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Westmorland County Council.

ANNUAL REPORT

OF THE

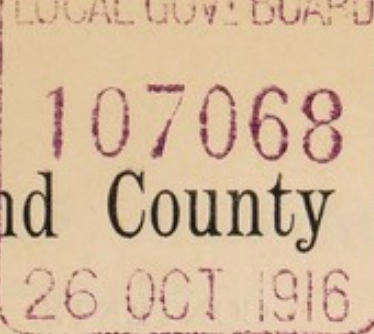
Medical Officer of Health.

THE YEAR 1915.



Atkinson and Pollitt, Printers, Kendal.





Westmorland County Council.

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Table A : Showing Deaths in each District of the County classified according to diseases.

Table B : Showing number of cases of infectious disease notified in each District of the County.

COUNTY OF WESTMORLAND.

Public Health and Housing Committee of the County Council.

Chairman : Mr. J. C. HAMILTON.

MESSRS. J. W. WESTON. M.P.,

G. M. BECK,

F. W. CREWDSON,

R. W. DENT,

J. G. GANDY,

G. GILKES,

R. P. HUNTER,

H. P. MASON,

A. J. MACCALLUM,

W. H. MUSGROVE,

W. S. PAGET-TOMLINSON,

J. PARKIN,

G. H. PATTINSON,

J. A. PATTINSON,

D. J. PENNINGTON,

H. A. T. SHEPHERD,

ED. THOMPSON,

R. B. THOMPSON,

S. WOOD.

District Medical Officer of Health.

<i>Name.</i>			<i>Urban District.</i>
W. BARON COCKILL, M.D., D.P.H.		...	AMBLESIDE.
"	"	"	... APPLEBY.
"	"	"	... GRASMERE.
"	"	"	... KENDAL.
"	"	"	... KIRKBY LONSDALE.
"	"	"	... SHAP.
"	"	"	... WINDERMERE.
			<i>Rural Districts.</i>
"	"	"	... EAST
			WESTMORLAND.
"	"	"	... SOUTH
			WESTMORLAND.
"	"	"	... WEST WARD.

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*To the Chairman and Members of the Public Health and
Housing Committee.*

Gentlemen,

I have the honour to submit my Fifth Annual Report, which deals with the Calendar Year 1915.

Main Features of the Year's Work.

On the outbreak of war, Lieut.-Colonel Cockill, T.D., R.A.M.C. (T.F.), the Medical Officer of Health for the Westmorland Combined Districts, was called up for military duty. With the sanction of the County Council, and the approval of the Local Government Board, I undertook to supervise the work during his absence. To this end I was appointed Deputy Medical Officer of Health for the Combined Districts. Colonel Cockill secured the services of Mr. H. W. G. Macleod, M.D., M.R.C.P., B.Sc., D.P.H., Barrister-at-Law, as temporary Assistant Medical Officer of Health. Mr. Macleod acted in this capacity from June, 1915, to the end of November, 1915.

From January, 1915, to the end of May, 1915, Colonel Cockill was stationed in Kendal, training a Casualty Clearing Station, when any spare time he had was spent at his Health Office.

The present Report is designedly as brief as possible in view of war conditions, which call for economy in time spent in preparing reports, and in cost of printing.

A considerable number of troops have been billeted in the County. Their health has been excellent. There has been close and constant co-operation between the Military Medical Officers and the Public Health Service. A welcome visit of inspection, as to camp sanitation and billeting arrangements, was paid by Dr. Macewen of the Local Government Board.

A somewhat serious outbreak of Enteric Fever, involving 24 cases and one death, occurred in Kendal from 27th September, 1915, to 4th November, 1915. (See p. 18).

The Notification of Births Extension Act, 1915, came into force on 1st September, 1915. By this Act every birth must now be notified, within 36 hours, to the Medical Officer of Health.

For years past there has been an annual casualty list of over 100,000 infants in England and Wales. It has taken a world war, with its slaughter of fathers, and potential fathers, to awaken the country to this sacrifice of our reinforcements for the years to come. (See p. 11).

The Public Health (Measles and German Measles) Regulations, whereby these diseases became universally notifiable, came into force on January 1st, 1916. Work under these regulations falls to be recorded in the Report for 1916. Notification will help parents to realise that Measles is a serious thing for children under 5 years of age, and should be treated as such.

Vital Statistics.

SUMMARY OF VITAL STATISTICS.

	1911.	1912.	1913.	1914.	1915.
*Birth Rate	... 19.6 ...	20.36...	18.18	...17.63..	17.41
†Infantile Mortality Rate	... 84 ...	69	...107	...67	74
*Nett Death Rate	...13.10 ...	12.15...	13.41	...11.97...	12.01
*Phthisis Death Rate	... 0.81 ...	0.55...	0.58	... 0.44...	0.59
*Cancer Death Rate	... 1.07 ...	1.25...	1.38	... 1.24...	1.10

*Rates calculated per 1000 living.

†Rates calculated per 1000 registered births.

POPULATION.

In the following Table the population of the Administrative County, as estimated by the Registrar General, is set out and compared with the figures contained in the 1911 Census :—

DISTRICT.	Area in Acres: (Land and Inland Water).	POPULATION.	
		1911 Census.	1915. Estimated by Registrar General
URBAN.			
Ambleside ...	4,424	2,553	2,230
Appleby	1,876	1,736	1,702
Grasmere ...	7,332	876	770
Kendal	2,622	14,033	13,194
Kirkby Lonsdale	3,254	1,524	1,377
Shap	2,082	1,006	950
Windermere ...	9,907	5,147	5,381
RURAL.			
East Westmorland	183,154	11,151	10,980
South Westmorland	170,810	19,116	17,909
West Ward ...	119,869	6,433	6,248
Totals ...	505,330	63,575	60,741

In a war year it is impossible accurately to estimate the population. This fact has to be borne in mind when considering the death-rate and the birth-rate. It is against the population figure that we match our births and deaths. If uncertainty exists as to that figure, then the rates founded on it have little value or significance. Furthermore the population figure is reduced by that section of the community which is most stable and healthy, namely, the men with the Colours.

The following table gives the Birth Rates, the Recorded Annual Death Rates per 1,000 from all causes, and from the several Epidemic Diseases during the year 1915; also the Infantile Mortality Rates during 1915.

	ANNUAL RATES PER 1,000 LIVING.										RATE PER 1000 BIRTHS.	
	Births.	DEATHS.		Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Diar- rhea and Enteritis (under 2 years).	Total deaths under one year.	
		Crude.	Cor- rected.									
England and Wales	21·8	15·1	14·8	0·04	0·00	0·43	0·06	0·21	0·15	18·18	110	
96 Great Towns ...	22·8	15·6	15·9	0·04	0·00	0·50	0·07	0·23	0·16	24·48	117	
148 Smaller Towns	21·6	14·0	14·2	0·04	0·00	0·52	0·06	0·22	0·15	17·15	114	
England and Wales (Rural)	20·7	14·8	13·6	0·04	0·00	0·32	0·05	0·19	0·14	9·79	98	
Westmorland ...	17·41	13·9	12·46	0·04	0·00	0·13	0·01	0·21	0·09	2·83	74	

Birth Rate.

BIRTH RATE PER 1,000 POPULATION.

DISTRICT.	No. of Births 1915	Birth Rate 1915.	Birth Rate 1914	Birth Rate 1913.	Birth Rate 1912	Birth Rate 1911
URBAN.						
Ambleside ...	24	10.76	11.35	14.80	12.92	14.8
Appleby ...	43	25.26	22.46	23.61	16.12	24.7
Grasmere ...	11	14.28	18.26	10.26	23.97	11.4
Kendal ...	242	18.34	20.95	20.73	22.73	21.1
Kirkby Lonsdale ...	21	15.25	15.30	15.30	15.30	17.6
Shap ...	16	16.84	22.89	23.89	20.87	17.9
Windermere ...	71	13.19	14.76	13.98	18.84	17.8
RURAL.						
East Westmorland	203	18.48	20.08	21.15	24.21	20.9
South Westmorland	323	18.03	15.26	15.32	18.83	18.7
West Ward ...	104	16.67	16.32	18.49	18.34	21.1
Westmorland ...	1058	17.41	17.63	18.18	20.36	19.6
England and Wales (Rural)		20.7	21.9	23.30	22.50	23.4

With the notable exception of Appleby, the 1915 Birth-rate is below that of England and Wales (Rural). To an uncertain extent war conditions affect this rate, but these conditions are not a County factor alone; they are a national one.

When the data available have been scrutinised, and all the recognised fallacies eliminated, we have to face the fact that the Westmorland fertility rate continues to be less than that of England and Wales. The significance of this will be seen when we come to consider Infant Mortality.

Death Rate.

NETT DEATH RATE PER 1,000 POPULATION.

DISTRICT.	No. of Deaths 1915	Death Rate 1915.	Death Rate 1914.	Death Rate 1913	Death Rate 1912.	Death Rate 1911
URBAN.						
Ambleside ...	31	13.9	15.66	9.01	12.92	9.39
Appleby ...	18	10.5	9.27	11.52	9.27	12.67
Grasmere ...	9	11.6	11.41	7.98	11.41	12.55
Kendal ...	197	14.9	12.61	15.67	13.32	15.60
Kirkby Lonsdale ...	9	6.5	16.00	10.00	5.30	11.81
Shap ...	16	16.8	15.9	13.91	12.92	8.94
Windermere ...	57	10.5	11.26	14.57	11.26	10.68
RURAL.						
East Westmorland	167	15.2	12.45	14.91	12.64	13.72
South Westmorland	282	15.7	9.88	11.35	10.92	12.60
West Ward ...	84	13.4	14.29	14.76	15.23	12.59
Westmorland ...	870	13.9	11.97	13.41	12.15	13.10
England and Wales (Rural)		15.1	13.30	13.10	12.90	13.93

The total deaths belonging to the Administrative County numbered 870 in 1915, as compared with 761 in 1914.

On comparing the deaths at various ages, it is found that, whereas in 1914, 354 persons over 65 years died, in 1915, 446 died, or an increase of 92.

This mortality among the elderly is most conspicuous in the Rural Districts of East and South Westmorland; in the former there is an increase of 33, in the latter of 66.

Infantile Mortality.

DEATHS OF INFANTS UNDER ONE YEAR.

DISTRICT.	No. of Deaths under 1 year in 1915.	Infant Death Rate per 1000 Births in 1915.	Infant Death Rate per 1000 Births in 1914.	Infant Death Rate per 1,000 Births in 1913.	Infant Death Rate per 1,000 Births in 1912.	Infant Death Rate per 1,000 Births in 1911.
URBAN.						
Ambleside ...	2	83	34	105	30	52
Appleby ...	1	23	179	48	0	93
Grasmere ...	1	90	0	0	47	0
Kendal ...	18	74	61	158	78	107
Kirkby Lonsdale ...	1	47	43	0	86	115
Shap ...	2	125	83	125	47	55
Windermere ...	7	98	78	13	61	32
RURAL.						
East Westmorland	17	83	93	101	77	89
South Westmorland	19	58	37	82	47	81
West Ward ...	11	105	85	159	135	80
Westmorland ...	79	74	67	107	69	84
England and Wales (Rural) ...		98	93	96	86	88

The following is an analysis of the causes of deaths of Infants :—

DEATHS OF INFANTS UNDER ONE YEAR IN EACH DISTRICT CLASSIFIED
ACCORDING TO DISEASES.

DISTRICT.	Whooping Cough	Bronchitis	Pneumonia (all forms)	Meningitis.	Congenital Malformations.	Premature Birth	Atrophy, Debility, and Marasmus.	Convulsions.	Enteritis.	Other Causes.	TOTALS
URBAN.											
Ambleside	-	-	1	-	-	-	-	-	-	1	2
Appleby ...	-	-	-	-	1	-	-	-	-	-	1
Grasmere	-	-	1	-	-	-	-	-	-	-	1
Kendal ...	4	1	2	1	1	1	2	1	2	3	18
Kirkby Lonsdale	-	-	-	-	-	1	-	-	-	-	1
Shap	-	-	-	-	-	-	1	-	-	1	2
Windermere	2	-	2	-	-	1	-	-	-	2	7
RURAL.											
East Westmorland	1	4	-	-	1	6	-	-	1	4	17
South Westmorland	1	-	3	1	1	2	5	4	-	2	19
West Ward ...	1	-	2	-	1	5	-	-	-	2	11
TOTALS	9	5	11	2	5	16	8	5	3	15	79

The County Infantile Mortality figure (deaths of infants under one year per 1,000 births) for 1915 is 74, while that for Rural England and Wales is 98.

A widespread interest in Infant Welfare work is manifest throughout the County. Many meetings of mothers have been convened in various localities to consider this question. I gladly take this chance to thank the ladies who made the local arrangements which enabled me to address the mothers on the "Save the Babies" campaign. My thanks are specially due to the members of the Mothers' Union.

In the District Health Reports much attention is given to this subject. Many District Health Authorities have appointed Health Visitors, and already useful work is being done.

Your Committee, too, has kept a close watch on Infant Welfare work. The following report was submitted to your Committee:—

NOTIFICATION OF BIRTHS (EXTENSION) ACT, 1915.

PROVISION OF HEALTH VISITORS.

Report by County Medical Officer, 17th February, 1916.

To the Chairman and Members of the Public Health and Housing Committee.

Gentlemen,

I have the honour to report that the various Nursing Associations throughout the County—14 in all—are deeply interested in the objects and aims of the above Act, and that they are willing to allow their Nurses to act as Health Visitors under the Act in return for an annual payment.

Further, these Nurses, where available, make excellent Health Visitors under the Act: they know the needs of their respective Districts, and are known of the mothers.

The question resolves itself into this: who is going to pay the Nursing Associations for the part-time services of their Nurses? Are the District Councils—who are primarily charged with the duty of carrying out the provisions of the Act—to do it, or is it to be done by the County Council under a County Scheme?

To ascertain the needs and secure the co-operation of the District Councils, the Clerk was requested by your Committee to communicate with the various District Councils as to what measures they had taken, or propose to take, under the Act. As a result of the replies received by the Clerk, and subsequent enquiry by myself, I herewith submit the following statement of what has been done, or is proposed to be done, by the various District Councils:—

Name of District Council.	Action taken by the District Council.
Ambleside ...	... Local District Nurse appointed by local Council as Health Visitor.
Appleby ...	... Local District Nurse appointed by local Council as Health Visitor.
Grasmere ...	... Local District Nurse appointed by local Council as Health Visitor.
Kendal ...	... Notification of Births Act, 1907, adopted in 1909, and Health Visitor appointed.
Kirkby Lonsdale	... District Council proposes appointing District Nurse.
Shap ...	... No Nurse available. Waiting to see what County Council proposes.
Windermere	... Windermere and Bowness Nurses to be employed by District Council for 3 months as a trial.
East Westmorland	... Waiting to see what County Council proposes to do.
South Westmorland	... If the other Rural districts will themselves undertake the provision of Health Visiting in their areas, the District Council is prepared to provide Health Visiting; if not, the District Council looks to a County Scheme.
West Ward ...	... Waiting to see what the County Council proposes to do.

The problem of the provision of Health Visitors in the Urban areas is a comparatively simple one. It is otherwise in the Rural districts. In the West Ward and East Westmorland Rural Districts there are large tracts where no district Nurses are available.

If the ground is to be covered, whole-time Health Visitors, at least one in each of these Rural Districts, will have to be appointed either by the District Councils or by the County Council.

Were such whole-time Health Visitors appointed, they could act also as School Nurses, and as Health Visitors under the Sanatorium Benefit Scheme. The cost might be shared between the District Council and the County Council, the former being responsible for Health Visiting under the Notification of Births Act, the latter for school work and Tuberculosis Visiting, 50 per cent. of the whole outlay being refunded by the Treasury.

I am,

Your obedient Servant,

W. E. HENDERSON,
County Medical Officer of Health.

KENDAL.

The Kendal Urban Authority adopted the Notification of Births Act in 1909.

In his Annual Report for 1915 the Medical Officer states :—

“ As this rate is founded on figures accurately known, viz., the number of deaths of infants under one year per 1,000 births, we can usefully comment on it.

“ The infantile mortality rate is the ratio of coffins to cradles.

“ Fifty-two fewer babies were born in Kendal in 1915 than in 1914, and yet the same number of babies died in 1915 as in 1914, viz., 18. Whereas the infantile mortality figure was 61 in 1914, it was 75 in 1915.

“ With fathers facing death in France, with fewer babies being born in Kendal, we simply cannot afford to let these infants slip through our hands. We must meet the sacrifice of life abroad by saving those who need not die at home.

“ Every year in England and Wales, 100,000 babies perish before they are a year old. It is well within the mark to state that at least 50,000 of them need never have died at all.

“ One of the horrible things of this war is that we are getting accustomed to casualty lists in the newspapers. What of that other casualty list which has gone on year after year? Our reinforcements for the future are dying at the rate of 100,000 per annum. Accordingly, the Notification of Births Act has been made universally compulsory. Grasping the significance of this Act in the days when it was a permissive Act, your Council adopted it in 1909, and instituted Health Visiting.

“ In fighting infant mortality, education is all important. The instruction which the older girls from the elementary schools re-

ceive at the Home Training Centre is of first class importance. As part of their training, they are taught by the Health Visitor infant management and simple home nursing. The instruction given by Nurse Kneale is very real and practical.

“Useful work is being done voluntarily by the Ladies’ Committee of the Soldiers’ and Sailors’ Families Association. As part of their work, they conduct a Babies’ Welcome.

“Your Medical Officer hopes, so soon as he is free from military duty, to start a Town’s Infant Welfare Scheme on a wide basis, and to co-ordinate the work done at the Home Training Centre with the proposed Infant Welfare Scheme.”

WINDERMERE.

The Health Committee of this Urban District has gone very thoroughly into the matter. They have appointed an efficient and keen Ladies’ Committee, representative of all interests. This committee has interested the mothers in the scheme, and supports in every way the efforts of the two Health Visitors appointed by the Urban Council. Meetings of mothers are held from time to time, and a house, suitably furnished, has been rented, where a Babies’ Welcome is conducted.

CANCER DEATH RATES.

DISTRICT.	No. of Deaths in 1915.	Rates per 1000 in 1915.	Rates per 1000 in 1914.	Rates per 1000 in 1913.	Rates per 1000 in 1912.	Rates per 1000 in 1911.
URBAN.						
Ambleside ...	5	2.24	1.17	0.78	2.35	0.78
Appleby ...	1	0.58	0.57	—	2.88	3.45
Grasmere ...	1	1.29	1.14	—	2.28	—
Kendal ...	9	0.68	1.28	1.21	0.85	1.35
Kirkby Lonsdale	—	—	1.33	1.31	0.66	—
Shap ...	1	1.05	0.99	1.98	1.98	0.90
Windermere ...	5	0.94	1.35	2.33	1.35	1.77
RURAL.						
East Westmorland	10	0.91	1.25	1.61	1.34	0.62
South Westmorland	23	1.28	0.99	1.46	1.04	0.99
West Ward ...	12	1.92	2.01	1.08	1.55	1.55
Westmorland	67	1.10	1.24	1.38	1.25	1.07

England.	London.	Administrative Counties (excluding London).	Rural Districts of England.	Westmorland.
2.93	2.57	2.77	2.47	2.77
3.51	3.82	2.96	2.61	1.78
4.38	2.54	3.87	3.42	1.88
3.23	3.94	3.32	3.14	1.79
1.24	1.57	1.10	1.00	1.70
1.39	1.70	1.26	1.03	1.91
1.60	2.02	1.23	1.32	1.36
1.52	2.11	1.40	1.22	0.40
0.23	0.16	0.22	0.18	0.03
0.22	0.17	0.22	0.18	0.08
0.23	0.17	0.23	0.20	0.21
0.18	0.14	0.17	0.14	0.23
0.06	0.08	0.02	0.04	0.00
0.02	0.08	0.04	0.03	0.03
0.06	0.09	0.02	0.04	0.02
0.06	0.06	0.04	0.04	0.02
0.62	0.91	0.23	0.42	0.22
0.64	0.92	0.22	0.43	0.71
0.74	1.10	0.29	0.47	0.66
0.07	0.89	0.26	0.46	0.26
0.01	0.02	0.01	0.01	0.03
0.01	0.02	0.01	0.01	0.00
0.08	0.14	0.07	0.07	0.02
0.02	0.03	0.02	0.01	0.12
0.01	0.02	0.01	0.01	0.01
0.02	0.02	0.02	0.01	0.01

Sickness Rates per 1,000 of the Population.

Disease	Year.	England and Wales (including ports).	England.	London.	English Administrative Counties (excluding London).	Rural Districts of England.	Westmorland.
Scarlet Fever ...	1912	2.98	2.95	2.57	2.77	2.47	2.77
	1913	3.58	3.51	3.89	2.96	2.61	1.78
	1914	4.47	4.38	5.54	3.87	3.45	1.88
	1915	3.59	3.53	3.94	3.32	3.14	1.79
Diphtheria ...	1912	1.24	1.24	1.57	1.10	1.00	1.70
	1913	1.39	1.39	1.70	1.26	1.03	1.91
	1914	1.61	1.60	2.02	1.53	1.32	1.36
	1915	1.52	1.52	2.11	1.40	1.25	0.40
Enteric Fever ...	1912	0.23	0.23	0.16	0.22	0.18	0.03
	1913	0.23	0.22	0.17	0.22	0.18	0.08
	1914	0.24	0.23	0.17	0.23	0.20	0.21
	1915	0.18	0.18	0.14	0.17	0.14	0.53
Puerperal Fever	1912	0.06	0.06	0.08	0.05	0.04	0.00
	1913	0.05	0.05	0.08	0.04	0.03	0.03
	1914	0.06	0.06	0.09	0.05	0.04	0.05
	1915	0.06	0.06	0.06	0.04	0.04	0.05
Erysipelas ...	1912	0.63	0.65	0.91	0.53	0.45	0.52
	1913	0.63	0.64	0.92	0.52	0.43	0.71
	1914	0.73	0.74	1.10	0.59	0.47	0.66
	1915	0.66	0.67	0.89	0.56	0.46	0.56
Cerebro-spinal Fever	1913	0.01	0.01	0.02	0.01	0.01	0.03
	1914	0.01	0.01	0.02	0.01	0.01	0.00
	1915	0.07	0.08	0.14	0.07	0.07	0.05
Poliomyelitis ...	1913	0.02	0.02	0.03	0.02	0.01	0.15
	1914	0.01	0.01	0.02	0.01	0.01	0.01
	1915	0.01	0.02	0.02	0.02	0.01	0.01

Infectious Disease.

In his Annual Report for 1915 on "Statistics of the Incidence of Notifiable Infectious Diseases," the Medical Officer of the Local Government Board presents valuable data which help us to realise how this County compares with other areas.

In the attached Table the sickness rates for Westmorland are contrasted with those for other areas :—

On Table B (see appendix) will be found an analysis of the infectious diseases notified in the various Districts during 1915, together with the number of cases removed to isolation hospitals.

SCARLET FEVER.

The total number of cases of Scarlet Fever notified in the County during 1915 was 111, as against 121 in 1914. During the last 5 years, 1911-1915 inclusive, 668 cases were notified, giving a yearly average of 133.6.

DIPHTHERIA.

The total number of cases notified in 1915 was 27, as against 93 in 1914, and 131 in 1913. During the last 5 years 431 cases were notified, yielding a yearly average of 86.

Thus it will be seen that this County was comparatively free from this disease in 1915. This is all the more gratifying as in former years the Westmorland incidence of Diphtheria was above the average of the Rural Districts of England, while for 1915 the rates per 1,000 of population are :—Westmorland 0.40, Rural Districts of England 1.25.

ENTERIC FEVER.

In 1915 the total number of cases notified in the County was 33. In 1914, 15 cases; in 1913, 4 cases; in 1912, 1 case; and in 1911, 22 cases were notified, making a total of 75 cases, or an average for that period of 15 cases per annum.

On consulting Table (p. 17) it will be seen that the County Enteric Fever sickness rate, 1915, is considerably above that of the English Administrative Counties. This is accounted for by the occurrence of two outbreaks, a somewhat serious one at Kendal, involving 24 cases with one death, and a smaller one of 8 cases in the Rural District of South Westmorland.

ENTERIC FEVER IN KENDAL.

27th September to 4th November, 1915.

The circumstances connected with this outbreak formed the subject of special reports, submitted by me, as Acting Medical Officer of Health for the Borough of Kendal, to the Kendal Health Committee, and to the Local Government Board; and as these reports cover the ground, I reproduce them here, together with reports furnished by the Assistant Medical Officer of Health, and the Sanitary Inspector.

“ OUTBREAK OF ENTERIC FEVER IN KENDAL.

“ *Interim Report by Acting Medical Officer of Health, to the Health Committee of the Borough of Kendal.*

“ October 22nd, 1915.

“ Gentlemen,

“ I have to report that from 27th September, 1915, to 22nd October, 1915, 21 cases of Enteric Fever have been notified as occurring within the Borough of Kendal.

“ One case was notified from Kirkby Lonsdale Urban District. As this patient probably contracted Enteric Fever in Kendal we include this case in our survey, making in all 22 cases.

“ AREAS AFFECTED.

“ The area first affected was Greenside, where one case was notified.

“ The following list includes the areas involved :—

<i>Name of Area.</i>	<i>No. of cases notified.</i>		
Greenside	...	...	1
Beast Banks	...	...	4
Fellside	...	...	6
Captain French Lane	...	...	3
Bishop Yard	...	...	2 (one house)
Stricklandgate	...	...	2
Queen's Road	...	...	1
German's Yard	...	...	1
Chapel Lane	...	...	1
Lound	...	...	1

“ AGES OF PATIENTS.

“ With the exception of 2 cases, the ages ranged from 5 to 15 years.

“ Of the cases within school age (16 in number) 14 attend Central Schools on Beast Banks.

“ One school-child who does not attend Central Schools has a brother who does, and this brother is suffering from Enteric Fever.

“ With the exception of one case (Queen's Road case) all the cases notified from districts at some distance from Fellside area are school children attending Central Schools.

“ INVESTIGATIONS AS TO PROBABLE SOURCE OF INFECTION.

“ No common factor can be found in the milk consumed by the patients, nor in food, tinned foods, shell-fish or ice-cream.

“ The factor, certain in 20 of the cases, and probable in the other 2, is the drinking of the horse-spout water as it discharges into a horse-trough, through the wall bounding the Central Schools.

“ During the investigations carried out by the Assistant Medical Officer of Health and the Sanitary Inspector, in respect of the first 3 cases, suspicion fell on the horse-spout water.

“ Samples of the horse-spout water and of the Town's supply at the houses of the first and second cases were taken on October 1st for preliminary bacteriological examination. All three samples were found by Mr. Vogt to contain *B. Coli Communis* in 5 c.c.

“ In conference with the Chairman of the Health Committee, it was decided to take a sample of Town's water, remote from the affected area. A sample was taken on 5th October from High-field (Kendal Green). It was found to contain *B. Coli Communis* in 10 c.c.

“ A warning notice was affixed near the horse-spout water supply on 5th October, and access to this supply was boarded up on 7th October.

“ On October 7th the Chairman of the Health Committee, the Acting Medical Officer of Health, the Assistant Medical Officer of Health, the Sanitary Inspector, and the Water Engineer inspected Fisher Tarn, Upper Birds Park Reservoir, Lower Birds Park Reservoir, and the gathering grounds between Fisher Tarn and Upper Birds Park Reservoir. Samples of water were taken from Fisher Tarn, Upper Birds Park Reservoir, Lower Birds Park Reservoir and from the horse-spout.

“ These samples were conveyed to the Public Health Laboratories, Manchester, by the Acting Medical Officer of Health, who in person laid the facts of the outbreak before Dr. Sidebotham, acting for Professor Delepine.

“ The same night (October 8th) samples from Fisher Tarn, Upper Birds Park Reservoir, Lower Birds Park Reservoir, and the horse-spout were collected in special apparatus for bacteriological examination. The specimens were taken to the Public Health Laboratory, Manchester, by the Sanitary Inspector. Meantime, the Assistant Medical Officer of Health, and the Sanitary Inspector investigated the probable course of the horse-spout supply. The course of this supply was tapped as it passed below the school-yard of the Boys' School. The school drains were next tested

to see if they were leaking into this water course. They were found to be water-tight.

“Next the sewer in Cliff Terrace was investigated. Water, coloured with dye, was poured into the sewer. This dye-coloured water was seen at the point where the horse-spout course had been tapped in the boys’ playground, and was also found discharging at the horse-spout into the horse-trough.

“RESULTS OF WATER ANALYSES MADE AT THE PUBLIC HEALTH LABORATORIES, MANCHESTER.

“These were telephoned through from Manchester to save time :—

Fisher Tarn.—Water was found to be good, B. Coli in 100 c.c., none in 15 c.c.

Upper Birds Park Reservoir.—Not good, B. Coli in 3 c.c.

Lower Birds Park Reservoir.—Good, B. Coli in 100 c.c., none in 15 c.c.

Horse-spout.—Very bad, very serious pollution, B. Coli in 100th of a c.c.

“These results were communicated at once to a meeting at which were present :—The Chairman of the Health Committee, the Chairman of the Gas and Water Committee, the Acting Medical Officer of Health, the Assistant Medical Officer of Health, the Sanitary Inspector, and the Water Engineer.

“OTHER ACTION TAKEN.

“All cases isolated in Sanatorium.

“Premises disinfected and disinfectants supplied.

“Co-operation with Kendal doctors—the Widal blood test used in majority of cases and in many suspected cases.

“Visits to Schools and rounding up of absentees by Medical Officers, Attendance Officer, and School Nurse. Search for ‘missed’ cases

“Military Medical Officer informed from time to time.

“Local Government Board also kept informed.

“Sewers and drains in affected areas specially flushed and cleansed.

“Special precautions taken to disinfect and cleanse the latrines at Central Schools.

" All public water supplies, other than the Town's supply, have also been inspected by the Sanitary Inspector (see below).

" PROGRESS OF PATIENTS.

" I regret to report that one has died. Five are now convalescent; the rest are making satisfactory progress.

" RECOMMENDATIONS.

" 1. That the sewer on Cliff Terrace be taken up and replaced by a new sewer, and, if possible, at the same time, that the course of the horse-spout water be further investigated.

" 2. That the horse-spout supply be permanently discontinued.

" 3. That the horse-trough be supplied with water from the Town's supply.

" 4. That the owner of 3 houses which at present have horse-spout water piped to these houses, be directed to instal a water supply from the Town's supply, and that the present supply from the horse-spout be discontinued.

" 5. That owing to the possibility of pollution reaching the Upper Birds Park Reservoir, because the gathering ground of this reservoir is in part cultivated land, the Upper Birds Park Reservoir be closed as one of the sources of supply to the Corporation Water Supply, and that the mains be fed direct from Fisher Tarn through a break-pressure valve.

" (Signed) W. E. HENDERSON,

" Acting Medical Officer of Health."

Concluding Report by Acting Medical Officer of Health to the Health Committee of the Borough of Kendal.

" December 17th, 1915.

" Gentlemen,

" In the detailed Report which I submitted to your Committee on October 22nd last, it was stated that up to that time 22 cases of Enteric Fever had been notified. Between 22nd October and 4th November 2 cases were notified, making a total of 24. These last 2 cases are secondary cases, are school children, and attend Central Schools. It is now over eight weeks since the last primary case was notified, viz., on 21st October. Of the total 24 cases, 20 are primary and 4 secondary.

" A brief narrative of events from 22nd October to 17th December concludes the Report.

“(a) HEALTH HISTORY OF RESIDENTS AT CLIFF TERRACE.

“It having been proved that leakage from the Cliff Terrace sewer gains access to the horse-spout water supply, the Assistant Medical Officer of Health made a thorough and painstaking inquiry as to the health history of past and present residents in Cliff Terrace. The object of this investigation was to ascertain whether or not sewage likely to contain B. Typhosus had entered the leaking sewer. The Assistant Medical Officer reported fully on this subject to your Committee on November 19th (see accompanying Report by Assistant Medical Officer).

“(b) FURTHER TRACING OF PROBABLE SOURCE OF HORSE-SPOUT WATER.”

“The Sanitary Inspector in his Report (see page 26) suggests:—‘The probability is that it goes under the houses of both Cliff Terrace and Victoria Terrace.’ The Assistant Medical Officer and the Sanitary Inspector made a careful search into this matter. (See Assistant Medical Officer’s Report, page 25).

“Referring to the ‘Cliffside’ cesspool mentioned in the Assistant Medical Officer’s Report (page 25), a second test with fluoresceine was made under more favourable conditions, the ground being no longer ice-bound. The result was again negative as regards any demonstrable connection between this cesspool and the source of the horse-spout water.

“VISIT OF MEDICAL INSPECTOR OF LOCAL GOVERNMENT BOARD.

“On the 26th and 27th October, Dr. Fletcher, Local Government Board, came to Kendal about the outbreak. Dr. Fletcher went very fully into details. He visited the affected areas, the Central Schools, the horse-spout, and the ground embracing the probable source of the horse-spout water, as well as the Town’s Water Supply reservoirs and gathering grounds. He conferred with the Chairman of the Public Health Committee, the Chairman of the Gas and Water Committee, and the Town Clerk.

“I am deeply indebted to Dr. Fletcher for his valued help and guidance.

“FURTHER ACTION TAKEN BY THE TOWN COUNCIL.

“The Council confirmed the resolutions arising from the foregoing recommendations (see page 22), as passed by your Committee

“The sewer on Cliff Terrace is being re-laid, and all defects in drains connected thereto are being remedied.

"The horse-spout water supply has been permanently discontinued.

"The works connected with the installation of a break-pressure valve (see page 22) are in hand.

"Periodic bacteriological analyses have been made of the Town's water supply. The last analyses to date (17th December) show :—

"Upper Bird's Park Reservoir, B. Coli Communis in 30 c.c.

"Lower Bird's Park Reservoir, B. Coli Communis in 20 c.c.

"PROGRESS OF PATIENTS.

"With one exception, which unhappily proved fatal, all the rest have made, or are making, excellent recoveries. Several were very ill indeed. The greatest possible credit is due to the Matron and her Staff at the Sanatorium for the very efficient manner in which the patients have been nursed. Care has been taken both by the Matron and myself to instruct the patients, previous to their discharge from the Sanatorium, as to certain precautions they must take in view of the risk of their becoming 'carrier' cases.

"I desire to record my indebtedness to the Chairman of the Health Committee, the Health Officials, and the Medical men practising in Kendal, for their hearty help and co-operation. My thanks are due also to Professor Delepine and his Staff for their valued help and guidance.

"I have the honour to remain,

"Your obedient Servant,

"(Signed) W. E. HENDERSON,

"Acting Medical Officer of Health."

Report by the Assistant Medical Officer of Health as to investigations carried out by him to ascertain :—

"(a) Whether any persons suffering from Enteric Fever, or being carriers of such infection, had of late been at Cliff Terrace.

"(b) The probable course of the underground water supplying the horse-spout.

"(c) The detection of other likely sources of its pollution.

"With regard to (a) :—

"I visited every house in Cliff Terrace to obtain evidence of possible infection. At one house there was a history that two

visitors from Glasgow (a mother and her young daughter) had both suffered from severe intestinal trouble, attended with diarrhoea, at the end of last year.

"The child was first affected, and then the mother, and subsequently another young girl, who lived in the same house, and was a resident in Kendal. The medical man who attended the first two cases informed me his suspicions of Enteric Fever were not verified, and that he finally concluded they were both cases of Ptomaine poisoning.

"As the third case had not come from Glasgow, and had taken the infection subsequently, I obtained two tubules of her blood, and had them tested at the Bacteriological Laboratory of Manchester University for:—

(a) Enteric Fever.

(b) Paratyphoid A.

Both proved to be negative.

"No other cases of illness resembling Typhoid Fever were traceable in Cliff Terrace or its neighbourhood.

"(b) Having obtained information at 9, Cliff Terrace, that there had been at 'Cliffside Cottage' a deep well, the site of which would be in the 'lie' of the probable course of the underground stream supplying the horse-spout, I visited the house and also another house, 'Mount Pleasant,' near it, to ascertain if these wells still existed, and were supplied by the same underground stream which is supposed to have its origin in the 'Serpentine' grounds, and to supply the horse-spout.

"The deep well, if it ever existed, has now been closed up; and so has the one (which is known to have been used for the supply of drinking water) at Mount Pleasant.

"Every person now at Kendal who has occupied 'Cliffside Cottage' for the last 50 years having been seen by me (one was written to as he does not now live in the town), it was ascertained that the house was supplied by a pipe which passed from a Reservoir in Tenter Fell to a tank in the cellar of Cliffside Cottage. The old Reservoir (now closed) was opened on November 26th, and it was found to have been supplied with water not from an underground stream, but from the Town's Reservoir on Fisher Tarn.

"The old Reservoir was tested with Fluoresceine, and the water in the horse-spout observed for several hours, without result.

"(c) As there is a cesspool in the grounds of 'Cliffside Cottage' which has not been cleared for some years, I had this tested on November 29th with Fluoresceine to see if there was any leakage from it into the horse-spout water. The test was not done

under favourable conditions, because the cesspool had not been cleared, and still contained sewage, and the ground had been ice-bound for some time; and on the day before the test was made much rain had fallen. The result was negative; but I recommended that another, and more decisive test, be made later on, after the cesspool is cleaned out and the weather is more favourable.

“This house is not connected with any sewer; and on this matter being reported by me to the Local Health Committee at its last meeting in November, it was decided to take steps to have this defect remedied, and to do away with the cesspool.

“As the course of the underground stream supplying the horse-spout has only been traced to the neighbourhood of Cliff Terrace, and no farther, and as there may be other possible sources of pollution, I would recommend that these be searched for.

“That the stream supplies deep wells is a theory that may yet be proved to be correct, and these may be liable to pollution. As there has been leakage into the horse-spout water from the sewer in Cliff Terrace (which has now been re-laid) and the water may be open to other sources of pollution still undiscovered, I am therefore of the opinion that it be no longer used as a source of supply of drinking water for Man until its purity be adequately safeguarded and be beyond suspicion.

“I am,

“Yours faithfully,

“(Signed) HERBERT MACLEOD,

“B.Sc., M.D., M.R.C.P. London, D.P.H. Camb.,

“D.P.H. London, Barrister-at-Law.”

*Report by Sanitary Inspector on Water Supplies, other than
Town's Supply.*

“22nd October, 1915.

“HORSE-TROUGH, BEAST BANKS.

“The source of this supply is unknown. Tests made prove that it goes under or near Cliff Terrace sewer, and the probability is that it goes under the houses of both Cliff Terrace and Victoria Terrace.

“The course was found a few years ago when a tennis court was being made on Belmont, and it was opened up at the Central School yard last week, when it was found to be flowing through a stone drain about 18 inches below the surface of the school-yard. It then goes under the Boys' School and down the back at the end

of the Infants' School, and issues through the wall into the trough. From the trough it passes down an overflow into an underground tank which supplies three cottages for domestic purposes. It also supplies water for trade purposes.

"Apart from any question of pollution of the spring itself, there is the liability of pollution in the trough before it passes to the underground tank. Bacteriological examination shows B. Coli in 100th of a c.c.

"HORSE-SPOUT, WINDERMERE ROAD.

"There is an open runner, and the only liability to pollution is from cultivated land and animals. No drains in the vicinity. Bacteriological examination shows B. Coli in 5 c.c.

"WELL, SHAW'S BROW.

"This supply is dry at the present time. It appears to be surface water from the adjoining hillside, and it is possible for surface water from the road to gain access to it.

"HORNCOP WELL.

"Spring from the limestone. There is liability to pollution from drain in neighbourhood, but bacteriological examination shows absence of any pollution at present.

"KIRKLAND FOUNTAIN.

"This supply comes from Anchorite Well. Originally there was a pipe laid up the bed of the stream into the well, but this cannot be traced the whole way now, and the probability is that it is broken and that the supply to the fountain comes from the stream. This stream is open for a great part of its course and is liable to pollution. Bacteriological examination shows B. Coli in 1 c.c.

"'T' WELL, FOUNTAIN BROW.

"This supply is dry at the present time, and has been so for some weeks."

CONTROL OF TUBERCULOSIS.

The methods adopted have been described at length in previous reports. For the year under review a brief statistical statement must suffice.

In 1915, 88 persons were notified as suffering from Tuberculosis, 78 from pulmonary, and 10 from other forms. Thirty-six deaths were registered as due to pulmonary and ten to other forms.

COMPARATIVE STATEMENT RESPECTING PHTHISIS NOTIFICATIONS IN 1915.

SANITARY DISTRICT.	Area in Acres (land and inland waters).	Estimated civil population in the middle of 1915.	No. of Persons notified.	Proportion per cent. of total persons notified in the county.	Proportion per cent. of population to total population of the county.	Excess or otherwise of cases notified in proportion to population.
URBAN.						
Ambleside ...	4,424	2,230	4	5.1	3.6	+ 1.5
Appleby ...	1,876	1,702	2	2.5	2.8	- 0.3
Grasmere ...	7,332	770	1	1.2	1.2	—
Kendal ...	2,622	13,194	24	30.7	21.7	+ 9.0
Kirkby Lonsdale	3,254	1,377	—	—	2.2	- 2.2
Shap ...	2,082	950	2	2.5	1.5	+ 1.0
Windermere ...	9,907	5,381	11	14.1	8.8	+ 5.3
RURAL.						
East Westmorland	183,154	10,980	19	24.3	18.0	+ 6.3
South Westmorland	170,870	17,909	10	12.8	29.3	- 16.5
West Ward ...	119,869	6,248	5	6.4	10.2	- 3.8

The County Sanatorium Benefit Scheme.

JOINT REPORT BY ADMINISTRATIVE OFFICER AND TUBERCULOSIS OFFICER.

(a) STATISTICAL.

1. RESIDENTIAL TREATMENT.

The number of persons admitted to Meathop from 1st January, 1915, to 31st December, 1915, was 68, of whom 31 were males, and 37 females. In 1914, 70 patients were admitted.

Of the 68 patients admitted during 1915, there were :—

Insured.	Dependants of Insured.	Non-insured Non-dependants.
36	20	12

Their age-constitution was as follows :—

	Under 14.	14—20.	21—30.	31—40.	Over 40.
Insured	0	9	12	10	5
Dependents	11	2	1	5	1
Non-insured	3	2	2	2	3
Non-dependents					
Totals	14	13	15	17	9

2. DISPENSARIES.

The following table shows what has been done at the Dispensaries during the year 1915 :—

	No. of new Patients examined.	No. of Insured.	No. of Non- insured.	No. of examina- tions made.
Kendal	61	29	32	281
Appleby	13	4	9	22
Meathop	5	4	1	5
Totals	79	37	42	308

3. DOMICILIARY VISITS.

The number of visits increases year by year, as will be seen in the following Table :—

NUMBER OF DOMICILIARY VISITS.

By Tuberculosis Officer.		By District Nurses.	By After-Care Visitors (Kendal only).	Grand Total.
1914	46	536	* 115	697
1915	97	1010	1378	2485

* Work started in November, 1914.

THE KENDAL AFTER-CARE COMMITTEE.

The practical work done by the Committee is apparent in the subjoined report, kindly prepared by Miss Martindale, the Secretary of the Kendal Charity Organisation Society.

" You asked me to let you have a little account of what our After-Care Visitors did, and I am now sending it.

" The names of the patients discharged from Meathop are sent to me, and then a lady visitor is appointed to go at least once a month as a friend, to enquire how they are, on behalf of the After-Care Committee. The visit is quite informal and has nothing of the ' inspector ' about it. The visitor is instructed to take a kindly interest in the patient, and to use her eyes and commonsense. If there appears to be any need, this is reported to me, but the ladies are warned against allowing their visits to be in any way connected with relief.

" We hold monthly meetings when the visitors bring written reports as to the health, surroundings, and circumstances of the patients; these are discussed, and if there are any financial needs, I bring them before my Committee. The reports are then passed on to the Tuberculosis Officer, who is thus kept in touch with the discharged patients, and we are able to consult him in all cases of difficulty. We send him about sixty reports each month.

" Our visitors paid 1,378 visits last year. The patients really appreciate the interest taken in them, and make friends with their visitors.

" They are not known as C.O.S. visitors, but as After-Care visitors."

(b) CLINICAL.

CLINICAL RETROSPECT.

The clinical work may be reviewed under three heads—(a) Diagnosis, (b) Treatment, (c) After-care.

(a) *Diagnosis.*

The arrangements for diagnosis of suspected cases are now very complete, and the results yielded have been most satisfactory. In addition to a large number of 'contacts' examined at their homes by the Tuberculosis Officer, many other suspected cases have come to the dispensaries to be examined by him, either at the suggestion of the Tuberculosis Nurse, or of their own medical adviser. In each case the Tuberculosis Officer communicates with the patient's doctor, stating his opinion on the case, and, if suitable, offering Sanatorium or Dispensary treatment.

The dispensaries are invaluable as centres of observation and diagnosis, doubtful cases being often required to attend for several weeks, so that the temperature can be charted, and the diagnosis established by repeated physical examinations.

The arrangement whereby the examination of specimens of sputum, etc., from Westmorland patients, is carried out free of charge at the Sanatorium Laboratory, has been largely taken advantage of by general practitioners throughout the county.

Outfits suitable for sending such specimens by post, with stamped envelopes addressed to the Laboratory, are supplied free of charge to the medical practitioners on application to the Administrative Officer. Each specimen is examined twice, the modern concentration method being applied in all cases where the ordinary method yields a negative result. Altogether 106 such specimens were examined during 1915, and a positive result found in 18 cases. During 1914, 151 specimens were dealt with, and Tubercle Bacilli were found in 31 cases. In every case the result is reported to the medical man in attendance, the Tuberculosis Officer at the same time offering to examine the patient, with a view to Sanatorium treatment, if suitable. In this way 23 patients were led to avail themselves of Sanatorium treatment during 1915; including 10 where the sputum had yielded a negative result, but where the Tuberculosis Officer was able, by examining the patient, to prove the existence of Pulmonary Tuber-

culosis. During 1914, 30 such cases were admitted to the Sanatorium, including 18 where the diagnosis rested on the subsequent clinical examination. Including cases dealt with in 1913, altogether 66 patients, whose sputum had previously been sent to the Laboratory for examination, had been led to accept Sanatorium treatment up to the end of 1915.

It is clear, therefore, that these laboratory facilities have largely contributed to the success of the Tuberculosis Scheme.

The value of the X-rays as a supplementary method of diagnosis in doubtful cases has now been definitely established. If facilities for X-ray diagnosis could be provided in connection with the Kendal Dispensary, they would undoubtedly be very helpful, and would be largely utilised.

(b) *Treatment.*

Altogether 54 patients were discharged from the Sanatorium during 1915, these 54 including 10 children of school age. Of the 54 patients discharged in 1915, 35 had improved sufficiently to resume their employment, undertake some other light occupation, or to attend school; while in 14 other cases the improvement was only slight, and 5 had failed to improve. Besides the 54 patients discharged, 5 advanced cases died in the institution during the year. The corresponding figures for 1914 are:—Discharged, 60 (including 15 of school age); fit for work or school, 51; slight or no improvement, 9; died 6.

At the Sanatorium a number of selected cases were treated with 'I.K.' with encouraging results. This is not a tuberculin, but an 'anti-serum' prepared by Dr. Carl Spengler, of Davos. Of greater importance, however, is the method of 'auto-inoculation,' which consists in a carefully graduated system of rest and exercise, carried out under strict medical supervision. Great attention is paid to this method of treatment at Meathop. In cases where the disease is active, absolute rest in bed is first prescribed, followed, when the temperature settles, by short walks, which are only increased very gradually as the patient makes progress. When the disease becomes quiescent, the patient is assigned light work, such as weeding or sweeping, which, in favourable cases, is gradually increased, until he is able to do several hours of fairly strenuous work each day, without loss of weight or rise of temperature. This method has the two-fold advantage of increasing the patient's resistance to the disease, while strengthening his muscles, and so fitting him to earn his living after discharge.

An important element in the value of the treatment at the Sanatorium consists in the systematic education of all patients, by lectures and personal advice, in the principles of improved hygiene and open-air methods. Thus even advanced cases are taught how to improve their health and prolong their lives without being a source of danger to those around them.

At the dispensaries inoculation treatment is not given, as it has been found that without the close observation, which can only be ensured by residential treatment, the results are disappointing.
(c) *After-care.*

All patients who have been discharged from the Sanatorium are re-examined at their homes or at the dispensaries, from time to time, by the Tuberculosis Officer, in consultation with the patient's medical adviser. They are also visited at shorter intervals by the Tuberculosis Nurses, and (in Kendal) by the voluntary Visitors of the Meathop After-care Committee. The latter body, organised by the Kendal Charity Organisation Society, has been very helpful, both in the supervision of the patient's mode of life and in providing nourishment or other assistance when the circumstances of the patient are found to require it.

The unsatisfactory housing conditions, which prevail in those parts of Kendal where the incidence of tuberculosis is greatest, make the problem of after-care a difficult one here, and it is further complicated by the almost total absence of suitable sites for shelters in the vicinity of the patients' homes.

The three open-air shelters purchased by the County Council have been in continuous use, and have proved most satisfactory. One is at present in use in the vicinity of Kendal, one in Windermere, and one near Kirkby Stephen. In addition, there are about 6 privately owned open-air shelters in use throughout the county.

In conclusion, the Administrative Officer and the Tuberculosis Officer desire to express their cordial thanks to the medical practitioners throughout the county for their loyal and helpful co-operation, which has contributed so largely to the success of the scheme. Their clinical keenness and interest in the work have been instrumental in discovering, and referring to the Tuberculosis Officer, many contacts and other cases in an early and curable stage of the disease. Thanks also are due to the staff of Tuberculosis Nurses for their painstaking and invaluable work. It is hoped that it may be found possible eventually to add to this staff, so as to deal with those outlying districts where there is at present no nurse available.

ISOLATION HOSPITAL ACCOMMODATION.

1. INFECTIOUS DISEASES OTHER THAN PHTHISIS AND SMALLPOX.

The beds available are in the ratio of one to 567 of population. As a rough estimate it is recognised that the ratio should never be less than one bed to 1,000 of the population.

With the advent of the motor ambulance, the remoteness of certain districts from the nearest isolation hospital does not present the same objections as hitherto. The health authorities of the East Westmorland and the West Ward Rural Districts are to be congratulated on securing a motor ambulance.

There is great need of one for patients who have to be removed to Kendal from the outlying parts of South Westmorland Rural District.

SITUATION.	TOTAL AVAILABLE BEDS.			Number of dise'ses which can be treated concurrently.
Kendal ...	32 beds	12 cots	...	4
Windermere ...	{ 13 "	2 cots	...	2
	{ 6 "	(convalescent cases)		
Ormside ..	32 "	...	...	2
Kirkby Lonsdale	2 "	...	...	1
Grasmere ...	4 "	...	...	1
TOTAL BEDS (including cots)	103			

2. SMALLPOX HOSPITAL ACCOMMODATION.

Situation.	No. of available beds.
Woodside, near Kendal ...	35
Ormside ...	2
	37

In view of war contingencies, careful thought has been given to this matter by your Council and the Kendal Health Committee. All is in readiness at the hospitals for instant occupation. Most fortunately there has been no call on them so far.

DISTRICT	GENERAL CHARACTER OF DEFECTS					No. of Houses Demolished	
	Number of Dwelling Houses Inspected	Number of cases found in each category	No. of Houses	No. of cases found in each category	No. of cases found in each category	Number of Houses Demolished	Number of Houses Demolished
URBAN.							
Kendal	8	6	6	8	0	0	4
Windermere	0	0	0	0	0	0	0
RURAL.							
East Westmorland	0	0	0	0	0	0	0
South Westmorland	0	0	0	0	0	0	0

HOUSING, TOWN PLANNING, &c., ACT, 1909. SECT. 17 (1).

DISTRICT.	Number of Dwelling Houses Inspected.	Number of Houses found to be unfit for Habitation.	CLOSING ORDERS.		No. of Houses in which defects were remedied without Closing Orders being made.	No. of Houses in which defects were remedied after making Closing Orders.	No. OF HOUSES DEMOLISHED.		GENERAL CHARACTER OF DEFECTS.
			No. of Representations made to Local Authority.	No. of Closing Orders made.			Under Demolition Orders.	Voluntarily by Owner.	
URBAN.									
Kendal	80	6	6	5	18	9	4	0	Insufficient light and ventilation.
Windermere	49	0	0	0	18	0	0	0	Defective drainage, yards and out-houses.
RURAL.									
East Westmorland	105	3	3	3	24	0	0	0	Damp; insufficient light and ventilation; defective drains and privies; defective roof.
South Westmorland	33	1	1	0	19	0	0	0	Deficient ventilation; damp; deficient light and drainage; unsatisfactory closet accommodation.

3. PHTHISIS ACCOMMODATION.

For many years, thanks to generous voluntary effort, this County has had ample accommodation in the Westmorland Consumption Sanatorium, for the segregation and the treatment of all cases, both early and advanced.

For instance :—

			Beds.
(a) In Sanatorium (early cases)	...	...	82
(b) In Home (advanced cases)	...	...	53
			135

Of these, 15 beds are leased to the County Council at £70 each per annum; 15 additional beds are at the disposal of the County Council, for extra cases, at the rate of 30s. per week per bed; cases over a total of 30 are charged at £2 2s. per week.

HOUSING.

Housing inspection had to be greatly curtailed in 1915: many of the Inspecting Staff were with the Colours, while owing to the shortage of labour, there was delay in remedying the defects found. In spite of this, however, a good deal of work has been done.

The subjoined Table deals with the larger Districts :—

WATER SUPPLY.

KENDAL.

During 1915 a systematic monthly bacteriological analysis of the Town's water supply has been undertaken. The analyst's reports are forwarded to the Medical Officer of Health.

The Water Engineer in his report for 1915, remarks :—

“ The level of the water in Fisher Tarn Reservoir fell during the year 10 feet 5 inches, but was overflowing again on February 6th, 1916.

“ Much anxiety was thrown on the Department owing to the abnormal drought of last summer, but although many towns throughout the country were giving intermittent supplies, Kendal was in the more fortunate position of only very slightly restricting, without inconvenience, the consumption of water.

“ A 6-inch Blakeborough pressure reducing valve has been installed on the high level supply to enable the direct delivery of water from Fisher Tarn Reservoir to the Upper District.”

WINDERMERE.

The Surveyor remarks :—“ The rainfall for the year was only 55.21 inches (12.45 below the average of the last 3 years). The months of March, May, June, August, September, October and November were exceptionally dry. The Water Company, having of necessity to delay the construction of the new Reservoir, found it necessary on the 21st October to turn off the water at night, and to issue a notice warning consumers not to waste water. On the 12th November the continuous supply was resumed.”

SHAP.

The Inspector reports :—“ The West Ward Guardians having remedied the defective pipes at the Workhouse, whereby a leakage amounting to several thousand gallons weekly had occurred, and the Council having carried out at the cost of £100 the provision of an extra and much larger storage tank, the public water supply has since given the greatest satisfaction. Although the drought was the most severe ever known in the district, the Council were able to give the consumers a continuous and practically unrestricted supply.”

**RIVERS POLLUTION PREVENTION ACT.
POLLUTION OF STREAMS WITHIN THE COUNTY.**

The following is a copy of the Report of Mr. Edmund A. Yates, Rivers Inspector, for the year 1915 :—

“ February 19th, 1916.

“ THE CHAIRMAN AND MEMBERS OF THE RIVERS POLLUTION
COMMITTEE.

“ Gentlemen,

“ I beg to present my annual report for the year ending February 19th, 1916.

“ The period under review was characterised by an unusual drought, and with the exception of small freshes which occurred in the middle of April, and again in the middle of August, the rivers generally, remained at a very low level from the latter end of March until the early part of November. Owing to the long-continued lowness of the river at points where polluting effluents enter the rivers and streams, the solids settled and accumulated on the river beds and remained there, though in some cases effluents may not necessarily have been in a worse condition than formerly, yet pollution has been much more apparent than it has been during the past two or three years.

“ After all due allowance has been made for the circumstances which existed throughout the six summer months, there is little doubt that, owing either to inefficient or insufficient purification plant, or to lack of attention or carelessness on the part of attendants of such plant, there has been, in one or two cases, a decided increase of pollution of the rivers.

“ Turning to the other side of the question, through the completion and operation of the new humus tanks at the Kendal Sewage Works, there has been a very marked improvement in the condition of the filter effluent, and this improvement will probably be still more marked when the pumps for pumping out the humus tanks are installed and in regular use.

“ At Windermere a great stride will have been made when the new Purification Works are put in operation, but although the works are almost completed, the extreme scarcity of labour, especially as regards the getting and delivering of the media, renders it impossible to fix any approximate date as to when the works will be ready to take the whole of the sewage.

“ Several much smaller schemes for purifying sewage effluent, which in ordinary times, would probably ere now, have assumed definite shape, have been hung up owing to the prevailing circumstances.

“ An interesting point has come to my notice with regard to the Burton Sewage Works, the effluent from which falls into a very small stream. Until about ten years ago, this stream was polluted by the effluent from the tan pit, as well as by the sewage, and, though latterly by sewage only, it has been devoid of fish life for a great number of years. The new Sewage Works were put into operation at the beginning of 1914, and in November, 1915, though the stream was still somewhat low, ten pairs of trout were observed spawning at a point not very far below the sewage effluent. Though this Committee is not directly concerned with fish life, I mention this matter as a tribute to the efficiency of the purification plant.

“ In the early part of 1915, the possibility of pollution of streams by waste sheep dip was brought to the notice of this Committee.

“ No cases of pollution from this source have come under my notice, but, when the vast quantity of dip which is annually used, and the ingredients of the dip, are taken into consideration, it is evident that a very real danger does exist of streams being seriously polluted through careless disposal of the waste.

“ It is of interest to note that in 1914, serious pollution was caused in one district of Scotland, through waste sheep dip entering the streams, and in the last annual report of the Scottish Fishery Board a large number of pages are taken up with this subject.

“ I am, Gentlemen,

“ Yours faithfully,

“ EDMUND A. YATES.”

MIDWIVES ACT, 1902.

The supervision of Midwives is carried out under my direction. In the following table will be found the number, and the qualifications of those practising.

REGISTERED MIDWIVES PRACTISING IN THE ADMINISTRATIVE
COUNTY OF WESTMORLAND.

LOCALITY.	Number.	QUALIFICATION.		
		C.M.B.	L.O.S.	In Practice July, 1901.
Kendal	5	I	—	4
Gatebeck	I	—	—	I
Preston Patrick	I	I	—	—
Levens	I	—	—	I
Witherslack	I	I	—	—
Burton	I	—	—	I
Kirkby Lonsdale	I	I	—	—
Upper Lune District...	I	—	I	—
Underbarrow	I	—	—	I
Bowness-on-Windermere	I	—	—	I
Windermere	I	—	—	I
Crosthwaite	I	I	—	—
	16	5	I	10

It will be seen that few of the Midwives have had maternity hospital training, while there are extensive areas, e.g., the Eden Valley, where no registered Midwife is in practice. The Health Committee has had this matter under consideration, and, in co-operation with the Education Committee, has arranged for the award of scholarships for maternity training.

**THE ADMINISTRATION OF THE SALE OF FOOD AND DRUGS
ACTS, 1875 TO 1907.**

The following is a copy of the Report of the Public Analyst on samples submitted to him during the year 1915. This Report refers to the County of Westmorland (excluding the Borough of Kendal). The taking of samples within this area is in the hands of the Police.

			Samples Analysed.
Milk	...	...	20
Butter	...	...	7
Coffee	...	...	3
Ground Ginger	...	...	1
Rum	...	...	1
Tea	...	...	5
Whisky	...	...	2
Pepper	...	...	5
Lard	...	...	1
Cocoa	...	...	1
Marmalade	...	...	1
Chocolate	...	...	1
Cornflour	...	...	1
Preserved Cream	...	...	2
Yeast	...	...	1
Jam	...	...	2
Ground Almonds	...	...	1
Margarine	...	...	1

56

All these samples were genuine, except two of whisky, one of which was diluted to 5.5 per cent. below the legal limit, and the other to 15.5 per cent. The vendors were fined, respectively, £1 and £1 7s. costs, and £2 and £1 1s. costs.

In the Borough of Kendal the taking of samples is in the hands of the Sanitary Inspector. The following Tables show the action taken in Kendal in 1915:—

Article and Identification number.	No. of Samples.	Result of Analysis.	Remarks.
Butter ...	Twelve ...	Genuine ...	All informal
Lard ...	One ...	Genuine ...	Informal
Sausage ...	One ...	Genuine ...	Informal
Jam ...	One ...	Genuine ...	Informal
Cream ...	Six ...	Genuine ...	All informal
Coffee ...	One ...	Genuine ...	Informal
Whisky ...	One ...	Genuine ...	Informal
Rum ...	One ...	Genuine ...	Informal
Wine ...	Two ...	Genuine ...	Informal
Milk ...	Seventeen ..	Genuine ...	16 Formal and 1 Informal
Milk (26) ...	One ...	Milk-fat 2.50 ... Non-fatty solids 9.00	Formal sample taken Sunday morning & arrived at Analyst's decomposed, so prosecution could not follow. Another sample taken later.
Milk (27) ...	One ...	Milk-fat 2.90 ... Non-fatty solids 8.40	do. do.
Milk (28) ...	One ...	Milk-fat 2.70 ... Non-fatty solids 8.50	do. do.
Milk (29) ...	One ...	Milk-fat 2.80 ... Non-fatty solids 8.80	do. do.
Milk (42) ...	One ...	Milk-fat 2.80 ... Non-fatty solids 8.30	do. do.
Milk (49) ...	One ...	Milk-fat 2.70 ... Non-fatty solids 8.90	do. do.

The 23 samples of milk had the percentage of milk fat and non-fatty solids shown in the table below :—

No.	Milk Fat.	Non-fatty Solids.	Month.	Day.
15	3.00	8.80	March	Wednesday
16	3.70	8.50	March	do.
17	3.50	9.40	March	do.
18	3.30	8.40	March	do.
19	4.90	8.80	March	do.
20	4.20	9.00	March	do.
26	2.50	9.00	June	Sunday
27	2.90	8.40	June	do.
28	2.70	8.50	June	do.
29	2.80	8.80	June	do.
30	3.00	9.00	June	do.
31	3.30	9.20	June	do.
32	3.10	9.00	June	do.
33	3.40	9.10	June	do.
41	3.40	9.00	September	do.
42	2.80	8.30	September	do.
43	3.20	8.40	September	do.
44	3.40	8.80	September	do.
45	3.50	8.70	September	do.
46	3.40	8.90	September	do.
47	3.50	9.00	September	do.
48	3.10	9.10	September	do.
49	2.70	8.90	September	do.
Average	... 3.36	8.82		

PUBLIC HEALTH (MILK and CREAM) REGULATIONS, 1912.

1. *Milk and Cream not sold as preserved Cream.*

			No. of samples examined for the presence of a preservative.		No. in which a preservative was reported to be present.
Milk	...	...	23	...	None.
Cream	...	...	3	...	None.

2. *Cream sold as preserved Cream.*

(a) Instances in which samples have been submitted for Analysis, to ascertain if the statements on the label were correct :—

1. Correct statements made	...	...	2
2. Statements incorrect	...	...	0
			—
Total	...	...	2
			—

(b) Determination made of milk fat in cream sold as preserved cream :—

1. Above 35 per cent.	...	...	2
2. Below 35 per cent.	...	...	0
			—
Total	...	...	2
			—

I have the honour to remain,

Your obedient Servant,

W. E. HENDERSON.

Appendix.

DEATHS IN EACH DISTRICT CLASSIFIED ACCORDING TO DISEASES.

Table A.

NAME OF DISTRICT	Enteric Fever.	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Erysipelas	Phthisis	Tuberculous Meningitis	Other Tuberculous Diseases	Cancer, malignant disease	Rheumatic Fever	Meningitis	Organic Heart Disease.	Bronchitis.	Pneumonia (all forms)	Other diseases of Respiratory Organs	Diarrhoea and Enteritis	Appendicitis and Typhlitis	Cirrhosis of Liver	Alcoholism.	Nephritis and Bright's Disease	Puerperal Fever	Other accidents and diseases of Pregnancy and Puerperium	Conceitral Debility and Malformation including Premature Birth	Violent Deaths, excluding Suicide	Suicide	Other defined diseases	Diseases ill-defined or unknown	TOTALS	
URBAN																																
Ambleside ...	-	-	-	-	-	1	1	-	1	-	1	5	-	-	2	1	4	-	-	-	-	-	2	-	-	-	2	-	11	-	31	
Appleby ...	-	-	-	-	-	-	1	-	-	-	-	1	-	-	2	1	1	1	-	-	-	-	-	-	-	1	1	-	9	-	18	
Grasmere ...	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	4	-	9	
Kendal ...	1	-	4	1	6	1	8	-	11	3	2	9	-	1	29	19	14	2	3	3	3	-	7	-	-	2	6	-	62	-	197	
Kirkby Lonsdale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	1	-	-	-	-	1	1	-	3	-	9	
Shap ...	-	-	-	-	-	1	-	-	3	-	-	1	-	-	2	-	-	-	-	-	-	1	-	-	-	1	3	-	4	-	16	
Windermere ...	-	-	-	-	2	-	1	-	3	-	1	5	-	-	11	1	4	4	-	-	-	1	-	-	-	1	-	-	23	-	57	
RURAL.																																
East Westmorland	-	-	1	-	2	1	4	-	4	-	-	10	-	1	29	13	15	3	-	-	3	-	5	-	-	7	6	1	62	-	167	
South Westmorland	1	-	2	-	1	-	7	1	8	1	2	23	-	2	46	10	19	1	-	3	2	1	8	1	-	4	2	1	132	4	282	
West Ward ...	-	-	-	-	1	-	-	2	5	-	-	12	-	-	10	5	2	1	1	1	1	-	3	-	-	6	5	-	29	-	84	
TOTALS	2	-	7	1	12	4	23	3	36	4	6	67	-	4	132	52	61	12	4	7	10	2	26	1	-	23	26	2	339	4	870	

Appendix.

Table B

NUMBER OF CASES OF INFECTIOUS DISEASE NOTIFIED IN EACH DISTRICT, AND THE NUMBER OF CASES REMOVED TO HOSPITAL.

NAME OF DISTRICT	NUMBER OF CASES NOTIFIED.												NUMBER OF CASES REMOVED TO HOSPITAL.											
	Smallpox	Polionyelitis	Diphtheria including Mem- branous Group	Erysipelas	Scarlet Fever	Ophthalmia Neonatorum	Enteric Fever	Relapsing Fever	Cerebro-spinal Fever	Puerperal Fever	Phthisis	Other Forms of Tuberculosis	Smallpox	Polionyelitis	Diphtheria including Mem- branous Group	Erysipelas	Scarlet Fever	Enteric Fever	Relapsing Fever	Cerebro-spinal Fever	Puerperal Fever	Phthisis	Other forms of Tuberculosis.	
URBAN.																								
Ambleside ...	-	-	-	4	5	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	3	-	
Appleby ...	-	1	1	2	9	-	-	-	-	-	2	-	-	-	1	-	9	-	-	-	-	2	-	
Grasmere ...	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
Kendal ...	-	-	9	10	25	3	24	-	1	1	24	7	-	-	6	-	24	23	-	-	1	19	1	
Kirkby Lonsdale	-	-	-	3	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Shap ...	-	-	3	-	3	-	-	-	-	-	2	-	-	-	1	-	3	-	-	-	-	2	-	
Windermere ...	-	-	1	-	1	1	-	-	-	-	11	-	-	-	1	-	-	-	-	-	-	7	-	
RURAL.																								
East Westmorland	-	-	2	5	31	-	-	-	-	1	19	2	-	-	1	-	22	-	-	-	-	6	1	
South Westmorland	-	-	8	10	33	-	8	1	2	1	10	1	-	-	6	2	27	6	1	-	-	6	-	
West Ward ...	-	-	3	4	4	1	-	-	-	-	5	-	-	-	2	-	2	-	-	-	-	3	-	
TOTALS	-	1	27	38	111	5	33	1	3	3	78	10	-	-	18	2	88	30	1	-	1	48	2	

Table 8

NUMBER OF CASES OF INFECTIOUS DISEASE NOTIFIED
REMOVED AND

TABLE OF DISEASES NOTIFIED									
DISTRICT	NAME OF DISEASE	NOTIFIED	REMOVED	NOTIFIED	REMOVED	NOTIFIED	REMOVED	NOTIFIED	REMOVED
URBAN	Ampleside	...	...	...	...	...	...	...	...
	Appleby	...	...	...	...	...	...	...	...
	Garsmere	...	...	...	...	...	...	...	...
	Kendal	...	...	...	...	...	...	...	...
	Kirkby-Lonsdale	...	...	...	...	...	...	...	...
	Shap	...	...	...	...	...	...	...	...
	Windermere	...	...	...	...	...	...	...	...
RURAL	East Westmorland	...	...	...	...	...	...	...	...
	South Westmorland	...	...	...	...	...	...	...	...
	West Ward	...	...	...	...	...	...	...	...
TOTAL		...	...	...	...	...	...	...	...

