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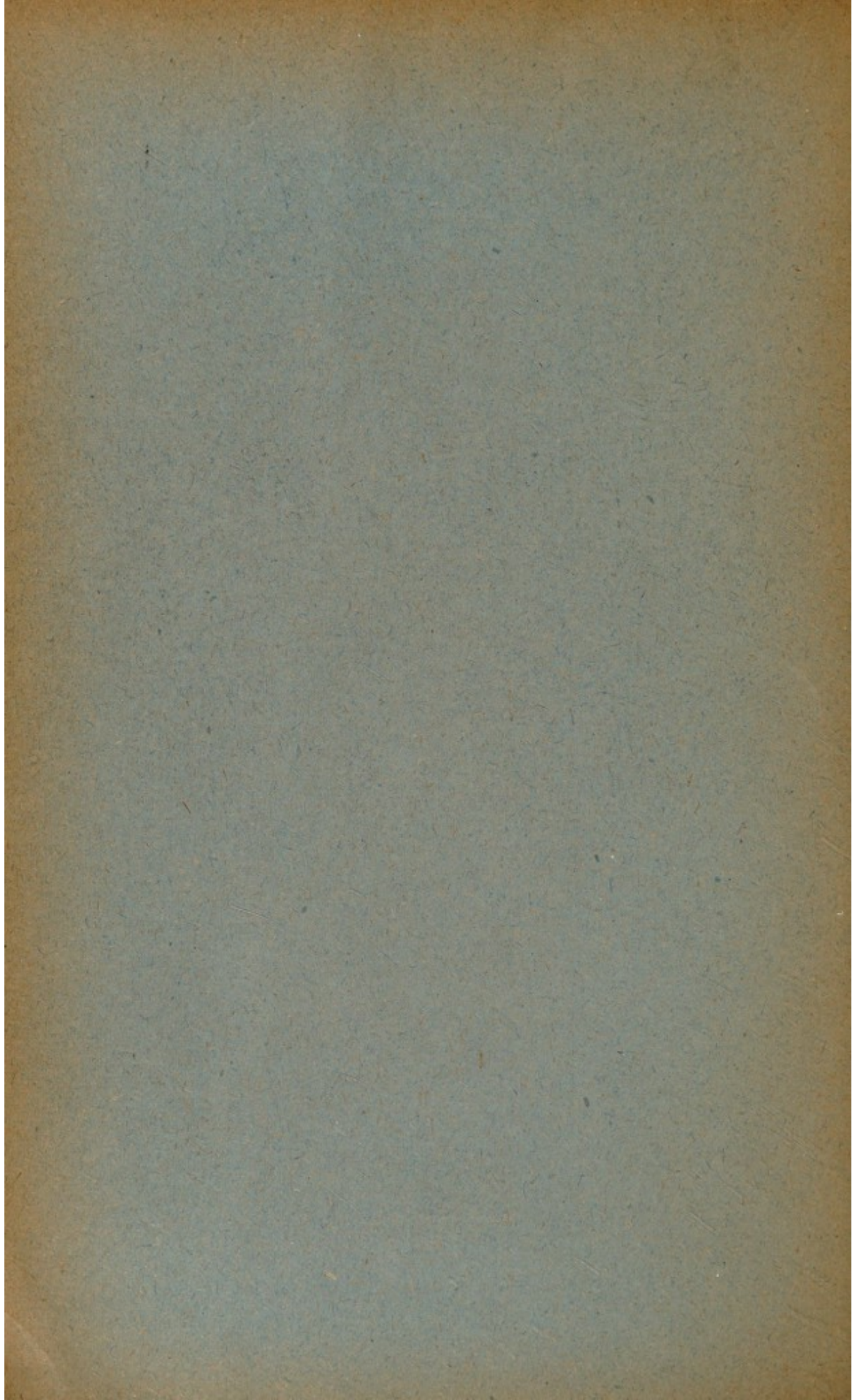
ANNUAL REPORT

OF THE

County Medical Officer
of Health.

THE YEAR 1926.

Atkinson & Pollitt, Printers, Kendal.



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County of Westmorland.

Public Health and Housing Committee of the County Council.

Chairman: MR. J. W. CROPPER.

Messrs. LORD HENRY BENTINCK.

ED. THOMPSON,

F. W. CREWDSON,

W. D. CREWDSON,

J. CROSBY,

R. W. DENT,

T. E. ETHELLES,

H. L. GROVES,

T. D. HANDLEY,

F. W. HARRISON,

R. W. HAYES,

REV. W. KING,

R. W. LAMBERT,

H. M. MOFFAT,

S. A. MOOR,

H. MOSER,

J. PARKIN,

G. H. PATTINSON,

G. N. PATTINSON,

H. A. T. SHEPHERD,

W. STALKER,

W. H. WALLACE.

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 District.</i>
” ” ”	... EAST WESTMORLAND.
” ” ”	... SOUTH WESTMORLAND.
” ” ”	... WEST WARD.

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

Gentlemen,

I have the honour to present the following Annual Report which deals with the Health of the County of Westmorland during the year 1926.

SUMMARY OF VITAL STATISTICS.

	1921.	1922.	1923.	1924.	1925.	1926.	England & Wales. 1926.
*Birth Rate	19.01	18.3	17.6	16.98	15.84	16.8	17.8
†Infantile Mortality Rate	73	58	60	67.6	46	54.8	70
*Nett Death Rate	12.8	13.1	12.3	14.76	13.68	12.04	11.6
*Phthisis Death Rate	0.50	0.59	0.39	0.59	0.67	0.54	0.86

* Per 1,000 population.

† Per 1,000 births.

General Statistics.

Area (acres)	504,917
Population (Reg. Gen. estimate 1926)	62,080
Number inhabited houses (1921)	14,460
Number of families or separate occupiers (1921)	14,648
Rateable Value (1926)	£669,494
Net Assessable Value (1926)	£465,350
Sum represented by a penny rate	£1,938 19s. 2d.

ESTIMATED POPULATION FOR 1926.

The population for the Year 1926, as estimated by the Registrar-General, will be found in the following Table :—

DISTRICT.	Area in Acres: (Land and Inland Water).	Population. Registrar General's estimate for 1926.
URBAN.		
Ambleside ...	4,425	2,259
Appleby	1,877	1,557
Grasmere	7,333	869
Kendal	2,700	13,950
Kirkby Lonsdale	3,254	1,211
Shap	2,081	979
Windermere ...	9,902	5,385
RURAL.		
East Westmorland	183,771	11,070
South Westmorland	169,702	18,770
West Ward ...	119,872	6,030
Westmorland ...	504,917	62,080

Birth Rate, 1922-26.

BIRTH RATE PER 1,000 POPULATION.

DISTRICT.	No. of Births 1926.	Birth Rate 1926	Birth Rate 1925	Birth Rate, 1924.	Birth Rate, 1923.	Birth Rate, 1922.
Urban.						
Ambleside	31	13.7	14.9	12.3	11.0	18.8
Appleby	13	8.3	11.6	14.6	17.5	15.1
Grasmere	11	12.7	11.3	16.1	18.0	19.6
Kendal	246	17.6	16.6	19.4	17.4	18.5
Kirkby Lonsdale	14	11.5	13.4	14.5	18.1	14.7
Shap	21	21.5	21.0	22.0	26.0	28.1
Windermere	69	12.8	10.3	14.1	12.3	12.8
Rural.						
East Westmorland	221	19.9	19.0	20.2	21.5	21.5
South Westmorland	279	14.9	15.2	14.7	17.1	16.9
West Ward	153	25.4	15.8	16.9	18.1	19.8
Westmorland	1058	16.8	15.8	16.9	17.6	18.2
England and Wales	—	17.8	18.3	18.8	19.7	20.6

The births registered in the above 5 years were as follows :

Year	.....	1922.	1923.	1924	1925.	1926.
No. of Births	.....	1,129	1,098	1,060	986	1058

Death Rates, 1926.

NET DEATH RATES PER 1000 POPULATION.

District:	No. of Deaths 1926.	Death Rate 1926.	Death Rate 1925.	Death Rate 1924.	Death Rate 1923.	Death Rate. 1922.
Urban.						
Ambleside	28	12.4	9.6	12.7	12.3	13.5
Appleby	18	11.6	20.2	15.8	15.1	6.6
Grasmere	16	18.4	12.5	8.0	11.4	9.2
Kendal	181	12.9	15.7	15.3	13.0	15.7
Kirkby Lonsdale	14	11.5	10.3	14.5	14.9	8.8
Shap	21	21.5	23.0	20.9	9.0	17.1
Windermere	47	8.7	12.6	13.6	10.0	14.5
Rural.						
East Westmorland	122	11.0	12.7	16.5	13.3	12.5
South Westmorland	244	13.0	10.8	14.5	12.5	11.7
West Ward	57	9.5	14.0	12.4	10.2	12.4
Westmorland	748	12.04	13.1	14.7	12.3	13.1
England & Wales	—	11.6	12.2	12.2	11.6	12.9

An analysis of the causes of deaths in the various districts in 1926, shows that the main diseases in order of fatality were as follows :—

Disease.	No. Deaths, 1926.	Average 1921—1925.
Heart Disease	134	138
Cancer	101	97
Cerebral Haemorrhage	68	72
Bronchitis	38	45
Congenital Debility and Prematurity	34	36
Tuberculosis of Respiratory System	34	37
Nephritis, Acute and Chronic	32	25
Arterio-Sclerosis	22	29
Other Respiratory Diseases	18	10
Pneumonia	16	38
Deaths from Violence	15	20
Influenza	15	29
Diabetes	11	10

Infantile Mortality, 1926.

DEATHS OF INFANTS UNDER ONE YEAR PER 1,000 BIRTHS.

DISTRICT.	No. of Births in 1926	No. of Deaths in 1926.	Infant Mortality Rate in 1926.	Infant Mortality Rate in 1925.	Infant Mortality Rate in 1924.	Infant Mortality Rate in 1923.	Infant Mortality Rate in 1922.
Urban.							
Ambleside	31	1	32	29	0	77	46
Appleby	13	0	0	0	41.6	0	0
Grasmere	11	0	0	0	71.4	0	59
Kendal	246	21	85	76	104.6	84.6	83
Kirkby Lonsdale	14	0	0	66	52.6	83.3	100
Shap	21	1	48	95	0	38.4	107
Windermere	69	2	29	19	53.3	30.7	45
Rural.							
E. Westmorland	221	15	68	43	81	55.5	30
S. Westmorland....	279	15	54	40	54.3	62.5	60
West Ward	153	3	19	34	29.1	45.4	58
Westmorland	1058	58	54.8	46.6	67.9	60.1	58
England & Wales	—	—	70	75	75	69	77

The Infantile Mortality rate for 1926 of 54.8 is the second lowest so far recorded for Westmorland. It is considerably below the rate for England and Wales. The average rate for the 5 years (1921-1925) for Westmorland was 61.6.

Age Incidence of Infantile Mortality, 1926.

DISTRICT.	1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	Under 1 month.	1-3 months	3-6 months	6-9 months	9-12 months	Total under 1 year.
URBAN.										
Ambleside ...	—	—	—	—	—	—	—	—	1	1
Appleby ...	—	—	—	—	—	—	—	—	—	—
Grasmere ...	—	—	—	—	—	—	—	—	—	—
Kendal ...	6	—	1	—	7	6	3	4	1	21
Kirkby Lonsdale	—	—	—	—	—	—	—	—	—	—
Sha ...	—	—	—	—	—	1	—	—	—	1
Windermere ...	1	—	—	—	1	1	—	—	—	2
RURAL										
E. Westmorland	7	2	—	—	9	3	3	—	—	15
S. Westmorland	7	5	—	—	12	—	—	3	—	15
West Ward ...	—	1	—	—	1	—	2	—	—	3
Westmorland	21	8	1	—	30	11	8	7	2	58

Analysis of Causes of Deaths of Infants under one year in 1926.

DISTRICT.	Gastritis.	Convulsions	Bronchitis	Pneumonia	Injury at Birth.	Prematurity	Marasmus, etc.	Congenital Malformation	Other Causes	TOTAL	Deaths in order of Fatality.
URBAN.											
Ambleside	—	—	—	1	—	—	—	—	—	1	—
Appleby ...	—	—	—	—	—	—	—	—	—	—	—
Grasmere	—	—	—	—	—	—	—	—	—	—	—
Kendal ...	2	2	1	—	—	5	2	3	6	21	18
Kirkby Lonsdale	—	—	—	—	—	—	—	—	—	—	10
Shap ...	—	—	1	—	—	—	—	—	—	1	8
Windermere	—	—	1	—	—	—	1	—	—	2	7
RURAL.											
E. Westmorland	1	—	2	1	1	6	1	2	1	15	3
S. Westmorland	—	—	1	1	—	7	3	2	1	15	2
West Ward	—	—	—	—	—	—	—	1	2	3	1
Westmorland	3	2	6	3	1	18	7	8	10	58	

MATERNITY AND CHILD WELFARE.

Dr. Dorothy Potts, the Assistant County Medical Officer of Health, supervises this work and acts as Inspector of Midwives.

Twenty-seven Nursing Associations co-operate in providing the part-time services of their nurses, who act as Infant Welfare Visitors, School Nurses, and Tuberculosis After-care Visitors. These nurses give valued help at the routine medical inspections in the Schools, in following up, and at the Dental and Orthopædic Clinics. For these services the County Council makes substantial annual payments to the Associations.

In spite of much wild and sparsely populated land impossible to include in a nursing area, 51,000 persons of the total population of 62,080 live in districts where nurses are available.

Isolated farms and cottages outside nursing areas have been visited by Dr. Potts. These visits are greatly appreciated by the mothers with young families.

Home visiting by the nurses or by Dr. Potts is the main activity. The pre-natal supervision of the mothers is being extended. Year by year the number of visits to expectant mothers increases.

There are few communities large enough to call for Infant Welfare Centres.

There are centres held once a month at Windermere, at Bowness-on-Windermere and at Ambleside, at all of which Dr. Potts attends. The thanks of your Committee are due to the public-spirited voluntary helpers who maintain and actively support these centres.

The figures as to visits by nurses are as follows :—

	By Nurses.	By Dr. Potts.	Total.
Expectant Mothers visited ...	327	4	331
Total visits ...	1527	10	1537
Infants visited ...	439	128	567
Total visits ...	5087	520	5607
Children 1—5 years,			
Total visits ...	2641	233	2874

There is a very successful and highly valued centre held weekly at Abbot Hall, Kendal, which is conducted by Dr. Cockill, the Medical Officer of Health for the Westmorland Combined Districts.

Dr. Cockill kindly furnishes the following statement of the work done in Kendal, 1926.

Summary of work done in connection with the Kendal Maternity and Child Welfare Centre :—

Number of times the Centre has been opened	...	52
" " Babies under 1 year attending	... 108	
" " Children, 1—5 years, attending	... 97	
	—	205
" " Consultations for Children	... 1346	
" " " " Mothers	... 223	
" " " " Expectant Mothers	... 123	
	—	1692
Average Number of Children attending per Session	... 25.9	
" " " Mothers " "	... 4.3	
" " " Expectant Mothers " "	... 2.3	
	—	32.5
Number of Expectant Mothers admitted to Hospital under the Maternity and Child Welfare Act	... 19	
The following is a summary of Nurse Peterson's (the Kendal Health Visitor's) excellent work :—		
Number of Visits to Newborn Babies	... 235	
Number of Subsequent Visits	... 1164	
Number of Visits to Children (1—5 years)	... 198	
Number of Visits to Expectant Mothers	... 87	
Number of Stillbirth Enquiries	... 11	
Number of Infant Death Enquiries	... 11	
Attendances at Centre	... 49	
	—	
	Total	1754
		—

Passing from infants and pre-school children to children of school age we find that in the Administrative County the nurses paid 3,827 visits to the homes in connection with children found defective at school medical inspection.

2,284 children had dental treatment, 5,251 had dental inspection, 523 children had their eyes tested by refraction, and 4,455 had full routine medical inspection.

Twenty-one children (3 of them under school age) received residential treatment at the Ethel Hedley Orthopædic Hospital, Calgarth Park, Windermere, in 1926. In addition 118 children have been under continued observation at the Orthopædic After-care Clinics at Kendal, Kirkby Lonsdale, Penrith, and at the Ethel Hedley Hospital out-patient department.

MATERNITY.

In 1926 no deaths occurred from puerperal sepsis. Two deaths occurred from other accidents and diseases of pregnancy and parturition, both from hæmorrhage, complicated by placenta prævia. Arrangements are in action for the dental treatment of expectant mothers, and ante-natal health supervision is being extended.

The figures for the years 1921-1926 as to maternal deaths are as follows:—

Year.	No. of Births.	Deaths from Sepsis.	From other Causes.
1921	1180	1	5
1922	1129	0	8
1923	1098	0	3
1924	1060	1	4
1925	986	2	4
1926	1058	0	2
Total	6511	4	26

For the year 1926 the mortality rate from Sepsis is nil, for other causes it is 1.9. The rate for England and Wales is 2.52 per 1,000 births.

MIDWIVES ACTS, 1902 & 1918.

Dr. Dorothy Potts, who acts as Inspector of Midwives, reports as follows:—"26 qualified midwives notified their intention to practise in the County of Westmorland in 1926.

Of these 15 were District Nurses, of whom 8 were purely emergency midwives. Four midwives practise in the maternity department of the County Hospital at Kendal, and two at St. Monica's Maternity Home for unmarried mothers. Four bona-fide midwives notified their intention to practise in 1926, of whom two actually practised midwifery. One notified for emergencies only, and one is practically bedfast. 30 routine visits of inspection were paid."

MIDWIVES' NOTIFICATIONS, 1926.

Form of Notification of Sending for Medical Aid	...	33
" " Stillbirth	...	2
" " Liability to be a Source of Infection	...	5
" " Laying out a Dead Body	...	6
" " Death of Mother	...	1
" " Artificial Feeding	...	6

THE PUBLIC HEALTH (NOTIFICATION OF PUERPERAL FEVER AND
PUERPERAL PYREXIA) REGULATIONS, 1926.

These regulations, which came into force as from October 1st, 1926, aim at securing increased control over this infection, and at providing adequate nursing and treatment for the patient.

As defined in the Regulations, by "Puerperal Pyrexia" is meant "any febrile condition (other than a condition which is required to be notified as puerperal fever under the Infectious Diseases (Notification) Acts) occurring in a woman within 21 days after child-birth or miscarriage, in which a temperature of 100.4 F. or more has been sustained during a period of 24 hours, or has recurred during that period."

Special notification forms have been issued to medical practitioners by the Medical Officer of the Westmorland Combined Districts in which the notifying practitioner states whether he desires:—

1. A second opinion.
2. A bacteriological examination.
3. That the patient be admitted to hospital.
4. Provision of a trained nurse.

Arrangements are being completed by the County Council to provide these facilities.

The Maternity department at the County Hospital, Kendal, has proved a very great boon to many mothers from Kendal and from all over the County. In 1926, 84 mothers were confined. There were no maternal deaths. Two infants died, and there were nine still-births. The response on the part of the mothers to this recent provision for their comfort and safety has been gratifying to all concerned. The mothers have expressed their deep sense of gratitude for the skilled treatment they have received, and for the great kindness shown them by the Matron and her nursing staff.

There is at Kendal a Maternity Home for unmarried mothers administered by the Carlisle Diocesan Rescue and Preventive Association, where for a number of years now much needed work is done in physical and moral reconstruction.

NOTIFIABLE DISEASES.

In the following table a statement of the number of diseases notified in the various districts in 1926, will be found:—

The abnormally high incidence of Scarlet Fever in 1926 was a legacy from 1925, the districts chiefly affected being Kendal, East Westmorland (Tebay), and South Westmorland.

Thus far Westmorland has escaped from smallpox which has been prevalent in neighbouring Counties. A close eye has been kept on children reported as suffering from chickenpox, and parents have been urged to have their infants vaccinated, and their older children and themselves re-vaccinated. Similar precautions are being taken at the Westmorland Sanatorium, Meathop, in respect of patients before admission from infected areas.

TUBERCULOSIS.

The following brief statistical statement summarises the main figures :—

	No. of Notifications, Average.	
	1926.	1921-25.
Notification of Tuberculosis :		
Pulmonary Tuberculosis ...	... 62	... 81
Other forms of Tuberculosis	... 6	... 17
Deaths from Tuberculosis :		
Pulmonary Tuberculosis ...	... 34	... 35
Other forms of Tuberculosis	... 6	... 9

Return showing the extent of residential treatment in 1926.

	Children.		Institution on Jan. 1st.	Admitted during the Year.	Discharged during the Year.	Died in Institution.	In Institution on Dec. 31st.
	Adults.						
Number of Patients.	M	12	12	16	14	4	10
	F	10	10	23	20	1	12
	M	2	2	—	2	—	—
	F	4	4	2	5	—	1
Number of Observation Cases.	M	2	2	—	2	—	—
	F	—	—	—	—	—	—
	M	—	—	—	—	—	—
	F	—	—	—	—	—	—
Total	.....	30	41	43	5	23	

**REPORT BY THE TUBERCULOSIS OFFICER,
C. FERGUSON WALKER, B.A., M.D., B.S., D.P.H.,
THE YEAR 1926.**

In addition to the ordinary medical work of the Institution, I am, as County Tuberculosis Officer, responsible for the clinical work of the scheme.

The Ministry of Health in Memorandum 37/T has laid down a new system of record keeping, and owing to there being no clerical assistance available at the County Dispensary, the introduction of this system has been very difficult, and so far has only been attempted for the Kendal Dispensary area. When the new system is in working order for the whole County, it will no doubt facilitate the making out of returns, etc., nevertheless the additional work involved is a serious matter with such a limited staff.

A feature of the county work has been the cordial co-operation of the medical men throughout the area, which has been of the greatest assistance in referring early or suspected cases for diagnosis and treatment. Patients are examined either at their homes—which often involves arduous motor journeys of 100 miles or more, under severe weather conditions, to outlying parts of the County—or at the consulting room of the medical attendant, or at the Dispensary Clinics in Kendal or Appleby. In many cases repeated examinations are made, and a continuous record of temperature charted, before a diagnosis is arrived at. X-ray examination at the County Hospital or at Meathop has been helpful in difficult cases.

Sputum outfits for sending specimens for examination are supplied to the doctors by the County Health Officer, and no charge is made for examination or report. When reporting the result of such an examination to the medical attendant, I always write him offering to examine the patient, with a view to sanatorium treatment or otherwise, and in this way one gets in touch with new cases while still in an early and curable stage.

During 1926 the number of specimens sent by the County doctors to Meathop under this arrangement was 66, of which 20 proved to be positive and 46 negative for T.B. Of the patients whose sputum was so examined, 9 were subsequently recommended for, and persuaded to avail themselves of, sanatorium treatment.

The number of Westmorland patients recommended for treatment during 1926 was 41, who were all treated at Meathop with the exception of one who was sent to Blencathra Sanatorium in Cumberland.

The following are the statistics of sanatorium treatment of the Westmorland patients :—

Table C.—Summary of Condition on Discharge (41 cases).

Quiescent.	Improved (not quiescent).	Not Improved.
19	20	2
T.B.—on admission.	T.B.—on discharge.	
18	11	

DENTAL TREATMENT.

The following are the figures showing dental treatment of Westmorland patients at Meathop during 1926:—

Treatments	...	...	65
Patients Treated	...	...	22
Extractions	...	...	83
Fillings	...	...	1
Scaling	...	...	2
Dentures Repaired	...	...	3
Part Dentures Supplied	...	...	13
Full Dentures Supplied	...	...	1

The following table gives the figures for the work of the Kendal Dispensary during the year:—

Attendances of Tuberculosis Officer	..	51
New Cases Examined	...	60
Total Patients Examined	...	134
Total Examinations and Consultations	...	382
Total Nurses' Visits	...	1257

DISPENSARY CHANGES.

The duties of Tuberculosis Health Visitor for Kendal are now combined with those of District Nurse to the Levens Nursing Association. Miss Hutt, the first holder of the combined appointment, did splendid work in organising the new system of records; she resigned in October on account of her approaching marriage; I cannot speak too highly of her invaluable tact and experienced assistance. We were fortunate in securing as her successor Miss Illingworth, who continues the same duties; she has also been very helpful and reliable.

The new Dispensary premises on Fellside are now complete, the heating has been improved, and they are commodious, central, and fairly quiet. I must again thank the retiring Chairman of the Public Health Committee, Mr. F. W. Crewdson, for the kind personal interest he took in supervising the extensive alterations required to make the premises suitable for use as a Clinic: the result is admirably satisfactory in every way.

AFTER-CARE.

Arrangements are made to follow up every patient discharged from the Sanatorium. In the first place, a medical report is sent to the County Health Office, and the Health Visitor is notified to put the case on her visiting list. I also write to the patient's private medical attendant giving full medical details regarding his progress, condition on discharge, and any further treatment which may be desirable. Thus the patient is able to receive appropriate advice and guidance in regard to home treatment.

Further consultations are arranged as requisite between the medical attendant and myself, and when desirable I re-visit the patient, or examine him at the Dispensary, in order to advise as to home treatment or further Sanatorium treatment.

During 1926 I paid 98 such home visits.

When home conditions are bad, and a suitable site exists, a shelter may be provided; of these the Westmorland County Council have 11 in use. They are at present located as follows:—Kendal (2), Bampton, Crooklands, Endmoor, Grasmere, Great Asby, Milnthorpe, Shap, Storth, Winton (1 each).

It may be of interest to give here a brief diary of an actual day's county work, which will give an idea of some of the difficulties one encounters. I may explain that I drive my own car.

8 a.m. Red sunrise, watery sky, looks like rain or snow.

8-45—9-30. Telephone calls to doctors re appointments, letters and institution matters of urgency.

9-30. Leave Meathop.

11 a.m. Arrive Kirkby Stephen. Snowing. See one new patient in consultation with doctor, and 2 ex-Meathop patients. Consultation with nurse re other cases.

12 noon. Leave Kirkby Stephen.

12-20. Arrive Crosby Garret. See 2 ex-Meathop patients. Advise further Sanatorium treatment for one; the other keeping well.

1-0 p.m.—Arrive Winton, see 2 patients (one in shelter).

1-30 p.m. Arrive Brough, snow 3 inches deep. See 3 patients in doctor's surgery, 1 in the town occupying shelter. Doctor wants me to see another patient (very ill) at an outlying farm 5 miles up Stainmore.

2 p.m. Leave Brough for Stainmore. Snow getting deeper, road very heavy, but has stopped snowing.

3 p.m. Arrive at patient's house on bleak hillside, after 1 mile walk through fields (snow knee deep). Patient very acute case, try to persuade her to come to Meathop.

- 4 p.m. Back at Brough. Leave at once for Appleby, where I was due at 3 p.m. (no time for lunch). Road to Appleby fairly good, but snow has recommenced.
- 4-30 p.m. Arrive Appleby. Examine 3 patients at dispensary, and one at doctor's surgery. Consultation with nurse re cases on her list. Consultation with doctor re cases in his district. Arrange for two patients to have Sanatorium treatment. Swallow a cup of tea.
- 5-30 p.m. Leave Appleby. Snowing very thickly, commence ascent towards Orton Scar. Car labouring heavily, stop and fit ropes to back wheels, and resume. Snow now 1 foot deep; if car sticks will not be able to restart.
- 6 p.m. Car stopped by 2ft. drift on the approach to the exposed part of the Scar. Back out and turn with great difficulty. Head back again towards Appleby, turn left for Mauld's Meaburn, to try the detour via Crosby Ravensworth to Orton. Snow has stopped, clear sky, bright starlight.
- 6-45 p.m. Car sticks again in deep drift where the road nears the summit of the Scar, and is very exposed. No house near where a spade could be borrowed, start using the jack to cut wheel tracks through the snow. Blizzard starts again.
- 7-30 p.m. Car going again, ploughs along for 40 yards, then sticks in another drift. More work with the jack, then renew the rope on one wheel, as it has been cut to pieces.
- 8 p.m. Start the car again, with the engine racing, can barely keep moving. At last I reach the summit and the main road, and commence the descent to Orton through a snow cutting 4 or 5 feet deep.
- 8-30 p.m. Orton; consultation with doctor re case to be examined at Tebay. Fill radiator, which is nearly empty. Empty reserve tin of petrol into tank. Notice front number plate bent out of recognition by ploughing through snow.
- 9 p.m. Tebay. Examine new patient, with apologies for arriving so late. Advised Meathop, patient willing and anxious to come.
- 9-30 p.m. Leave Tebay. Going heavy all the way to Kendal.
- 11 p.m. Arrive Meathop. Distance covered 112 miles.

Although the above weather conditions are fortunately exceptional, yet it will be understood that when consultations and appointments have been arranged they must be kept, whatever the weather; so it is not surprising to find one has to dig through snow-

drifts occasionally; or, as on one occasion at Kirkby Stephen, to find oneself beset by fog so dense that one did not arrive home till midnight.

On the last occasion when I visited the east and north of the county the weather conditions were everything that could be desired during the day, but I had so many patients to see at Appleby and elsewhere that darkness was falling as I started for home, and I had the misfortune to be stopped by a puncture, right "on the roof of Westmorland," 1,300 feet above sea level. The wind was so cutting and powerful that the job took $1\frac{1}{2}$ hours, owing to the fact that one's hands were quickly benumbed, so that they lost all feeling.

Dr. Quine, of the Ministry of Health, paid an official visit of inspection to the County, and spent December 20th and 21st inquiring into the working of our Tuberculosis Scheme. On the first day he visited the Sanatorium at Meathop and the County Tuberculosis Clinic at Kendal, on the second day he accompanied me on a tour of country visits.

Leaving Kendal at 9-30 a.m., we visited Kirkby Stephen, Brough, Stainmore, Brackenber, Appleby, Dufton, and Orton, arriving back at Kendal 8-30 p.m. The day's work included consultations with 6 doctors, reviewing lists with 2 nurses, and examining 11 patients; the distance travelled was 100 miles. This is the first time an official of the Ministry has gone so fully into the details of the working of the Westmorland Tuberculosis Scheme.

Dr. Quine showed a sympathetic understanding of the special problems and difficulties peculiar to such a scattered area of population.

In conclusion, I desire to express my cordial appreciation of the helpful co-operation of my colleague, Dr. Henderson, the County Medical Officer, and of the invaluable work done by the Nurses of the County Nursing Associations, who act as Tuberculosis Health Visitors in their respective areas.

C. FERGUSON WALKER,

Medical Superintendent and

County Tuberculosis Officer for Westmorland.

THE CONTROL OF BOVINE TUBERCULOSIS.

Under the Tuberculosis Order the following action has been taken in 1926 :—

Animals Destroyed	...	...	...	126
Compensation paid :—				
Rate.		No. of Animals.		Amount paid.
				£ s. d.
1.	...	1	...	5 0 0
2.	...	68	...	637 17 6
3.	...	57	...	154 15 0
				<hr/>
				£797 12 6
				<hr/>

Arrangements are in force for close co-operation between the Veterinary Inspectors, the Agricultural Officer, the Police, and the County Health Office, in carrying out the requirements of this Order.

HOUSING.

The Housing (Rural Workers) Act, 1926, empowers County Councils to give assistance either by grant or loan to owners of dwelling houses for agricultural workers, or for persons whose economic condition is substantially the same as that of such workers, for the purpose of reconditioning such dwelling houses.

A draft Scheme, in terms of this Act, has been considered by the County Council, and has received the approval of the Ministry of Health.

Working-class cottages found on inspection to be defective remain unremedied when the owner is not in a financial position to carry out the reconditioning. This Act will help such owners to remedy the defects.

This Act is not meant to give assistance to well-to-do people from the cities who rent or purchase as "week-end" cottages dwelling-houses originally built for rural workers. In view of the housing shortage this procedure is not playing the game.

The following tabulated statement summarises the housing activities in 1926 :—

PUBLIC HEALTH (VENEREAL DISEASES) REGULATIONS.**A. SCHEME.**

(a) Arrangements are in force whereby Westmorland patients are treated at the V.D. Clinics at the North Lonsdale Hospital, Barrow-in-Furness, at the Cumberland Infirmary, Carlisle, and at the Preston Royal Infirmary (occasionally).

There is a maternity home for unmarried mothers in Kendal (St. Monica's); all patients before admission have the Wassermann test applied. Should any prove positive they are transferred to the Hope Hospital, Leeds, for obstetric and venereal treatment.

(b) Diagnosis.

All medical practitioners are supplied with special outfits (blood and smears) for sending specimens to the Pathological Department of the University of Manchester.

(c) Attendance at V.D. Clinics.

In necessitous cases the scheme provides for the payment of the railway fares to the clinics.

(d) Supply of Approved Drugs.

The medical practitioners who have had previous experience in the administration of approved drugs have been supplied with these drugs.

B. ADEQUACY OF PROVISION.

The distance of the clinics is a disadvantage, but it is very problematic if the incidence of venereal disease in this County warrants the opening of a centre.

From extensive enquiry in all directions I cannot find a high incidence of the disease in this County.

C. CO-OPERATION OF MEDICAL PROFESSION.

All practitioners have been informed about the Scheme and the facilities offered, and they frequently make use of the diagnosis outfits.

D. PUBLIC INSTRUCTION.

By means of the Westmorland Branch of the Social Hygiene Council special lectures have been given to women and female adolescents by Dr. Brade Birks, and by myself to male adolescents.

During 1926, 26 blood specimens were sent to the Public Health Laboratory, Manchester, of which 5 gave a positive and 21 a negative Wassermann reaction. Three specimens were examined for gonococcus at the Laboratory of the Westmorland Combined Districts.

	Ambleside	Appleby	Grasmere	Kendal	Kirkby Lonsdale	Shap	Windermere	E. Westmorland	S. Westmorland	West Ward	Total
Number of new houses erected during 1926 :—											
(a) Total (including numbers given separately under (b))	4	9	2	85	3	0	9	11	37	8	168
(b) With State assistance under Housing Acts :											
(i) By the Local Authority	0	6	0	36	0	0	0	6	0	0	48
(ii) By other bodies or persons	0	3	0	44	3	0	6	5	20	0	81
Unfit Dwelling-houses :—											
Inspection (1) Total number of dwelling-houses inspected for housing defects	59	212	6	1276	18	8	40	213	69	64	1965
(2) Number of dwelling-houses inspected and recorded under Housing Consolidated Regulations, 1925	13	212	2	153	10	4	20	213	60	5	692
(3) Number of dwelling-houses found unfit for human habitation	0	0	0	4	0	0	0	0	0	0	4
(4) Number of dwelling-houses (exclusive of above) found not in all respects reasonably fit for human habitation	0	17	0	376	9	4	0	198	24	28	656
Remedy of defects without Service of formal notices.											
Number defective dwelling-houses rendered fit	0	17	6	337	1	4	0	161	24	28	578
Action under Statutory Powers.											
A. Proceedings under Section 3 of Housing Act 1925.											
(1) Number of dwelling-houses in respect of which notices served	0	0	0	19	1	0	0	0	0	0	20
(2) Number of dwelling-houses which were rendered fit after formal notices :—											
(a) By Owners	0	0	0	15	1	0	0	0	0	0	16
(b) By Local Authority in default of Owners	0	0	0	4	0	0	0	0	0	0	4
B. Proceedings under Public Health Acts.											
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	23	0	0	20	8	0	0	32	55	0	138
(2) Number of dwelling-houses in which defects were remedied after service of formal notice :											
(a) By Owners	23	0	0	16	8	0	0	26	4	0	77
(b) By Local Authority in default of Owners	0	0	0	4	0	0	0	0	0	0	4
C. Proceedings under Sections 11, 14 & 15 of the Housing Act, 1925 :											
(1) Number of representations made for Closing Order	0	0	0	4	0	0	0	0	0	0	4
(2) Number of dwelling-houses in respect which Closing Orders were made	0	0	0	4	0	0	0	0	1	0	5

Between 1921 & 1925, 133 working class dwelling houses had been erected in Kendal, 131 in South Westmorland, 44 in Windermere and 36 in East Westmorland. The Windermere Urban Council have passed plans for 60 houses on its Oldfield Estate.

Reference was made in my Survey Report of 1925 to the extensive work undertaken by the Corporation of Kendal, and by the Kendal and District Housing Society, Ltd.

In 1926, 9 Westmorland patients were treated, 5 for Syphilis, 2 for Gonorrhoea, and one for Soft Chancre at the following treatment centres, viz. :—5 at Barrow-in-Furness, 3 at Carlisle, and 1 at Preston. The total attendances of Westmorland patients at these centres numbered 151, and the aggregate number of "in-patient" days was 15. In addition one mother and infant were treated at the Hope Hospital, Leeds.

SALE OF FOOD AND DRUGS ACTS.

In the County, excluding the Borough of Kendal, the Police take samples under these Acts. The County Analyst, Mr. C. J. H. Stock, B.Sc., F.I.C., reports for the year ended 31st December, 1926, as follows:—

ANNUAL REPORT OF THE COUNTY ANALYST.

(1) During the 12 months ended the 31st December, 1926, I have analysed 80 samples of Food submitted by the Inspectors appointed under the Sale of Food and Drugs Acts, for the County of Westmorland, viz. :—

From Appleby Division	...	...	...	37
From Kendal Division	...	...	...	43
				—
				80
				—

(2) The following table briefly summarises the result of the analysis of these samples, and indicates what action has been taken in connection with those which were not found to be of genuine quality:—

Number of samples of milk submitted	...	...	...	52
Number of other articles	...	...	...	28
				—
				80
				—
Number of samples Adulterated or Below Standard	...	...	...	5
Number of samples of Doubtful Quality	...	...	...	—
Number of samples "Appeal to Cow"	...	...	...	4
Number of samples "on delivery"	...	...	...	1
Number of Persons cautioned	...	...	...	1
Number of Persons summoned	...	...	...	4
Number of Persons convicted	...	...	...	3
Number of Persons discharged	...	...	...	1
Number of Persons to pay costs	...	...	...	3
Number of cases in which no action taken	...	...	...	—
Number of cases pending at end of year	...	...	...	—
Amount of Fines	...	...	£12 : 12 : 0	
Amount of Costs	...	...	1 : 13 : 0	

(3) The percentage of adulteration for the year is 6.66; for the 12 months ended the 31st December, 1925, it was 12.8.

In each case all samples, other than appeal and reference samples, which have been reported as not being of genuine quality are included.

(4) The only article in respect of which it has been necessary to institute proceedings is milk, the whole of the other samples being of genuine quality.

(5) Of the 52 samples of milk submitted during the 12 months, 5 were returned as being adulterated or below standard, while 4 samples were taken as appeal to the cow samples and 1 as a reference sample in course of delivery.

Excluding the appeal and reference samples, the percentage of adulteration for Milk amounted to 10.63; for the previous 12 months the figure was 22.44.

In view of the fact that the number of ordinary samples of Milk for the two periods was practically the same, namely, 49 in 1925, and 47 in 1926, the reduction in the percentage of adulteration is satisfactory, but is still too high when the average composition of the 42 genuine samples is taken into consideration:—

Average Composition of 42 Genuine Milks.

Non-Fatty Solids	...	...	...	...	8.85%
Fat	...	...	...	...	3.72%

These figures compare very closely with the average for the year 1925, in which the average Non-fatty Solids were 8.67% with Fat 3.80% for 38 genuine samples.

The conclusion is therefore that Milk of good and satisfactory quality is capable of being produced in the County.

(6) OTHER SAMPLES.

As already indicated, the other samples submitted for analysis were genuine, and the number and kind of these articles were as follows:—

Almonds, Ground	...	3	Egg Powder	...	1
Baking Powder	...	1	Lard	...	1
Butter	...	2	Milk, Condensed	...	4
Cinnamon, Ground	...	3	Oatmeal	...	1
Cocoa	...	2	Rice, Ground	...	3
Coffee	...	3	Sponge Fingers	...	2
Cream of Tartar	...	1	Tea	...	1

In view of the new Regulations dealing with Preservatives, some extension of the above list of articles would appear to be necessary in the future.

(Signed) CYRIL J. H. STOCK.

In the Borough of Kendal the Inspector under these Acts is the Borough Sanitary Inspector, and the Borough Analyst is Mr. W. H. Roberts, M.Sc., F.I.C., Liverpool.

The Medical Officer of Health for Kendal reports as follows :—

Sale of Food and Drugs Acts, Borough of Kendal, the year 1926.

Four informal samples of apples were submitted to the Borough Analyst for examination for the presence of Arsenic. In one of the samples Arsenic equivalent to 1-65th grain of Arsenious Oxide per pound was found to be present on the surface and in the substance of the skin. A warning was issued to the vendor in this case. The other three samples were free from Arsenic. One informal sample of butter was submitted, and found to be genuine. 18 formal and 4 informal samples of milk were submitted, and all were found to be genuine. The average content of milk fat was 3.61%, and of non-fatty solids 9%.

SOME COMPARATIVE FIGURES.

The Registrar-General's Statistical Review for 1926 has come to hand. This is a volume full of arresting figures. For instance, in 1926, in England & Wales, of 1,359 persons burned to death, no fewer than 568 were toddlers aged one to five years. There were 340 infants suffocated in bed, and 25 in cot, cradle, etc. 419 persons were killed on the railway, while 4,075 persons met their death by or in mechanically propelled vehicles. By means of this Statistical Review we find the relative position of Westmorland among the Administrative Counties as regards the incidence of, and mortality from, certain diseases.

There are 49 English Administrative Counties, including London. As regards the incidence of certain diseases the position in 1926 of this County was as follows:—Enteric Fever, 17 Counties had a lower incidence; Scarlet Fever, no County had a higher incidence; Diphtheria, no County had a lower incidence.

The following figures give the Westmorland mortality rates for certain diseases and compare them with those for the Administrative Counties as a whole:—

DISEASE.	Mortality per Million Population of all Ages		Mortality per 1,000 Births.	
	Adminis- trative Counties.	Westmor- land.	Adminis- trative Counties.	Westmor- land.
Enteric Fever	10	16		
Tuberculosis (all Forms)	865	644		
Tuberculosis of Respiratory System	691	548		
Measles	84	48		
Whooping Cough	96	97		
Scarlet Fever	17	16		
Diphtheria	69	16		
Total deaths under 1 year per 1,000 births			64	55
Diarrhoea and Enteritis (under 2 years)			7.08	3.78
Deaths of Mothers (Child- birth)			2.52	1.89
Puerperal Fever			1.48	Nil.

Our mortality figure for Tuberculosis (All Forms) of 644 per million is the lowest among the Counties save the following four, viz. :—Soke of Peterborough 530, Huntingdon 611, Rutland 610, and Bucks 635.

Our mortality figure for Tuberculosis of the Respiratory System gives us twelfth place, there being 11 Counties with a lower mortality figure.

As regards the Infant mortality rate, Westmorland for 1926 takes twenty-first place, as 20 Counties have a lower rate. If we exclude Kendal, the County infant mortality rate resulting would place us third among the Counties with the lowest rate.

BACTERIOLOGICAL INVESTIGATIONS.

The Medical Officer of Health for the Westmorland Combined Districts kindly furnishes the following report on the bacteriological and analytical work carried out by him in his Laboratory, which is maintained by the Combined Districts. As is evident from this Table much valuable work has been done to the great and prompt convenience of the practising doctors, for results reach them with as little delay as possible.

Blood specimens for the Wassermann test are dealt with at the Pathological Department, University of Manchester, in terms of the County Scheme under the Public Health (Venereal Diseases) Regulations, 1916. In addition to the 45 specimens of sputum examined in the above Laboratory, 66 specimens were examined at the Laboratory of the Westmorland Sanatorium, Meathop, Grange-over-Sands (see page 18).

LABORATORY REPORT, 1926.

DISTRICT.	BACTERIOLOGICAL.											PHYSICAL & CHEMICAL					TOTALS.						
	Diphtheria.	Organisms.	Tubercle (Sputum).	Enteric Fever.		Bacilluria.	Vaccine Cultures.	Water (B Coll).	Milk.		Malaria.	Gonococcus.	Cytodiagnoses.	Scarlet Fever.	Urine.			Anemia.	Milk Deposits.	Water.			
				Agglutinations.	Carriers.				Bacterial Counts.	B. Coll.					Albuminuria.	Deposits.				Analysis.	Deposits.		
Ambleside ...	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
Appleby ...	7	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	
Grasmere ...	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Kendal ...	89	82	33	3	6	6	3	28	12	12	2	3	1	8	1	7	1	1	1	1	3	303	
Kirkby Lonsdale ...	12	1	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	
Shap ...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Windermere ...	23	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	3	30	
East Westmorland	4	-	-	-	-	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4	1	14
South Westmorland	57	58	11	10	2	1	1	6	17	18	-	4	1	-	-	4	-	-	-	-	2	-	188
West Ward ...	2	-	-	-	-	-	-	1	7	6	-	-	-	-	-	-	-	-	-	-	3	-	19
TOTALS	194	147	45	14	10	8	4	41	36	36	2	3	2	8	1	2	11	1	1	1	13	4	582

HANDING ON HEALTH NEWS.

Year by year this important side of our work is being extended. For this we have to thank in large measure, the County Federation of Women's Institutes. These Institutes are widespread and active in this County, and ever since their inception they have invited us to join their rota of speakers and demonstrators. We have been able to discuss together many elements in the gentle art of healthy living. The members are practical people, and such topics as "Food and Your Money's Worth," "Health in the Home," "Health and Citizenship," find favour. The positive side of health is stressed in an attempt to wean folk from the habit of for ever talking and thinking about the lurid details of disease and major operations. This work goes on all the year round, especially in autumn and winter—a health year as it were instead of a spasmodic health week.

The thanks of your Committee are due to Dr. Potts and Mr. Edwards for their valued, capable and cheerful help which calls for much evening work and many a long motor journey on misty, moonless nights.

Courses of instruction to Guides and Rangers (Senior Guides) for the Health and Child Nurse Badges have been conducted by Dr. Potts. To Scouts courses of instruction for the Healthy-man badge and to Rovers (senior Scouts) for the Public Health-man badge, have been held by Mr. Edwards and myself. This last-mentioned badge provides a training in father-craft, i.e., in practical, applied citizenship, and in the duties of a young householder in his own home and community. If the older girls are taught mothercraft, equally so should lads be taught father-craft.

The service of physical welfare is concerned not only in stamping out disease, but in stamping in healthy habits and healthy ways of living among the rising generation.

I have the honour to be,

Your obedient Servant,

WILLIAM ELMSLIE HENDERSON.

The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance in the theory of differential equations. The second part is devoted to the study of the properties of the solutions of the equation. It is shown that the solutions are bounded and continuous. The third part is devoted to the study of the asymptotic behavior of the solutions. It is shown that the solutions approach zero as the independent variable increases. The fourth part is devoted to the study of the stability of the solutions. It is shown that the solutions are stable. The fifth part is devoted to the study of the periodicity of the solutions. It is shown that the solutions are periodic. The sixth part is devoted to the study of the bifurcation of the solutions. It is shown that the solutions bifurcate at certain points. The seventh part is devoted to the study of the resonance of the solutions. It is shown that the solutions resonate at certain frequencies. The eighth part is devoted to the study of the chaos of the solutions. It is shown that the solutions exhibit chaotic behavior. The ninth part is devoted to the study of the fractals of the solutions. It is shown that the solutions exhibit fractal behavior. The tenth part is devoted to the study of the chaos of the solutions. It is shown that the solutions exhibit chaotic behavior.

