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of Bolton

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR

1934.

BOLTON :

ROBT. WHEWELL & SON, LTD., 5-13 FOLDS ROAD.

1935.



County

Borough



of Bolton

ANNUAL REPORT

OF THE

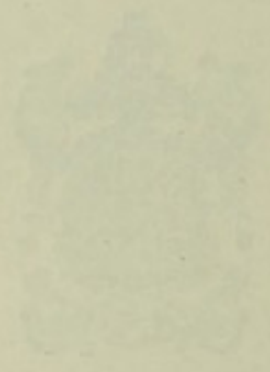
Medical Officer of Health

FOR

1934.

County of

State of



ANNUAL REPORT

of the
Medical Officer of Health

for the

year

PUBLIC HEALTH DEPARTMENT,

BOLTON.

28th June, 1935.

To the Chairman and Members of the Public Health Committee.

LADIES AND GENTLEMEN,

I have the honour to submit the report for 1934, the sixty-third Annual Report on the health of Bolton.

The health of the town was very satisfactory during the year under review. The death-rate of 12.0 per 1,000 of the population, and the infantile mortality-rate of 53 infant deaths per 1,000 live births are both the lowest rates which have ever been recorded in Bolton. The infantile mortality-rate is also the lowest rate recorded in the large Lancashire towns in 1934. Fifty years ago the death-rate in Bolton was 24 and the infantile mortality-rate 194. There are, therefore, remarkable grounds for satisfaction concerning the progress which has been made in the health of the people.

During the year there were 2,131 deaths and 2,212 births giving a natural increase in the population of 81.

A table is again reproduced giving vital statistics for the wards. As has been explained in previous years the figures in relation to this table are so small that they must be regarded as having limited value.

There have been no outstanding developments during the year. The extension of the Isolation Hospital and the general provisions of the Health Services have received the careful consideration of the Committee during the year. Your recommendations have not yet reached a form for the Council's approval. The unification of Hospital Services by the appropriation of Townleys Hospital for administration under the Public Health Acts has also been considered by the Public Health Committee and the Council, but the matter has been deferred.

It is gratifying to be able to report that in contrast to the last five years, the death-rate from conditions associated with childbirth is below the average for the country generally. The Bolton rate is 3.61 maternal deaths per 1,000 live births. If this most encouraging improvement continues it will mean the removal of the serious reflection that a number of preventable maternal deaths have been occurring in the town.

Four of the Sanitary Inspectors, including the Smoke Inspector, left during the year. Messrs. Cripps, Hilton and Pashley were appointed to three of the vacancies. The office of Smoke Inspector has not been filled and other arrangements have been made for the execution of his duties. The continual changes which are occurring in the staff of Sanitary Inspectors is not in the best interests of the work of the department.

Public acknowledgment 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. J. P. TAYLOR, B.A., 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.

„ DR. E. MONKS, 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. MALLET.

„ 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 L. MILNER, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.
 6. Miss D. HIGHAM, Cert. Midwife, 3 years' Cert. and New Health Visitors' Cert.
 7. Miss F. ISHERWOOD, 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. WILLETT, Cert. R.S.I.
 7. N. F. CRIPPS, Cert. S.I.B.
 8. R. PASHLEV, Cert. S.I.B.
 9. R. HILTON, Cert. S.I.B.

*Vaccination Officer—*P. H. TAYLOR.

*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. WOODSON, 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.
Resigned 31st March, 1935. Dr. H. W. BOWYER appointed.		
Dr. T. CHADDERTON...	Brightmet, 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.

SUMMARY OF NATURAL FEATURES

VITAL AND MORAL STATISTICS

1934

SUMMARY REPORT OF BUREAU

Published by the Bureau of Census, U. S. Department of Commerce

Washington, D. C. 20540

General Information: Bureau of Census, U. S. Department of Commerce

Special Cope, 1934-1935 (111)

Table in detail of and by State of Census

Population, Census 1930

Table in detail of and by State of Census

SECTION I.

Natural and Social Conditions.

SECTION 1

Natural and Social Conditions

SUMMARY OF NATURAL FEATURES
—AND—
VITAL AND MORTAL STATISTICS,
1934.

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. 1887-1934, 42'111")	...	...	...	...	41'964"
Area in Acres (Land and Inland Water)	...	...	...	...	15,280
Population (Census 1921)	...	...	...	...	178,683
„ (Census 1931)	...	...	...	...	177,250
„ (Mid-yearly estimated population 1934)	...	...	...	...	176,200
Density	...	...	...	...	11'5
Inhabited Houses (Census 1921)	...	...	...	...	41,825
„ „ (Census 1931)	...	...	...	...	46,618
Private Families or Separate Occupiers (Census 1921)	...	...	...	...	42,635
„ „ „ „ (Census 1931)	...	...	...	...	47,706
New Houses Certified 1934	...	...	...	...	1,058
Estimated No. of Houses in the Borough at 31st December 1934	...	...	...	...	50,615
No. of inhabited Houses according to the Rate Books	...	...	...	...	50,085
Rateable Value at 31st March, 1935	...	...	...	...	£1,052,033
Sum represented by a Penny Rate (1934-1935)	...	...	...	...	£4,063-2s.-2d.
Births	...	...	...	...	2,212
Birth-rate	...	...	...	...	12'5
Deaths	...	...	...	...	2,131
Death-rate (Crude)	...	...	...	...	12'0
Death-rate (Registrar General's)	...	...	...	...	12'2
Average Death-rate (1925-1934)	...	...	...	...	13'4

SUMMARY—Continued.

Infantile Mortality	...	...	...	...	...	53
Neo-natal Death-rate	...	...	...	...	...	37·0
Puerperal Death-rate (per 1,000 live births)	...	...	...	...	...	3·61
Epidemic Death-rate (seven chief diseases)...	...	...	...	...	...	·21
Diarrhœa & Enteritis (under 2 years), Death-rate per 1,000 Births	...	...	...	...	...	4·5
Phthisis Death-rate	...	...	...	...	...	·53
Other forms of Tuberculosis, Death-rate	...	...	...	...	...	·10
Respiratory Death-rate	...	...	...	...	...	1·25

121 COUNTY BOROUGHES AND GREAT TOWNS—

Birth-rate	...	...	...	...	...	14·7
Death-rate	...	...	...	...	...	11·8
Infantile Mortality	...	...	...	...	...	63
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	...	...	...	...	...	7·4

ENGLAND AND WALES—

Birth-rate	...	...	...	...	...	14·8
Death-rate	...	...	...	...	...	11·8
Infantile Mortality	...	...	...	...	...	59
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 Births	...	...	...	...	...	5·5

**Birth-rates, Death-rates and Infantile Mortality in Wards,
1933 and 1934.**

(Rates calculated on the 1931 Census population.)

Ward.	Census Popula- tion 1931.	Birth-rate.		Death-rate.		Infantile Mortality.	
		1933.	1934.	1933.	1934.	1933.	1934.
Astley Bridge ...	8,525	13.4	14.3	13.2	14.4	43	65
Bradford ...	15,711	13.4	14.5	16.6	12.8	113	56
Church ...	7,226	8.5	10.1	14.5	12.4	64	13
Darcy-Lever- cum-Breightmet...	5,297	14.3	14.7	12.6	10.0	92	12
Deane-cum-Lostock	5,873	10.5	9.8	10.7	8.0	48	86
Derby...	16,618	11.4	13.4	13.1	11.1	100	35
East ...	8,080	12.7	13.3	18.9	12.7	106	74
Exchange ...	2,629	11.2	12.9	19.4	15.9	151	117
Great Lever ...	13,712	9.6	8.3	13.4	11.4	75	43
Halliwel ...	19,464	9.5	11.0	14.1	12.0	77	41
Heaton ...	4,420	11.3	8.3	12.6	10.4	60	...
Hulton ...	6,456	12.2	8.2	13.4	12.3	75	56
North ...	6,241	10.7	10.8	11.3	12.8	74	73
Rumworth ...	9,236	9.8	11.1	10.3	10.2	54	67
Smithills ...	10,181	10.8	15.1	12.0	12.0	45	45
Tonge...	13,502	12.7	14.3	13.8	11.6	58	56
West ...	24,079	15.9	14.4	15.8	12.9	83	69
Whole Borough ...	177,250	11.9	12.4	14.9	12.0	78	53

Population.

The Registrar-General's estimate of the population of Bolton for 1934 was 176,200.

Birth-rate.

Bolton had 2,212 births in 1934. The birth-rate was 12·5.

Death-rate.

Bolton had 2,131 deaths in 1934 giving a death-rate of 12·0.

During the year 594 persons whose usual place of residence was in the area of this county borough died outside the borough; of these, 494 died in Townleys Hospital or Fishpool Institution and 50 died in Mental Hospitals.

Non-residents who died in the area numbered 142, of whom 116 died in Bolton Royal Infirmary.

208 Boltonians died in Bolton Royal Infirmary.

SUMMARY OF THE PRINCIPAL CAUSES OF DEATH, 1934.

	No. of Deaths.	Per cent. of total Deaths.
INFECTIOUS AND PARASITIC DISEASES	187	8·77
Measles	12	·56
Diphtheria	11	·51
Erysipelas	10	·46
Influenza	27	1·26
Pulmonary tuberculosis	94	4·41
Other forms of tuberculosis	18	·84
Other infectious and parasitic diseases	15	·70
CANCER AND OTHER TUMOURS	267	12·52
Cancer	257	12·06
Tumours... ..	10	·46
RHEUMATISM, DISEASES OF NUTRITION, ETC.	57	2·67
Rheumatic fever	18	·84
Chronic rheumatism, osteo-arthritis	8	·37
Diabetes	19	·89
Exophthalmic goitre	8	·37
Other general diseases	4	·18
DISEASES OF THE BLOOD & BLOOD FORMING ORGANS	24	1·12
Anæmia, chlorosis	15	·70
Leukæmia, aleukæmia	6	·28
Hæmorrhagic Conditions	3	·14

DISEASES OF THE NERVOUS SYSTEM & SENSE ORGANS				197	9'24
Meningitis	..	...	...	10	'46
Cerebral hæmorrhage	...	...	...	105	4'92
Cerebral thrombosis...	...	...	...	17	'79
Hemiplegia	...	...	...	8	'37
Infantile convulsions...	...	...	...	5	'23
Epilepsy...	...	...	...	10	'46
Diseases of the mastoid sinus	...	...	...	7	'32
Other diseases	...	...	...	35	1'64
DISEASES OF THE CIRCULATORY SYSTEM				605	28'39
Heart diseases	...	...	...	417	19'56
Arterio-sclérosis	...	...	...	160	7'50
Abnormalities of blood pressure	...	...	...	18	'84
Other diseases	...	...	...	10	'46
DISEASES OF THE RESPIRATORY SYSTEM				222	10'41
Bronchitis	...	...	...	85	3'98
Pneumonia	...	...	...	117	5'48
Congestion of lungs, etc.	...	...	...	6	'28
Asthma	...	...	...	5	'23
Other diseases	...	...	...	9	'42
DISEASES OF THE DIGESTIVE SYSTEM				112	5'25
Ulcer of the stomach or duodenum	...	...	...	19	'89
Diarrhœa and enteritis	...	...	...	15	'70
Appendicitis	...	...	...	22	1'03
Hernia and intestinal obstruction	...	...	...	18	'84
Cirrhosis of the liver	...	...	...	5	'23
Diseases of the gall bladder and ducts	...	...	...	7	'32
Other diseases	...	...	...	26	1'22
DISEASES OF THE GENITO-URINARY SYSTEM				126	5'91
Nephritis	...	...	...	99	4'64
Diseases of the prostate	...	...	...	14	'65
Other diseases	...	...	...	13	'61
THE PUERPERAL STATE				8	'37

CONGENITAL MALFORMATIONS	18	·84
DISEASES OF EARLY INFANCY	57	2·67
Congenital debility	10	·46
Premature birth	41	1·92
Other diseases	6	·28
OLD AGE	145	6·80
DEATHS FROM VIOLENCE	95	4·45
Suicide	29	1·36
Accidents	61	2·86
Other violent deaths...	5	·23
MISCELLANEOUS CAUSES	14	·65

The five principal certified causes of death were :

	Proportion per 1000 deaths
1. Diseases of the Heart and Circulatory System ...	283
2. Cancer, Malignant Disease	125
3. Bronchitis, Pneumonia and other Respiratory Diseases	104
4. Diseases of the Nervous System	92
5. Old Age	68

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 1,000 births, and is called the infantile mortality-rate.

The infantile mortality-rate in Bolton in 1934 was 53·3.

The infantile mortality-rate amongst the legitimate children was 53·0; and amongst the illegitimate 74.

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 1934.

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
		1934	... 53

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 53 babies who died in 1934 for every 1,000 babies born, 37 died in the first four weeks of life.

Maternal Deaths.

I am able to record with satisfaction that the maternal mortality rate is at the low figure of 3.61 deaths per 1,000 live births. The figure is in marked contrast to the rates which have obtained in Bolton during the last five years.

Puerperal Mortality per 1,000 Total Births in Boroughs of Lancashire in 1934.

Bolton	...	...	3.43	Blackburn	...	...	5.95
Warrington	...	...	3.45	Salford	...	...	6.6
Wigan	...	...	3.86	Oldham	...	...	6.98
Manchester	...	...	4.25	Bury	...	...	10.25
St. Helens	...	...	5.04	Burnley	...	...	14.57
Rochdale	...	...	5.65				

CANCER.

The number of deaths ascribed to cancer during the year was 257, of which 127 occurred in males and 130 in females. The cancer death-rate was 1.45 deaths per 1,000 of the population. The corresponding figure for England and Wales was 1.56.

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 develop 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 1934.

Deaths from Cancer in Bolton in the years 1901-1934.

Year.	No. of deaths.		Total.	Cancer Death-rate.	Senility Rate.
	Males.	Females.			
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
1934	127	130	257	1.45	.82

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 died of cancer in Bolton in 1934. The table shows also the localization of the disease.

DEATHS FROM CANCER, 1934.

Age and Sex Distribution, and Localization of Disease.

*Lesion	Sex		AGE																
	M.	F.	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
			to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
Buccal Cavity																			
Fauces	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...
Mouth	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Pharynx	3	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...
Tongue	3	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...
Tonsil	3	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...
Other Sites	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
Total Buccal Cavity ...	15	...	...	...	...	...	...	1	...	...	1	1	...	7	3	2	...	...	...
	...	3	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...
Digestive Organs																			
Gall Bladder... ..	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Intestines	19	...	...	...	...	...	...	...	...	1	1	1	5	5	2	3	...	...	...
Liver	8	...	...	...	...	...	...	...	1	...	...	2	2	2	1	...	...	...	...
Æsophagus	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...
Pancreas	6	...	...	...	...	...	...	...	1	...	...	...	...	...	3	1	...	...	...
Rectum	9	...	...	...	...	...	...	...	2	...	...	...	...	1	4	2	...	...	...
Stomach	30	...	...	...	...	...	...	...	2	1	2	4	2	6	3	6	4	...	...
Total Digestive Organs ...	77	...	...	...	...	...	...	...	5	2	3	5	5	16	18	14	7	2	...
	...	50	...	...	...	...	...	...	2	2	...	1	5	9	9	15	3	3	...

DEATHS FROM CANCER, 1934.—*contd.*

Lesion	Sex		AGE																		
			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	
	M.	F.																			
Respiratory Organs	5	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	1	1	...	...
Larynx ... ..	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Lung	8	...	...	...	...	...	...	...	...	1	...	2	...	4	...	...	1	...	...	...
...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Mediastinum	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Other Respiratory Organs ...	16	...	...	...	...	...	...	...	...	1	1	2	...	6	1	...	4	1	...	...
...	...	4	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	...	...	...
Male Genital Organs	...	22	...	...	...	...	...	...	...	...	3	1	2	7	1	4	3	...	...	1
Uterus ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ovary ... ..	...	9	...	...	...	...	...	1	...	...	1	1	3	1	...	1	1	...	...	...
Other Female Genital Organs...	...	31	...	...	...	...	...	1	...	...	4	2	5	8	1	5	4	...	...	1
...	...	33	...	...	...	...	...	...	...	2	3	3	5	10	2	5	1	2	...	...
Genito-urinary Organs	8	...	...	...	...	...	...	...	...	...	...	1	2	1	1	1	2	...	...	...
Bladder ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kidney	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Prostate	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
Scrotum	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
Male Genito-urinary Organs	14	...	...	...	...	...	...	...	...	...	...	2	2	1	1	5	3	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
For Unspecified Organs	4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2	...	...	...	...
...	...	7	...	...	...	...	...	1	...	...	...	1	...	...	1	1	...	2	...	1
Males	27	...	...	...	...	...	...	...	1	6	4	8	8	12	26	28	23	8	2	1
Females ... ..	...	130	...	...	...	...	...	2	...	4	9	6	12	24	15	20	23	8	3	4
TOTAL both sexes ...	257	...	...	...	...	...	...	2	1	10	13	14	20	36	41	48	46	16	5	5

Deaths from Infectious Diseases.

The deaths attributed in Bolton to the various epidemic diseases are shown in the following table for the years 1926 to 1934.

CAUSES OF DEATH FROM EPIDEMIC DISEASES.

	1926	1927	1928	1929	1930	1931	1932	1933	1934
Smallpox... ..	—	—	—	—	—	—	—	—	—
Scarlet Fever... ..	1	—	1	4	3	2	1	10	2
Diphtheria and Memb. Croup	14	10	16	8	3	2	3	6	11
Enteric and Continued Fever	1	4	1	1	1	—	—	—	—
Measles	16	21	17	11	4	24	9	14	12
Whooping Cough	37	1	9	85	8	14	11	9	2
Diarrhoea and Enteritis under 2 years of age... ..	47	20	17	18	27	17	12	17	10
Erysipelas	6	11	9	5	14	7	3	7	10
Puerperal Sepsis	5	4	3	6	6	3	3	5	1
Cerebro-spinal Fever	2	3	4	—	2	7	5	3	2
Encephalitis Lethargica	14	10	11	5	4	6	3	2	5
Influenza	68	147	55	208	42	110	46	165	27

A consideration of the above table shows that during the last nine years influenza, whooping cough and measles have been the chief causes of death from infectious disease and that smallpox, scarlet fever, diphtheria and enteric fever are no longer the formidable foes they were in the past. The decline in the mortality from infectious disease in the last fifty years has been very remarkable. The greatest advances have been made in the control of the diseases due to environmental conditions. Thus enteric fever and cholera have declined in this country because of the improvements in our water supplies. Plague and typhus have disappeared because of changed environmental conditions. The epidemic diseases which are spread by more "personal" infection raise a different set of problems. Improved conditions of living with a reduction in overcrowding, an increased physical efficiency of the population as a fortification against infection, the isolation of avowed cases of the disease and the immunization of individuals against specific infections by such means as are at our disposal, all help towards the reduction of infectious disease. It is important to realize that although whooping cough, measles and influenza are not notifiable infectious diseases, they nevertheless call for adequate hospital accommodation for the treatment of severe and complicated cases whose home environment is unsatisfactory.

Deaths from Tuberculosis.

There were in 1934 in Bolton 112 deaths due to tuberculosis in all its forms. Of these deaths, 94 were due to tuberculosis of the lungs.

The tuberculosis death-rate for 1934 of '63 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
1934	94	.53	18	.10	112	.63

Deaths from Violence.

During the year, 95 deaths occurred from violence. Suicide accounted for 29 of these deaths. Amongst the 61 accidental deaths which occurred, 29 were the result of street accidents.

There were 16 fatal street accidents in the Borough, and these resulted in the death of 16 persons, including Boltonians and non-residents of Bolton. The total persons so killed in Bolton, it is pleasing to report, is the lowest recorded since 1927.

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

(Figures taken from the Summaries of the Registrar-General).
1933 and 1934.

	Birth-rate.		Death-rate.		Infantile Mortality.	
	1933	1934	1933	1934	1933	1934
England and Wales	14·4	14·8	12·3	11·8	64	59
County Boroughs and Great Towns, including London ...	14·4	14·9	12·6	11·9	68	63
St. Helens... ..	18 0	19·1	14·0	10·6	116	65
Warrington	16 0	17·3	12·4	11·6	73	74
Bolton	12·0	12·7	14·1	12·2	78	53
Wigan	16·6	17·4	14·4	12·4	110	67
Manchester	14·7	15·3	13·6	12·6	75	69
Bootle	21·4	21·4	13·9	12·8	89	75
Barrow-in-Furness	13·3	13·6	12·5	13·0	65	98
Liverpool	19·7	20·5	14·5	13·2	98	80
Blackburn	12·0	12·0	14·4	13·3	71	57
Burnley	12·1	11·8	14·9	13·5	75	70
Salford	15·2	15·0	13·9	13·7	80	92
Preston	14·6	14·2	13·4	13·7	88	69
Bury	12·6	12·3	13·9	14·2	52	84
Oldham	12·2	12·5	15·0	14·5	72	72
Rochdale	11·4	12·4	15·0	14·6	89	78

In 1934, of the above 15 towns, Bolton has the sixth lowest birth-rate, the third lowest death-rate, and the lowest infantile mortality-rate.

SECTION II.

1. General Provision of Health Services.

SECTION II
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. There are no material changes to report during the year.

The services provided by the Bolton Royal Infirmary have been amplified by the opening of an excellent new out-patient department ; and by the establishment of special clinics for cases requiring radium treatment, for urological conditions and for functional nervous diseases.

The report of the Minister of Health on the Health Services of the town has been given most careful consideration and methods for implementing his suggestions have been considered. The proposed alterations in the working and staffing of the Health Department have not yet received the approval of the Council.

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 workpeople.

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.

59 Midwives notified their intention of practising in Bolton in 1934, as compared with 66 last year.

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).

BYELAWS 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, 1934	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 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."

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.

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. 2. Chalfont Street. 3. Halliwell. 4. Grecian Crescent. 5. Kensington. 6. St. Chad's. 7. Saviour's. 8. Daubhill. 9. Delph Hill.	The Friends' School Room, Tipping Street. Chalfont Street Methodist School. Halliwell Road Free Church, Halliwell Road. Victoria Wesleyan Church, Grecian Crescent. Girls' Club, Kensington Street. St. Chad's School, Belvoir Street. Saviour's Church House, Deane Road. Daubhill Methodist School, Derby Street. Delph Hill Methodist School.	Monday, 3-0 p.m. Monday, 3-0 p.m. Tuesday, 3-0 p.m. Tuesday, 3-0 p.m. Wednesday, 3-0 p.m. Wednesday, 3-0 p.m. Thursday, 3-0 p.m. Thursday, 3-0 p.m. Friday, 3-0 p.m.	2 Rooms. 2 Rooms. 5 Rooms. 2 Rooms. 4 Rooms. 3 Rooms. 2 Rooms. 3 Rooms. 4 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.
Ante-natal Clinics. 1. St. George's Road. 2. Haslam Maternity Home. 3. Dental Clinic for expectant mothers.	Mother and Child Welfare Association, 70 St. George's Road. "Ravenswood," Chorley New Road. School Clinic, Charles Street.	Tuesday, 3-0 p.m., and Thursday 10-30 a.m. Wednesday, 10-30 a.m. Friday, 10-30 a.m. and 2-0 p.m. Tuesday, 6-0 p.m. (By arrangement.)	2 Waiting Rooms, Lecture Room and Doctor's Room. 2 Waiting Rooms and Doctor's Room.	Do. do. Bolton Public Health Committee.
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. Masseur—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.

Name of Patient	Address	Date of Birth
John Smith	123 Main Street, New York, N.Y.	January 1, 1900
Mary Jones	456 Elm Street, New York, N.Y.	March 15, 1905
Robert Brown	789 Broadway, New York, N.Y.	July 22, 1910
Elizabeth White	1010 Fifth Avenue, New York, N.Y.	November 8, 1915
William Black	2020 Third Avenue, New York, N.Y.	February 1, 1920
Margaret Green	3030 Second Avenue, New York, N.Y.	April 10, 1925
Charles Hall	4040 First Avenue, New York, N.Y.	June 18, 1930
Susan King	5050 West Street, New York, N.Y.	August 25, 1935
Thomas Lee	6060 East Street, New York, N.Y.	October 5, 1940
Anna Clark	7070 North Street, New York, N.Y.	December 12, 1945
George Evans	8080 South Street, New York, N.Y.	January 20, 1950
Helen Foster	9090 Central Avenue, New York, N.Y.	March 28, 1955
Frank Adams	10100 Park Avenue, New York, N.Y.	May 10, 1960
Grace Baker	11110 Madison Avenue, New York, N.Y.	July 15, 1965
Edward Carter	12120 Lexington Avenue, New York, N.Y.	September 22, 1970
Dorothy Davis	13130 Riverside Drive, New York, N.Y.	November 5, 1975
Richard Evans	14140 Bleecker Street, New York, N.Y.	January 18, 1980
Lillian Foster	15150 West Street, New York, N.Y.	March 25, 1985

SECTION III.

Sanitary Circumstances.

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Sanitary Circumstances.

AIR.

The changes which occurred in the staffing of the department, including the resignation of the Smoke Inspector, have disorganised the work of smoke inspection during the year. The Committee decided to abolish the special appointment of Smoke Inspector and to allocate the work to the district inspectors. A period of the week is now devoted in each of the districts to the taking of smoke observations.

During the year 208 smoke observations were made, with the following results.

No. of Observations.	Result.
63	No black smoke.
36	$\frac{1}{2}$ min. „
58	1 „ „
22	$1\frac{1}{2}$ „ „
15	2 „ „
1	$2\frac{1}{2}$ „ „
1	$5\frac{1}{2}$ „ „
3	6 „ „
9	Smoke other than black. (Ash, soot, etc.)

This last group may be further subdivided as follows :—

No. of Observations.	Result.
6	Ash emitted.
1	Acrid fumes emitted.
2	Yellow smoke emitted.

Four firms were served with statutory notices of abatement, black smoke having been emitted from their chimneys in such quantities as to be a nuisance.

During the year it was decided to secure statistics of the intensity of light in various parts of the Borough. It was thought that the iodine method which was developed by Dr. Bailey would provide useful information. This method consists in recording daily the amount of iodine liberated by the action of light on a mixture of Potassium Iodide (10 c.cs. of a solution of 20 grammes of potassium iodide per litre of water) and sulphuric acid (10 c.cs. of a solution of 11.85 grammes of sulphuric acid per litre of water). The mixture is exposed in a 2 oz. stoppered bottle. The free iodine is estimated in the usual way with a standard sodium thio-sulphate solution of such a strength that each c.c. of the solution is the equivalent of 1 milligramme of iodine.

The method gives no information as to the absolute amount of the impurities in the air but it indicates the effect of the atmospheric pall in preventing the penetration of the sun's rays. Ordinary glass bottles have

been used. These do not allow of the penetration of the ultra-violet rays of the sun's spectrum. As the figures are chiefly of comparative value the absence of any estimate of the ultra-violet rays activity is of no particular moment.

Four stations have been maintained during the year.

- A. Town Centre ... 310 feet above sea level.
 B. Borough Hospital 463 " " $1\frac{3}{4}$ miles from Town Centre.
 C. Lum Street ... 310·7 " " $\frac{1}{2}$ " "
 D. Tonge Moor ... 432·5 " " $1\frac{3}{4}$ " "

For the period 1st June, 1934, to 31st May, 1935, the following figures have been obtained showing the daily average in milligrammes of iodine liberated in the light tests at the stations mentioned.

	A		B		C		D
	Town		Borough		Lum		Tonge
	Centre		Hospital		Street		Moor
June ...	12·06	...	12·75	...	12·46	...	12·25
July ...	13·01	...	13·99	...	12·04	...	12·79
August ...	8·06	...	9·3	...	7·69	...	8·15
September ...	7·6	...	8·96	...	6·78	...	7·01
October ...	4·77	...	5·76	...	4·39	...	4·76
November ...	1·68	...	2·44	...	1·67	...	1·91
December ...	1·20	...	1·45	...	·83	...	1·10
January ...	2·13	..	2·44	...	1·65	...	2·35
February ...	3·13	...	3·77	...	2·92	...	3·17
March ...	5·31	...	6·51	...	4·65	...	5·58
April ...	9·23	...	10·67	...	9·1	...	10·18
May ...	12·96	...	13·66	...	12·38	...	13·58
Average per month	6·76	...	7·64	...	6·38	..	6·9

An analysis of the information secured gives the daily averages of light at the various stations expressed in milligrammes of iodine as follows:—

	A		B		C		D
	Town		Borough		Lum		Tonge
	Centre		Hospital		Street		Moor
Monday ...	6·86	...	7·98	...	6·84	...	7·15
Tuesday ...	6·77	...	7·82	...	6·48	...	7·48
Wednesday ...	6·56	...	7·91	...	6·76	...	7·13
Thursday ...	6·95	...	8·19	...	6·66	...	7·8
Friday ...	6·07	...	8·8	...	5·85	...	8·1
Saturday ...	6·87	...	7·4	...	6·37	...	6·72
Sunday ...	6·88	...	7·0	...	6·3	...	6·77

An examination of the above tables shows that the figures from Hulton Lane Hospital, situated as it is on the windward side of the town (in relation to the prevailing winds), are the most satisfactory. Tonge Moor, the Town Centre and Lum Street follow in order of merit.

WATER.

The Public Analyst and Bacteriologist reports:—"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.

As the result of the prolonged drought the quality of the water for 1934 has not been quite up to the usual standard, this being entirely due to the incorporation of supplies not usually called upon. On the whole, however, the quality has been quite good and suitable as a domestic supply."

Summary of Results. (Filtered Waters.)

CHEMICAL EXAMINATION.

Total Solids	12.15	Parts per 100,000
Free Ammonia	0.003	do. do.
Albumenoid Ammonia	0.002	do. do.
Nitrogen as Nitrates	0.010	do. do.
Nitrogen as Nitrites	none	
Chlorine	1.20	do. do.
Acidity	none	
Hardness	4.00	Degrees
Oxygen Absorbed (3 hours)	0.080	Parts per 100,000.

BACTERIOLOGICAL EXAMINATION.

Agar Count per 1 c.c.	33
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B. COLI.

Positive in 10 c.cs.	3.0%
Positive in 50 c.cs. Negative in 10 c.cs.	20.0%
Positive in 100 c.cs. Negative in 50 c.cs.	36.5%
Negative in 100 c.cs. ... ..	...	...	...	40.5%

The Waterworks Engineer reports:—"Due to abnormally low rainfall from the summer of 1933 to the summer of 1934, economy in consumption was urged, and certain supplies, chiefly of a luxury character, were prohibited for a period of the year. Otherwise, the supply was adequate for all purposes.

5 miles, 1,121 yards of cast iron water mains, varying from 3" to 12" in diameter, were laid within the Borough, and 1,365 yards of mains were re-laid with mains of larger diameter."

DRAINAGE AND SEWERAGE.

The Borough Engineer reports:—"During the past year the Tonge and Bradshaw Brook Intercepting Sewer has been completed, and is now in operation for its full length, and an extension has been made to this sewer for the drainage of the Barrow Bridge district. A new sewer has also been constructed from the Tonge Intercepting Sewer through Leverhulme Park to Long Lane, for the drainage of that portion of the Brightmet district abutting on Long Lane which is in course of development.

Many of the existing sewers in the town have been repaired and cleansed, and 15 additional manholes provided for their more efficient ventilation and control.

The sewers for the greater part are constructed of glazed earthenware pipes, with cement joints laid in straight line with manholes built at every change of gradient and direction, and ventilation provided by means of open manhole covers. When possible, a separate system of drainage is carried out, the surface water sewers discharging into the various water-courses flowing through the district."

The Sewage Works Manager reports:—"There have been no important extensions or alterations at the Sewage Works during the year.

Owing to the reconstruction and enlargement of the Tonge and Bradshaw Brook Intercepting Sewers it has been possible to close down the old and inefficient sewage works at Astley Bridge and to convey the sewage of that district to the Hacken Works for treatment. Also, an agreement has been entered into with the Turton Urban District Council for the treatment by the Corporation at Hacken, of the sewage formerly treated at the Bradshaw Sewage Works, belonging to the Turton Urban District Council. These works were old and inefficient and have now been closed down."

CLOSET ACCOMMODATION.

The position of Bolton as regards closet accommodation at the close of 1920 and the close of 1934 is shown in the following table.

	Dec. 31st, 1920.			Dec. 31st, 1934.		
Fresh-water closets ...	11,062	...	...	...	35,219	
Waste-water closets ...	15,219	...	...	...	14,894	
Pail closets ...	6,302	...	...	...	463	
Privy Middens...	10,540	...	...	...	651	

22 privy middens, 8 pail closets and 3 waste-water closets were replaced by fresh-water closets in 1934.

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, 633 privy middens and 447 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 (one for males and one for females) were provided in Bridge Street.

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

Ward		Fresh-water closets		Privy middens		Pail closets		Waste-water closets	
Name		Indoor		Outdoor		Indoor		Outdoor	
St. Andrew's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
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St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1
St. Andrew's		1	1	1	1	1	1	1	1
St. John's		1	1	1	1	1	1	1	1
St. Mary's		1	1	1	1	1	1	1	1
St. Michael's		1	1	1	1	1	1	1	1
St. Nicholas		1	1	1	1	1	1	1	1
St. Peter's		1	1	1	1	1	1	1	1
St. Paul's		1	1	1	1	1	1	1	1
St. Vincent's		1	1	1	1	1	1	1	1
St. James's		1	1	1	1	1	1	1	1
St. George's		1	1	1	1	1	1	1	1

CLOSET ACCOMMODATION, 1934.

	No. of Closets Converted or Demolished, 1934.				F.W.Cs. provided in lieu of any other type and additions in new and old houses, 1934.	Present Closet Accommodation, 1934.				Per Cent. on	
	P.M.	Pail.	W.W.C.	F.W.C.		P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough...	5	10	9	21	98	136	302	10770	18456	1'5	98'5
Great Lever ...	...	...	...	...	89	97	15	1104	2750	2'8	97'2
Tonge ...	...	...	2	...	39	43	28	760	3638	1'6	98'4
Astley Bridge ...	2	...	...	7	102	25	9	437	2348	1'2	98'8
Smithills ...	4	5	...	...	140	30	57	698	2733	2'5	97'5
Hulton ...	3	...	...	...	87	115	4	589	1266	6'0	94'0
Darcy Lever-cum- Brightmet ...	...	...	...	...	408	110	24	177	1554	7'2	92'8
Deane-cum-Lostock ...	13	...	...	...	78	68	10	210	1309	4'9	95'1
Heaton ...	...	...	...	...	51	27	14	149	1165	3'0	97'0
Extended Borough ...	27	15	11	28	1092	651	463	14894	35219	2'2	97'8

30.

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.....352.

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

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

Gully Cleansing.

About 90% 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	43·0%
Salvage and Incineration	12·8%
Controlled Tipping	38·3%
Crude Tipping	1·3%
Agricultural Purposes	4·6%

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 asphalt 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	12723
Newly-infected houses	1027
Schools	4
Common lodging-houses	534
Houses let in lodgings	919
Factories	104
Workshops	306
Workplaces	47
Offensive trades	20
Dairies, Cowsheds, and Milk-shops	363
Conversion of Closets	74
Drains... ..	264
Miscellaneous... ..	1165

NUISANCES FOUND.

Houses, workshops, cowsheds, etc., needing limewashing	1001
Houses overcrowded	24
House roofs, walls, floors, etc., in bad repair	1184
Insan. or insufficient closet accommodation	114
Ashpits or pails in bad repair	121
Defective or choked drains	204
Yards in bad repair	361
Animals kept as a nuisance	11
Miscellaneous	908

ACTION TAKEN.

Letters written	826
Informal notices served	805
Verbal notices	314
Legal notices served	237

DISINFECTIONS.

Houses disinfected	1307
Articles disinfected	8107
Articles destroyed	63

COMPLAINTS.

From Public	172
From Factory Inspector	20
Reports on complaints to Factory Inspector	12

PLACES UNDER INSPECTION.

Common lodging-houses	35
Houses let in lodgings	78
Factories	355
Factory Chimneys	259
Workshops and Workplaces	812
Bakehouses	311
Outworkers' Premises	8
Offensive trades	23
Slaughterhouses	32
Cowsheds	351
Milk-shops	487
Public Sanitary Conveniences	25
Travelling Vans	132

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 was built for use as a lodging-house 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 tendency 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, 140 notifications have been received but only 78 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, 29 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 exorbitant charges are being made which generally bear no relationship with the accommodation afforded.

The charges made vary considerably. The lowest rent paid is 4/6 and the highest 12/-.

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 are found in houses let in lodgings.

Vans

The number of living vans in Bolton at the close of 1934 was 23, one less than last year.

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

Situation.	No. of Vans.	Occupants.	
		Adults	Children
Berlin 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 ...	1	2	—
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	—
Church Wharf... ..	1	1	—
	23	35	5

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.	Halliwel.	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 connection with any of the afore-said trades.

Slaughterhouses.

Accommodation for slaughtering in the borough is the same as last year. The public abattoir and 16 private slaughterhouses have been in regular use throughout the year.

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 2,476 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.

I.—INSPECTION.

Premises.	Number of		
	Inspec- tions.	Written Notices.	Prosecu- tions.
Factories (Including Factory Laundries)	104	2	—
Workshops (Including Workshop Laundries)	306	6	—
Workplaces (Other than Outworkers' premises)	47	—	—
Total	457	8	—

2.—DEFECTS.

Particulars.	Number of Defects.			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
<i>Nuisances under the Public Health Acts:—*</i>				
Want of cleanliness	17	16	—	—
Want of ventilation	—	—	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	—	—	—	—
Sanitary accommodation { insufficient	2	—	—	—
{ unsuitable or defective	2	1	—	—
{ not separate for sexes	3	1	—	—
<i>Offences under the Factory and Workshop Acts:—</i>				
Illegal occupation of underground bake-house (s. 101)	—	—	—	—
Other offences	4	3	—	—
(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	28	21	—	—

*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.

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 came into operation in 1933. 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. 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. A scheme is also in operation 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.

During the year, Inspectors from the Ministry of Health held public enquiries into seven Clearance Orders, to which objection had been made by owners and other interested parties. The Minister confirmed all the Orders with small modifications in three instances. The clearance areas concerned contained ninety houses.

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 35.

The number of new houses completed in 1934 was 1,058 as compared with 1,018 in 1933.

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
1934	616	442	1,058

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
"	1934	50,615	3.48

The following table gives particulars as to numbers and situation in Wards of houses which were completed and certified during 1934, of all houses which were in course of construction during 1934, but which were unfinished at its close, and of all houses for which plans had been passed during 1934, but whose construction had not been begun when this year ended.

New houses certified, 1934.

Erected by the Local Authority	...	442
Erected by other bodies or persons	...	616

Ward.					Number.
Old Borough	...	...	...	...	90
Tonge	...	...	...	...	37
Astley Bridge	...	...	...	...	100
Great Lever	...	...	...	...	89
Smithills	...	...	...	...	134
Hulton	...	...	...	...	84
Darcy Lever-cum-Brightmet	...	...	...	...	408
Deane-cum-Lostock	...	...	...	...	65
Heaton	...	...	...	...	51
Total	...	...	...	...	1,058

Houses in course of construction on 31st December, 1934.

				Number.
By the Local Authority	...	...	...	114
By other bodies or persons	...	...	...	425
Total	...	...	...	539

Houses for which plans had been approved but construction had not been commenced on 31st December, 1934.

				Number.
By the Local Authority	...	...	...	—
By other bodies or persons	...	...	...	123
Total	...	...	...	123

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 (31st March, 1935).

Unfit houses demolished in clearance areas	...	50
Number of persons displaced from such houses	...	196
Individual unfit houses (Sec. 19) demolished	...	143
Number of persons displaced from such houses	...	491
Number of houses made fit as a result of statutory notice	... ..	1,109
Insanitary houses demolished in anticipation of formal procedure	... ..	33
Insanitary houses closed (but not demolished) on an undertaking of the owner not to use for habitation		27
Number of houses made fit as a result of informal notice preliminary to formal notice	... ..	3,565

Housing Statistics, 1934.**I. INSPECTION OF DWELLING-HOUSES DURING THE YEAR.**

(1) (a)	Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	... ..	3,145
(b)	Number of inspections made for the purpose	...	12,581
(2) (a)	Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	... ..	1,433
(b)	Number of inspections made for the purpose	...	2,664
(3)	Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	... ..	156
(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	... ..	1,021

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	792
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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	281
(2) Number of dwelling-houses which were rendered fit after service of formal notices	
(a) by owners	270
(b) by Local Authority in default of owners... ..	5

B. *Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	15
(2) Number of dwelling-houses in which defects were remedied after service of formal notices..	
(a) by owners	15
(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 pur- suance of Demolition Orders	66

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	4,306
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SECTION V.

Inspection and Supervision
of Food.

(The Annual Report of the Veterinary Officer.)

THE ANNUAL REPORT OF THE VETERINARY OFFICER

FOR THE YEAR 1900

IN THE DISTRICT OF COLUMBIA

AND TERRITORIES

SECTION V

Inspection and Supervision
of Food

(The Annual Report of the Veterinary Officer)

MILK.

The Milk and Dairies Order, 1926.

COWKEEPERS, DAIRYMEN AND PURVEYORS OF MILK.

Cowkeepers on register (1933)	...	...	...	...	124
„ added to register (1934)	...	...	...	...	Nil
„ discontinued (1934)	...	...	...	...	Nil
			Total	...	<u>124</u>

Cowsheds on register (1933)	...	...	...	...	353
„ added to register (1934)	...	...	...	...	3
„ discontinued (1934)	...	...	...	...	5
			Total	...	<u>351</u>

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, 1934 :—

Number of District	Cowkeepers	Cowsheds	Number of Cows provided for	Average number of Cows in sheds
1	15	43	402	312
2	31	84	916	715
3	16	37	372	315
4	19	62	515	379
5	11	31	290	218
6	8	19	154	101
7	24	75	679	612
<u>Totals</u>	<u>124</u>	<u>351</u>	<u>3,328</u>	<u>2,652</u>

Number of dairies and premises of milk purveyors on register (31st December, 1934) ... 641

In carrying out the provisions of the Milk and Dairies Order, all farms and premises dealing with milk have been frequently visited by the Veterinary Officer and Sanitary Inspectors. The Veterinary Officer paid 247 visits to farms during the year, when 696 cowsheds were inspected and 5,558 cows examined.

During the year 17 mixed samples of milk involving groups of cows were taken and submitted to the biological test for tubercle bacilli. Two of these samples were found to contain tubercle bacilli, and 15 were reported negative.

Eight individual samples of milk were taken from cows on the farms from which the two positive milk samples had been obtained with the result that two cows giving tuberculous milk were discovered.

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

Prosecutions under the Milk and Dairies Order, 1926.

PART V.—SECTION 20.

On the 8th June, 1934, for keeping poultry in a cowshed in which cows in milk are milked, a farmer was fined 40/-.

PART VI.—SECTION 22 (3).

On the same date, for failing to cause all dung and other offensive matter to be removed from the cowshed in which cows are milked at least once in every day, the same farmer was fined 40/-. Total fines £4.

PART VI.—SECTION 22 (2).

On the 27th November, 1934, for failing to cause the interior of the roof and walls of a cowshed to be properly lime-washed during September or October, a farmer was fined £3.

PART VI.—SECTION 23 (ii).

On the same date, for failing to remove all dirt in or around the flanks, udders and teats of each of three cows, the same farmer was fined £3 in each case. Total fines £12.

Milk (Special Designations) Order, 1923.

The following licences were granted during the year 1934 under this Order:—

Producer's Licence to use the designation "Certified" ...	2
(Licences issued by Ministry of Health.)	
Producer's Licence to use the designation "Grade A" ..	4
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.

Tuberculin testing of these herds by your Veterinary Officer was discontinued as from the 4th April in compliance with the resolution of the Public Health Committee—That as a general principle the Veterinary Officer of the Corporation be instructed not to examine or carry out the prescribed tuberculin testing of herds of cows under and for the purposes of the Milk (Special Designations) Order, 1923, in respect of "Certified" Milk or "Grade A" (Tuberculin Tested) Milk.

"Grade A" Milk.

Licences to produce "Grade A" Milk have been granted by this department to four dairy farmers in the Borough. Every animal in these herds has been submitted to a veterinary examination once in every three months in accordance with the provisions of the Order, and all the farms have been frequently visited during the year for the purpose of examining recently purchased cows before being admitted to the herds.

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
276	255	21

All the samples were examined for preservatives and colouring matter. In two cases Boric Acid was found to the extent of 24.3 and 6.0 grains of Boric Acid respectively per gallon of milk.

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

Milk fat	Non-fatty solids	Water
3.57%	8.82%	87.61%

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	16	3.73	8.74
February	45	3.51	8.78
March	28	3.61	8.81
April	35	3.48	8.74
May	20	3.56	8.66
June	12	3.38	9.03
July	36	3.42	8.91
August	17	3.69	8.93
September	0	...	...
October	10	3.71	8.81
November	31	3.66	9.01
December	26	3.46	8.74

BACTERIOLOGICAL EXAMINATION.

VENDED MILK. (Bottled.)

No Ministry of Health Standard of Purity.

No. of samples examined...	...	...	...	...	1
Average Agar count per 1 c.c.	...	...	...	...	1,740
No. of samples with B. Coli in 1/100 c.c.	...	...	...	...	0
" " " 1/10 c.c. absent in 1/100 c.c.	...	...	...	...	0
" " " 1 c.c. " 1/10 c.c.	...	...	...	...	0
" " " absent in 1 c.c.	...	...	...	...	1 or 100%

"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.

No. of samples examined	...	...	...	...	41
Average Agar count per 1 c.c.	...	...	...	...	2,502
No. of samples with B. Coli in 1/100 c.c.	...	...	...	...	1 or 2.4%
" " " in 1/10 c.c. absent in 1/100 c.c.	...	...	...	...	4 or 9.7%
" " " in 1 c.c. " 1/10 c.c.	...	...	...	...	10 or 24.4%
" " " absent in 1 c.c.	...	...	...	...	26 or 63.5%

The above 41 samples of "Grade A" Milk contained total bacteria per 1 c.c. as follows:—

Under 1,000	...	...	...	13
1,000 to 5,000	...	...	...	20
5,000 to 10,000	...	...	...	6
10,000 to 12,000	...	...	...	2
12,000 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	...	...	...	...	21
Average Agar count per 1 c.c.	...	...	...	...	1,374
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 4.8%
" " " in 1 c.c. " 1/10 c.c.	...	...	...	...	1 or 4.8%
" " " absent in 1 c.c.	...	...	...	...	19 or 90.4%

The above 21 samples of "Certified" Milk contained total bacteria per 1 c.c. as follows:—

Under 1,000	...	...	...	14
1,000 to 5,000	...	...	...	5
5,000 to 10,000	...	...	...	2
10,000 to 30,000	...	...	...	0
Over 30,000	...	...	...	0

" PASTEURIZED " MILK.

Ministry of Health Standard :—

Agar count not to exceed 100,000 per 1 c.c.

No. of samples examined ...	...	...	...	...	13
Average Agar count per 1 c.c. ...	...	...	...	...	4,606
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	7.7%				
" " " in 1 c.c. " 1/10 c.c. 1 or	7.7%				
" " " absent in 1 c.c. ...	...	...	...	11 or	84.6%

The above 13 samples of " Pasteurized " Milk contained total bacteria per 1 c.c. as follows :—

Under 1,000...	...	...	0
1,000 to 5,000...	...	...	10
5,000 to 10,000...	...	...	1
10,000 to 15,000...	...	...	2

Tuberculosis Order of 1925 and**Tuberculosis (Amendment) Order of 1931.**

This Order requires certain suspected forms of 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 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
318	9	Nil	1	2	6

MEAT.

PUBLIC HEALTH (MEAT) REGULATIONS, 1924.

The regulations require notification to the Local Authority of the time, day, and place of any slaughtering; when written notice is given of fixed times of regular slaughtering, no special, or further notice is required. Shops and stalls are also controlled by the provision of these regulations.

The following notices of slaughtering and disease were received:

Written notice of regular slaughtering on fixed days. 13

Notifications of slaughtering at other than fixed days. 253

Notification of suspected disease:

Relating to Cattle	...	...	...	...	...	189
Do. Sheep	...	...	...	...	...	6
Do. Pigs	...	...	...	...	...	104
Do. Calves	...	...	...	...	...	3
Total						302

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 only		Cows affected with Tuberculosis of the Udder
		Number	Per-centage	Number	Per-centage	Number
CATTLE	11,275	1,629	14'45	1,023	9'7	21
CALVES	1,200	22	1'84	11	'9	—
SHEEP	58,650	431	'73	—	—	—
PIGS	10,360	461	4'45	416	4'1	—

CARCASSES 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 carcass destroyed	Parts and Organs destroyed		Whole carcass destroyed	Parts and Organs destroyed		Whole carcass destroyed	Parts and Organs destroyed		Whole carcass destroyed	Parts and Organs destroyed
Tuberculosis ...	912	61	15	35	149	874	11	6	5	...	...	...	397	49	378
Pneumonia ...	2	2	...	...	2	2	2	2	...	1	1	...	...	...	...
Pleurisy ...	7	2	2	1	...	12	...	...	...	...	...	...	15	...	15
Mastitis ...	51	...	...	...	...	51	...	...	...	...	...	...	...	...	...
Nephritis ...	3	...	1	...	...	4	...	...	...	...	...	...	...	...	...
Pericarditis ...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...
Abscess ...	5	3	...	...	...	8	1	...	1	2	2	...	1	...	1
Bacterial Necrosis ...	8	2	...	...	...	10	...	...	...	...	...	...	...	...	...
Actinomycosis ...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...
Echinococcus ...	119	3	...	1	...	123	...	...	...	5	...	5	7	...	7
Distomatosis ...	165	118	3	7	...	293	...	...	...	385	...	386	...	...	...
Decomposition ...	...	...	...	...	...	...	1	1	...	21	21	...	...	...	...
Angioma ...	71	...	...	...	...	71	...	...	...	...	...	...	...	...	...
Emaciation ...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...
Johne's Disease ...	8	...	...	...	6	2	...	...	...	...	...	...	...	...	...
Traumatism ...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	1
Oedema ...	6	...	...	1	7	...	...	...	...	11	11	...	...	...	...
Fevered ...	3	...	1	...	4	...	...	...	...	...	...	...	1	1	...
Cirrhosis ...	1	1	...	...	...	2	...	...	...	...	...	...	11	...	11
Cysticercus Tenuicollis ...	...	...	...	...	...	...	...	...	...	4	...	4	18	...	18
Immaturity ...	...	...	...	...	...	...	5	5	...	...	...	...	...	...	...
Septicaemia ...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...
Septic Metritis ...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Asphyxia ...	...	1	...	...	1	...	...	...	...	...	...	...	1	1	...
Enteritis ...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Jaundice ...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...
Swine Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	...
Total ...	1367	195	22	15	173	1456	22	16	6	431	36	395	461	30	431

**Number of Organs Destroyed for Tuberculosis and Other Conditions
in the Different Classes of Animals during 1934.**

	Cattle.	Calves.	Sheep.	Pigs.	Total.
LUNGS :					
Tuberculosis	937	10	...	155	1,102
Other conditions ...	164	11	36	17	228
HEARTS :					
Tuberculosis	401	6	...	135	542
Other conditions ...	24	11	38	10	83
BOWELS :					
Tuberculosis	462	6	...	115	583
Other conditions ...	27	11	36	10	84
STOMACHS :					
Tuberculosis	405	6	...	104	515
Other conditions ..	26	11	36	10	83
SPLEENS :					
Tuberculosis	397	6	...	104	507
Other conditions ...	25	11	38	9	83
LIVERS :					
Tuberculosis	627	6	...	144	777
Other conditions ..	474	11	426	41	952
KIDNEYS :					
Tuberculosis	6	...	...	...	6
Other conditions ...	8	...	...	...	8
HEADS :					
Tuberculosis	537	6	...	344	887
Other conditions ...	30	10	36	5	81
TOTALS	4,550	122	646	1,203	6,521

Weight of Unsound Meat Destroyed.

	Number	tons.	cwts.	qrs	lbs.
Beef Carcases ...	...	37	12	2	23
„ Fore Quarters ..	13	...	16	1	0
„ Hind Quarters ...	2	...	2	2	0
„ Offals ..	...	29	0	2	23
Mutton Carcases ...	...	...	10	3	20
„ Offals ..	...	...	7	0	3
Pork Carcases ...	...	1	11	3	26
„ Offals ..	...	2	5	2	14
Veal Carcases ..	...	...	7	3	27
„ Offals ...	...	...	2	0	13
Imported ...	...	...	8	0	15
Total Weight ...	—	73	5	3	24

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 ... ..	...	17	3	26
Poultry and Rabbits ..	...	7	3	7
Fruit and Vegetables ..	2	13	0	8
Canned Foods and Provisions	...	8	3	15
	4	7	3	0

Sale of Food Order, 1921.

Routine inspections of all premises where this Order applies have been regularly carried out, and attention has been specially directed to the proper observance of this Order. At the end of the year 1934, this Order was revoked, the marking of imported meat is now regulated by the 1934 Order (No. 7) of the Merchandise Marks Act.

Merchandise Marks Act, 1926.

Under this Act, Orders in Council are made which provide for the compulsory marking of certain imported goods. Each year the work of carrying out the provisions of this Act is steadily increasing, and takes up a considerable amount of the Food Inspector's time. During the year under review, further additions have been made respecting imported poultry, bacon and hams. The different classes of goods have their own peculiar identifying mark, either in the form of a disc attached to the article, or by an indelible stamp.

Orders in Council controlling the following mentioned goods have been made up to the year ending 1934. Honey, fresh apples, currants, sultanas, raisins, eggs in shell, and dried eggs, oats and oat products, raw tomatoes, chilled salmon, butter, poultry, bacon and hams.

General Food Inspections.

The following table shows the number of visits paid to shops, stalls and stores.

Beef Butchers	...	...	1,546	Provision Dealers	...	...	1,367
Pork Butchers	...	...	811	Fruiterers	...	...	1,355
Wholesale Meat Stores	...	...	289	Fishmongers	...	...	767
Food Preparation Premises	...	...	455	Street Hawkers	...	...	439

Slaughter of Animals Act, 1933.

On the 1st January, 1934, it became compulsory to stun all cattle, calves, and pigs with a mechanically operated instrument. There are various types of instruments in use within the Borough, all being of an approved type. They include—the captive bolt pistol, spring pistol, loose bullet, and the various electrical appliances. On the 1st May, 1934, by Resolution of Council, it became compulsory to stun sheep in a similar manner as cattle, calves and pigs. The butchers in the Borough were opposed to this new legislation, but with experience of the new methods opinions have changed, and it is now the general verdict of those concerned that the humane method of slaughter is a great improvement. There are eight firms using electrical appliances for the stunning of sheep and pigs, and apart from the extra time involved, this method has proved very satisfactory.

It was found necessary to take proceedings against a firm of butchers for slaughtering 42 sheep, without previously stunning by a mechanically operated instrument. A fine of 40/- was imposed.

At the end of the year there were on the register the names of 112 licensed slaughtermen.

Diseases of Animals Acts, 1894 to 1927.

The following is a brief account of the principal Acts and Orders under which work has been carried out:—

Tuberculosis Order.

See page 56.

Anthrax Order of 1928.

On the 4th February, Anthrax was reported as suspected in the carcase of a cow at the Knackers' Yard, which had been brought in from Bromley Heyes Farm, Belmont. Examination of blood smears from the carcase revealed the presence of Anthrax.

On the 7th February, a suspected outbreak of Anthrax was reported on one of the farms in the Borough. One cow was reported to have died suddenly, and microscopical examination of blood smears from the carcase revealed the presence of Anthrax.

Blood specimens from each of the suspected cases were sent to the Laboratory of the Ministry of Agriculture and Fisheries, and in each case the disease was confirmed.

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

During the year six cows were reported on other farms in the Borough as having died without showing signs of previous illness, but in each case microscopical examination of the blood of the carcase proved negative.

Foot and Mouth Disease.

No outbreaks of this disease have occurred in the Borough during the year; but, owing to an outbreak of Foot and Mouth Disease at Bacup, a large area of Lancashire, including the County Borough of Bolton, was, on the 20th September, 1934, scheduled as an infected area by an Order of the Ministry of Agriculture and Fisheries. All movements of animals in the Borough from the above date were controlled by licences, and during the period that Bolton remained in the infected area, 360 licences involving the movement of 5,122 animals were granted by this department.

On the 5th October, 1934 the infected area was contracted by an Order of the Ministry, in which Bolton was released from restrictions.

Parasitic Mange Orders of 1911 and 1918.

One suspected case of mange was reported in a pony, but microscopical examination of skin scrapings proved negative.

Swine Fever Order of 1908.

On the 5th and 22nd January, and the 20th and 26th September, Swine Fever was reported as suspected on farms in the Borough. The premises were visited, and on investigation Swine Fever lesions were discovered. Restrictions were imposed on the premises, and precautionary measures taken to prevent the spread of disease.

The Ministry of Agriculture and Fisheries were notified and the existence of Swine Fever was confirmed by their Officers.

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 Lancashire. This Order came into operation on the 28th December, 1933, and continued in force until the 11th April, 1934. During this period all movements of Swine out of, or within the Borough were controlled, and 126 licences involving the movement of 477 pigs were granted by this Department.

**Animals (Landing from Ireland, Channel Islands and Isle-of-Man)
Order of 1933.**

Under the provisions of this Order the movements of all animals from the above-named Islands to a destination in Great Britain is controlled by licences issued by Inspectors of the Ministry of Agriculture and Fisheries.

The following imported animals were received on licence in the Borough during 1934:—

Cattle	...	...	...	...	4,435
Sheep	...	...	...	...	12,767
Pigs	...	...	...	...	3,433

Total ... 20,635

On arrival at the premises to which they are licensed the Order requires that these animals shall be detained there for a period of six days unless previously slaughtered. During the detention period the animals shall not be moved from the premises except under a further licence to be granted by an Inspector of the Local Authority, and then only to a slaughterhouse. For this purpose 583 cattle and 691 sheep were moved to slaughterhouses under further licences granted by this department.

Inspection of Markets.

The Cattle Market has been visited each week when sales of animals 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 1934. 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
1934	104	Nil	1,206	1,560	18	90	2,874
1933	98	17	1,097	1,755	23	315	3,207

Rats and Mice (Destruction) Act, 1919.

During the National Rat Week, in order to draw the attention of all concerned, thirty large printed posters issued by the Ministry of Agriculture and Fisheries were displayed on the principal boardings in various parts of the town.

A large number of enquiries have been received during the year from the occupiers of a variety of premises including private houses, food stores, slaughter-houses, farms, food preparation premises, drapers' shops and furriers' stores. In each case the respective premises were visited and suitable advice given.

During the year rat-catchers have been employed on Corporation premises—including the Fish Market, Market Hall, and refuse destructor, with satisfactory results.

Inspection and Treatment of Corporation Horses and Cattle.

See page 132.

SECTION VI.

Annual Report of the
Public Analyst and Bacteriologist.

REPORT OF THE
ANNUAL REPORT OF THE
PUBLIC ANALYST AND BACTERIOLOGIST
FOR THE YEAR 1900

1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
100	100	100	100	100	100	100	100	100	100	100

SECTION VI
ANNUAL REPORT OF THE
PUBLIC ANALYST AND BACTERIOLOGIST
FOR THE YEAR 1900

ANNUAL REPORT OF THE
PUBLIC ANALYST AND BACTERIOLOGIST
FOR THE YEAR 1900

Annual Report of the Public Analyst and Bacteriologist

for the year ended December 31st, 1934.

The following is the report on the work carried out in the Borough Laboratory during 1934. The details of the work in connection with milk have been printed for convenience in the section dealing with milk (page 53). The detailed report of water examinations is given on page 27.

SUMMARY.

	Number of Samples.
Food and Drugs	576
Bacteriological Examinations for the Public Health Dept.	1,300
Bacteriological Examinations of Milk	76
Analyses for the Waterworks Committee	709
Gas Examinations	288
Fertilizers and Feeding Stuffs	3
Examinations for the Public Assistance Committee ...	61
Miscellaneous Analyses	151
	<hr/> 3,164

PUBLIC HEALTH COMMITTEE.

FOOD AND DRUGS.

	Total.	Genuine.	Adulterated.	Percentage Adulterated.
Milk	276	255	21	7.61
Condensed Milk	4	4	...	...
Cream	5	5	...	...
Butter	27	27	...	...
Margarine	8	8	...	...
Cheese... ..	2	2	...	...
Lard	16	15	1	6.25
Tea	27	27	...	...
Coffee	13	13	...	...
Cocoa	6	6	...	...
Sugar	20	20	...	...
Jam and Marmalade ...	3	3	...	...
Meat and Fish Products	31	30	1	3.23
Shredded Suet	6	4	2	33.33
Cereals... ..	18	18	...	...
Condiments and Spices	29	29	...	...
Cakes	2	2	...	...
Sweets... ..	20	20	...	...
Beverages	3	3	...	...
Drugs	19	19	...	...
Miscellaneous	41	40	1	2.44
	<hr/> 576	<hr/> 550	<hr/> 26	<hr/> 4.52

MILK.—See page 53.

BUTTER.

27 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.

4 samples have been examined. These were of satisfactory quality and contents agreed with declarations on labels.

CREAM.

5 samples have been examined. Several of these were of the tinned variety with a Fat content of 20%. Fresh cream contains as a rule about 50% Fat and its superiority over the tinned variety is therefore obvious.

The samples examined were free from preservatives and thickening agents.

MARGARINE.

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

CHEESE.

2 samples have been examined. These were whole meat of satisfactory quality. 39% and 37% Fat respectively.

COFFEE.

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

MEAT AND FISH PRODUCTS.

31 samples were examined with special regard to preservatives. Where no declaration was made, these were proved to be absent in every case except a sample of Sausage which contained 125 parts of Sulphur Dioxide per million.

SHREDDED SUET.

6 Samples were examined. In two cases excess of Cereal was reported. (20.6% and 66.6%). 15% has been proved to be an adequate quantity of cereal for purposes of manufacture and the calculation of the above excess is based on this figure.

LARD.

16 samples were examined. One sample was found to consist of Beef Fat 45%, Cottonseed Oil 55%.

SWEETS.

20 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.

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

CONDIMENTS AND SPICES.

29 samples were examined. All were genuine.

DRUGS.

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

MISCELLANEOUS.

41 samples were examined.

SUGAR.

20 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 Preservatives.
Milk	276	2	6.0 and 24.3 grains boric acid per gal.
Cakes	2	0	...
Condiments and Spices	19	0	...
Meat and Fish Products	31	1	125 parts SO ₂ per million

COLOURING MATTER.

	No. examined.	No. containing colouring matter.
Milk	276	0

BACTERIOLOGICAL EXAMINATIONS.

(Public Health Department).

	Total.	Positive.	Negative.	Doubtful.
Tuberculosis	558	89	469	...
Diphtheria	732	95	625	12
Fever B. Typhosus ...	10	1	9	...
Para typhoid A.	10	...	10	...
Para typhoid B.	10	...	10	...

BACTERIOLOGICAL EXAMINATION OF MILK—See page 54.MISCELLANEOUS EXAMINATIONS.

- 15 Urines.
- 3 Waters.
- 13 Pathogenic specimens other than those previously tabulated.
- 2 Milks.
- 46 Bath Waters.
- 13 Coals.
- 11 Effluents and Deposits.
- 4 Disinfectants, Soaps, etc.
- 4 Examinations in suspected poisoning cases.
- 3 Tinned Peas and Pickling Salts.
- 1 Medicine.

BATH WATERS.

Since the installation of Chlorine Plants at the Baths the water has been uniformly good and gives better bacteriological results than formerly when Sodium Hypochlorite treatment was used.

AVERAGE AGAR COUNTS AND B. COLI CONTENTS.

	High Street.	Moss Street.	Bridgeman Street.
		Ladies. Gents.	Ladies. Gents.
Agar Counts per 1 c.c.	2,523 ...	2,232 2,374 ...	78 52

B. COLI.

-in 10 c.c.s. ...	...	66.67 ...	66.67	66.67	...	88.89	100.00%
+in 10 - in 5 c.c.s. ...	...	— ...	11.11	11.11	...	11.11	0%
+in 5 - in 2 c.c.s. ...	...	11.11 ...	0	0	...	0	0%
+in 2 - in 1 c.c. ...	...	0 ...	0	11.11	...	0	0%
+in 1 - in $\frac{1}{2}$ c.c. ...	...	0 ...	0	0	...	0	0%
+in $\frac{1}{2}$ - in 1/10 c.c. ...	...	0 ...	11.11	0	...	0	0%
+in 1/10 - in 1/100 c.c. ...	...	22.22 ...	11.11	11.11	...	0	0%
+in 1/100 c.c. ...	...	0 ...	0	0	...	0	0%

FERTILIZERS AND FEEDING STUFFS.

Three samples have been examined. One of these did not agree with warranty. Fibre content 17.67% below warranty instead of the permissible 12.5%.

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 27.

Routine Water Examinations	694
Solders	9
Lubricating Oils	6

GAS COMMITTEE.

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

WATCH COMMITTEE.

- 1 parcel of clothing examined in connection with assault case.
- 1 pocket knife and razor blade examined for blood stains.

STREETS COMMITTEE.

- 1 examination of material to determine its suitability for street signs.

PUBLIC ASSISTANCE COMMITTEE.

- 47 Milks.
- 7 Margarines.
- 4 Coals.
- 3 Fæces.

The average composition of the above milks was :—

Milk fat	...	...	...	3.77%
Non-fatty solids	..	...	...	8.75%
Water	...	...	...	87.48%

These figures are quite satisfactory.

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

CLEANSING COMMITTEE.

- 1 Fish Meal.

HOUSING COMMITTEE.

- 25 Paints.
- 1 Dampcourse.

ROYAL INFIRMARY.

- 4 Milks for Bacteriological and Chemical Examinations.
- 1 Fæces.

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	22.7% deficient in fat	Case dismissed.
Milk	18.7% " "	No action. Appeal to cow was deficient in fat.
Milk	13.0 % " "	Warning letter sent.
Milk	9.7 % " "	Fined 40/- and 10/6 costs.
Milk	8.3 % " "	Appeal to cow sample.
Milk	6.7 % " "	Appeal to cow sample.
Milk	6.7 % " "	Appeal to cow sample.
Milk	5.0 % " "	Appeal to cow sample.
Milk	8.95% added water	No action. Subsequent samples found to be genuine.
Milk	6.5 % " "	No action. Appeal to cow.
Milk	5.3 % " "	No action.
Milk	4.94% " "	No action.
Milk	4.2 % " "	Warning letter sent.
Milk	3.7 % " "	Warning letter sent.
Milk	3.65% " "	No action.
Milk	3.5 % " "	Informal sample.
Milk	1.06% " "	No action. Subsequent samples found to be genuine.
Milk	5.3 % deficient in fat, and 6.6% added water	Appeal to cow sample.
Milk	19.33% deficient in fat, and 4.35% added water	Fined 40/- and 10/6 costs.
Milk	Addition of preservative equivalent to 6.0 grains of boric acid per gallon	Warning given.
Milk	Addition of preservative equivalent to 24.3 grains of boric acid per gallon.	Warning given.
Lard	35.0% cottonseed oil and 45.0% beef fat	Informal sample.
Cake "Manufactured Cream Sandwich	Not manufactured cream but cream substitute	Informal sample. No action.
Shredded suet	66.6% excess cereal	Informal sample.
Shredded suet	77.59% beef fat, 20.41% cereal.	Informal sample.
Sausages	Contained 28 parts per million of Sulphur Dioxide	Warning given.

Offences other than adulterations.—Nil.

State of New York and County of Albany
In SENATE,
January 12, 1892.

REPORT
OF THE
COMMISSIONERS OF THE LAND OFFICE
IN RESPONSE TO A RESOLUTION
PASSED BY THE SENATE
JANUARY 12, 1892.
ALBANY:
J. B. LEECH, STATE PRINTER,
1892.

ALBANY:
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1892.

SECTION VII.

Prevalence of, and Control over,
Infectious Diseases.

SECTION VII

Prevalence of, and Control over,
Infectious Diseases

ACUTE INFECTIOUS DISEASES.

(Notifiable.)

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

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

PREVALENCE AND MORTALITY.

Below are shown the number of cases of notifiable diseases notified in Bolton in 1934 and the number of deaths resulting from each of these notifiable diseases.

NOTIFIABLE DISEASES DURING THE YEAR 1934.

Disease.	Total Cases Notified.	Total Deaths.
Smallpox... ..	...	...
Scarlet Fever... ..	1007	2
Diphtheria	97	11
Enteric Fever (including Paratyphoid)	1	...
*Pneumonia	125	117
Puerperal Fever	4	1
Puerperal Pyrexia	8	...
Cerebro-spinal Fever	1	2
Acute Poliomyelitis	6	1
Encephalitis Lethargica	1	5
Dysentery	1	...
Ophthalmia Neonatorum	13	...
Erysipelas	57	10
Malaria	1	...
Tuberculosis (all forms)	153	112

* 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 1934.

			Bolton.		England and Wales.
Smallpox	...	...	'00	...	'004
Scarlet Fever	...	...	5'71	...	3'76
Diphtheria	...	...	'55	...	1'70
Enteric Fever	...	...	'00	...	'03
Puerperal Fever	...	...	'02	...	'06
Puerperal Pyrexia	...	...	'04	...	'15
Erysipelas	...	...	'32	...	'51
Pneumonia	...	...	'70	...	1'27

Smallpox.

There were no cases of Smallpox in Bolton during the year.

Scarlet Fever.

An epidemic of scarlet fever continued during the year, 1,007 cases being notified. 559 cases were admitted to the Hulton Lane Hospital. Two 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
1934	...	...	1,007

Immunization Against Scarlet Fever.

Last year, figures were given showing the effects of immunization against scarlet fever in three elementary schools with a high incidence of the infection. The large numbers of cases occurring made it possible to compare two groups of children with very striking results. Children who had had scarlet fever before the dates of immunization were excluded from the comparisons.

Comparative figures were given showing the incidence of scarlet fever subsequent to the date of immunization in, firstly, 538 immunized children and secondly, 1,400 non-immunized children who were not known to have had scarlet fever. When writing in last year's report no case had occurred in the 538 immunized children and 75 cases had occurred in the non-immunized group. The groups of children have now been kept under observation for another twelve months. 5 cases of scarlet fever have occurred in the immunized group and 23 further cases have occurred in the non-immunized group.

Up to the present time the two groups of children, both exposed to the same heavy herd infection have shown 5 cases in the immunized group and 98 in the non-immunized group, or a percentage incidence of .92 in the immunized and 7.0 in the non-immunized.

Our Bolton experience would show in a striking way the value to the individual of immunization against scarlet fever. It also suggests that with the immunization methods used, the results tend to lose effect after 10 months and that thereafter the immunity to scarlet fever is less complete.

Encephalitis Lethargica.

One case was notified during 1934 as suffering from encephalitis lethargica. This case died and there were four other deaths which had not been notified during life.

Ophthalmia Neonatorum.

The number of cases notified during the year was 13, compared with 18 in 1933.

Four of the cases were attended daily by a district nurse.

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 1934 are as follows:—

CASES.			VISION.			Deaths
Notified	Treated		Un- impair'd	Impaired	Total Blind- ness	
	At Home	In hospital				
13	13	—	13	—	—	—

Puerperal Fever.

Four notifications of puerperal fever were received during 1934. 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 1934.

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 1934 in Chief Lancashire

Manufacturing Towns.

(FIGURES COMPILED FROM THE REGISTRAR-GENERAL'S
QUARTERLY RETURNS.)

	Total Rate	Scarlet Fever	Diph- theria	Enteric Fever	Puerperal Fever	Puerperal Pyrexia	Ophthal- mia Neona- torum
Rochdale	3.54	1.84	1.57	.01	.02	.07	.03
Oldham	4.13	2.47	1.41	.01	.02	.16	.06
Bury	4.60	2.70	1.50	—	.16	.13	.11
Wigan	4.77	4.39	.24	.01	.02	.08	.03
Preston	4.90	2.69	1.85	—	.03	.27	.06
Manchester	4.97	2.83	1.68	.02	.13	.15	.16
St. Helens	5.09	2.64	2.13	.01	.09	.17	.05
Bolton	6.38	5.72	.53	—	.02	.04	.07
Blackburn	6.39	5.43	.72	.02	.06	.10	.06
Salford	6.89	2.52	4.08	.01	.07	.15	.06
Burnley	7.58	3.67	3.61	.01	.07	.16	.06
Barrow-in-Furness...	8.11	4.02	4.04	.03	—	.01	.01
Bootle	8.23	3.63	3.80	.01	.05	.50	.24
Liverpool... ..	8.71	4.15	3.37	.02	.04	.33	.80
Warrington	8.98	2.98	5.80	—	.02	.14	.04

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 27 deaths in Bolton in 1934. The average for the last ten years is 96.

Amongst the 27 deaths attributed to influenza, pneumonia complicated 15 cases and other respiratory disease complicated 5 cases. In 5 cases other complications occurred. 2 deaths were attributed to influenza alone.

Bolton's influenza deaths from 1922 to 1934 are shown below :—

	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Deaths	122	94	88	98	68	147	55	208	42	110	46	165	27

Whooping Cough.

Two deaths were due, in Bolton, in 1934 to whooping cough. In 1933 the number was nine.

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
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
1934	2	·01	·05

Measles.

12 deaths occurred in 1934 as compared with 14 in 1933.

The table below shows the death-rate for measles for Bolton and for England and Wales since 1925 :—

Year.	Bolton.		England & Wales.
	No. of Deaths	Rate per 1,000	Rate per 1,000
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
1934	12	·06	·09

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 1934 were as follows :—

	Total	Positive	Negative	Doubtful
Sputum (for B. Tuberculosis) ...	558	89	469	—
Diphtheria (Throat Swabs) ...	732	95	625	12
Enteric Fever (Agglutination test)	10	—	10	—

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

	Total	Positive	Negative
Milk (Inoculation test for B. Tuberculosis)	28	3	25
Diphtheria (Throat Swabs) ...	3	—	3
Pleural fluid for T.B. ...	1	1	—

Medical Officers of our own department examined 243 sputum specimens for B. Tuberculosis and 1,146 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 1934 there were supplied 73 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 1934, 1,527 bottles of insulin each containing 100 units, and 18 bottles each containing 200 units were supplied free, and 660 bottles of 100 units and 146 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 1934 the following work was done by the disinfecting station :

Houses disinfected	...	1,307
Articles of clothing, bedding, etc., disinfected	...	8,107
Articles of clothing, bedding, etc., destroyed	...	63

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

665 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, in 1932 429, and in 1933 836.

Amongst the patients admitted to the scarlet fever ward:

- 650 had scarlet fever only
- 1 had scarlet fever and chicken-pox
- 1 had scarlet fever and mumps
- 1 had scarlet fever and measles
- 4 had measles only
- 5 had tonsillitis only
- 1 had diphtheria
- 1 had erysipelas
- 1 had gastro-enteritis

The great majority of the cases were mild. There were only two deaths in the scarlet fever wards, one from measles and one from gastro-enteritis.

The complications which occurred were as follows:

- 28 cases of otorrhœa
- 20 cases of nephritis
- 28 cases of adenitis
- 3 cases of rheumatism
- 11 cases of mastoid infection
- 6 cases with other complications

We had 9 return cases in 1934, as against 17 in 1933. 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.

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

78 had diphtheria only.

1 had diphtheria and chicken pox.

1 had diphtheria and broncho-pneumonia.

1 had tonsillitis.

1 had pharyngeal abscess.

1 had acute pharyngitis.

6 had scarlet fever.

Four patients required tracheotomy, one of whom died.

Seven of the diphtheria cases admitted died.

Hospital Staff.

There were two cases of infectious disease amongst the nursing staff—two probationers contracting scarlet fever, before it had been possible to immunize them.

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.	Diphtheria	Pulmonary Tuberculosis.	Other Tuberculous Diseases.	Other Diseases	
Remaining, Dec. 31st, 1933	62	...	12	19	...	...	93
Admitted in 1934	659	...	81	49	...	14	803
Total No. treated, 1934 ...	721	...	93	68	...	14	896
Discharged in 1934	655	...	80	33	...	12	780
Died in 1934 ... ..	...	...	7	16	...	2	25
Remaining, Dec. 31st, 1934	66	...	6	19	...	...	91

VACCINATION.

The following is a summary of the return for 1933 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, 1933, to the 31st December, 1933, inclusive.

No. of Births registered 1,678

On the 31st January, 1935, of the above children—

333 or 19·84% were successfully vaccinated,

9 or ·53% were insusceptible of vaccination,

None had had smallpox,

1,203 or 71·69% of their parents made the statutory declaration of conscientious objection,

74 or 4·41% died unvaccinated,

4 or ·23% were temporarily unfit to be vaccinated,

4 or ·23% had removed out of Bolton,

14 or ·83% could not be traced,

and 37 or 2·20% 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, 1934, was 371, and the number of statutory declarations of conscientious objection received during the same period was 1,233.

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, 1934, was as follows :

No. of successful primary vaccinations					
Under one year of age	...	...	...	292	
One year and upwards	...	...	...	14	
				<hr/>	306
No. of successful re-vaccinations of persons who had been successfully vaccinated at some pre- vious time					
	...	...	...	38	
				<hr/>	
Total vaccinations by Public Vaccinators ..				344	
				<hr/>	

The first point to be considered is the question of the
effect of the various factors on the results of the
experiment. It is well known that the results of an
experiment are influenced by many factors, such as the
quality of the materials used, the skill of the operator,
the accuracy of the instruments, and the conditions of the
environment. In this experiment, the factors mentioned
above have been taken into account, and the results are
considered to be reliable. The results of the experiment
show that the effect of the various factors on the results
of the experiment is not significant. This is in
agreement with the results of other experiments of this
kind. The results of the experiment are therefore
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SECTION VIII.

Tuberculosis.

SECTION VIII

Tuberculosis

TUBERCULOSIS.

The death-rate from all forms of tuberculosis in Bolton during 1934 was 0·63. This rate is the lowest which has ever been recorded in our town.

The total number of new cases notified in 1934 was 153, as compared with 148 in 1933.

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 1934 in certain Lancashire County Boroughs was as follows :—

Blackburn	·63	Warrington... ..	·83
BOLTON	·63	St. Helens	·88
Rochdale	·71	Wigan	·95
Burnley	·76	Salford	1·04
Oldham	·80	Manchester	1·14
Bury	·83		

New Cases.

The number of new cases notified in 1934 was :—

Pulmonary	116
Non-pulmonary	37
Total	153

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, 1924-1934.

Year.	Rate per 1,000 living.	
	Bolton.	England and Wales.
1924	1·12	1·05
1925	1·02	1·03
1926	·92	·96
1927	1·02	·97
1928	·77	·93
1929	·79	·96
1930	·82	·89
1931	·77	·89
1932	·75	·83
1933	·64	·82
1934	·63	·76

It will be seen that Bolton stands this comparison very well. For the past seven 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 1934.

PULMONARY TUBERCULOSIS NOTIFICATIONS.

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	2	6	4	17	15	20	9	5	78
Females	2	9	16	6	1	2	2	38

NON-PULMONARY TUBERCULOSIS NOTIFICATIONS.

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	12	...	...	...	4	...	2	1	...	20
Females	2	3	5	...	3	1	...	2	1	...	17

DEATHS FROM TUBERCULOSIS.

112 Bolton residents were certified as having died of tuberculosis during 1934. This compares with 114 in 1933.

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

16 died in the Bolton Borough Hospital.

28 died in Townleys Hospital.

4 died in the Bolton Royal Infirmary.

5 died in the Wilkinson Sanatorium.

1 died in the Haslam Nursing Home.

1 died in the County Mental Hospital, St. Helens.

1 died in the North Wales Counties Mental Hospital, Denbigh.

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 DEATHS.

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	64	...	...	1	...	24	9	14	11	5
Females... ..	30	...	1	...	2	14	7	1	2	3
Total	94	...	1	1	2	38	16	15	13	8

NON-PULMONARY TUBERCULOSIS DEATHS.

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	7	1	1	1	...	2	...	...	2	...
Females... ..	11	...	...	1	...	3	2	3	1	1
Total	18	1	1	2	...	5	2	3	3	1

In 12 cases the disease had not been notified during life. Six 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 1934.

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.

228 persons applied for treatment in 1934. 183 of these were cases of pulmonary tuberculosis and 45 of non-pulmonary tuberculosis.

The treatment given was as follows :

Residential treatment	139
Domiciliary treatment	63
Out-patient treatment	25
Declined residential treatment...	—
On waiting list at close of 1933	—
Application withdrawn	—
Application cancelled	1

No patient desiring residential treatment was refused such treatment

TUBERCULOSIS DISPENSARY.

The work of the Dispensary continues as in previous years. It acts as a clearing house for all forms of tuberculosis. Cases are referred here by the practitioners of the town. The Tuberculosis Officer examines the patients and advises the general practitioner as to diagnosis and future treatment—whether it should be provided in a Sanatorium, at home by the family doctor, or through the medium of the dispensary.

The premises at present in use are very unsatisfactory. All the methods which science has placed at our disposal should be available as aids to diagnosis. The future happiness and well-being of the patient may depend on the accuracy of the dispensary work. Under existing conditions readily accessible X-ray facilities are not available, and the buildings themselves do not allow of the quietness and privacy necessary for careful clinical work. Until the completion of the new dispensary with its provision for ancillaries to clinical diagnosis this department cannot function in a completely satisfactory way.

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

Total attendances	...	...	...	...	...	1,689
Total number of patients sent for consultation	...	...	...	...	...	276

The results of these consultations were as follows:—

Number found to have pulmonary tuberculosis	...	...	...	...	...	84
Number found to have non-pulmonary tuberculosis...	...	...	...	...	...	28
Number of cases kept under observation for suspected pulmonary tuberculosis	...	...	...	...	...	1
Number of cases kept under observation for suspected non-pulmonary tuberculosis.	...	...	...	...	...	2
Number in whom no evidence of tuberculosis was found	...	...	...	...	...	161
Visits by Tuberculosis Nurse	...	...	...	...	...	1,253
No. of specimens of sputum examined ..	...	...	...	...	...	243

The total number of cases on the register (notified)						
pulmonary tuberculosis	...	...	...	...	...	353
non-pulmonary tuberculosis	...	...	...	...	...	186
Total						539

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 1934.

ACCOMMODATION PROVIDED BY LOCAL AUTHORITY WITH NUMBER OF PERSONS ADMITTED FOR TREATMENT DURING THE YEAR 1934.

INSTITUTION.	Beds.	Treated:			Under Treatment 31st Dec. 1934.
		Total	Insured	Un-insu'd	
Wilkinson Sanatorium	30	67	53	14	32
Borough Hospital	24	49	34	15	18
*Heswall	6	6	...	6	11
*Bolton Royal Infirmary ... ..	...	8	4	4	...
*Manchester and Salford Hospital for Skin Diseases ... ..	...	2	1	1	...
*Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry ... ..	...	2	1	1	1
*Westmorland Sanatorium, Meathop... ..	...	1	1	...	...
*Ethel Hedley Hospital, Windermere... ..	...	2	...	2	1
*New Hall Sanatorium, Scarisbrick ... ..	...	1	1	...	1
*Liverpool Sanatorium, Delamere Forest, Frodsham ... ..	...	1	1	...	...

* Paid for per user.

Manchester and Salford Hospital for Skin Diseases.

13 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 143 days. 11 of the cases received various other treatments. The total number of attendances made by the out-patients was 99.

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 derived 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	...	...	99
2. Average time receiving assistance	...	5 months	
3. Amount of milk given	...	...	13,389 pints
4. Malt and oil given	...	...	115 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.

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SECTION IX.

Venereal Diseases.

SECTION IX

Veneral Diseases

Venereal Diseases.

During 1934 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, and it is hoped that prior claim will be given to the completion of the new premises now in course of construction.

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.)
Friday ...	...	...	...	6-0 p.m.)
Tuesday	9-30 a.m.)	Females.
Thursday ...	...	...	...	6-0 p.m.)
Saturday ...	...	...	...	10-0 a.m.)

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 553 more attendances by women in Bolton during 1934 than in 1933. 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 1934.**

The number of patients who attended the clinics in 1934 was :—

Men ...	910	Women ...	423
---------	-----	-----------	-----

The diseases from which they suffered were :—

	Men	Women	Total
Syphilis ...	234	181	415
Soft Chancre ...	—	—	—
Gonorrhœa ...	537	84	621
Non-venereal ...	139	158	297
	<hr/> 910	<hr/> 423	<hr/> 1,333

The above figures give the total number of patients who attended the clinics during 1934. The numbers of new patients who came under treatment for the first time in 1934 were as follows :—

	Men	Women
Syphilis... ..	64	48
Soft Chancre ...	—	—
Gonorrhœa ...	197	41
Non-venereal ...	125	127
	<hr/> 386	<hr/> 216

Attendances.

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

Men ...	11,073	Women ...	5,722
---------	--------	-----------	-------

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

Patients received 3,063 intravenous injections of salvarsan substitutes, and 2,822 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.	Bury.	Salford.
No. of cases dealt with for the first time during 1934..	21	2	22
(a) Syphilis ...	9	1	4
(b) Soft Chancre	1	...	1
(c) Gonorrhœa	5	...	9
(d) Conditions other than Venereal ...	6	1	8
Attendances of all patients ...	325	42	1032
Doses of Salvarsan substitutes given	49	1	70
Tests—			
Wassermann ...	38	...	...
Gonorrhœa ...	...	...	...
In-patient days ...	...	...	...

The tables on pages 106 and 107 show the work carried out at the Bolton Treatment Centre.

15 medical men applied during 1934 for arsenobenzene compounds and 228 doses were supplied to them for use in their private practices.

325 specimens of blood, 16 cerebro-spinal fluids and 37 smears taken by medical practitioners not connected with the Treatment Centre were sent for examination to the Public Health Laboratory, Manchester.

[illegible]

	Syphilis.		Soft Chancere.		Gonorr- hoea.		Conditions other than Venereal.		TOTALS.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals
Number of attendances :—											
(a) for individual attention of the medical officers...	3309	2835	...	...	4341	1096	370	497	8020	4428	12448
(b) for intermediate treatment, e.g., irrigation, dressing	40	...	...	...	2807	1174	206	120	3053	1294	4347
TOTAL ATTENDANCES	3349	2835	...	...	7148	2270	576	617	11073	5722	16795

in-patients :—

- (a) Total number of persons admitted for treatment during the year
- (b) Aggregate number of "in-patient days" of treatment given

NIL.

	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.
Number of cases of congenital syphilis in Item 3 above classified according to age periods :—	1	...	3	1	3	7	3	4	10	12

	Arsenobenzene Compounds.			Mercury.		Bismuth.	
	M.	F.	Totals.	M.	F.	M.	F.
Chief preparations used in treatment of Syphilis :—							
(a) Names of preparations	Stabilarsan, Novarsenobillon, Sulfarsenol, Sulphostab.					Bismuthyl, Bismostab.	
(b) Total number of injections given (out-patients and in-patients)	3063			...		2822	

Are the tests recommended in Memo. V 214 as amended
by Memo. V 214 followed in deciding as to the dis-
charge of the patient after treatment and observation
for syphilis and gonorrhoea ?

Yes.

If not, in what way are they modified ?

PATHOLOGICAL WORK :—(a) Number of specimens examined at and by the medical officer of the treatment centre—Microscopical for gonococci, 1146.
(b) Number of specimens from patients attending at the treatment centre sent for examination to an approved laboratory—For Gonococci, 4
Serum tests (Wassermann), 758.

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

Name of County or County Borough (or Country in the case of persons residing elsewhere than in England and Wales) to be inserted in these headings.	Bolton	Lancs. C.C.	London	Manch'ter	Bury	Preston	Warring- ton	Lancaster	Wigan	Total.
Number of cases in Items 3 and 4 from each area and to be suffering from :—										
Syphilis	86	31	...	...	...	...	...	...	...	117
Soft Chancre ... ..	...	...	...	...	...	...	...	...	...	...
Gonorrhoea	162	87	2	2	2	1	...	1	...	257
Conditions other than Venereal	201	49	...	...	2	...	...	...	...	252
TOTAL	449	167	2	2	4	1	...	1	...	626
Total number of attendances of all patients residing in each area	11633	5058	3	6	76	3	14	1	1	16795
Aggregate number of "in-patient days" of all patients residing in each area ... ..	...	...	...	...	...	...	...	...	...	...
Number of doses of arsenobenzene compounds given in the out-patient Clinic and In-patient Department to patients residing in each area	2147	911	...	...	5	...	...	...	...	3063

SECTION X.

Maternity and Child Welfare.

SECTION X

Maternity and Child Welfare.

Maternity and Child Welfare.

Births.

The number of children born to Bolton parents in 1934 was 2,212.

Of these births 2,131 were legitimate and 81 illegitimate.

20 births were not notified as compared with 15 in 1933. Careful inquiry was made in every case, and in none was any intention to deceive found.

The birth-rate for Bolton was 12.5 in 1934.

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.
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
1934	14.8	12.5

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 1934 was 119, giving a stillbirth-rate of 0.67 per 1,000 of the population. The rate for England and Wales was 0.62.

Infantile Mortality.

Bolton's infantile mortality-rate for 1934 was 53. The figure for England and Wales was 59. Both these figures are the lowest ever recorded. It is a matter for great satisfaction that the Bolton rate is appreciably less than the lowest rate of which the country as a whole has ever been able to boast. I am satisfied that the improvement in the health of infants is correlated with the activities of our maternity and child welfare services.

Of Bolton's 2,212 births in 1934, 2,131 were legitimate and of these the mortality-rate was 53. For the 81 illegitimate children the mortality-rate was 74.

In the following table is given the average infantile mortality for five year periods from 1876 to 1925 and for each year from 1926 to 1934.

Quinquennium.	Average rate.	Year.	Rate.
1876-1880	... 171	1926	... 101
1881-1885	... 169	1927	... 75
1886-1890	... 173	1928	... 64
1891-1895	... 185	1929	... 103
1896-1900	... 173	1930	... 69
1901-1905	... 157	1931	... 78
1906-1910	... 134	1932	... 71
1911-1915	... 128	1933	... 78
1916-1920	... 100	1934	... 53
1921-1925	... 91		

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 thirty 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	1934	37.0

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
Pneumonia (all forms)	—	—	—	—	—
Diarrhoea and Enteritis	1	—	1	1	3
Syphilis	—	—	—	—	—
Suffocation... ..	—	—	—	—	—
Injury at Birth	1	—	—	—	1
Atelectasis	2	—	—	—	2
Congenital Malformations	11	3	1	—	15
Premature Birth	32	1	3	3	39
Congenital Debility	4	1	3	—	8
Other Causes	8	—	1	1	10
Totals	62	6	9	5	82

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 8 deaths directly due to pregnancy or child-bearing in Bolton during 1934, giving a puerperal mortality-rate of 3·61. The rate for England and Wales was 4·60.

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.	BOLTON. Rate per 1000 total births.	ENGLAND & WALES. Rate per 1000 total births.
Puerperal sepsis ...	2	·85	1·95
Other puerperal causes ...	6	2·57	2·46
Total ...	8	3·42	4·41

The reduction in the death-rate associated with child-bearing as compared with the last five years is a matter for congratulation.

In addition to the 8 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) Rheumatic Endocarditis, (2) Cancer of Ovary.

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. During the year the scope of this work has been extended in certain cases to the provision of dentures.

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.
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
1934	4·6	3·6

The Health Visitors' 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	...	...	...	...	...	2,232
Visits to children, 1—5 years	...	...	...	...	...	3,602
Primary visits to expectant mothers	...	...	...	...	...	271
Revisits to infants under 1 year	...	...	...	...	...	5,486
Revisits to expectant mothers	...	...	...	...	...	219
Visits to puerperal fever cases	...	...	...	...	...	19
Visits to ophthalmia cases	...	...	...	...	...	122
Death enquiries made	...	...	...	...	...	114
Visits to midwives' houses	...	...	...	...	...	194
Visits—Children Act	...	...	...	...	...	174
Ineffective visits	...	...	...	...	...	1,680
Total visits	...	...	...	...	...	14,113

As a result of their visits the Health Visitors reported 20 nuisances to the Medical Officer of Health, and referred two cases to the N.S.P.C.C.

They distributed at the houses visited 2,100 leaflets.

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

103,288 quarts of new milk were given to 1,598 persons.

4,924 lbs. of dried milk were given for the use of 257 infants.

1,740 lbs. of malt and oil were given to 529 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 were three applications for home help which were 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 nine 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.
Delph Hill Methodist School ... ..	... Friday 3 p.m.

Orthopædic Work.

There is still no organised scheme for the treatment of crippling defects in children under five. It is of importance that such treatment should be commenced in early life before deformities and defects are fixed. Treatment on the lines of that adopted for crippling defects in school children should be extended to the children under five.

STATISTICS FOR THE YEAR ENDED 31ST DECEMBER, 1934. INFANT CLINICS.

Clinic	Average attendance per session	Number who attended for the first time		Number of Children on the Roll	Total attendances by Children		Total number of Children who were in attendance at the end of the year		Number of meetings during the year
		Under 1 yr. of age	Between 1 yr. the ages of 1 and 5 yrs.		Under 1 yr. of age	Between 1 yr. the ages of 1 and 5 yrs.	Under 1 yr. of age	Between 1 yr. the ages of 1 and 5 yrs.	
1. Tipping Street ...	40.6	95	18	275	1012	777	89	186	44
2. Daubhill ...	37.0	111	17	205	1255	447	82	123	46
3. Halliwell ...	61.6	170	33	438	1847	928	136	302	45
4. Grecian Crescent ...	58.8	157	26	352	1744	963	124	228	46
5. Kensington ...	56.4	226	36	459	2105	549	181	278	47
6. Saviour's ...	46.4	143	11	297	1458	726	130	167	47
7. Chalfont Street ...	52.1	135	18	271	1620	674	115	156	44
8. St. Chad's ...	64.7	195	19	407	2270	773	167	240	47
	417.6	1232	178	2704	13311	5837	1024	1680	366
		1410			19148				

The total number of new members enrolled at the centres in 1934 was 1,410. The number for 1933 was 1,258. This is an increase of 152 as compared with 1933.

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

Under one month	...	...	...	...	404
„ two months	...	...	...	...	377
„ three months	...	...	...	...	180
„ six months	...	...	...	...	176
„ twelve months	...	...	...	...	95
Twelve months and over	...	...	...	...	178

The total number of children under the age of 12 months enrolled in 1934 was 1,232. This shows an increase of 178 as compared with 1933. The number of children under 12 months of age enrolled in 1934 was over 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)	...	...	1405
Haslam Maternity Home (three clinics weekly)	...	...	2084
Townleys Hospital (1 clinic weekly)	...	...	1727
(Bolton Residents only)			<hr/> 5216

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

St. George's Rd.	...	515
Haslam Maternity Home	...	349
Townleys Hospital	...	507
		<hr/> 1371

Including the work done at Townleys Hospital, the total number of expectant mothers who attended the clinics was 57.9% 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 child-bearing.

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 1934 was 95, and these received a total of 1,911 treatments.

Most of the cases benefited 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.

The number of cases treated in 1934 was 75, and these received a total of 1,337 treatments. There has been no change in the routine of the clinic.

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.

It has not been possible to accept all the cases desirous of entering Haslam Maternity Home as the accommodation is limited. There is little doubt that the capacity of the Home would have to be doubled in order to satisfy all the demands for admission.

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 1934.

STATISTICS, 1934.

1.	No. of beds in the Home	...	...	...	...	...	18
2.	No. of cases admitted	...	...	...	...	...	392
3.	Average duration of stay in days	...	...	...	...	...	14·07
4.	No. of cases delivered by—						
	(a) Midwives	...	...	...	...	...	297
	(b) Doctors	...	...	...	...	...	85
5.	No. of cases in which medical assistance was sought by the midwife...	...	...	...	...	...	73
	(a) Ante-natal	...	...	...	...	...	14
	(b) During labour	...	...	...	...	...	39
	(c) After labour	...	...	...	...	...	5
	(d) For Infant	...	...	...	...	...	15
6.	No. of cases notified as—						
	(a) Puerperal fever	...	...	...	...	...	Nil
	(b)*Puerperal pyrexia	...	...	...	...	...	4
	*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	...	...	...	...	...	11
9.	No. of cases notified as ophthalmia neonatorum, with result of treatment in each case	...	...	...	...	...	Nil
10.	No. of maternal deaths, with causes (Adherent placenta)	...	...	...	...	...	1

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	...	...	...	...	...	24
(a)	Stillborn	...	...	...	...	...	17
	Macerated	...	...	...	...	5	
	Extended impacted breach	...	...	...	...	3	
	Long difficult labour	...	...	...	...	2	
	Cord and arm presentation	...	...	...	...	2	
	Small pelvis	...	...	...	...	1	
	Long dry labour	...	...	...	...	1	
	Anencephalic	...	...	...	...	1	
	Albuminuria of mother	...	...	...	...	1	
	Unknown cause	...	...	...	...	1	
(b)	Within 10 days of birth	...	...	...	...	...	7
	Spina bifida	...	...	...	...	3	
	Convulsions	...	...	...	...	2	
	Premature feeble twin	...	...	...	...	1	
	Heart disease	...	...	...	...	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 1934, 810 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, and on occasions applications for admission have had to be refused.

Below are set forth full particulars of the attendances at the Day Nursery during 1934.

STATISTICS FOR THE YEAR ENDED 31ST DECEMBER, 1934.

A.	NUMBER OF PLACES FOR CHILDREN UNDER 5 YEARS OF AGE ...	27
	(i.e. the total number of children that can be accommodated at any one time)	

B. TOTAL NUMBER OF ATTENDANCES
OF CHILDREN :

Whole day under 3 years	...	...	3,997
Whole day 3 years and over	...	...	1,397
Total whole day	...	...	5,394
Half day under 3 years	...	...	363
Half day 3 years and over	...	...	146
Total half day	...	...	509
Number of attendances of children under 5 years :			
Whole day...	...	...	5,394
Half day	...	...	509
Average for the year—whole day	...	...	22
half day	...	...	11
Number of days open during year	{	whole day...	244
		half day	46
Actual number of children who have attended	...	...	63
Average number of attendances per child	...	...	45

CONTROL OF MIDWIVES.

During 1934 the number of midwives who notified their intention to practise in Bolton was 59. Of them, seven 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	57	2	59
No. of cases attended	1,458	—	1,458
Average No. of cases per midwife	25	—	25
No. of calls for medical aid	377	—	377
Per cent. of cases in which medical aid was sought...	25%	—	25%
No. on the Register at the beginning of the year...	...	...	57
No. who ceased to practise in Bolton	...	...	1
No. who notified their intention to practise in Bolton for the first time	...	...	1
No. on the Register at the end of the year	...	...	58
Names voluntarily removed from the Roll	...	...	1

In addition to the above, the midwives attended 252 cases as maternity nurses.

The following 462 notifications were received from midwives in accordance with the regulations of the Central Midwives Board :—

Medical assistance	377
--------------------	-----	-----	-----	-----	-----	-----	-----

CONDITIONS FOR WHICH DOCTORS WERE SUMMONED
IN AN EMERGENCY BY MIDWIVES.

PREGNANCY	...	...	...	...	...	...	...	...	49
Ante-partum hæmorrhage	...	...	...	...	...	...	...	14	
Albuminuria	...	...	...	...	...	...	...	13	
Abortion or threatened abortion	...	...	...	...	...	...	...	7	
Heart disease	...	...	...	...	...	...	...	5	
Contracted pelvis	...	...	...	...	...	...	...	3	
Presenting part high	...	...	...	...	...	...	...	2	
Other conditions	...	...	...	...	...	...	...	5	
LABOUR	...	...	...	...	...	...	...	...	215
Ruptured perineum	...	...	...	...	...	...	...	74	
Delayed, complicated or obstructed labour	...	...	...	...	...	...	...	44	
Uterine inertia	...	...	...	...	...	...	...	14	
Persistent occipito posterior	...	...	...	...	...	...	...	13	
Breech presentation	...	...	...	...	...	...	...	13	
Malpresentation	...	...	...	...	...	...	...	11	
Premature labour	...	...	...	...	...	...	...	8	
Retained placenta	...	...	...	...	...	...	...	6	
Contracted pelvis	...	...	...	...	...	...	...	3	
Collapse	...	...	...	...	...	...	...	3	
Prolapsed cord	...	...	...	...	...	...	...	3	
Threatened eclampsia	...	...	...	...	...	...	...	3	
Hysterical fits	...	...	...	...	...	...	...	3	
Placenta prævia	...	...	...	...	...	...	...	2	
Hæmorrhage	...	...	...	...	...	...	...	2	
Heart Disease	...	...	...	...	...	...	...	2	
Other conditions	...	...	...	...	...	...	...	11	
PUERPERIUM	...	...	...	...	...	...	...	...	26
Post-partum hæmorrhage	...	...	...	...	...	...	...	4	
Abcess of breast	...	...	...	...	...	...	...	4	
Rise of temperature	...	...	...	...	...	...	...	3	
Bronchitis, colds, etc.	...	...	...	...	...	...	...	3	
Pneumonia	...	...	...	...	...	...	...	2	
Phlebitis	...	...	...	...	...	...	...	2	
Other conditions	...	...	...	...	...	...	...	8	
INFANT	...	...	...	...	...	...	...	...	87
Feebleness	...	...	...	...	...	...	...	22	
Inflammation of eyes	...	...	...	...	...	...	...	20	
Abnormality	...	...	...	...	...	...	...	15	
Premature	...	...	...	...	...	...	...	10	
Convulsions	...	...	...	...	...	...	...	10	
Spina bifida	...	...	...	...	...	...	...	3	
Tongue-tied	...	...	...	...	...	...	...	3	
Other conditions	...	...	...	...	...	...	...	4	

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

Stillbirths	...	...	...	...	...	...	...	63
Artificial feeding	...	...	...	...	...	...	...	13
Death of mother or child	...	...	...	...	...	...	...	8
Laying out of dead body	...	...	...	...	...	...	...	1

1,458 cases out of a total of 2,212 births registered were attended by midwives. The figure 1,458 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.

During the year it was decided to assist necessitous mothers not entitled to Maternity Benefit in the payment of the midwives' fees. This is an extension of the work previously carried out by the Public Assistance Committee. In 86 cases the Council paid or contributed towards the midwife's fee. As the Public Health Committee's Scheme only came into operation towards the end of the year, these payments were chiefly made by the Public Assistance Committee.

Lectures to Midwives

During the Winter Season four 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:—

"The New Rules," by Dr. Mary E. Boullen, the Maternity and Child Welfare Officer.

"Uterine Action—Normal and Abnormal," by Dr. J. W. Hunter, of Manchester.

"Rational Treatment of Asphyxia in the Newborn," by Dr. P. M. Overton, of Bolton, and

"Contracted Pelvis," by Dr. E. A. 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.

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SECTION XI.

Miscellaneous.

SECTION XI

Miscellaneous

Queen's Park Observatory, Bolton.

METEOROLOGICAL SUMMARY, 1934.

The average barometric reading for the year 29.888", was .049" lower than usual, largely owing to the low December average which was .7" below normal. The highest reading for the year was 39.977" on 15th February and the lowest 28.571" on March 15th.

Temperatures were, on the whole slightly above average. The means for July, September, October and December being exceptionally high. The highest shade temperature, 85.6°, occurred on 11th July, and the lowest, 26.0°, on 28th January and 2nd February.

The total rainfall 41.964" was .2" below the long period average. February, July, August and November showed a marked deficiency of rainfall, but this was compensated for by the abnormal totals for October and December. The greatest fall on one day was 1.01" on 16th January. Rain fell on 217 days, and for 873.6 hours (average 213 days and 1848.2 hours). Snow fell on 5 days.

Sunshine was 128 hours in excess of the long period average and occurred on 268 days, 13 more than usual.

Winds during the year were light in force, the daily average of 105 miles being the lowest ever recorded. The highest velocity was 43 m.p.h. on 20th August.

There were 9 slight thunderstorms during the year.

E. HENDY,

Borough Meteorologist.

Meteorological Summary, 1934.

1934	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	
January ...	29.794"	88.3%	39.69°	53.1°	17	26.0°	28	hours 34.9	hours 5.7	19	3.954"
February ...	30.460	81.0	39.33	50.4	15	26.0	2	44.0	7.5	26	.476
March ...	29.664	80.3	40.05	54.8	25	26.9	14	70.2	9.2	27	3.359
April ...	29.741	75.6	44.83	67.2	15	29.5	7	96.6	10.3	30	2.784
May ...	30.070	72.8	49.52	75.6	11	33.5	17	139.0	11.6	14	3.410
June ...	30.061	72.3	57.91	76.1	16	43.1	4	186.4	14.1	2	2.028
July ...	30.015	67.5	62.79	85.6	11	47.0	4	234.1	14.2	8	2.236
August ...	29.843	80.6	57.37	73.2	8	42.0	31	121.1	10.9	24	4.807
September ...	29.607	81.2	56.44	76.2	15	39.0	2	110.2	8.9	5	3.488
October ...	29.890	81.5	50.35	65.0	7	32.5	31	55.0	7.5	9	6.453
November ...	30.045	88.2	42.96	51.0	26	26.5	1	24.3	5.8	7	2.299
December ...	29.175	88.7	46.64	54.4	9	37.7	30	6.9	1.5	10	6.670
Totals ...	358.665	958.0	587.78					1122.7			41.964
Averages ...	29.888	79.8	48.98	55.8	...	43.1	...	93.6			3.497

Rainfall. Average 1887-1934 = 42.111"

Baths and Wash-houses. 12 months ended 31st March, 1935.

	Mixed Bathing	Swimming Baths			Slipper Baths				Vapour and Needle Baths	Con- tracts	Total Bathers	Corres- ponding period last year	No using Wash- houses	Corres- ponding period last year
		4d.	3d.	2d.	8d.	6d.	4d.	2d.						
Moss St. Baths & Wash- houses...	8074	23152	3144	35039	1052	4483	3324	...	...	56350	134618	147595	19366	20693
Bridgeman St. Baths	11116	18801	2164	29753	2630	1696	1332	...	294	44703	112489	124265	...	...
High St. Baths	7085	12624	1134	23773	704	3220	1884	...	64	38556	89044	85272	...	...
Rothwell Street Baths and Wash-houses	...	...	...	...	...	704	612	4346	...	...	5662	6317	44542	43810
Total	26275	54577	6442	88565	4386	10103	7152	4346	358	139609	341813	363449	63008	64503

Turkish Baths. 12 months ended 31st March, 1935.

	Turkish Baths			Slipper Baths			Foam Baths	Pine Aeration Baths	Medi- cated Baths	Total Bathers	Corres- ponding period last year
	1st Class	2nd Class	1st Class	2nd Class	1st Class	2nd Class					
Turkish Baths	1747	1512	186	251	504	13	139	41	4393	3881	

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, 1934, 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 Inspec- tion during 1934.
Cleansing and Sewage	...	...			42	81
Streets	...	...	...	...	1	4
Gas	...	...	...	...	2	5
Parks	...	...	...	...	1	8
Cemetery	...	...	...	...	2	9
Waterworks	...	...	...	...	1	2
Education	...	...	...	...	2	5
Total	...	...	...		51	114

During the year six horses were submitted for veterinary examination prior to consideration of purchase by the Cleansing and Sewage 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.

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.												
			M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40
					to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	
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	12	5	7	...	3	5	1	1	1	...	...	...	1	...	...	...
8	Scarlet fever	2	2	...	...	...	...	...	...	...	1	...	1	...	...	...	...
9	Whooping cough	2	1	1	...	1	...	...	...	1	...	...	...	...	...	...	...
10	Diphtheria	11	7	4	...	1	1	1	4	4	...	...	...	...	...	...	...
11	Influenza	27	17	10	1	...	...	...	1	...	1	...	1	4	1	...	...
12	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Erysipelas	10	6	4	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Acute poliomyelitis	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
17	Encephalitis lethargica	5	4	1	...	...	1	...	...	...	...	...	...	...	...	...	...
18	Cerebro-spinal fever	2	1	1	...	1	...	...	...	...	1	...	...	...	...	...	...
19	Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Tetanus	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
23-32	Tuberculosis (all forms):	112	71	41	...	1	...	...	...	2	3	2	14	18	11	10	...
23	Respiratory system	94	64	30	...	...	...	...	...	1	1	2	13	15	10	10	...
24	Central nervous system	3	2	1	...	1	...	...	...	...	2	...	...	...	...	...	...
25	Intestines and peritoneum	7	3	4	...	...	...	...	...	1	...	...	...	3	...	...	...
26	Vertebral column	3	...	3	...	...	...	...	...	...	...	...	...	...	1	...	...
27	Other bones and joints	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
28	Skin and subcutaneous tissues	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Lymphatic system (abdominal and bronchial glands excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Genito-urinary system	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
31	Other organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	Disseminated tuberculosis	2	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...
33	Leprosy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35	Other venereal diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36	Purulent infection, Septicæmia	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
37	Yellow fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	Other diseases due to protozoa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Ankylostomiasis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	Hydatid cysts	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
42	Other diseases due to helminths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	Mycoses	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44	Other infectious or parasitic diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Infectious and Parasitic Diseases...	187	115	72	1	7	7	2	6	8	7	2	16	23	13	1	...
II. Cancer and other Tumours.																	
45-53	Cancer, malignant disease	257	127	130	...	...	...	...	...	...	...	...	...	2	1	1	...
45	Buccal cavity and pharynx	18	15	3	...	...	...	...	...	...	...	...	...	...	1	...	...
46	Digestive organs and peritoneum	127	77	50	...	...	...	...	...	...	...	...	...	...	...	...	...
47	Respiratory organs	20	16	4	...	...	...	...	...	...	...	...	...	...	...	...	...
48	Uterus	22	...	22	...	...	...	...	...	...	...	...	...	...	...	...	...
49	Other female genital organs	9	...	9	...	...	...	...	...	...	...	...	...	1	...	...	...
50	Breast	33	...	33	...	...	...	...	...	...	...	...	...	...	...	...	...
51	Male genito-urinary organs	14	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...
52	Skin	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...
53	Other or unspecified organs	11	4	7	...	...	...	...	...	...	...	...	...	1	...	...	...
54	Non-malignant tumours	7	1	6	1	...	...	...	...	...	...	...	...	...	...	1	...
55	Tumours of undetermined nature	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Cancer and Other Tumours	267	130	137	1	...	...	...	...	...	...	...	...	2	2	1	...

[illegible]

List No.	CAUSES OF DEATH	Total	SEX.		AGE.											35 to 40
			M.	F.	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	18	9	9	...	...	...	...	...	...	3	1	1	2	1	
57	Chronic rheumatism, Osteo-arthritis... ..	8	1	7	...	...	...	...	...	...	...	...	...	...	...
58	Gout ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	Diabetes	19	4	15	...	...	...	...	...	...	...	...	...	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	11	...	11	1	...	...	...	...	...	...	...	...	1	...	
67	Diseases of the thymus ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
68	Diseases of the adrenals ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
69	Other general diseases	1	...	1	...	...	...	...	...	...	...	...	...	...	...
	Total Rheumatism, Diseases of Nutrition and of Endocrine Glands, and Other General Diseases	57	14	43	1	...	...	...	...	...	3	1	1	4	1	
	IV. Diseases of the Blood and Blood-forming Organs.															
70	Hæmorrhagic conditions	3	1	2	...	...	...	...	...	...	...	...	...	...	...
71	Anæmia, Chlorosis	15	5	10	...	1	...	...	...	...	1	...	1	...	...
72	Leukæmia, aleukæmia	6	5	1	...	...	...	...	...	...	...	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	24	11	13	...	1	...	...	...	...	1	1	1	...	...
	V. Chronic Poisoning.															
75	Alcoholism (acute or chronic) ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
76	Chronic poisoning by other organic substances... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
77	Chronic poisoning by mineral substances ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Chronic Poisoning ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	VI. Diseases of the Nervous System and Sense Organs															
78	Encephalitis	6	4	2	...	1	...	...	...	...	...	...	...	1	...	
79	Meningitis	10	4	6	4	...	...	...	...	2	2	...	...	...	...
80	Tabes dorsalis (locomotor ataxy)	1	1	...	...	...	...	...	...	...	...	...	...	...	...
81	Other diseases of the spinal cord	4	3	1	...	...	...	...	...	...	...	...	...	...	...
82	Cerebral hæmorrhage, Apoplexy, etc.	136	56	80	4	...	...	...	...	...	1	...	1	...	...
83	General paralysis of the insane	3	2	1	...	...	...	...	...	...	...	...	...	...	...
84	Other forms of insanity	4	2	2	...	...	...	...	...	...	...	...	...	...	...
85	Epilepsy	10	6	4	...	...	...	...	...	...	...	2	1	...	...
86	Infantile convulsions (age under 5 years)	5	3	2	5	...	...	...	...	...	...	...	...	...	...
87	Other diseases of the nervous system	11	5	6	...	...	...	...	...	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
1	3	...	...	...	...	...	18	...	...	4	2	...	...	1	...	1	2	...	1	...	2	1	2	2
2	2	1	2	...	...	...	8	...	1	2	1	...	...	...	1	...	...	...	2	...	...	1	...	...
4	3	3	4	1	1	...	19	...	...	2	1	...	1	1	2	...	2	2	1	1	2	1	1	2
...
...
...
...
...	2	1	...	...	...	1	10	...	...	2	2	...	1	...	...	...	...	...	...	...	2	1	3	...
...
...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	11	5	6	1	1	1	56	...	1	11	6	...	2	2	3	1	4	2	4	1	6	4	6	4
1	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1
2	2	1	1	...	...	1	14	1	1	2	1	2	1	...	1	...	1	...	...	2	1	...	...	2
1	...	...	...	...	...	...	6	...	...	...	...	...	1	...	1	...	2	1	...	...	...	...	1	...
...
4	2	1	1	...	...	1	23	1	1	2	1	2	2	...	2	...	3	2	...	2	1	1	1	3
...
...
...
...
...	...	...	...	...	...	1	5	...	...	1	1	...	...	...	...	...	...	2	...	1	1	...	...	...
1	...	...	...	...	...	4	6	2	...	4	...	...	...	...	2	...	1	1	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1	...	...	...	...	...	...	4	...	...	...	2	...	...	1	...	...	...	...	...	1	...	...	...	...
30	23	20	18	5	5	4	132	2	8	17	8	3	17	3	16	3	16	2	2	?	17	1	5	9
...	...	...	...	...	...	...	3	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	1	...	...	...	4	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...
1	...	...	...	...	...	...	10	2	1	1	...	...	2	...	1	...	...	...	...	...	2	...	1	...
...	...	...	...	...	...	5	...	...	...	...	...	1	...	...	...	...	...	...	1	1	1	...	...	1
1	1	2	1	...	...	...	11	...	...	...	1	...	...	...	2	...	1	1	1	1	1	...	...	...

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
...	...	...	...	...	1	6	1	1	...	1	...	...	...	1	...	1	...	...	...	...	...	1	1
24	24	20	5	5	15	182	7	11	27	13	4	19	4	23	3	22	6	4	11	23	1	7	12
62	69	51	27	13	1	416	17	21	46	35	9	44	7	31	11	34	19	8	23	50	3	34	25
...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
...	...	...	...	...	1	5	...	...	2	...	...	...	...	...	...	1	...	...	1	1	...	1	...
8	10	9	5	...	...	96	4	4	8	6	3	12	3	4	4	12	5	2	4	10	...	7	8
46	50	37	20	10	...	252	8	15	28	24	6	28	3	20	7	18	9	3	14	33	1	22	13
5	2	3	1	2	...	32	3	1	5	2	...	1	1	1	...	...	2	1	3	4	2	4	2
3	7	2	1	1	...	29	2	1	3	2	...	3	...	6	...	3	2	2	1	2	...	...	2
...	...	...	...	...	...	3	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1
24	39	40	19	12	...	160	7	4	20	12	4	23	10	8	7	8	8	1	6	19	6	8	9
1	2	1	...	1	...	5	...	...	...	1	...	...	...	...	...	...	1	1	...	2	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...
7	3	1	...	...	...	18	...	...	4	1	...	...	2	2	1	1	1	1	...	1	...	...	...
...
94	113	93	46	26	1	604	24	25	70	49	13	68	20	42	19	43	29	11	29	74	12	42	35
...	...	...	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...
13	17	18	5	1	3	82	3	4	19	7	1	6	5	7	2	7	1	1	2	5	4	5	6
7	8	5	4	...	30	87	3	5	28	5	3	14	5	2	6	8	5	3	2	13	2	6	7
2	5	2	2	...	25	35	1	3	16	2	2	7	3	1	2	4	2	3	1	4	1	4	4
2	3	2	2	...	1	46	2	2	8	1	1	6	2	1	3	4	3	...	1	8	1	2	2
3	...	1	...	...	4	6	...	...	4	2	...	1	...	...	1	...	...	...	...	1	...	...	1
2	...	...	...	...	...	5	...	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	1
...	2	...	...	...	1	5	...	...	1	1	...	...	...	...	...	1	...	...	...	...	2	1	...
2	1	1	...	...	...	5	1	...	1	1	...	...	...	1	...	...	1	...	...	...	...	...	...
...
...	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
24	28	24	9	1	34	188	7	9	51	14	4	21	11	12	8	17	7	4	5	18	8	12	14
...	...	...	...	...	3	8	...	...	3	2	...	2	...	1	1	1	...	...	...	...	...	...	1
...
2	1	1	...	...	...	19	1	1	...	2	...	3	2	...	...	2	1	1	1	3	...	1	1
1	1	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	10	5	2	3	5	1	...	...	...	...	...	1	...	...	...	2	...	1	...

1934.

								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
5	...	1	1	22	3	...	3	1	1	4	2	1	...	2	4	1
1	2	3	2	1	17	...	1	8	2	2	...	3	1	...	1	1	2	...	2	...
1	...	...	...	1	...	...	5	...	...	...	...	...	...	1	1	...	...	...	...	1	2	...	...
1	1	1	...	...	...	...	5	...	...	...	...	...	2	...	2	...	1	...	...	...	...	...	...
2	1	1	...	...	...	...	5	...	...	...	...	...	...	1	1	1	...	...	...	1	...	...	1
1	1	...	...	...	...	...	7	...	...	1	...	...	1	...	...	1	2	1	...	...	...	...	1
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
17	9	8	4	1	...	14	98	6	5	17	5	...	11	7	5	7	10	6	4	5	9	2	8	5
17	19	13	8	3	2	...	99	4	4	17	5	...	5	3	6	2	10	4	4	5	12	6	4	8
1	2	...	...	...	...	...	6	...	...	1	...	...	2	...	...	...	2	...	...	...	...	...	...
11	15	10	6	1	2	...	73	3	3	13	4	...	3	3	6	1	6	3	2	2	10	3	4	7
5	2	3	2	2	20	1	1	3	1	1	2	1	2	3	2	3
...	...	...	...	...	1	...	5	...	...	1	1	...	1	...	...	...	...	...	...	...	...	1	1
1	...	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...
...	...	1	...	...	...	...	2	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
3	3	1	3	2	14	2	2	1	2	...	1	3	1	2	...
...	
...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...
21	22	15	11	5	3	...	126	4	4	20	10	...	6	3	9	2	12	6	4	7	15	7	8	9
...	1	1	
...	
...	
...	1	1	
...	1	
...	1	1	
...	1	
...	2	1	1	
...	
...	8	2	2	1	1	2	
...	
...	2	1	1	...	
...	
...	2	1	1	...	

4, 1934.

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[illegible]

List No.	CAUSES OF DEATH.	Total	SEX.		AGE.												
			M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40
					to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45
190	Excessive cold ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
191	Excessive heat ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
192	Lightning ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
193	Electricity (lightning excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
194	Other and unstated forms of accidental violence	4	2	2	...	...	...	...	...	...	...	1	...	...	...	...	...
195	Violent deaths of unstated nature (i.e., accidental, suicidal, etc.)	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
196	Wounds of war	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
197	Execution of civilians by belligerent armies ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198	Execution ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total Deaths from Violence	95	67	28	...	...	1	...	1	3	1	4	5	4	7		
	XVIII Ill-defined Diseases.																
199	Sudden death	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
200	Causes of death unstated or ill-defined	10	1	9	1
	Total Ill-defined Deaths ...	11	1	10	1	1

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1, 1934.

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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	...	...	...	...	...	...	4	...	...	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
...
...
15	11	2	3	2	...	2	93	3	6	10	15	1	6	6	4	1	8	4	...	5	10	3	5	8
...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
3	3	3	...	...	...	...	10	...	...	5	...	...	...	1	...	1	...	...	...	...	...	1	1	1
3	3	3	...	...	...	...	11	...	...	5	...	...	...	2	...	1	...	...	...	...	...	1	1	1

List No.	CAUSES OF DEATH	Total	SEX.		AGE.											
			M.	F.	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
1-44	Infectious and Parasitic Diseases	187	115	72	1	7	7	2	6	8	7	2	16	23	13	12
45-55	Cancer and other Tumours	267	130	137	1	...	...	...	...	...	...	...	...	2	2	10
56-69	Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases	57	14	43	1	...	...	...	...	...	3	1	1	4	1	1
70-74	Diseases of the Blood and Blood-forming Organs...	24	11	13	...	1	...	...	...	...	1	1	1	...	...	1
75-77	Chronic Poisoning...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
78-89	Diseases of the Nervous System and Sense Organs	197	90	107	14	1	...	...	...	5	4	1	3	3	...	7
90-103	Diseases of the Circulatory System	605	292	313	1	...	...	...	...	3	2	5	3	4	6	13
104-114	Diseases of the Respiratory System	222	113	109	14	10	4	3	3	8	1	4	7	5	3	5
115-129	Diseases of the Digestive System	112	61	51	11	1	1	1	...	4	1	1	3	5	6	2
130-139	Non-Venereal Diseases of the Genito-Urinary System and Annexa	126	68	58	...	...	...	...	...	1	...	...	...	4	3	5
140-150	Diseases of Pregnancy, Childbirth and the Puerperal State	8	...	8	...	...	...	...	...	...	...	...	1	4	1	1
151-153	Diseases of the Skin and Cellular Tissue	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...
154-156	Diseases of the Bones and Organs of Locomotion...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
157	Congenital Malformations	19	7	12	19	...	...	...	...	...	...	...	...	...	...	...
158-161	Diseases of Early Infancy	57	29	28	57	...	...	...	...	...	...	...	...	...	...	...
162	Old Age	141	66	75	...	...	...	...	...	...	...	...	...	...	...	...
163-198	Deaths from Violence	95	67	28	...	...	1	...	1	3	1	4	5	4	7	8
199-206	Ill-defined Diseases	11	1	10	1	1
GRAND TOTAL		2131	1065	1066	119	20	13	6	10	32	20	20	41	58	42	65

continued.

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								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	5 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
17	8	6	1	4	...	23	164	5	18	26	8	6	22	12	18	1	18	5	4	9	10	2	11	12
43	49	45	17	5	5	1	266	13	10	27	23	5	23	12	25	6	28	7	7	13	41	4	11	12
7	11	5	6	1	1	1	56	...	1	11	6	...	2	2	3	1	4	2	4	1	6	4	6	4
4	2	1	1	...	...	1	23	1	1	2	1	2	2	...	2	...	3	2	...	2	1	1	1	3
...
34	24	24	20	5	5	15	182	7	11	27	13	4	19	4	23	3	22	6	4	11	23	1	7	12
92	94	113	93	46	26	1	604	24	25	70	49	13	68	20	42	19	43	29	11	29	74	12	42	35
18	24	28	24	9	1	34	188	7	9	51	14	4	21	11	12	8	17	7	4	5	18	8	12	14
17	9	8	4	1	...	14	98	6	5	17	5	...	11	7	5	7	10	6	4	5	9	2	8	5
21	22	15	11	5	3	...	126	4	4	20	10	...	6	3	9	2	12	6	4	7	15	7	8	9
...	...	...	...	...	...	...	8	...	...	2	2	...	...	...	1	...	...	...	...	1	2	...	...	...
...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	19	...	...	1	4	1	...	4	...	1	...	2	...	2	...	2	...	1	1
...	...	...	...	...	...	57	...	3	4	13	6	3	5	...	2	...	4	3	2	5	3	...	3	1
3	15	33	46	24	19	...	141	6	8	28	4	4	13	10	10	4	14	3	1	2	21	1	6	6
15	11	2	3	2	...	2	93	3	6	10	15	1	6	6	4	1	8	4	...	5	10	3	5	8
3	3	3	...	...	...	...	11	...	...	5	...	...	...	2	...	1	...	...	...	...	...	1	1	1
274	272	283	226	102	60	168	1963	80	103	313	157	42	202	90	157	53	185	80	47	95	235	46	123	123

Causes of death	Sex	All Ages	0—	1—	2—	3—	4—	5—	6—	7—	8—	9—	10—	11—	12—
ALL CAUSES	M	1079	60	10	13	34	38	50	72	121	243	274	164		
	F	1063	59	11	15	19	22	51	81	97	198	283	227		
Typhoid and paratyphoid fevers ...	M	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	M	5	...	2	2	...	...	1	...	...	...	...	...	...	...
	F	7	...	1	5	1	...	...	...	...	...	...	...	...	...
Scarlet fever	M	2	...	...	...	1	1	...	...	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping cough	M	1	...	...	...	1	...	...	...	...	...	...	...	...	...
	F	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	M	7	...	...	3	4	...	...	...	...	...	...	...	...	...
	F	4	...	1	2	1	...	...	...	...	...	...	...	...	...
Influenza	M	19	1	...	1	...	1	3	...	5	6	1	1	...	...
	F	13	...	...	...	2	...	2	1	2	4	2	...	...	...
Encephalitis lethargica	M	4	...	...	1	...	...	...	1	1	1	...	...	...	...
	F	2	...	...	...	...	...	1	...	...	1	...	...	...	...
Cerebro-spinal fever	M	1	...	...	...	1	...	...	...	...	...	...	...	...	...
	F	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of respiratory system...	M	64	...	...	...	1	9	15	9	14	11	4	1	...	...
	F	30	...	...	...	1	6	10	7	1	2	3	...	...	...
Other tuberculous diseases	M	7	...	1	...	2	1	1	...	...	2	...	...	...	...
	F	11	...	...	...	1	...	3	2	3	1	1	...	...	...
Syphilis	M	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	F	1	...	...	...	...	...	...	...	1	...	...	...	...	...
General paralysis of the insane, tabes dorsalis	M	3	...	...	...	...	...	...	1	...	1	1	...	...	...
	F	2	...	...	...	...	...	...	...	...	2	...	...	...	...
Cancer, malignant disease	M	128	...	...	...	...	...	1	10	15	40	51	11	...	...
	F	132	...	...	...	...	...	2	13	20	38	44	15	...	...
Diabetes	M	6	...	...	...	...	...	1	...	...	2	2	1	...	...
	F	23	...	...	...	...	...	...	1	2	6	8	6	...	...
Cerebral hæmorrhage, &c	M	55	...	...	...	...	...	...	4	5	17	21	8	...	...
	F	75	...	...	...	...	...	1	...	7	22	25	20	...	...
Heart disease	M	223	...	...	...	1	7	4	7	27	63	73	41	...	...
	F	242	...	...	...	1	4	9	17	21	47	78	65	...	...
Aneurysm	M	4	...	...	...	...	...	...	...	3	1	...	...	...	...
	F	3	...	...	...	...	1	...	...	...	2	...	...	...	...
Other circulatory diseases	M	80	...	...	...	...	...	...	2	2	16	32	28	...	...
	F	66	...	...	...	...	...	...	...	1	9	25	31	...	...
Bronchitis	M	35	1	...	...	...	...	...	...	6	8	10	10	...	...
	F	38	1	...	1	...	1	1	...	3	4	15	12	...	...
Pneumonia (all forms)	M	59	4	6	4	6	5	3	6	9	6	7	3	...	...
	F	57	7	5	5	2	3	2	6	7	9	7	4	...	...
Other respiratory diseases	M	10	...	...	...	2	1	1	3	...	...	3	...	...	...
	F	6	...	...	...	...	1	...	...	2	...	2	1	...	...
Peptic Ulcer	M	16	...	...	...	...	1	2	2	2	5	3	1	...	...
	F	3	...	...	...	...	...	...	...	1	1	...	1	...	...
Diarrhoea, etc.	M	5	4	...	...	...	...	1	...	...	...	...	...	...	...
	F	8	5	1	...	...	...	1	...	1	...	...	...	...	...
Appendicitis	M	11	...	...	...	2	2	1	2	1	3	...	...	...	...
	F	10	...	...	...	...	1	1	1	3	2	1	1	...	...
Cirrhosis of liver	M	2	...	...	...	...	...	...	...	...	1	1	...	...	...
	F	4	...	...	...	...	...	...	...	1	1	2	...	...	...
Other diseases of liver, etc	M	4	...	...	...	...	...	1	...	...	2	...	1	...	...
	F	9	...	...	...	...	...	...	...	3	4	2	...	...	...
Other digestive diseases	M	24	2	...	1	1	...	4	...	3	9	2	2	...	...
	F	20	2	...	1	2	...	1	4	3	1	5	1	...	...
Acute and chronic nephritis	M	51	...	...	...	1	...	2	5	7	12	17	7	...	...
	F	47	...	...	...	...	...	3	5	3	14	15	7	...	...
Puerperal sepsis	F	2	...	...	...	...	...	1	1	...	...	...	...	...	...
Other puerperal causes	F	5	...	...	...	...	1	3	1	...	...	...	...	...	...
Congenital debility ; premature birth, malformations, etc.	M	42	42	...	...	...	...	...	...	...	...	...	...	...	...
	F	38	38	...	...	...	...	...	...	...	...	...	...	...	...
Senility	M	62	...	...	...	...	...	...	...	...	2	25	35	...	...
	F	66	...	...	...	...	...	...	...	...	1	21	44	...	...
Suicide	M	27	...	...	...	...	1	3	2	5	7	8	1	...	...
	F	4	...	...	...	...	...	...	1	1	1	1	...	...	...
Other violence	M	42	...	...	1	3	6	4	7	4	11	3	3	...	...
	F	34	...	...	1	1	1	4	5	3	5	4	10	...	...
Other defined diseases	M	78	6	1	...	8	3	2	10	12	17	10	9	...	...
	F	93	6	1	...	7	3	6	16	8	20	17	9	...	...
Causes ill-defined or unknown	M	2	...	...	...	...	...	...	1	...	...	...	...	...	...
	F	6	...	...	...	...	...	...	...	...	1	5	...	...	...



