	No. of Deaths.	Rate per 1,000	Rate per 1,000
1921	25	·13	·12
1922	13	·07	·16
1923	11	·06	·10
1924	28	·15	·10
1925	32	·17	·15
1926	37	·20	·10
1927	1	·00	·09
1928	9	·04	·07
1929	85	·46	·15
1930	8	·04	·05
1931	14	·07	·06
1932	11	·06	·07
1933	9	·05	·05

Measles.

14 deaths occurred in 1933 as compared with nine in 1932.

The table below shows the death-rate for measles for Bolton and for England and Wales since 1921 :—

Year.	Bolton.		England & Wales.
	No. of Deaths	Rate per 1,000	Rate per 1,000
1921	5	·02	·05
1922	63	·34	·14
1923	4	·02	·13
1924	12	·06	·12
1925	18	·09	·13
1926	16	·09	·09
1927	21	·11	·09
1928	17	·09	·11
1929	11	·06	·08
1930	4	·02	·10
1931	24	·13	·08
1932	9	·05	·08
1933	14	·07	·05

Examination of Pathological and Bacteriological Specimens.

These are examined at the Borough Analyst's Laboratory of the County Borough of Bolton. Occasional specimens for which provision is not made in our own laboratory are sent to the Public Health Laboratory, York Place, Manchester.

The examinations made in our own laboratory during 1933 were as follows :—

	Total	Positive	Negative	Doubtful
Sputum (for B. Tuberculosis) ...	481	128	353	—
Diphtheria (Throat Swabs) ...	946	162	775	9
Enteric Fever (Agglutination test)	4	1	3	—

At the Public Health Laboratory, Manchester, the following examinations were made :—

	Total	Positive	Negative
Milk (Inoculation test for B. Tuberculosis)	42	8	34
Diphtheria (Throat Swabs)	3	1	2
Enteric Fever (Agglutination test)	1	—	1

Medical Officers of our own department examined 408 sputum specimens for B. Tuberculosis and 959 slides for the gonococcus in the course of routine clinical work.

Diphtheria Antitoxin.

Antitoxin can be had day and night by the medical practitioners of the town. During 1933 there were supplied 61 phials, each of 8,000 units.

Insulin.

Since the 16th of September, 1924, the Bolton Public Health Department has supplied insulin free to uninsured patients suffering from diabetes where the income of such patients made it impossible for them to purchase the drug. This has proved a great boon to many sufferers. During 1933, 1,324 bottles of insulin each containing 100 units, were supplied free, and 978 bottles of 100 units and 156 bottles of 200 units were supplied at a cheap rate.

Disinfection.

There is a fully equipped disinfecting station at School Hill, near the centre of the town. Two motor vans are attached to this station. During 1933 the following work was done by the disinfecting station :

Houses disinfected	1,498
Articles of clothing, etc., disinfected	8,456
Articles of bedding, etc., destroyed	135

Cleansing of Verminous Persons.

Arrangements have been made for the bathing of such persons at one of the Corporation's bathing establishments. Clothing is disinfected or destroyed at the School Hill Disinfecting Station.

WORK OF THE BOROUGH ISOLATION HOSPITALS.

Scarlet Fever.

836 cases were admitted to the scarlet fever wards of the Borough Hospital for Infectious Diseases. The number in 1929 was 410. in 1930 219, in 1931 228, and in 1932 429.

Amongst the patients admitted to the scarlet fever ward :

815 had scarlet fever only
1 had scarlet fever and chicken-pox
1 had scarlet fever and diphtheria
15 had scarlet fever and measles
1 had measles only
2 had tonsillitis only
1 had erysipelas

All cases not definitely mild received the scarlet fever antitoxin.

The great majority of the cases were mild. There were five deaths.

The complications which occurred were as follows :

44 cases of otorrhœa
12 cases of albuminuria
25 cases of adenitis
10 cases of rheumatism
3 cases of mastoid infection
1 case of retro-pharyngeal abcess.

We had 17 return cases in 1933, as against 13 in 1932. A return case is a case occurring in the home of a discharged patient within four weeks of the return home of such patient.

It is impossible to prevent return cases. In spite of care in seeing that patients at the time of their discharge are free from infection, in so far as such freedom can be established by clinical examination, these cases occur in connection with every infectious diseases hospital.

The tendency at present is to reduce the period of hospital treatment for scarlet fever. The practice in Bolton during the last year has been to discharge simple uncomplicated cases four weeks from the date of onset of the illness.

Diphtheria.

96 cases sent in as diphtheria were admitted to the diphtheria wards. Of these—

3 had diphtheria and scarlet fever.
8 had tonsillitis.
2 had peritonsillar abcess.
1 was a diphtheria carrier.

Two patients required tracheotomy, one dying within 15 minutes of admission.

Four of the cases admitted died.

Hospital Staff.

There were two cases of infectious disease amongst the nursing staff—one scarlet fever and one measles.

None of the domestic staff contracted any infectious disease during the year.

I have great pleasure in expressing my appreciation of the untiring devotion and ability with which the Matron, Miss Bateman, discharges the duties of her office.

The work in the Hospital is greatly hampered by the inadequacy of the accommodation for the nursing staff. It is impossible to house sufficient staff to use all the wards in the Hospital. A cubicle isolation block is also urgently needed. The Public Health Committee are giving the whole question of the Borough Hospital buildings their serious consideration.

Borough Isolation Hospitals.

No. of Patients.	No. of Patients suffering from the following Diseases.						Total.
	Scarlet Fever.	Enteric Fever.	Diph-theria.	Pul-monary Tuber-culosis.	Other Tuber-culous Diseases.	Other Diseases.	
Remaining, Dec. 31st, 1932	48	...	1	22	...	...	71
Admitted in 1933	832	2	85	33	...	16	968
Total No. treated, 1933 ...	880	2	86	55	...	16	1039
Discharged in 1933	813	2	70	27	...	14	926
Died in 1933	5	...	4	9	...	2	20
Remaining, Dec. 31st, 1933	62	...	12	19	...	...	93

VACCINATION.

The following is a summary of the return for 1932 made to the Registrar-General by the Vaccination Officer respecting the vaccination of children whose births were registered in the County Borough of Bolton from 1st January, 1932, to the 31st December, 1932, inclusive.

No. of Births registered 2,023

On the 31st January, 1934, of the above children—

467 or 23·08% were successfully vaccinated,
8 or ·39% were insusceptible of vaccination,
None had had smallpox,
1,389 or 68·66% of their parents made the statutory declaration of conscientious objection,
100 or 4·94% died unvaccinated,
5 or ·25% were temporarily unfit to be vaccinated,
5 or ·25% had removed out of Bolton,
15 or ·75% could not be traced,
and 34 or 1·68% had not been duly vaccinated or otherwise accounted for.

The total number of certificates of successful primary vaccination of children under 14 received during the calendar year, 1933, was 440, and the number of statutory declarations of conscientious objection received during the same period was 1,199.

The number of persons successfully vaccinated and re-vaccinated at the cost of the Bolton rates by the local Public Vaccinators during the year ended 30th September, 1933, was as follows :—

No. of successful primary vaccinations		
Under one year of age	387	
One year and upwards	20	
		407
No. of successful re-vaccinations of persons who had been successfully vaccinated at some previous time...		38
Total vaccinations by Public Vaccinators ...		445

SECTION VIII.

Tuberculosis.

TUBERCULOSIS.

The death-rate from all forms of tuberculosis in Bolton during 1933 was 0·64 This rate is the lowest which has ever been recorded in our town.

The total number of new cases notified in 1933 was 148, as compared with 222 in 1932.

The steady decline in the incidence of tuberculosis is one of the most gratifying features in Public Health work.

The death-rate from tuberculosis of all forms during 1933 in certain Lancashire County Boroughs was as follows:—

Southport	·62	Barrow-in-Furness ...	·85
BOLTON	·64	Burnley	·87
Bury	·65	Wigan	·93
Blackpool	·72	Manchester ...	1·15
Oldham	·78	Liverpool	1·33
Preston	·84		

New Cases.

The number of new cases notified in 1933 was:—

Pulmonary	113
Non-pulmonary	35
Total ...	148

How does Bolton stand as regards deaths from tuberculosis when compared with England and Wales as a whole? This is set forth in the following table.

Annual Death-rate from Tuberculosis (All Forms) Bolton and England and Wales, 1901-1933.

Year.	Rate per 1000 living. Bolton.	Rate per 1000 living. England and Wales.	Year.	Rate per 1000 living. Bolton.	Rate per 1000 living. England and Wales.
1901	1·94	1·80	1917	1·53	1·60
1902	1·81	1·74	1918	1·57	1·66
1903	1·81	1·74	1919	1·18	1·28
1904	1·79	1·78	1920	1·00	1·13
1905	1·61	1·63	1921	1·08	1·12
1906	1·73	1·65	1922	·97	1·12
1907	1·45	1·61	1923	1·11	1·06
1908	1·75	1·59	1924	1·12	1·05
1909	1·54	1·53	1925	1·02	1·03
1910	1·41	1·43	1926	·92	·96
1911	1·40	1·46	1927	1·02	·97
1912	1·29	1·37	1928	·77	·93
1913	1·15	1·35	1929	·79	·96
1914	1·19	1·36	1930	·82	·89
1915	1·32	1·51	1931	·77	·89
1916	1·43	1·52	1932	·75	·83
			1933	·64	·82

It will be seen that Bolton stands this comparison very well. For the past six years the Bolton tuberculosis death-rate has been lower than that for England and Wales.

Age and sex distribution of cases of tuberculosis notified in Bolton in 1933.

Pulmonary Tuberculosis.

Ages.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards.	Total.
Males	...	...	...	...	1	11	8	15	21	7	1	64
Females ...	...	...	1	...	4	10	16	9	7	2	...	49

NON-PULMONARY TUBERCULOSIS.

Ages.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards.	TOTAL.
Males	1	4	7	3	...	1	3	1	...	...	...	20
Females ...	1	2	1	2	1	2	2	1	1	2	...	15

DEATHS FROM TUBERCULOSIS.

114 Bolton residents were certified as having died of tuberculosis during 1933. This compares with 134 in 1932.

58 of these deaths took place in institutions as follows :—

10 died in the Bolton Borough Hospital.

32 died in Townleys Hospital.

3 died in the Bolton Royal Infirmary.

10 died in the Wilkinson Sanatorium.

1 died in the Morland Clinics, Alton, U.D.

1 died in Calderstones, Whalley.

1 died in the County Mental Hospital, Lancaster.

The age and sex distribution of those who died of tuberculosis are given in these tables :

PULMONARY TUBERCULOSIS.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males	49	...	...	...	...	17	11	8	11	2
Females...	41	...	...	...	4	21	9	3	3	1
Total	90	...	...	...	4	38	20	11	14	3

NON-PULMONARY TUBERCULOSIS.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males	11	4	3	...	...	3	1	...	...	...
Females...	13	4	...	...	2	4	3	...	...	...
Total	24	8	3	...	2	7	4	...	...	...

In 20 cases the disease had not been notified during life. Most of these cases died in institutions and the diagnosis was made after death.

PUBLIC HEALTH (PREVENTION OF TUBERCULOSIS) REGULATIONS, 1925.

No action was taken under these Regulations.

Public Health Act, 1925, Section 62.

No action was taken under the above Section during 1933.

In Bolton, institutional treatment for tuberculosis is given very promptly to all patients desiring it and who are deemed suitable cases for such treatment. It is rare for a patient to wait more than a week.

211 persons applied for treatment in 1933. 167 of these were cases of pulmonary tuberculosis and 44 of non-pulmonary tuberculosis.

The treatment given was as follows:

Residential treatment	122
Domiciliary treatment	70
Out-patient treatment	17
Declined residential treatment... ...	1
On waiting list at close of 1932 ...	—
Application withdrawn...	—
Application cancelled	1

No patient desiring residential treatment was refused such treatment.

Tuberculosis Dispensary.

The dispensary is not a place for the general treatment of tuberculosis. Special treatments such as tuberculin treatment are given. Any new treatment for which a specific effect on tuberculosis is claimed is given a trial if the evidence in favour of such treatment appears to justify a trial. Increased use was made of X-ray as an aid to diagnosis (80 cases compared with 32 in 1932).

The dispensary is open every week-day (except Saturday) from 9 a.m. to 12 noon and on Wednesday from 2 p.m. to 5 p.m. The work done at the dispensary is shown by the following figures:—

Total attendances	1,562
Total number of patients sent for consultation ...	270

The results of these consultations were as follows:—

Number found to have pulmonary tuberculosis ...	80
Number found to have non-pulmonary tuberculosis...	26
Number of cases kept under observation for suspected pulmonary tuberculosis	3
Number of cases kept under observation for suspected non-pulmonary tuberculosis.	—
Number in whom no evidence of tuberculosis was found	161
Visits by Tuberculosis Nurse	1,216
No. of specimens of sputum examined...	261

The total number of cases on the register (notified)	
pulmonary tuberculosis	367
non-pulmonary tuberculosis	204
Total ...	571

Treatment of Tuberculosis.

For suitable cases, institutional treatment is given as follows:—

30 beds (and more if needed) at the Wilkinson Sanatorium.

24 beds at the Borough Hospital.

All these beds are for pulmonary cases.

Cases of surgical tuberculosis requiring institutional treatment are sent to the Bolton Royal Infirmary and to the Liverpool Children's Hospital at Heswall in Cheshire, where we have a call on 6 beds.

The following table summarizes the residential treatment given during 1933.

ACCOMMODATION PROVIDED BY LOCAL AUTHORITY WITH NUMBER OF PERSONS ADMITTED FOR TREATMENT DURING THE YEAR 1933.

INSTITUTION.	Beds.	Treated:			Under Treatment 31st Dec. 1933.
		Total	Insured	Un-insu'd	
Wilkinson Sanatorium	30	65	59	6	28
Borough Hospital	24	33	25	8	19
*Heswall	6	9	...	9	9
*Bolton Royal Infirmary	...	5	4	1	...
*Manchester and Salford Hospital for Skin Diseases	...	2	...	2	...
*Robert Jones and Agnes Hunt Orthopædic Hospital, Oswestry ...	...	2	1	1	2
*St. Andrew's Hospital, Dollis Hill, London	...	1	1	...	1
*Westmorland Sanatorium, Meathop..	...	3	3	...	2
*Ethel Hedley Hospital, Windermere.	...	1	...	1	1
*Wrightington Hospital, Wrightington	...	1	1	...	1

* Paid for per user.

Manchester and Salford Hospital for Skin Diseases.

15 patients suffering from tuberculosis of the skin were referred for advice and treatment to the Manchester and Salford Hospital for Skin Diseases.

Two of these patients received in-patient treatment, and the period these cases were in hospital was 38 days.

One received sunlight treatment, and 12 received various other treatments. The total number of attendances made by the out-patients was 293.

The two in-patients also received various other treatments previous to, and after their period of in-patient treatment.

Most of the patients sent to the Manchester and Salford Skin Hospital got great benefit from the treatment received.

The Bolton Public Health Committee pays for the treatment of all patients referred by it to the Manchester and Salford Skin Hospital.

In five cases of patients who received out-patient treatment, travelling expenses were defrayed by the Bolton Public Health Committee as the patients' means did not permit of their bearing this cost themselves.

ASSISTANCE GIVEN TO NECESSITOUS TUBERCULOUS PATIENTS.

1.	Total number of patients assisted	74
2.	Average time receiving assistance ...	3½ months
3.	Amount of milk given	7,780 pints
4.	Malt and oil given	96 lbs.

Artificial Pneumothorax.

This method of treatment, suitable for a small percentage of cases, was continued during the year. The results encourage an extended use in the future.

SECTION IX.

Venereal Diseases.

Venereal Diseases.

During 1933 the venereal diseases clinics were very busy.

The number of patients and the number of attendances showed a considerable increase, particularly noticeable among women.

The importance of the work done by these clinics is of immense importance to the patients and to the community at large.

These clinics are conducted so as to attract the attention of the general public as little as possible.

The work of the clinics is very much hindered by the insufficiency of the present premises. It is extremely desirable that there should be entirely separate premises for women. Such provision is urgently necessary.

The times and place where the clinics are held are announced by public notices in many places in the town.

The times at which the clinics meet are as follows :—

Monday	6-0 p.m.	Males.
Wednesday	6-0 p.m.	Males.
Friday	6-0 p.m.	Males.
Tuesday	9-30 a.m.	Females.
Thursday	6-0 p.m.	Females.
Saturday	10-0 a.m.	Females.

Patients who are unable to attend the evening clinics can receive treatment during the day by arrangement. Every case which calls for the first time at the Public Health Office receives whatever treatment may be necessary the same day. In all towns more difficulty is experienced in securing regular treatment for women than for men. It is gratifying to note that there were 1253 more attendances by women in Bolton during 1933 than in 1932. This does not indicate any increase in venereal disease, but is a result of the extended facilities which have been made for the treatment of women.

Irrigation of cases of gonorrhœa is carried out at the following times :—

For Males.

Monday	10 a.m. and 6 p.m.
Tuesday	7 p.m.
Wednesday	10 a.m. and 6 p.m.
Thursday	10 a.m.
Friday	10 a.m. and 6 p.m.

FOR FEMALES.

Monday	2-30 p.m.
Tuesday	9-30 a.m.
Wednesday	2-30 p.m.
Friday	2-30 p.m.

Statistics of Number of Patients and Number of Attendances at the Venereal Diseases Clinics in 1933.

The number of patients who attended the clinics in 1933 was :—

Men ... 928 Women ... 422

The diseases from which they suffered were :—

	Men	Women	Total
Syphilis	233	175	408
Soft Chancre	—	—	—
Gonorrhœa	504	55	559
Non-venereal	191	192	383
	928	422	1,350

The above figures give the total number of patients who attended the clinics during 1933. The numbers of new patients who came under treatment for the first time in 1933 were as follows :—

	Men	Women
Syphilis...	67	47
Soft Chancre	—	—
Gonorrhœa	199	19
Non-venereal	144	160
	410	226

Attendances.

The total number of attendances made by patients at the clinics was :—

Men ... 11,843 Women ... 5,169

720 specimens of blood were taken for the Wassermann test. These were examined at the Public Health Laboratory, Manchester.

Patients received 2,502 intravenous injections of salvarsan substitutes, and 2,480 intramuscular injections of bismuth.

The following table shows the attendances and treatment received by Bolton patients at Treatment Centres in other towns.

	Treatment Centre				
	Manchester.	Wallasey.	Bury.	Salford.	St. Helens.
No. of cases dealt with for the first time during 1933..	17	1	3	17	1
(a) Syphilis ...	3	...	...	1	...
(b) Gonorrhœa	5	1	2	9	1
(c) Conditions other than Venereal ...	9	...	1	7	...
Attendances of all patients	410	43	16	948	1
Doses of Salvarsan substitutes given	68	...	...	17	...
Tests—					
Wassermann ...	25	...	...	...	...
Gonorrhœa ...	2	...	...	...	...
In-patient days ...	...	...	...	...	...

The tables on pages 114 and 115 show the work carried out at the Bolton Treatment Centre.

15 medical men applied during 1933 for arsenobenzene compounds and 260 doses were supplied to them for use in their private practices.

370 specimens of blood or cerebro-spinal fluid and 39 smears taken by medical practitioners not connected with the Treatment Centre were sent for examination to the Public Health Laboratory, Manchester.

RETURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT BOLTON PUBLIC HEALTH OFFICES DURING THE YEAR ENDED THE 31ST DECEMBER, 1933.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTAL		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1. Number of cases on 1st January under treatment or observation	149	116	...	...	282	33	47	32	478	181	659
2. Number of cases removed from the register during any previous year which returned during the year under report for treatment or observation of the same infection	14	7	...	...	8	2	...	...	22	9	31
3. Number of cases dealt with for the first time during the year under report (exclusive of cases under Item 4) suffering from :—											
Syphilis, primary...	29	1	—	—	—	—	—	—	29	1	30
,, secondary	6	11	—	—	—	—	—	—	6	11	17
,, latent in first year of infection	...	...	—	—	—	—	—	—	...	...	..
,, all later stages	21	24	—	—	—	—	—	—	21	24	45
,, congenital	11	11	—	—	—	—	—	—	11	11	22
Soft Chancre	—	—	...	...	—	—	—	—	...	...	..
Gonorrhœa, 1st year of infection	—	—	—	—	197	19	—	—	197	19	216
,, later...	—	—	—	—	2	...	—	—	2	...	2
Conditions other than venereal	—	—	—	—	—	—	144	160	144	160	304
4. Number of cases dealt with for the first time during the year under report known to have received treatment at other Centres for the same infection	3	5	...	...	15	1	...	...	18	6	24
TOTALS OF ITEMS 1, 2, 3, AND 4	233	175	...	...	504	55	191	192	928	422	1350
5. Number of cases discharged after completion of treatment and final tests of cure (see Item 15)	7	2	...	...	42	6	175	158	224	166	390
6. Number of cases which ceased to attend before completion of treatment and were, on first attendance, suffering from : —											
Syphilis, primary...	19	2	—	—	—	—	—	—	19	2	21
,, secondary	10	14	—	—	—	—	—	—	10	14	24
,, latent in first year of infection	3	1	—	—	—	—	—	—	3	1	4
,, all later stages...	14	20	—	—	—	—	—	—	14	20	34
,, congenital...	6	6	—	—	—	—	—	—	6	6	12
Soft Chancre	—	—	...	...	—	—	—	—	...	...	...
Gonorrhœa, 1st year of infection	—	—	—	—	115	8	—	—	115	8	123
,, later...	—	—	—	—	17	...	—	—	17	...	17
7. Number of cases which ceased to attend after completion of treatment but before final tests of cure (see Item 15)	3	3	...	...	13	...	—	—	16	[illegible]	19
8. Number of cases transferred to other centres or to institutions, or to care of private practitioners... ...	11	2	...	...	13	1	—	...	24	[illegible]	27
9. Number of cases remaining under treatment or observation on 31st December	160	125	...	...	304	40	16	34	480	19[illegible]	679
TOTALS OF ITEMS 5, 6, 7, 8, AND 9	233	175	...	...	504	55	191	192	928	42[illegible]	1350
(These totals should agree with those of Items 1, 2, 3, and 4).											
10. Number of cases in the following stages of syphilis included in Item 6 which failed to complete one course of treatment :—											
Syphilis, primary...	12	1	—	—	—	—	—	—	12	[illegible]	13
,, secondary	5	4	—	—	—	—	—	—	5	[illegible]	9
,, latent in 1st year of infection	...	...	—	—	—	—	—	—	...	...	...
,, all later stages...	10	7	—	—	—	—	—	—	10	[illegible]	17
,, congenital	3	2	—	—	—	—	—	—	3	[illegible]	5

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTALS.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals.
er of attendances :—											
for individual attention of the medical officers...	3293	2443	...	...	4257	555	548	969	8098	3967	12065
for intermediate treatment, e.g., irrigation, dressing	32	...	...	...	3713	1202	...	...	3745	1202	4947
TOTAL ATTENDANCES	3325	2443	...	...	7970	1757	548	969	11843	5169	17012

ients :—	
Total number of persons admitted for treatment during the year	NIL.
Aggregate number of "in-patient days" of treatment given	

	Under 1 year.		1 & under 5 years.		5 & under 15 years.		15 years and over.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
er of cases of congenital syphilis in Item 3 ve classified according to age periods :—	1	...	1	1	9	6	...	4	11	11

	Arsenobenzene Compounds.	Mercury.	Bismuth.
preparations used in treatment of Syphilis :— Names of preparations	Stabilarsan. Novarsenobillon. Sulfarsenol.		Bismuthyl. Bismostab.
Total number of injections given (out-patients and in-patients)	2502	...	2480
Number of injections *included in* (*b*) given to patients who on first attendance at this Centre were suffering from primary and secondary syphilis	934	...	1114

e tests recommended in Memo. V21 as amended Memo. V 21A followed in deciding as to the dis- ge of the patient after treatment and observation yphilis and gonorrhœa ?	Yes.
, in what way are they modified ?	

LOGICAL WORK :—(*a*) Number of specimens examined at and by the medical officer of the treatment centre—Microscopical for gonococci, 959.
(*b*) Number of specimens from patients attending at the centre sent for examination to an approved laboratory—Serum tests (Wassermann), 720.
For Gonorrhœa, 8.

ENT SHOWING THE SERVICES RENDERED AT THE TREATMENT CENTRE DURING THE EAR, CLASSIFIED ACCORDING TO THE AREAS IN WHICH THE PATIENTS RESIDED.

County or County Borough (or Country in e of persons residing elsewhere than in d and Wales) to be inserted in these s.	Bolton	Lancs. C.C.	Bury	Blackpool	Manch'ter	London	Reading	Preston	Warrington	Wigan	Total.
r of cases in Items 3 and 4 from each area o be suffering from :—											
philis	76	44	1	...	...	...	1	...	...	...	122
t Chancre	...	...	...	...	...	...	...	...	...	...	...
norrhœa	150	80	2	...	...	1	1	...	...	...	234
nditions other than Venereal	230	69	1	1	2	1	...	...	...	...	304
TOTAL	456	193	4	1	2	2	2	...	...	...	660
number of attendances of all patients g in each area	11840	4985	132	1	3	4	2	8	29	8	17012
ate number of "in-patient days" of all s residing in each area	...	...	...	...	...	...	...	...	...	...	...
r of doses of arsenobenzene compounds n the out-patient Clinic and In-patient ment to patients residing in each area ...	1673	800	28	...	...	...	1	...	...	...	2502

SECTION X.

Maternity and Child Welfare.

Maternity and Child Welfare.

Births.

The number of children born to Bolton parents in 1933 was 2,123.

Of these births 2,040 were legitimate and 83 illegitimate.

15 births were not notified as compared with 27 in 1932. Careful inquiry was made in every case, and in none was any intention to deceive found.

The birth-rate for Bolton was 11·9 in 1933, the lowest which has ever been recorded in the County Borough.

The following table gives the birth-rate for the last ten years for England and Wales and for Bolton.

Year.	Birth-rate.	
	England & Wales.	Bolton.
1924	18·8	17·6
1925	18·3	16·3
1926	17·8	16·3
1927	16·6	15·1
1928	16·7	14·3
1929	16·3	14·2
1930	16·3	13·8
1931	15·8	13·7
1932	15·3	13·2
1933	14·4	11·9

The fall in Bolton's birth-rate follows the fall in the birth-rate for England and Wales. The causes producing the fall in Bolton are exactly the same as those bringing about the fall in the birth-rate of England and Wales.

Stillbirths.

A stillbirth, by which is meant the dead birth of a child born at any period after the 28th week of pregnancy, must be registered. The number of stillbirths in Bolton in 1933 was 133, giving a stillbirth-rate of 0·75 per 1,000 of the population. The rate for England and Wales was 0·62.

Infantile Mortality.

Bolton's infantile mortality-rate for 1933 was 78.

Of the fifteen large towns of Lancashire, Bolton had the eighth highest infantile mortality-rate. I am satisfied that this infantile mortality is definitely correlated with the activities of our maternity and child welfare services.

Of Bolton's 2,123 births in 1933, 2,040 were legitimate and of these the mortality-rate was 71. For the 83 illegitimate children the mortality-rate was 265.

In the following table is given the average infantile mortality for five year periods from 1876 to 1920 and for each year from 1921 to 1933.

Quinquennium.		Average rate.	Year.		Rate.
1876-1880	...	171	1921	...	96
1881-1885	...	169	1922	...	93
1886-1890	...	173	1923	...	85
1891-1895	...	185	1924	...	92
1896-1900	...	173	1925	...	87
1901-1905	...	157	1926	...	101
1906-1910	...	134	1927	...	75
1911-1915	...	128	1928	...	64
1916-1920	...	100	1929	...	103
			1930	...	69
			1931	...	78
			1932	...	71
			1933	...	78

1928 was an exceptional year, not only for Bolton, but for a great part of the country.

Neo-Natal Mortality.

By neo-natal mortality is meant the mortality of the first four weeks of life.

It is due mainly to causes which have been at work before birth.

The following table gives the neo-natal mortality-rate for Bolton since 1905. It will be seen that it has not varied much in the last twenty-nine years. It is obvious that the causes that give rise to premature birth have not been much influenced for the better during that period.

BOLTON'S NEO-NATAL MORTALITY-RATE PER 1,000 LIVE BIRTHS.

Year.	Rate.	Year.	Rate.
1905	46·8	1920	38·9
1906	36·7	1921	41·2
1907	44·6	1922	43·0
1908	37·3	1923	37·6
1909	45·4	1924	35·5
1910	36·7	1925	32·8
1911	43·2	1926	43·7
1912	38·7	1927	36·2
1913	41·7	1928	25·8
1914	45·8	1929	38·3
1915	37·8	1930	34·6
1916	40·1	1931	34·1
1917	49·8	1932	38·5
1918	38·9	1933	32·9
1919	40·3		

The causes of death during the first four weeks of life were as follows:—

Deaths under Four Weeks.

CAUSES OF DEATH.	Under 7 days	7 and under 14 days	14 and under 21 days	21 and under 28 days	Total under 28 days
Icterus Neonatorum	—	—	—	—	—
Convulsions	2	—	1	—	3
Bronchitis	1	—	1	1	3
Pneumonia (all forms)	—	—	1	—	1
Diarrhœa and Enteritis	—	2	—	—	2
Syphilis	—	—	—	1	1
Suffocation	—	—	—	—	—
Injury at Birth	5	1	—	—	6
Atelectasis	4	—	—	—	4
Congenital Malformations	8	2	—	1	11
Premature Birth	20	5	4	—	29
Congenital Debility	3	—	—	1	4
Other Causes	5	1	—	—	6
Totals	48	11	7	4	70

Maternal Deaths.

Maternal mortality is the number of maternal deaths per 1,000 live births.

Maternal deaths comprise not only deaths directly due to pregnancy and child bearing (including abortion,) but also deaths due to an independent disease concurrent with pregnancy or childbirth in which child bearing contributed to or accelerated death. The number of all these deaths per 1,000 live births is called the total maternal mortality-rate. If only the deaths directly due to pregnancy and child bearing are calculated per 1,000 live births, the puerperal mortality-rate is obtained.

There were 18 deaths directly due to pregnancy or child-bearing in Bolton during 1933, giving a puerperal mortality-rate of 8·4. The rate for England and Wales was 4·5.

The Registrar-General also bases the maternal mortality figures on stillbirths as well as live births. The Bolton rates on this basis are as follows:—

	Deaths.	Rate per 1,000 total births.
Puerperal sepsis	5	2·2
Other puerperal causes	13	5·7
Total	18	7·9

This high puerperal mortality-rate in Bolton is a matter for considerable concern.

In addition to the 18 deaths directly due to pregnancy and child bearing there were two deaths where childbirth was a contributory cause. The deaths in these cases were assigned to (1) Asthma, (2) Heart Disease.

Full details of all maternal deaths are sent to the Ministry of Health.

The following sentences from the Report of the Departmental Committee of the Ministry of Health on "Maternal Mortality" are of importance. "False hopes would be raised if it were suggested that all maternal deaths are preventable. Changes in social life necessary to raise the standard of health and physical development of the women of the nation can only come with time; great advances in medical knowledge must be made before many of the risks of childbirth can be eliminated: even then the factor of human fallibility will remain. Nevertheless we are confirmed in the opinion that at least half of the deaths which have come under review could have been prevented had due forethought been exercised by the expectant mother and her attendant."

Provision has been made for dental treatment for expectant mothers who are unable to obtain it otherwise. The work is proving useful. It appears necessary, however, in certain circumstances to extend the scope of the work to the provision of dentures. As far as our general work for the protection of motherhood is concerned, persistent sustained conscientious effort will doubtless result ultimately in improvement.

The puerperal mortality-rates for England and Wales and for Bolton for the past ten years are as follows:—

Year.	Puerperal Mortality.	
	England & Wales.	Bolton.
1924	3·9	7·8
1925	4·0	4·7
1926	4·1	3·4
1927	4·1	4·4
1928	4·4	3·0
1929	4·3	8·5
1930	4·4	6·7
1931	4·1	8·1
1932	4·2	6·7
1933	4·5	8.4

The Health Visitor's Work.

No work in connection with a Health Department is more important than that of Health Visitors. Their daily contact with the homes gives them exceptional opportunities for spreading health truths and exercising generally an influence for good.

VISITS BY HEALTH VISITORS.

Primary birth enquiries	2,144
Visits to children, 1—5 years	3,226
Primary visits to expectant mothers	291
Revisits to infants under 1 year	5,864
Revisits to expectant mothers	120
Visits to puerperal fever cases	13
Visits to ophthalmia cases	128
Death enquiries made	158
Visits to midwives' houses	144
Visits—Children Act	180
Total visits	12,268

As a result of their visits the Health Visitors reported 37 nuisances to the Medical Officer of Health, and referred three cases to the N.S.P.C.C.

They distributed at the houses visited 3,100 leaflets.

Assistance given to Expectant and Nursing Mothers and Children under 5 years of age.

97,746 quarts of new milk were given to 1,430 persons.

3,690 lbs. of dried milk were given for the use of 189 infants.

1,112 lbs. of malt and oil were given to 410 children.

All cases receiving assistance are kept under observation and, unless under treatment by a doctor, attend the infant clinics or the ante-natal centres.

There was one application for home help which was granted.

Infant Clinics and School for Mothers.

The Bolton Mother and Child Welfare Association and the Public Health Authority continue to work in the partnership started in 1916. The Association was the Bolton pioneer in organizing educational work amongst mothers, and commenced its activities in 1908. In 1916 an obligation was placed on the Local Authority to participate in the work. The Bolton Health Authority was fortunate in being able to co-operate with the Association and a partnership commenced which has been of inestimable value to the mothers and children of Bolton. The devoted work of voluntary helpers continues to command the confidence and support of the public.

The eight centres and time at which meetings take place at them are as follows :—

Name and Address of Centre.	Day and Time of Meeting.	
The Friends' School Room, Tipping Street ...	Monday	3 p.m.
Chalfont Street Methodist School	Monday	3 p.m.
Halliwell Road Free Church	Tuesday	3 p.m.
Victoria Wesleyan School, Grecian Crescent ...	Tuesday	3 p.m.
Girls' Club, Kensington Street	Wednesday	3 p.m.
St. Chad's School, Belvoir Street	Wednesday	3 p.m.
The Saviour's Church House, Deane Road... ...	Thursday	3 p.m.
Daubhill Methodist School, Derby Street	Thursday	3 p.m.

STATISTICS FOR THE YEAR ENDED 31ST DECEMBER, 1933. INFANT CLINICS.

Clinic	Average attendance per session	Number who attended for the first time — Children: Under 1 yr. of age	Number who attended for the first time — Children: Between the ages of 1 and 5 yrs.	Number of Children on the Roll	Total attendances by Children: Under 1 yr. of age	Total attendances by Children: Between the ages of 1 and 5 yrs.	Total number of Children who were in attendance at the end of the year: Under 1 yr. of age	Total number of Children who were in attendance at the end of the year: Between the ages of 1 and 5 yrs.	Number of meetings during the year
1. Tipping Street ...	44·7	104	25	326	1177	793	74	252	44
2. Daubhill	37·7	104	21	257	1209	490	91	166	45
3. Halliwell	60·0	157	31	397	1843	860	123	274	45
4. Grecian Crescent ...	51·6	119	31	323	1647	731	101	222	46
5. Kensington	52·5	200	27	420	1648	771	175	245	46
6. Saviour's	49·5	121	29	311	1416	862	93	218	46
7. Chalfont Street ...	44·4	115	18	273	1223	734	89	184	44
8. St. Chad's	55·3	134	22	362	1555	991	119	243	46
	395·7	1054	204	2669	11718	6232	865	1804	362
		1258			17950				

The total number of new members enrolled at the centres in 1933 was 1,258. The number for 1932 was 1,405. This is a decrease of 147 as compared with 1932.

The age distribution of the children enrolled at the various centres was as follows:—

Under one month	301
„ two months	330
„ three months	181
„ six months	143
„ twelve months	99
Twelve months and over	204

The total number of children under the age of 12 months enrolled in 1933 was 1,054. This shows a decrease of 118 as compared with 1932. The number of children under 12 months of age enrolled in 1933 was nearly 50 per cent. of the children born in Bolton during the same year. The importance to the social life of Bolton of the service provided by these clinics is evident.

Ante-natal Work.

Ante-natal clinics are conducted by the Public Health Authority at 70, St. George's Road, Bolton, the Headquarters of the Mother and Child Welfare Association and the Haslam Maternity Home. An ante-natal clinic is also held at Townleys Hospital. The clinics at the Haslam Maternity Home and at Townleys Hospital are for prospective mothers who are to be admitted to those institutions.

The number of attendances during the year at the various clinics was:—

St. George's Road (two clinics weekly)	1176
Haslam Maternity Home (three clinics weekly) ...	2159
Townleys Hospital (1 clinic weekly)	1291
(Bolton Residents only)	
	4626

The number of expectant mothers who attended during the year was:—

St. George's Rd.	422
Haslam Maternity Home ...	284
Townleys Hospital ...	437
	1143

Including the work done at Townleys Hospital, the total number of expectant mothers who attended the clinics was 44·1% of the total births (live and still) notified during the year.

Ante-natal work has now established itself as a most important branch of midwifery. There is no question as to the value of careful medical examination of an expectant mother in order to prevent possible dangers and illnesses of childbearing.

Massage.

This clinic is conducted by the kind permission of the Bolton Education Authority in quite suitable rooms at Flash Street Special School.

The clinic was held as follows :

Monday, Tuesday, Wednesday, Thursday and Friday, 10 a.m. to noon, and 2 p.m. to 5 p m.

The number of cases treated in 1933 was 129, and these received a total of 2,655 treatments.

Most of the cases benefitted very much by the treatment.

The treatment is given by Miss M. L. Bruckshaw, C.S.M.M.G., who is a part-time employee of the Public Health Department.

Artificial Sunlight Clinic.

This clinic, of which the Medical Officer is Dr. Mary Boullen, and the operator Miss Charnock, C.S.M.M.G., meets three times a week at the premises of the Mother and Child Welfare Association in St. George's Road.

I give below Dr. Mary Boullen's report on the Clinic for 1933.

" In 1933 much the same method of treatment was adopted as in 1932, the initial dose beginning in most cases with three minutes and gradually increasing to 30 minutes, but the increase in dosage was made more slowly so that the average number of treatments in cases which attended till they were discharged was 25, an increase on the previous year.

The 47 new cases admitted to the clinic for treatment in 1933 are fewer than those of 1932, partly owing to the fact that types of cases which did not show satisfactory improvement during the previous year were not so frequently referred for treatment.

It is interesting to note that the improvement in the number of cases who finished their course of treatment still continued in 1933, so making it easier to estimate the value of the clinic and enabling the patients to obtain the full value of the course provided.

The great majority of patients treated were either suffering from rickets or some form of malnutrition, such as loss of weight or persistent failure to gain weight, and loss of appetite.

17 cases of rickets were treated, 10 of these completing their course of treatment. With the exception of two, those who attended for any length of time showed not only improvement of deformity but also of their general health. In two cases only there appeared to be no change and very little gain in weight.

Four out of 16 cases of malnutrition and failure to gain weight showed no improvement, though three of these finished their treatment. Six, however, of the nine cases who completed their course made an excellent gain in weight and their general condition improved.

One of three cases of anæmia improved considerably but the other two did not attend long enough to be able to judge of the result.

In the one case of cervical adenitis the gland became much smaller.

Two cases of alopecia were treated. One showed very marked improvement, but the other which was a case of almost complete baldness in a mongol child, did not respond at all.

There were very few cases of debility following the various diseases of childhood referred for treatment, probably due to the fact that these types had responded badly during the previous year.

Most of the cases of rickets had the ultra-violet treatment before being referred to the massage centre, as the mothers could not afford to spend the time in attending both concurrently. Also, as in previous years, it was found that many of the children who needed treatment most could not be brought to the clinic by their mothers owing to the pressure of home duties.

In many of the cases the mothers remarked on the improvement in the general activity and liveliness of the children and on the fact that they were sleeping much better.

The clinic has shown its greatest value in the treatment of rickets, general debility and malnutrition.

During the year a total of 942 treatments was given."

HASLAM MATERNITY HOME.

The Maternity Home continues to serve its useful function in the town. It is available for all Bolton mothers. The fees charged vary according to the patient's ability to pay. Deliveries may be conducted either by the

midwives of the Home, with medical attendance from a rota of practitioners when necessary; or patients may make their own arrangements with their doctor to attend them. As in previous years most of the deliveries were conducted by the staff of midwives in the Home.

Thanks are again due to the Matron, Miss Evans, for the untiring skill and energy which she so freely gives.

As in past years Dr. Mary Boullen has devoted some of her time to the general supervision of the Home.

I append full particulars of all cases admitted to the Home in 1933.

Statistics, 1933.

1.	No. of beds in the Home		18
2.	No. of cases admitted		347
3.	Average duration of stay in days		14·09
4.	No. of cases delivered by—		
	(*a*) Midwives		280
	(*b*) Doctors		57
5.	No. of cases in which medical assistance was sought by the midwife...		64
	(*a*) Ante-natal	24	
	(*b*) During labour	32	
	(*c*) After labour	2	
	(*d*) For Infant	6	
6.	No. of cases notified as—		
	(*a*) Puerperal fever	Nil	
	(*b*)*Puerperal pyrexia	1	
	*i.e. rise of temperature to 100·4°F for 24 hours, or its recurrence within that period.		
7.	No. of cases of pemphigus neonatorum		Nil
8.	No. of infants not entirely breast fed whilst in the Home ...		7
9.	No. of cases notified as ophthalmia neonatorum, with result of treatment in each case		Nil
10.	No. of maternal deaths, with causes		Nil

11.	No. of infant deaths (stillborn or within 10 days of birth) and their causes, and the results of the post-mortem examinations, if obtainable		13
	(*a*) Stillborn		12
	Macerated	3	
	Difficult delivery	4	
	Placenta prævia	2	
	Premature	2	
	Hydrocephalic	1	
	(*b*) Within 10 days of birth		1
	Difficult labour	1	

Note.—No post-mortems were made.

MATERNITY WARDS AT TOWNLEYS HOSPITAL.

Townleys Hospital, which was transferred to the Bolton Corporation under the Local Government Act of 1929, has a modern and efficient maternity unit of 56 beds. In addition to Bolton cases the Hospital admits from adjacent townships which were in the old Bolton Union area. During 1933, 721 women were confined in the hospital. The major proportion of these were Bolton residents.

Bolton Day Nursery.

The work of the Bolton Day Nursery was continued during the year. The Day Nursery has a specially important place in the life of an industrial town where economic necessity compels mothers to go out to work. Children may be left daily from 7 a.m. to 5-30 p.m. at a charge of 9d. per day. The new premises are excellent. The attendances have increased considerably during the year. The Nursery was closed for three weeks in April on account of the prevalence of chicken-pox.

Below are set forth full particulars of the attendances at the Day Nursery during 1933.

STATISTICS FOR THE YEAR ENDED 31ST DECEMBER, 1933.

A.	NUMBER OF PLACES FOR CHILDREN UNDER 5 YEARS OF AGE ... (i.e. the total number of children that can be accommodated at any one time)	30

B. TOTAL NUMBER OF ATTENDANCES OF CHILDREN:

Whole day under 3 years	3,793
Whole day 3 years and over	1,357
Total whole day	5,150
Half day under 3 years	356
Half day 3 years and over	145
Total half day	501
Number of attendances of children under 5 years:	
Whole day...	5,150
Half day	501
Average for the year—whole day	21·2
half day	11·9
Number of days open during year ... whole day... ...	238
half day	42
Actual number of children who have attended	95
Average number of attendances per child ...	59·5

CONTROL OF MIDWIVES.

During 1933 the number of midwives who notified their intention to practise in Bolton was 66. Of them, eight were resident members of the staff of the Haslam Maternity Home.

The following table gives details of the Midwives' work :—

	Trained.	Untrained.	Total.
No. of midwives	64	2	66
No. of cases attended	1,414	12	1,426
Average No. of cases per midwife	22	6	21
No. of calls for medical aid ...	347	2	349
Per cent. of cases in which medical aid was sought...	23%	16%	24%
No. on the Register at the beginning of the year... ...			65
No. who ceased to practise in Bolton			1
No. who notified their intention to practise in Bolton for the first time			—
No. on the Register at the end of the year			65
Names voluntarily removed from the Roll			—

In addition to the above, the midwives attended 235 cases as maternity nurses.

The following 455 notifications were received from midwives in accordance with the regulations of the Central Midwives Board:—

Medical assistance 349

Conditions for which Doctors were Summoned in an Emergency by Midwives.

Pregnancy		52
Ante-partum hæmorrhage	13	
Abortion or threatened abortion	7	
Presenting part high	7	
Heart disease	5	
Albuminuria	4	
Breech presentation	3	
Pendulous abdomen	2	
Large head	2	
Other conditions	9	
Labour		196
Ruptured perineum	71	
Delayed, complicated or obstructed labour	62	
Malpresentation	23	
Uterine inertia	12	
Retained placenta	5	
Contracted pelvis	4	
Premature labour	3	
Collapse	3	
Prolapsed cord	3	
Placenta prævia	2	
Hæmorrhage	2	
Threatened eclampsia	2	
Other conditions	4	
Puerperium		34
Rise of temperature	10	
Bronchitis, colds, etc.	7	
Post-partum hæmorrhage	2	
Weakness	2	
Rash	2	
Pain in leg	2	
Collapse	2	
Other conditions	7	
Infant		67
Feebleness	17	
Inflammation of eyes	12	
Premature	7	
Melæna	5	
Convulsions	5	
Abnormality	4	
Jaundice	4	
Spina bifida	3	
Other conditions	10	
		349

Notifications received from midwives regarding matters other than the summoning of medical aid :

Stillbirths	70
Artificial feeding	26
Death of mother or child	7
Laying out of dead body	1
Liability to be a source of infection	2

1,426 cases out of a total of 2,123 births registered were attended by midwives. The figure 1,426 refers to Bolton cases attended by midwives practising in Bolton, and does not include for instance Bolton cases attended by midwives (under medical supervision) on the staff of Townleys Hospital which is situate outside the borough boundary.

The Local Authority neither employs nor subsidises any practising midwives.

The difficult position of the midwife is sometimes not sufficiently remembered. The falling birth-rate and the increased hospital provision for maternity has made our supply of practising midwives excessive. In 1923 the 88 midwives in Bolton attended an average of 33 cases each. In the year under review 66 midwives attended an average of only 21 cases each. It is obvious that it has become impossible for midwives to make a reasonable living.

Lectures to Midwives.

During the Winter Season two lectures were delivered to the midwives of Bolton and District. The lectures were very well attended and were much appreciated.

The lecturers and the subjects were as follows :—

" Hæmorrhage from the Vagina in Pregnancy and Parturition," by Dr. A. Ingham, of Bolton.

" Diet during Pregnancy," by Dr. A. E. Gerrard, of Manchester.

Children Act, 1908, and Children and Young Persons Act, 1932.

All our Health Visitors are appointed Infant Protection Visitors. Their dual duties completely harmonise.

There were seventeen children on the register at the end of the year. All these cases are visited frequently by the Health Visitors in order to satisfy themselves that the children are being properly cared for.

SECTION XI.

Miscellaneous.

Queen's Park Observatory, Bolton.

METEOROLOGICAL SUMMARY, 1933.

The average barometer reading for the year, 30·014", was ·075" above normal, largely owing to the unusually high average for December (30·223" against 29·893"). The highest daily reading was 30·757" on January 24th and the lowest 29·045" on October 28th.

January, November and December were considerably colder than usual but from June to September the mean temperature was approximately 4° above the forty-seven years' average. The mean temperature for the year, 48·90°, was 1·7° in excess of normal. The maximum shade temperature for the year was 84·2° on June 6th and the minimum 23·4° on January 23rd. The mean temperature in the sun (Black bulb) showed an excess of 2·3° owing to the smaller amount of cloud (6·9 against 7·4). Ground temperatures were about 1° above the average.

Sunshine was recorded on 269 days and the amount, 1178·5 hours, is the greatest yearly total since 1911 and 167 hours in excess of the long period average.

There was a remarkable deficiency of rainfall, the total amount 31·802", being 12·4" below normal and the lowest since 1887. Rain fell on 168 days with a total duration of 575·7 hours.

Correlated with the absence of rain was the unusual frequency of Easterly winds (3,386 hours compared with 3,062 of a Westerly type). The force was also lighter than any yet recorded, the maximum velocity for the year being only 26 miles per hour.

THOMAS MIDGLEY, F.R.Met.S.

Meteorological Summary, 1933.

1933	Barometer	Mean Relative Humidity	Mean of Maximum and Minimum Temperature	Absolute extremes of Temperature				Sunshine			Total Rainfall
				Highest	Date	Lowest	Date	Total Amount	Maximum in one day	Date	
								hours	hours		
January	30·126"	89·4%	36·30°	50·9°	8	23·4°	23	19·3	5·2	9	2·402"
February	29·952	85·7	39·21	54·1	9	34·7	24	66·9	8·0	22	4·127
March	29·886	79·2	43·98	64·2	28	30·7	21	100·3	8·5	24	3·005
April	30·082	76·0	47·00	67·9	7	30·7	22	85·3	10·5	13	1·855
May	29·975	73·9	52·16	70·5	20	41·3	2 & 3	132·5	11·0	14	1·948
June	29·881	68·1	59·02	84·2	6	46·3	27	178·7	13·1	5	3·958
July	30·018	75·2	61·93	83·0	3	47·6	30	180.8	14·0	5	2·824
August	30·046	76·1	60·98	81·2	4 & 5	48·1	12	162·9	10·9	10	2·512
September	30·075	76·8	58·49	77·2	4	40·3	15	148·8	9·5	14	1·012
October	29·932	82·4	49·46	66·3	6	32·5	28	63·2	7·0	26	5·123
November	29·972	85·8	42·16	53·6	7	29·6	13	30·9	7·0	2	2·324
December	30·223	86·6	36·10	43·7	15	28·5	6	8·9	4·5	4	·712
Total	360·168	954·6	586·79					1178·5			31·802
Average	30·014	79·6	48·90					98·2			2·650

Rainfall. Average 1887—1933 = 44·24"

Baths and Wash-houses. 12 months ended 31st March, 1934.

	Mixed Bathing	Swimming Baths			Slipper Baths				Vapour and Needle Baths	Contracts	Total Bathers	Corresponding period last year	No. using Wash-houses	Corresponding period last year
	6d.	4d.	3d.	2d.	8d.	6d.	4d.	2d.	9d.					
Moss St. Baths & Wash-houses...	9621	27542	2674	37780	1455	5362	3643	...	...	59518	147595	157238	20693	23097
Bridgeman St. Baths ...	8589	27120	2716	35399	2969	1800	1261	...	288	44123	124265	122758	...	...
High St. Baths	7213	12385	1037	20584	781	3508	1876	...	120	37768	85272	86624	...	...
*Rothwell Street Baths and Wash-houses	...	...	...	...	...	758	545	5014	...	...	6317	7307	43810	44900
Total ...	25423	67047	6427	93763	5265	11428	7325	5014	408	141409	363449	373927	64503	67997

* Opened 11th February, 1931.

Turkish Baths. 12 months ended 31st March, 1934.

	Turkish Baths		Slipper Baths		Massage	Medicated Baths	Total Bathers	Corresponding period last year
	1st Class	2nd Class	1st Class	2nd Class				
Turkish Baths	1659	1486	237	260	203	36	3881	5033

Corporation Horses.

Report on the Inspection and Treatment of Horses belonging to the Corporation.

The following statement shows the total number of Corporation horses on the 31st December, 1933, the Committees to which they belong, and the total visits of inspection for the purpose of treatment of horses for various ailments during the year.

Committee	Number of Horses	Visits of Inspection during 1933.
Cleansing and Sewage	42	82
Streets	1	2
Gas	2	4
Parks	3	39
Waterworks	1	3
Education	2	12
Total	51	142

During the year four horses were submitted for veterinary examination prior to consideration of purchase by the Cleansing and Sewage Committee, and two were submitted by the Parks Committee.

In addition to the above horses, 20 dairy cattle belonging to the Education Committee at the Lostock Open Air School have received veterinary attendance and medicine during the year.

SECTION XII.

Appendix.

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List No.	Causes of Death	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
	I. Infectious and Parasitic Diseases.																
1-2	Typhoid and paratyphoid fevers	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Relapsing fever ("Spirillum obermeieri")	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Undulant fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Measles	14	7	7	3	4	3	4	...	...	...	...	...	...	...	...	...
8	Scarlet fever	10	7	3	...	3	2	1	1	1	...	1	...	...	1	...	...
9	Whooping cough	9	4	5	6	2	...	..	...	1	...	...	...	...	...	...	...
10	Diphtheria	6	5	1	...	...	1	...	1	1	3	...	...	...	...	...	...
11	Influenza	165	78	87	3	2	2	1	...	1	1	1	4	2	7	11	12
12	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Erysipelas	7	4	3	...	1	...	...	...	1	...	1	...	...	...	...	...
16	Acute poliomyelitis	1	1	..	...	...	...	...	...	1	...	...	...	...	...	...	...
17	Encephalitis lethargica	2	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...
18	Cerebro-spinal fever	3	3	...	1	...	..	...	...	1	...	...	1	...	...	...	...
19	Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Tetanus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23-32	Tuberculosis (all forms): ...	114	60	54	4	2	1	...	1	3	...	6	19	15	11	12	12
23	Respiratory system	90	49	41	...	...	...	...	...	...	...	4	16	13	9	10	10
24	Central nervous system ...	7	3	4	1	2	1	...	1	1	...	1	...	...	...	...	...
25	Intestines and peritoneum ..	8	4	4	3	...	...	...	...	...	...	1	...	2	1	1	...
26	Vertebral column	3	1	2	...	...	...	...	...	...	...	...	...	...	...	1	2
27	Other bones and joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	Skin and susbcutaneous tissues .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Lymphatic system (abdominal and bronchial glands excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Genito-urinary system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	Other organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	Disseminated tuberculosis ...	6	3	3	...	...	...	...	..	2	...	...	3	...	1	...	...
33	Leprosy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	Syphilis	5	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...
35	Other venereal diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36	Purulent infection, Septicæmia .	6	4	2	...	...	1	...	...	...	...	...	...	...	1	...	...
37	Yellow fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	Other diseases due to protozoa ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Ankylostomiasis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	Hydatid cysts	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
42	Other diseases due to helminths	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
43	Mycoses	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
44	Other infectious or parasitic diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Infectious and Parasitic Diseases....	344	180	164	18	14	11	6	3	10	4	9	25	18	21	23	24
	II. Cancer and other Tumours.																
45-53	Cancer, malignant disease ...	235	116	119	1	...	...	...	...	...	1	...	1	2	5	...	16
45	Buccal cavity and pharynx ...	24	22	2	...	...	...	...	...	...	...	...	...	...	...	...	2
46	Digestive organs and peritoneum	103	54	49	...	...	...	...	...	...	...	...	...	1	3	...	2
47	Respiratory organs	16	12	4	...	...	...	...	...	...	...	...	...	...	...	...	2
48	Uterus	24	...	24	...	...	...	..	...	...	...	...	...	...	1	...	4
49	Other female genital organs ...	4	...	4	...	...	...	...	...	...	...	...	1	...	...	...	...
50	Breast	26	...	26	...	...	...	...	...	...	...	...	...	...	...	...	3
51	Male genito-urinary organs ...	16	16	...	...	...	...	...	...	...	...	...	...	...	...	...	2
52	Skin	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
53	Other or unspecified organs ...	20	10	10	1	...	...	...	...	...	1	...	...	1	1	...	1
54	Non-malignant tumours	4	1	3	...	...	...	...	...	...	...	...	...	...	...	...	1
55	Tumours of undetermined nature	4	3	1	...	...	...	...	...	1	...	1	...	...	1	...	...
	Total Cancer and Other Tumours	243	120	123	1	...	...	...	...	1	1	1	1	2	6	...	17

							WARD.															
65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar.Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
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...	...	...	...	...	8	1	1	1	2	1	1	1	...	...	1	...	...	...	1	...	...	...	...
...	...	...	...	...	2	4	...	...	...	2	...	1	1	1	...	...	...	...	...	1	...	...	...
9	14	22	10	4	8	157	5	11	25	13	5	18	5	9	4	19	7	7	8	11	3	8	7
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3	...	...	...	...	8	106	5	10	17	15	3	16	2	9	1	8	4	3	2	12	3	1	3
3	...	...	...	...	...	90	2	8	11	11	3	12	2	7	1	8	4	3	2	11	2	...	3
...	...	...	...	...	5	2	...	1	2	1	...	1	...	2	...	...	...	...	...	...	...	...	...
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13	15	24	10	4	52	292	11	27	53	34	11	45	10	22	8	33	13	10	12	26	6	11	12
44	28	16	5	3	1	234	4	19	38	15	1	30	6	15	8	24	11	3	11	21	5	14	10
10	4	2	...	...	...	24	...	3	5	2	...	4	...	2	4	...	1	...	...	2	...	...	1
19	18	7	3	1	...	103	3	10	16	10	...	15	2	7	1	10	3	...	7	8	2	6	3
2	2	1	...	1	...	16	1	...	...	1	...	1	1	2	1	3	...	...	2	1	...	1	2
3	...	1	1	...	...	24	...	1	6	...	1	4	...	...	1	1	3	1	...	3	...	2	1
...	...	1	...	...	...	4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...
3	2	3	1	...	...	26	...	2	5	1	...	2	1	2	1	5	...	1	...	3	...	1	2
4	1	1	...	...	...	16	...	2	1	..	...	1	2	1	...	3	2	...	1	1	1	...	1
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3	1	...	...	1	1	19	...	1	4	1	...	2	...	1	...	1	2	1	1	2	2	2	...
1	...	...	...	...	...	4	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...
...	...	...	...	...	...	4	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	1
45	28	16	5	3	1	242	5	19	41	15	1	30	6	15	8	25	11	4	11	21	5	15	11

List No.	Causes of Death.	Total	Sex. M.	Sex. F.	Age. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35
	III. Rheumatism, Diseases of Nutrition and of Endocrine Glands, and other General Diseases.														
56	Rheumatic fever	24	7	17	...	...	...	...	...	1	2	1	1	3	1
57	Chronic rheumatism, Osteo-arthritis...	6	2	4	...	...	...	...	...	...	...	...	...	...	...
58	Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	Diabetes	36	17	19	...	...	...	...	...	...	...	1	...	...	...
60	Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...
61	Beri-beri	...	...	...	...	...	...	...	...	...	...	...	...	...	...
62	Pellagra	...	...	...	...	...	...	...	...	...	...	...	...	...	...
63	Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...
64	Osteomalacia	...	...	...	...	...	...	...	...	...	...	...	...	...	...
65	Diseases of the pituitary gland ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
66	Diseases of the thyroid and parathyroid glands	13	5	8	2	...	...	...	...	...	...	1	...	...	1
67	Diseases of the thymus	1	...	1	...	...	...	1	...	...	...	...	...	...	...
68	Diseases of the adrenals	1	1	...	...	...	...	...	...	...	...	...	...	...	...
69	Other general diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Rheumatism, Diseases of Nutrition and of Endocrine Glands, and Other General Diseases	81	32	49	2	...	...	1	...	1	2	3	1	3	2
	IV. Diseases of the Blood and Blood-forming Organs.														
70	Hæmorrhagic conditions	...	...	...	...	...	...	...	...	...	...	...	...	...	...
71	Anæmia, Chlorosis	11	6	5	...	...	...	...	...	...	...	1	...	...	...
72	Leukæmia, aleukæmia	9	3	6	...	...	...	...	...	...	...	...	2	...	1
73	Diseases of the spleen	...	...	...	...	...	...	...	...	...	...	...	...	...	...
74	Other diseases of the blood and blood-forming organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of the Blood and Blood-forming Organs ...	20	9	11	...	...	...	..	...	...	...	1	2	...	1
	V. Chronic Poisoning.														
75	Alcoholism (acute or chronic) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
76	Chronic poisoning by other organic substances...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
77	Chronic poisoning by mineral substances	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Chronic Poisoning ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
	VI. Diseases of the Nervous System and Sense Organs.														
78	Encephalitis	3	2	1	...	...	...	...	...	...	1	...	...	...	...
79	Meningitis	6	3	3	1	1	1	...	...	...	1	...	...	...	...
80	Tabes dorsalis (locomotor ataxy)	2	1	1	...	...	...	...	...	...	...	...	...	...	...
81	Other diseases of the spinal cord	7	3	4	...	...	...	..	...	...	...	...	2	...	...
82	Cerebral hæmorrhage, Apoplexy, etc.	141	63	78	2	...	...	...	...	...	...	1	...	...	...
83	General paralysis of the insane ...	7	7	...	...	...	...	...	...	...	...	...	...	...	...
84	Other forms of insanity	2	2	...	...	...	...	...	...	...	...	...	...	...	...
85	Epilepsy	4	3	1	...	...	...	...	...	...	1	..	...	...	...
86	Infantile convulsions (age under 5 years)	8	2	6	6	1	...	1	...	...	...	...	...	...	...
87	Other diseases of the nervous system	13	7	6	...	...	...	...	...	...	1	...	...	...	1

ntinued.

, 1933.

								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
1	1	1	...	...	...	...	24	...	3	2	...	...	2	...	5	1	1	...	2	...	4	..	1	3
...	2	...	1	1	...	...	6	...	...	...	2	...	...	1	1	...	...	...	...	...	1	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	10	2	3	1	...	...	36	...	...	8	3	...	3	...	3	...	1	1	2	1	10	1	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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10	14	3	5	2	...	3	78	1	3	13	6	...	6	2	9	3	4	3	4	1	15	1	4	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	2	2	...	...	...	...	11	...	...	1	1	...	1	1	...	...	3	...	...	2	...	...	1	1
2	2	...	...	...	...	...	9	1	...	...	1	1	2	...	...	...	1	1	...	2	...	...	...	...
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4	4	2	...	...	...	...	20	1	...	1	2	1	3	1	...	...	4	1	...	4	...	...	1	1
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1	1	...	...	...	...	...	7	...	...	...	1	...	1	...	1	...	...	...	...	...	3	1	...	...
22	26	31	13	8	5	2	139	3	6	15	16	...	10	2	9	3	10	4	8	5	18	4	15	13
...	2	...	...	...	...	...	7	...	1	1	...	...	2	...	1	...	1	1	...	...	...	...	...	...
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2	4	...	...	...	...	...	13	...	1	2	1	...	1	2	3	...	...	...	...	...	...	...	1	2

TABLE
CAUSES OF

List No.	Causes of Death	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
88	Diseases of the eye and annexa	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
89	Diseases of the ear and mastoid sinus	10	6	4	1	...	...	...	...	2	...	...	2	1	...	...	1
	Total Diseases of the Nervous System and Sense Organs	204	100	104	10	2	1	1	...	2	4	1	4	1	1	7	9
	VII. Diseases of the Circulatory System.																
90-95	Heart diseases:	485	217	268	1	...	...	...	1	1	2	1	3	7	7	10	22
90	Pericarditis...	2	1	1	..	...	...	...	...	..	...	...	1	...	...	...	1
91	Acute endocarditis...	3	1	2	...	...	...	...	1	...	1	...	...	...	1	...	...
92	Chronic endocarditis, valvular disease	135	52	83	...	...	...	...	...	...	1	1	...	4	5	5	11
93	Diseases of the myocardium ..	294	138	156	1	...	...	...	...	1	...	...	2	2	1	2	8
94	Diseases of the coronary arteries, Angina pectoris	20	15	5	..	...	...	...	...	...	...	...	...	...	...	...	...
95	Other diseases of the heart ...	31	10	21	...	...	...	...	...	...	...	...	...	1	..	3	2
96	Aneurysm	5	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...
97	Arterio-sclerosis	163	77	86	...	...	...	...	...	...	...	...	...	...	...	..	...
98	Gangrene	5	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...
99	Other diseases of the arteries ..	3	1	2	...	...	...	...	...	...	...	...	...	...	..	..	...
100	Diseases of the veins (Varix, hæmorrhoids, phlebitis, etc.) ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	..	...
101	Diseases of the lymphatic system (lymphangitis, etc)	1	1	...	1	...	..	...	...	...	...	...	...	...	...	..	...
102	Abnormalities of blood pressure	15	6	9	...	...	...	...	...	...	...	...	...	...	...	..	...
103	Other diseases of the circulatory system	1	...	1	...	...	...	...	...	...	...	...	...	...	...	..	...
	Total Diseases of the Circulatory System.	679	309	370	2	...	...	...	1	1	2	1	3	7	7	1	22
	VIII. Diseases of the Respiratory System.																
104	Diseases of nasal fossæ and annexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
105	Diseases of the larynx	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...
106	Bronchitis	136	61	75	10	3	...	...	...	...	...	1	...	2	...		1
107-109	Pneumonia (all forms)	152	75	77	31	27	7	3	2	4	3	2	2	1	1		8
107	Broncho-pneumonia	92	42	50	26	23	5	2	2	2	1	...	...	...	...		1
108	Lobar pneumonia	35	18	17	1	1	1	...	...	1	1	...	2	1	1		6
109	Pneumonia (not otherwise defined)	25	15	10	4	3	1	1	...	1	1	2	...	...	...		1
110	Pleurisy	4	3	1	...	...	...	...	...	...	...	...	...	...	...		1
111	Congestion and hæmorrhagic infarct of lung, etc.	9	4	5	...	...	...	...	...	...	...	...	...	1	...		...
112	Asthma	9	4	5	...	...	...	...	...	...	...	...	...	...	1		1
113	Pulmonary emphysema	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...
114	Other diseases of the respiratory system	1	1	...	...	...	...	...	...	...	...	...	...	...	...		...
	Total Diseases of the Respiratory System	313	150	163	41	30	7	3	2	4	3	3	2	4	2	7	11
	IX. Diseases of the Digestive System.																
115	Diseases of the buccal cavity, pharynx, etc.	8	3	5	...	...	...	...	...	2	...	...	...	...	...		2
116	Diseases of the œsophagus ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	..	...
117	Ulcer of the stomach or duodenum	19	18	1	...	...	...	...	...	...	...	...	...	...	2	1	1
118	Other diseases of the stomach	8	4	4	1	...	...	...	...	1	...	...	...	...	...	..	1
119-120	Diarrhœa and enteritis	28	19	9	15	1	...	...	1	...	1	...	1	..	1	..	...

								WARD.															
0 to 5	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	1	9	...	...	2	2	...	2	...	1	...	...	...	...	...	2	...	1	...
6	33	31	13	9	5	14	190	4	9	29	21	...	16	4	17	3	13	6	10	5	28	5	19	15
0	84	87	59	37	21	2	483	13	20	79	29	10	39	14	33	18	39	20	10	22	73	14	26	26
...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	1	2	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1
6	25	19	11	7	4	...	135	3	7	27	5	4	11	7	6	3	13	3	3	9	18	3	5	8
7	49	60	42	30	17	1	293	8	11	43	23	6	24	6	24	11	24	15	3	12	49	8	14	13
2	4	5	1	...	...	...	20	1	...	2	1	...	...	...	...	...	1	1	2	...	4	1	4	3
5	6	3	5	...	...	...	31	1	2	5	...	...	4	1	3	3	1	1	1	1	2	2	3	1
...	...	...	...	...	...	...	5	...	...	1	...	...	1	...	1	...	...	...	...	...	1	...	1	...
4	22	57	32	20	9	...	163	4	11	22	16	6	20	10	15	5	13	3	...	5	15	5	8	5
...	...	1	4	...	...	...	5	1	...	...	1	...	...	...	1	1	1	...	...	...	...	...	...	...
1	...	...	2	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...
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4	4	...	1	1	...	...	15	...	...	1	2	...	1	2	2	...	...	2	1	..	1	1	1	1
...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
9	110	145	99	58	30	3	676	18	31	103	48	16	63	27	52	24	53	25	11	29	90	21	36	32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
2	15	27	28	14	8	13	123	4	12	27	11	2	16	6	8	4	17	3	4	4	9	1	2	6
7	6	7	7	2	2	69	83	4	11	24	13	7	19	7	8	7	20	5	5	5	9	...	6	2
5	3	5	4	1	1	58	34	2	6	17	9	6	11	2	5	3	11	3	4	2	7	...	3	1
1	3	2	2	...	...	3	32	2	2	7	3	...	5	...	3	2	7	1	...	2	...	...	1	...
1	...	...	1	1	1	9	16	...	3	...	1	1	3	5	...	2	2	1	1	1	2	...	2	1
1	1	...	...	...	...	...	4	...	...	1	...	...	...	...	2	...	1	...	...	...	...	...	...	...
2	1	...	2	2	...	...	9	...	...	2	1	...	...	1	1	...	2	1	...	...	...	...	...	1
2	...	...	1	...	...	...	9	1	...	1	...	...	3	1	...	...	...	...	...	...	1	1	1	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
5	23	34	38	18	10	83	230	9	24	55	25	9	38	15	19	11	41	9	9	9	20	2	9	9
1	1	2	...	...	...	...	8	...	...	1	...	...	...	1	3	1	...	1	...	...	1	...	...	...
1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
2	1	1	...	...	...	...	19	1	.	2	1	...	2	1	8	...	...	1	...	...	1	...	2	...
...	...	3	...	...	1	1	7	...	...	1	1	...	1	1	1	...	...	1	...	...	1	...	1	...
2	2	...	...	...	1	18	10	...	5	3	2	3	2	4	...	...	4	...	...	...	3	...	1	1

List No.	Causes of Death.	Total	Sex. M.	Sex. F.	Age. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40
121	Appendicitis	11	4	7	...	...	...	...	...	2	...	1	...	...	...	1
122	Hernia, intestinal obstruction ...	8	3	5	...	...	...	...	...	...	...	...	...	...	...	1
123	Other diseases of the intestines ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...
124	Cirrhosis of the liver	6	6	...	...	...	...	...	...	...	...	...	...	...	...	1
125	Other diseases of the liver ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
126	Biliary calculi	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...
127	Other diseases of the gall bladder and ducts...	15	7	8	1	...	...	...	...	...	...	...	1	...	...	2
128	Diseases of the pancreas	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
129	Peritonitis without stated cause	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of the Digestive System	109	67	42	18	1	...	...	1	5	1	1	2	...	3	6
	X. Non-Venereal Diseases of the Genito-Urinary System and Annexa.															
130-132	Nephritis:	92	45	47	1	...	...	...	...	1	1	...	...	1	3	2
130	Acute nephritis	7	1	6	1	...	...	...	...	...	1	...	...	...	...	1
131	Chronic nephritis	65	33	32	...	...	...	...	...	1	...	...	...	1	3	...
132	Nephritis, not stated to be acute or chronic	20	11	9	...	...	...	...	...	...	...	...	...	...	...	1
133	Other diseases of the kidney and annexa	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...
134	Calculi of the urinary passages	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...
135	Diseases of the bladder	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...
136	Diseases of the urethra, urinary abscess, etc.	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...
137	Diseases of the prostate	15	15	...	...	...	...	...	...	...	...	...	...	...	...	...
138	Diseases of the male genital organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
139	Diseases of the female genital organs	4	...	4	...	...	...	...	...	...	...	...	...	...	1	
	Total Non-Venereal Diseases of the Genito-Urinary System and Annexa.	123	66	57	1	...	...	...	...	1	1	...	...	1	4	
	XI. Diseases of Pregnancy, Childbirth and the Puerperal State.															
140	Post-abortive sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
141	Abortion not returned as septic ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
142	Ectopic gestation	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
143	Other accidents of pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
144	Puerperal hæmorrhage	2	...	2	...	...	...	...	...	...	...	...	...	...	1	...
145	Puerperal sepsis not returned as post-abortion	5	...	5	...	...	...	...	...	...	...	...	1	1	2	...
146	Puerperal albuminuria and convulsions	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...
147	Other toxæmias of pregnancy ...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...
148	Puerperal phlegmasia alba dolens, embolism, and sudden death ..	4	...	4	...	...	...	...	...	...	...	...	...	...	1	1
149	Other accidents of childbirth ...	3	...	3	...	...	...	...	...	...	...	...	...	1	2	...
150	Other or unspecified conditions of the puerperal state ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of Pregnancy, Childbirth and the Puerperal State, ...	18	...	18	...	...	...	...	...	...	...	...	2	3	6	5
	XII. Diseases of the Skin and Cellular Tissue.															
151	Carbuncle, Boil	2	...	2	...	...	...	...	...	...	...	...	...	1	...	...
152	Cellulitis, Acute abscess	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
153	Other diseases of the skin and its annexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of the Skin and Cellular Tissue. ...	3	1	2	...	...	...	...	...	...	...	...	...	1	...	...

								WARD.																	
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
1	...	...	...	...	...	...	11	...	1	...	...	...	...	2	2	...	2	...	1	...	2	...	...	1
1	...	1	4	...	...	...	8	...	...	1	...	...	2	1	...	...	...	...	...	...	1	1	1	1
1	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
1	...	1	...	...	...	...	6	...	...	...	...	1	2	1	...	...	...	...	...	...	1	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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1	3	3	2	1	...	1	14	...	2	2	1	...	1	...	2	1	...	2	...	1	2	1	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	8	11	7	1	2	20	89	1	8	10	6	4	11	12	16	2	6	5	1	1	14	2	6	4
12	15	16	9	2	3	1	91	5	4	10	11	...	8	2	4	2	10	2	3	3	13	4	5	6
2	...	...	...	...	...	1	6	1	1	...	...	...	1	...	...	...	1	...	...	1	1	...	...	1
8	13	11	7	2	1	...	65	4	3	5	10	...	5	2	1	2	6	2	3	...	9	4	5	4
2	2	5	2	...	2	...	20	...	...	5	1	...	2	...	3	...	3	...	...	2	3	...	...	1
...	1	...	1	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1	...
1	...	...	...	...	...	...	2	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
1	...	...	2	...	...	...	3	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
1	2	...	...	...	...	...	4	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...
1	5	3	2	2	...	...	15	...	...	4	...	...	...	...	...	...	1	4	...	1	1	1	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	4	...	...	1	...	...	1	1	...	...	...	...	1	...	...	...	...	...
16	24	19	14	4	3	1	122	6	6	17	11	...	11	3	5	2	11	6	5	5	15	5	7	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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...	...	...	...	...	...	...	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	5	...	...	2	1	...	1	...	...	...	...	...	...	...	...	...	1	...
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...	...	...	...	...	...	...	4	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	18	1	...	6	1	1	2	1	1	...	...	...	...	1	1	...	1	2
...	...	...	1	...	...	...	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
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...	...	1	1	...	...	...	3	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...

List No.	Causes of Death.	Total	Sex. M.	Sex. F.	Age. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
	XIII. Diseases of the Bones and Organs of Locomotion																
154	Acute infective osteomyelitis and periostitis...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
155	Other diseases of the bones ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
156	Diseases of the joints and other organs of locomotion	3	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...
	Total Diseases of the Bones and Organs of Locomotion.	4	3	1	...	...	...	...	...	...	2	...	...	...	...	...	...
157	**XIV. Congenital Malformations.**	19	13	6	18	1	...	...	...	...	...	...	...	...	...	...	...
	XV. Diseases of Early Infancy.																
158	Congenital debility	8	3	5	8	...	...	...	...	...	...	...	...	...	...	...	...
159	Premature birth	33	17	16	33	...	...	...	...	...	...	...	...	...	...	...	...
160	Injury at birth	6	3	3	6	...	...	...	...	...	...	...	...	...	...	...	...
161	Other diseases peculiar to early infancy	7	5	2	7	...	...	...	...	...	...	...	...	...	...	...	...
	Total Diseases of Early Infancy	54	28	26	54	...	...	...	...	...	...	...	...	...	...	...	...
162	**XVI. Old Age.**	174	76	98	...	...	...	...	...	...	...	...	...	...	...	...	...
	XVII. Deaths from Violence.																
163-171	Suicide:	29	20	9	...	...	...	...	...	...	...	...	1	1	2	...	3
163	By solid or liquid poisons and corrosive substances	6	3	3	...	...	...	...	...	...	...	...	1	...	1	...	1
164	By poisonous gas	6	4	2	...	...	...	...	...	...	...	...	...	...	1	...	...
165	By hanging or strangulation ...	4	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...
166	By drowning	9	7	2	...	...	...	...	...	...	...	...	...	1	...	...	...
167	By firearms	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
168	By cutting or piercing instruments	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
169	By jumping from high places...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
170	By crushing	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
171	By other means	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
172-175	Homicide:	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
172	Infanticide (under one year)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
173	Homicide by firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
174	Homicide by cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175	Homicide by other means ..	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
176-194	Accidental deaths:	59	38	21	1	...	2	2	2	4	4	3	6	2	1	4	1
176	Attack by venomous animals ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
177	Food poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
178	Accidental absorption of irrespirable or poisonous gas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179	Other acute accidental poisoning (not by gas)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
180	Conflagration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181	Accidental burns (conflagration excepted)	9	4	5	1	...	1	1	1	...	...	1	1	1	...	...	...
182	Accidental mechanical suffocation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
183	Accidental drowning	3	3	..	...	...	...	...	...	2	...	...	...	...	...	1	...
184	Accidental injury by firearms...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
185	Accidental injury by cutting or piercing instruments	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186	Accidental injury by fall, crushing, etc.	39	25	14	...	...	1	...	1	2	2	2	5	1	1	3	1
187	Cataclysm	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
188	Injury by animals (poisoning by venomous animals excepted)	...	...	...	...	...	...	...	...	...	...	..	...	...	..	...	...
189	Hunger or thirst	...	...	...	...	...	..	...	...	...	...	...	...	...	..	...	...

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								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
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...	...	...	...	...	...	54	...	1	5	11	2	...	8	1	6	1	6	3	...	3	4	1	1	1
7	7	37	61	33	28	...	174	9	15	20	9	10	16	17	9	1	9	3	1	9	25	5	8	8
5	1	...	1	...	...	...	29	...	2	6	2	1	3	1	2	...	1	...	2	2	6	...	...	1
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4	3	3	3	3	1	7	52	1	2	11	3	3	6	5	4	2	6	1	3	3	5	1	2	1
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3	3	2	2	2	1	2	37	...	2	5	2	3	2	5	4	1	4	1	2	1	3	1	2	1
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List No.	Causes of Death.	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	0 to 5
190	Excessive cold	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
191	Excessive heat	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
192	Lightning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
193	Electricity (lightning excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
194	Other and unstated forms of accidental violence	4	3	1	...	...	...	1	...	...	2	...	...	...	...	...	...
195	Violent deaths of unstated nature (*i.e.*, accidental, suicidal, etc.)	6	4	2	...	...	...	...	...	...	...	1	...	...	1	1	...
196	Wounds of war	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
197	Execution of civilians by belligerent armies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198	Execution	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Deaths from Violence	95	62	33	2	...	2	2	2	4	4	4	7	3	4		4
	XVIII. Ill-defined Diseases.																
199	Sudden death	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Causes of death unstated or ill-defined	15	12	3	...	...	...	...	...	...	...	...	1	...	...	...	1
	Total Ill-defined Deaths ...	15	12	3	...	...	...	...	...	...	...	...	1	...	...	...	1

								WARD.																	
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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9	4	5	4	4	1	8	87	1	5	18	6	4	9	6	7	2	7	2	5	5	12	2	2	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	2	2	3	...	...	...	15	...	1	3	...	...	3	...	2	...	2	...	...	1	1	...	1	1
4	2	2	3	...	...	...	15	...	1	3	...	...	3	...	2	...	2	...	...	1	1	...	1	1

List No.	Causes of Death	Total	SEX. M.	SEX. F.	AGE. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45
1-44	Infectious and Parasitic Diseases	344	180	164	18	14	11	6	3	10	4	9	25	18	21	2	24
45-55	Cancer and other Tumours ...	243	120	123	1	...	...	...	...	1	1	1	1	2	6		17
56-69	Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases ...	81	32	49	2	...	...	1	...	1	2	3	1	3	2		3
70-74	Diseases of the Blood and Blood-forming Organs	20	9	11	...	...	...	...	...	...	...	1	2	...	1		1
75-77	Chronic Poisoning...	1	...	1	...	...	...	...	...	...	...	...	...	...	...		...
78-89	Diseases of the Nervous System and Sense Organs	204	100	104	10	2	1	1	...	2	4	1	4	1	1		9
90-103	Diseases of the Circulatory System	679	309	370	2	...	...	...	1	1	2	1	3	7	7		22
104-114	Diseases of the Respiratory System	313	150	163	41	30	7	3	2	4	3	3	2	4	2		11
115-129	Diseases of the Digestive System	109	67	42	18	1	...	...	1	5	1	1	2	...	3		5
130-139	Non-Venereal Diseases of the Genito-Urinary System and Annexa	123	66	57	1	...	...	...	...	1	1	...	...	1	4		7
140-150	Diseases of Pregnancy, Childbirth and the Puerperal State ...	18	...	18	...	...	..	...	...	...	...	...	2	3	6		2
151-153	Diseases of the Skin and Cellular Tissue	3	1	2	...	...	...	...	...	...	...	...	...	1	...		...
154-156	Diseases of the Bones and Organs of Locomotion...	4	3	1	...	...	...	...	...	...	2	...	...	...	...		...
157	Congenital Malformations ...	19	13	6	18	1	...	...	...	...	...	...	...	...	...		...
158-161	Diseases of Early Infancy ...	54	28	26	54	...	...	...	...	...	...	...	...	...	...		...
162	Old Age	174	76	98	...	...	...	...	...	...	...	...	...	...	...		...
163-198	Deaths from Violence	95	62	33	2	...	2	2	2	4	4	4	7	3	4	5	4
199-200	Ill-defined Diseases	15	12	3	...	...	...	...	...	...	...	...	1	...	...		1
	GRAND TOTAL ...	2499	1228	1271	167	48	21	13	9	29	24	24	50	43	57	78	106

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								WARD.																	
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever-c-Br'htmet	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
20	13	15	24	10	4	52	292	11	27	53	34	11	45	10	22	8	33	13	10	12	26	6	11	12
38	45	28	16	5	3	1	242	5	19	41	15	1	30	6	15	8	25	11	4	11	21	5	15	11
10	14	3	5	2	...	3	78	1	3	13	6	...	6	2	9	3	4	3	4	1	15	1	4	6
4	4	2	...	...	...	...	20	1	...	1	2	1	3	1	...	...	4	1	...	4	...	...	1	1
...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
26	33	31	13	9	5	14	190	4	9	29	21	...	16	4	17	3	13	6	10	5	28	5	19	15
79	110	145	99	58	30	3	676	18	31	103	48	16	63	27	52	24	53	25	11	29	90	21	36	32
25	23	34	38	18	10	83	230	9	24	55	25	9	38	15	19	11	41	9	9	9	20	2	9	9
11	8	11	7	1	2	20	89	1	8	10	6	4	11	12	16	2	6	5	1	1	14	2	6	4
16	24	19	14	4	3	1	122	6	6	17	11	...	11	3	5	2	11	6	5	5	15	5	7	8
...	...	...	...	...	...	...	18	1	...	6	1	1	2	1	1	...	...	...	...	1	1	...	1	2
...	...	1	1	...	...	...	3	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...
...	...	...	...	...	...	19	...	2	...	2	1	...	...	...	2	2	3	...	2	...	3	1	...	1
...	...	...	...	...	...	54	...	1	5	11	2	...	8	1	6	1	6	3	...	3	4	1	1	1
7	7	37	61	33	28	...	174	9	15	20	9	10	16	17	9	1	9	3	1	9	25	5	8	8
9	4	5	4	4	1	8	87	1	5	18	6	4	9	6	7	2	7	2	5	5	12	2	2	2
4	2	2	3	...	...	...	15	...	1	3	...	...	3	...	2	...	2	...	...	1	1	...	1	1
250	287	334	285	144	86	258	2241	71	153	381	187	57	261	105	184	67	219	87	63	96	276	56	123	113

Causes of Death at Different Periods of Life in the County Borough of Bolton—1933.

(Statistics supplied by the Registrar-General).

Causes of death	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
All Causes	M	1230	84	30	24	36	36	42	77	133	255	313	200
	F	1272	83	19	20	16	41	59	108	117	193	302	314
Typhoid and paratyphoid fevers ...	M	1	...	...	...	...	...	...	...	...	1	...	...
	F	...	...	...	...	...	...	...	...	...	...	...	...
Measles	M	7	1	2	4	...	...	...	...	...	...	...	...
	F	7	2	2	3	...	...	...	...	...	...	...	...
Scarlet fever	M	7	...	2	3	...	1	1	...	...	...	...	...
	F	3	...	1	1	1	...	...	...	...	...	...	...
Whooping cough	M	4	3	1	...	...	...	...	...	...	...	...	...
	F	7	3	1	1	2	...	...	...	...	...	...	...
Diphtheria	M	5	...	...	2	3	...	...	...	...	...	...	...
	F	1	...	...	...	1	...	...	...	...	...	...	...
Influenza	M	76	1	2	3	2	3	6	10	12	13	9	15
	F	93	2	...	...	1	2	4	16	16	19	11	22
Encephalitis lethargica	M	1	...	...	...	...	...	1	...	...	...	...	...
	F	1	...	...	...	...	1	...	...	...	...	...	...
Cerebro-spinal fever	M	3	1	...	...	1	1	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of respiratory system...	M	53	...	...	...	...	7	11	13	8	12	2	...
	F	41	...	...	...	...	13	13	8	3	3	1	...
Other tuberculous diseases ...	M	12	2	1	1	3	1	3	1	...	...	...	...
	F	14	2	1	1	...	4	2	3	...	1	...	...
Syphilis	M	3	1	...	...	...	...	...	...	2	...	...	...
	F	2	...	...	...	...	1	...	...	...	...	1	...
General paralysis of the insane, tabes dorsalis	M	9	...	...	...	...	...	...	1	3	3	2	...
	F	1	...	...	...	...	...	...	...	1	...	...	...
Cancer, malignant disease ...	M	120	...	...	...	...	...	4	10	18	36	45	7
	F	122	1	...	...	1	1	4	10	22	33	33	17
Diabetes	M	19	...	...	...	...	1	...	1	1	6	7	3
	F	24	...	...	...	...	...	...	1	2	8	9	4
Cerebral hæmorrhage, &c	M	65	...	...	...	...	...	...	3	5	20	27	10
	F	76	...	...	...	...	1	...	5	7	17	28	18
Heart disease	M	247	...	...	...	3	4	5	9	32	51	90	53
	F	289	...	...	1	1	4	11	24	26	45	101	76
Aneurysm	M	6	...	...	...	...	...	...	...	4	2	...	...
	F	1	...	...	...	...	...	...	...	1	...	...	...
Other circulatory diseases	M	67	...	...	...	...	...	...	...	1	13	24	29
	F	87	...	...	...	...	...	...	...	1	8	41	37
Bronchitis	M	54	6	1	...	...	...	...	...	2	8	21	16
	F	71	6	2	...	...	...	1	2	4	10	16	30
Pneumonia (all forms)	M	72	13	15	4	3	2	...	7	6	12	7	3
	F	69	18	10	7	2	1	2	5	3	9	5	7
Other respiratory diseases	M	14	...	...	...	...	1	...	2	4	4	2	1
	F	10	...	...	...	1	...	...	2	...	4	...	3
Peptic Ulcer	M	17	...	...	...	...	...	1	2	9	3	2	...
	F	1	...	...	...	...	...	...	...	...	1	...	...
Diarrhœa, etc	M	17	9	1	1	1	1	...	...	...	3	...	1
	F	8	7	...	...	...	...	...	...	...	1	...	...
Appendicitis	M	3	...	...	...	1	...	...	1	...	1	...	...
	F	8	...	...	...	1	1	...	1	2	3	...	...
Cirrhosis of liver	M	6	...	...	...	...	...	...	1	1	3	1	...
	F	...	...	...	...	...	...	...	...	...	...	...	...
Other diseases of liver, etc	M	6	1	...	...	...	1	...	...	...	2	1	1
	F	10	...	...	...	...	...	...	2	1	...	4	3
Other digestive diseases	M	14	...	...	1	1	...	1	1	1	4	4	1
	F	23	1	...	1	1	...	1	4	2	2	7	4
Acute and chronic nephritis ...	M	46	...	...	...	1	...	1	4	5	14	13	8
	F	48	1	...	...	1	...	3	4	5	7	18	9
Puerperal sepsis	F	6	...	...	...	...	1	3	2	...	...	...	...
Other puerperal causes	F	12	...	...	...	...	1	5	6	...	...	...	...
Congenital debility; premature birth, malformations, etc.	M	40	39	1	...	...	...	...	..	...	...	...	...
	F	33	33	...	...	...	...	...	...	...	...	...	...
Senility	M	67	...	...	...	...	...	...	...	...	6	24	37
	F	85	...	...	...	...	...	...	...	...	2	15	68
Suicide	M	19	...	...	...	...	1	1	1	6	8	1	1
	F	9	...	...	...	...	...	2	1	4	2	...	...
Other violence	M	44	1	...	4	8	6	3	3	5	5	4	5
	F	28	1	1	2	...	5	1	3	1	2	4	8
Other defined diseases	M	97	6	4	1	9	6	4	6	8	23	23	7
	F	78	6	1	3	3	5	7	9	16	14	8	6
Causes ill-defined or unknown ...	M	9	...	...	...	...	...	...	1	...	2	4	2
	F	4	...	...	...	...	...	...	...	...	2	...	2