Annual report of the Medical and Sanitary Department / Sierra Leone.

SIERRA LEONE.

Annual

MEDICAL AND SANITARY

REPORT

FOR THE YEAR

1925.

FREETOWN:
Printed at the Government Printing Office
SIERRA LEONE
—
1926.

With the Compliments of

The Director of Medical and Sanitary Services.

Medical Department,
Sierra Leone.

SIERRA LEONE.

ANNUAL

MEDICAL AND SANITARY

REPORT

1925.

1,666—300. 9/9/26.

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Medical and Sanitary Report

1925.

MEDICAL AND SANITARY DEPARTMENT,
FREETOWN, SIERRA LEONE,
9th September, 1926.

THE HONOURABLE THE COLONIAL SECRETARY, FREETOWN.

SIR,

I have the honour to submit, for the information of His Excellency the Governor, the Medical and Sanitary report on the health and sanitary condition of Sierra Leone for the year 1925, together with the returns, etc., appended thereto.

I—Administrative.

(i) ESTABLISHMENT, INCLUDING VACANCIES.

MEDICAL STAFF.

1 Director of Medical and Sanitary Services
1 Deputy Director of Sanitary Service
1 Deputy Director of Medical Service
1 Senior Sanitary Officer
2 Senior Medical Officers
1 Medical Officer of Health
9 Medical Officers of the West African Medical Staff
1 Lady Medical Officer
8 African Medical Officers.

NURSING STAFF.

1 Matron, Connaught Hospital
2 Senior Nursing Sisters
3 Nursing Sisters.

SUBORDINATE MEDICAL AND SANITARY STAFF.

2 Superintendent Sanitary Inspectors
30 Dispensers
25 Male Nurses and Apprentices
24 Female Nurses and Probationers
3 Health Visitors
33 Sanitary Inspectors and Learners
1 Keeper, Lunatic Asylum
1 Assistant Keeper, Lunatic Asylum
10 Assistants, Lunatic Asylum
1 Laboratory Assistant
1 Vaccinator (Freetown).

Clerical Staff.

15 Clerks—one first grade, two second grade, six third grade and six fourth grade.

Temporary Assistance.

Dr. W. F. O. Taylor was employed as a temporary medical officer from 1st January to 31st May.

Store-keeping Staff.

1 Chief Store-keeper

2 Assistant Store-keepers.

Principal Acting Appointments.

(Substantive holders are given on Table I).

Dr. H. O'Hara May as Director of Medical and Sanitary Services, from 8th July to 4th December.

Dr. W. H. Peacock as Deputy Director of Sanitary Service, from 26th September to 4th December.

Dr. J. Y. Wood as Senior Medical Officer, from 1st January to 10th March.

Dr. J. M. MacKay as Medical Officer of Health, from 1st January to 24th November.

Dr. J. Y. Wood as Medical Officer of Health, from 25th November to 31st December.

Miss A. E. Macmaster as Matron, Connaught Hospital, from 25th November to the end of the year.

New Appointments.

The following new appointments were made during the year:—

Dr. C. B. Jennings as Medical Officer, West African Medical Staff, on the 7th January.

Dr. R. F. Campbell as Medical Officer, West African Medical Staff, on the 4th February.

Dr. W. F. O. Taylor, who was previously temporarily employed, was appointed African Medical Officer on 1st April.

Dr. J. A. Williams as African Medical Officer, on the 7th April.

Dr. M. G. Blacklock as Lady Medical Officer, on the 18th March.

Miss A. E. Macmaster as Nursing Sister, on the 29th April.

Miss C. H. B. Goodwin as Nursing Sister, on the 7th October.

Consequent on the death of Mr. E. G. Luke, Chief Dispenser, at Wembley on the 23rd July, the following changes took place in the African subordinate staff:—

Mr. D. T. Betts, Assistant Chief Dispenser, promoted Chief Dispenser.

Mr. I. H. Wright, Senior First Class Dispenser, promoted Assistant Chief Dispenser.

Mr. K. A. King, Assistant Store-keeper, promoted Store-keeper.

(ii)—FINANCIAL.

The following tables give the comparative revenue and expenditure for the years 1924 and 1925:—

Medical Revenue.	1924. £	s.	d.	1925. £	s.	d.
Connaught Hospital's receipts	151	6	6	162	3	3
European Hospital's receipts	838	9	9	467	9	6
Sundry receipts (out-patients' fees, etc. ...	189	3	6	309	0	7
Druggists fees (registration)	3	10	0	3	0	0
Maintenance of lunatics	190	2	1	115	3	6
Departmental fines	17	14	8	7	6	7
Total	£1,390	6	6	£1,064	3	5

Medical Expenditure.	1924. £	s.	d.	1925. £	s.	d.
Personal Emoluments	27,643	13	3	32,574	2	9
Other Charges	14,052	10	7	18,469	17	11
Total	£41,696	3	10	£51,044	0	8

Sanitary Revenue.	1924. £	s.	d.	1925. £	s.	d.
Sanitary services (Contributions from Bonthe)	367	9	7	232	4	11
Maintenance of persons in quarantine ...	74	19	3		...	
Total	£442	8	10	£232	4	11

Sanitary Expenditure.	1924. £	s.	d.	1925. £	s.	d.
Personal Emoluments	7,726	18	4	7,253	7	8
Other Charges	11,588	10	0	10,521	8	10
Total	£19,315	8	4	£17,774	16	6

Ratios of combined Medical and Sanitary votes to total estimated revenue for the past five years:—

	£	
1921	82,194	1 : 12·4
1922	75,270	1 : 11
1923	68,033	1 : 11·1
1924	67,725	1 : 10·6
1925	73,731	1 : 11

ANALYSIS OF HOSPITAL EXPENDITURE FOR THE YEAR 1925.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Institution.	Total number of patients.	Daily average number of patients.	Hospital days.	Provisions from Store-keeper. Total.	Fresh provisions. Total.	5 and 6 per patient per day.	Wines, Spirits, Minerals, Tobacco, Ice. Total.	8 per patient per day.	7 and 9 per patient per day.	Fuel, Light. Total.	Miscellaneous: cleaning materials, hospital equipment, replacements.	Total of 5, 6, 8, 11 and 12.	5, 6, 8, 11 and 12 per patient per day.	Total sum recoverable from paying patients.
				£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
European Hospital ...	111	3·60	1,135	59 1 0	240 16 8	0 4 6½	48 9 7	0 0 8¾	0 5 3¼	24 2 0	56 12 0	423 1 3	0 6 6¼	467 9 6
Connaught Hospital	1,860	64·21	23,440	683 15 2¼	1,092 15 11	0 1 6	31 13 7	0 0 0¼	0 1 6¼	212 18 6	50 19 5¼	2,072 2 7¼	0 1 9	100 16 3
Lunatic Asylum ...	1,009	78·61	28,698	36 12 0	923 3 6	0 0 8	20 8 0	0 0 0¼	0 0 8¼	40 16 0	39 1 0	1,060 0 6	0 0 8	61 7 0
Ki-sy Infirmaries ...	734	47·54	17,355	31 7 0	545 5 0	0 0 7¼	18 6 0	0 0 0¼	0 0 7¼	67 14 0	38 19 0	701 11 0	0 0 9¼	—
Bonthe Hospital ...	332	12·27	4,478	26 1 3¼	227 4 1	0 1 1¼	—	—	0 1 1¼	8 13 5	10 17 5¼	273 6 2¼	0 1 4¼	1 3 0

II—Public Health.

(i) GENERAL REMARKS.

1. The general health of the European officials was on the whole satisfactory, though a greater number (176) went on the sick list for a greater number of days (1,683), as against 155 for 1,382 days in 1924. The total number of invalidings was five—the lowest on record; and the total deaths was two.

The invaliding rate per 100 residents was 2·77 as compared with 7·92 for 1924.

The invaliding rate for the past ten years is shown below.

Year.	Average Number Resident.	Total Number of Invalidings.	Percentage of Invalidings to Average Resident.	Remarks.
1916	172	8	4·65	
1917	110	9	8·18	
1918	97	11	11·34	
1919	...	...	...	Records destroyed in hospital fire of 3rd February, 1920.
1920	133	10	7·51	
1921	144	15	10·41	
1922	109	5	4·58	
1923	102	14	13·72	
1924	164	13	7·92	
1924	180	5	2·77	

2. Malaria, though as usual the most common individual cause of sickness, still shows a slight decrease in the number of cases treated. There were fifty-eight in-patients and thirty-nine out-patients in a total of 115 and 400, respectively.

Table showing relative position of malaria as a cause of time lost through sickness (excluding Imperial Troops).

Year.	Average Resident.	Total Sick Days.	Total Days spent on Sick List for Malaria.	Total Days spent on Sick List for other Causes.	Percentage of Malaria Days to Total Days.	Number of Days lost through Malaria for year per 100 Resident.
1921	144	1,815	938	877	51·68	651
1922	109	1,426	590	836	41·37	541
1923	102	1,462	319	1,143	21·81	312
1924	164	1,382	446	936	32·27	271
1925	180	1,683	402	1,281	23·88	223

The number of days lost through malaria continues to show a satisfactory decrease.

3. Among the African officials the general health remained fairly good. The invaliding rate shows a very slight reduction. The death-rate shows an increase.

4. The following are the total cases treated in Government hospitals and dispensaries.

	1923.	1924.	1925.
IN-PATIENTS—			
Europeans	131	152	115
Africans	3,154	3,381	3,207
OUT-PATIENTS—			
Europeans	170	395	400
Africans	46,805	53,270	61,030
Total	50,260	57,198	64,752
DEATHS—			
Europeans	2	3	3
Africans	197	231	242
Total	199	234	245
Percentage of deaths to total number treated ...	·39	.40	·37

A total increase of 7,552 in the number of new cases treated. This increase was all on the out-patients' side, as there was a reduction of 211 in the total of in-patients admitted—174 Africans and thirty-seven Europeans.

5. Sierra Leone was free from any epidemics throughout the year.

Communicable Diseases.

6. *Dysentery.*—A total number of 199 cases of dysentery, showing decrease of 282 as compared with 1924 when 481 cases were reported.

7. *Tuberculosis.*—The precautions taken, as mentioned in last year's report, still continue, viz. the compulsory notification by the Registrar of Births and Deaths of every case which comes under his observation to the Medical Officer of Health with subsequent inspection, disinfection and advice as to overcrowding, etc. The returns reveal a total of seventy-three in-patients and 121 (new) out-patients—making a total of 194 cases. This shows an increase of sixty-three over last year. In August a ward in the Connaught Hospital was set apart for the treatment of early cases of tuberculosis, but the result has been disappointing as only twenty cases agreed to be admitted. As a result of this experiment the Government was advised that the time is not yet ripe to expend large sums on a special tuberculosis sanatorium.

8. *Venereal Diseases.*—Both gonorrhœa and syphilis continue to show an increase in the number of cases presenting themselves for treatment. In June, 1925, a special venereal diseases clinic was opened in connexion with the out-patients department of the Connaught Hospital. 160 new cases were seen with 245 subsequent attendances.

9. Table of Incidence:

Disease.	1921.	1922.	1923.	1924.	1925.
Tuberculosis	116	91	138	131	194
Dysentery	185	252	306	481	199
Gonorrhœa	1,087	969	1,248	1,248	1,523
Syphilis	687	647	919	919	1,005

10. *Malaria.*—There was an increase of 258 in the total number of cases treated. 3,750 against 3,492 in 1924. Deaths from malaria were seven or a case mortality of ·18 per cent.

11. *Blackwater Fever.*—Three cases only were reported during the year with two deaths. One case occurred at Moyamba and the other two at Bonthe.

12. *Leprosy.*—A total of fifty-eight cases was reported from all stations.

13. *Trypanosomiasis.*—No cases were reported.

14. *Ankylostomiasis.*

The following table gives the numbers examined with the percentage of infection:—

Place.	Number Examined.	Number Infected with Ankylostomes.	Per Cent.	Remarks.
Freetown ...	805	204	25·34	Connaught Hospital laboratory
Freetown ...	170	62	26·47	Freetown Prison
Bonthe ...	191	143	74·86	In and out-patients and prisoners
Kissy ...	26	23	88·46	Patients—Male and Female Infirmaries
Bo	7	7	...	
Port Lokko ...	78	38	48·72	Court messengers with their wives and children
Moyamba	200	149	74·50	Mostly prisoners
Moyamba	106	71	68·93	Boys of Agricultural Training College
Makeni ...	41	15	36·59	Court messengers and soldiers
Daru ...	200	117	58·50	Soldiers and civilians

(ii)—HEALTH OF EUROPEAN OFFICIALS (EXCLUDING IMPERIAL FORCES).

(*a*) TABLE SHOWING THE SICK, INVALIDING AND DEATH-RATE OF EUROPEAN OFFICIALS.

	1923.	1924.	1925.
Total number of officials resident	188	198	200
Average number of resident	102	164	180
Total number on sick list	167	155	176
Total number of days on sick list	1,462	1,382	1,683
Averrge daily number on sick list	4·00	3·77	4·61
Percentage of daily sick to average number of residents	3·92	2·29	2·56
Average number of days on sick list to each patient ...	8·75	8·91	9·50
Average sick time to each resident	14·33	8·42	9·35
Total number invalided	14	13	5
Percentage of invalidings to total residents	7·44	6·56	2·50
Percentage of invalidings to average number resident	13·72	7·92	2·77
Total deaths	...	1	2
Percentage of deaths to total residents	...	0·50	1·00
Percentage of deaths to average number resident ...	...	0·60	1·11

(*b*) CAUSES OF INVALIDINGS AND DEATHS OF EUROPEAN OFFICIALS.

Causes.	Invalided.	Died.
Exophthalmic goitre	1	...
Dilatation of the heart	1	...
Hepatitis	1	...
General debility and severe eyestrain	1	...
Neurasthenia and general debility	1	...
Cardiac failure following cerebral hæmorrhage	...	1
Cardiac failure following continued hyperpyrexia and malaria	...	1
Total	5	2

(*c*) GENERAL TABLE OF INVALIDINGS AND DEATHS OF EUROPEANS.

	Total Resident.	Deaths.	Invalided.
Officials, including West African Frontier Force	200	2	5
Imperial Military	283	1	4
Others	350	3	3

(*d*) HILL STATION EUROPEAN RESERVATION.

Between 700 and 900 feet above Freetown, overlooking and connected with it by a winding railway about five miles long and a good motor road.

The average number of residents at Hill Station during the year was fifty-four, divided as follows:—

Civil officials, 34; Military, 7; Missionaries, 2; Non-officials and wives of above, 11.

(iii)—HEALTH OF AFRICAN OFFICIALS.

(*a*) TABLE SHOWING THE SICK, INVALIDINGS, AND DEATH-RATES OF AFRICAN OFFICIALS.

	1923.	1924.	1925.
Total number of officials resident	850	992	1,009
Average number of resident	750	900	997
Total number on sick list	879	1,009	1,121
Total number of days on sick list	7,586	8,920	8,735
Average daily number on sick list	20·78	24·37	23·93
Percentage of daily sick to average number resident ...	2·77	2·70	2·40
Average number of days on sick list to each patient ...	8·63	8·84	7·79
Average sick time to each resident	10·11	9·91	8·76
Total number invalided	13	18	18
Percentage of invalidings to total resident	1·52	1·81	1·78
Percentage of invalidings to average number resident	1·73	2·00	1·80
Total deaths	7	5	10
Percentage of deaths to total residents	0·82	·50	·99
Percentage of deaths to average number resident ...	0·93	·55	1·00

(*b*) Causes of Invaliding and Deaths of African Officials.

Causes.	Invalided.	Died.
Primary lepidoma (inoperable) of abdominal wall	1	...
Pulmonary tuberculosis	2	...
Double cataract	1	...
Glosso-pharyngeal paralysis	1	...
Cardiac dilatation and insufficiency	1	...
Mental instability and disturbance	1	...
Neurasthenia and general debility	1	...
Defective vision	1	...
Malignant neoplasm with marked cachexia	1	...
Cardiac weakness, anæmia and general debility	1	...
Naso-pharyngeal adenoma and valvular disease of the heart	1	...
Cardiac arhythmia and recurrent attacks of secondary vertigo	1	...
Valvular disease of the heart and myocardial degeneration	1	...
Chronic hepatitis mitral regurgitation right inguinal hernia and general debility	1	...
Anæmia and mental deficiency	1	...
Organic disease of the heart	1	...
Primary syphilis and chronic gonorrhœal rheumatism	1	...
Cerebral hæmorrhage-paralysis	...	1
Bronchitis	...	1
Apoplexy	...	1
Acute general peritonitis	...	1
Angina pectoris-embolism	...	1
Torticollis, cerebral type	...	1
Enteritis—the result having taken of corrosive poison	...	1
Malaria	...	1
Malaria and diarrhœa	...	1
Total	18	9

(iv)—HEALTH OF TROOPS.

(*a*) Imperial Troops—European Officers.

Table showing the average strength, admission into hospital, number of cases placed on sick list for barrack treatment, numbers invalided and deaths, with ratios per 1,000 of the average strength.

Average Strength 40. Diseases.	Admission into Hospital.	Invalids sent Home.	Deaths.	Ratio per 1,000.		Deaths.	Barrack-Treatment.	
				Admissions.	Invalids sent Home.		Placed on Sick List.	Ratio per 1,000.
Specific Diseases due to Infection:								
Erysipelas	1	...	...	25·00	...	...	...	...
Malaria	15	1	...	375·00	25·00	...	5	125·00
Other diseases	...	...	...	...	...	...	1	25·00
Other Diseases classified under System:								
Diseases of the digestive systems	3	...	...	75·00	...	...	3	75·00
Diseases in connexion with nutrition	1	...	...	25·00	...	...	...	...
Diseases of the respiratory system	...	...	...	...	...	...	1	25·00
Organs of locomotion ...	1	...	...	25·00	...	...	2	50·00
Areolar tissue	...	...	...	...	...	...	2	50·00
Total	21	1	...	525·00	25·00	...	14	350·00

(*b*) Imperial Troops (European) Warrant Officers, Non-commissioned Officers and Men.

Table showing the average strength, admission in hospital, number of cases placed on the sick list for barrack treatment, number invalided and deaths, with the ratio per 1,000 of the average strength.

Average Strength, 243. Diseases.	Admissions into Hospital.	Invalids sent Home.	Deaths.	Ratio Per 1,000.		Deaths.	Barrack Treatment.	
				Admissions.	Invalids sent Home.		Placed on Sick List.	Ratio per 1,000.
Specific Diseases due to Infection :								
Influenza	5	...	...	20·57	...	...	...	...
Malaria	84	...	...	345·78	...	...	...	...
Rheumatic fever ...	1	...	...	4·11	...	...	...	...
Tuberculosis	1	...	...	4·11	...	...	...	...
Other infections	1	...	...	4·11	...	...	...	...
Venereal Diseases :								
Gonorrhœa	16	...	...	65·84	...	...	...	...
Soft chancre	4	...	...	16·46	...	...	...	...
Syphilis	3	...	...	12·34	...	...	...	...
Other Diseases classified under Systems :								
Diseases of the nervous system	3	2	1	12·34	8·22	4·11	8	32·96
Diseases of the ear and nose	7	...	...	28·80	...	...	67	275·72
Diseases of the Circulatory System :								
Tachycardia	1	1	...	4·11	...	...	...	...
Diseases of the blood ...	4	...	...	16·44	...	...	5	20·57
Diseases of the lymphatic system	2	...	...	8·22	...	...	4	16·44
Diseases of the respiratory system	4	...	...	16·44	...	...	9	37·03
Diseases of the Digestive System :								
Teeth and gums ...	1	...	...	4·11	...	...	...	...
Diarrhœa	...	...	...	...	...	...	5	20·57
Inflammation of tonsils	12	...	...	49·38	...	...	10	41·14
Liver	1	...	...	4·11	...	...	...	...
Inflammation fauces ...	...	...	...	...	...	...	1	4·11
Other diseases ...	13	...	...	53·49	...	...	25	102·88
Generative system ...	4	...	...	16·44	...	...	1	4·11
Organs of locomotion ...	18	...	...	74·07	...	...	44	181·05
Areolar tissue	24	...	...	98·76	...	...	99	407·46
Diseases of the Skin :								
Scabies	1	...	...	4·11	...	...	...	...
Other diseases	6	...	...	24·69	...	...	23	94·65
Urinary system	1	...	...	4·11	...	...	...	...
Injuries :								
General	3	...	...	12·34	...	...	...	...
Local	21	...	...	86·53	...	...	66	271·60
Parasites—animal ...	1	...	...	4·11	...	...	1	4·11
Pyrexia of uncertain origin	...	...	...	...	...	...	1	4·11
Tumours and cysts... ...	...	...	...	...	...	...	1	4·11
Total	242	3	1	995·92	8·22	4·11	370	1522·62

(*c*) Imperial Troops (European)—Summary.

	1924.	1925.
1. Average strength	278	283
2. Total number on sick list	566	647
3. Percentage of sick to average strength	203·9	228·62
4. Total number invalided	9	4
5. Percentage of invalidng to average number of resident ...	3·5	1·41
6. Total number of deaths	1	1
7. Percentage of deaths to average number resident	.36	·35

(*d*) Imperial Troops—Non-European (West African Regiment).

Table showing the average strength, admission in hospital, number of cases placed on sick list for barrack treatment, number invalided and deaths, with the ratio per 1,000 of the strength.

Average Strength, 440. Diseases.	Admissions into Hospital.	Invalids Finally Discharged.	Deaths.	Ratio per 1,000.		Deaths.	Barrack Treatment.	
				Admissions.	Invalids.		Placed on Sick List.	Ratio per 1,000.
Specific Diseases due to Infection:								
Influenza	...	...	...	...	...	...	3	6·81
Malaria	40	...	...	90·93	...	...	8	18·18
Pneumonia	2	...	...	4·54	...	...	...	...
Other infections	1	...	...	2·29	...	...	8	18·18
Venereal Diseases:								
Gonorrhœa	37	1	...	84·09	2·29	...	5	11·36
Soft chancre	12	...	...	27·27	...	...	...	...
Syphilis	3	1	...	6·81	2·29	...	...	...
Other Diseases classified under Systems:								
Diseases of the nervous system	1	...	...	2·29	...	...	1	2·29
Diseases of the eye ...	3	...	...	6·81	...	...	...	...
Diseases of the lymphatic system	5	1	...	11·36	2·29	...	4	9·08
Diseases of the Respiratory System:								
Bronchi and brochioles	6	...	...	13·62	...	...	16	36·20
Larynx and trachea ...	10	...	...	22·72	...	...	...	...
Diseases of the Digestive System:								
Teeth and gums ...	...	...	...	...	...	...	1	2·29
Inflammation of tonsils	...	...	...	...	...	...	3	6·82
Diarrhœa	...	...	...	...	...	...	4	9·08
Other diseases ...	9	...	...	20·45	4·54	...	4	9·08
Diseases of the generative ... system	2	1	...	4·54	2·29	...	1	2·29
Organs of locomotion ...	8	1	...	18·18	2·29	...	5	11·36
Areolar tissue	35	...	...	79·56	...	...	63	143·11
Diseases of the Skin:								
Scabies	3	...	...	6·82	...	...	3	6·82
Other diseases ...	2	...	...	4·54	...	...	...	...
Urinary system	2	...	...	4·54	...	...	...	...
Injuries:								
General	...	...	...	...	...	...	1	2·29
Local	6	...	...	13·64	...	...	26	59·09
Pyrexia of uncertain origin	12	...	...	27·27	...	...	12	27·27
No appreciable diseases ...	2	...	...	4·54	...	...	...	...
All other causes ...	...	...	...	...	...	...	19	43·40
Total	201	7	...	456·81	15·99	...	187	425·00

(*e*) West African Frontier Force (Non-European).

The following table gives the sick and death-rates:—

Average Strength of Battalion in 1925.	Total Number of Deaths.	Death-rate per 1,000.	Total Number of Men on Sick List.	Sick Rate per 1,000.
354	2	5·98	836	2,361

V—POLICE.

The following table gives the sick and death-rates:—

Total Number of Men.	Total Number of Deaths.	Death-rate per 1,000.	Total Number of Men on Sick List.	Sick Rate per 1,000.
303	6	19·8	215	709

VI—PRISONERS.

Table showing sick and death-rates in Freetown Prison:—

	1923.	1924.	1925.
Total number of prisoners admitted	1,040	1,190	985
Average strength	248	259	245
Total deaths	3	10	5
Total number of prisoners on sick list	279	188	137
Daily average number on sick list	15	9	4
Daily sick rate per 1,000 of average strength ...	60·48	23·16	16·86
Death-rate per 1,000 of average strength	12·09	38·61	20·40

In Appendix IV will be found the Annual Medical report on Freetown Prison.

Table showing sick and death-rates at all prisons:—

Prison.	Daily Average Number in Custody in 1925.	Daily Sick Rate per 1,000 of Average Strength.	Death-rate per 1,000 of Average Strength.
Freetown	245	16·86	20·40
Batkanu	24	62·50	Nil
Kaballa	17	24·20	Nil
Moyamba	52	76·80	19·23
Kennema	56	26·61	17·86
Pujehun	37	19·25	27·2

III—Hospital and Dispensaries.

CONNAUGHT HOSPITAL.

The capacity of the Connaught Hospital remained the same as last year—eighty beds and five cots.

The administrative offices, stores, laboratory, dispensary and out-patients' departments are still in the old law courts buildings; but it is hoped that the new out-patient department's block, the administrative block and the store will be commenced early in 1926.

The total number of admissions during the year was 1,860 with 134 deaths. In 1924, the total number of admissions was 1,862 with 129 deaths—a decrease of two in total admissions and an increase of five in total deaths. The prevailing diseases were malaria, bronchitis, ulcers, pneumonia, injuries and intestinal parasites.

The total in-patients and the maternity in-patients for the past ten years are shown in the following table:—

Year.	Total In-patients.	Maternity In-patients.	Remarks.
1916	1,096	109	
1917	1,664	105	
1918	1,493	?	
1919	1,477	93	
1920	602	133	Hospital burnt—temporary hospital of one male ward and four maternity beds.
1921	737	142	New hospital opened—four wards in January, including maternity ward of eleven beds. Two more wards in August.
1922	1,282	169	
1923	1,557	200	
1924	1,862	263	
1925	1,860	214	

Dr. E. J. Wright, Medical Officer-in-charge of maternity ward, furnishes a report which appears as Appendix II, page 50.

Out-patients during the last ten years have been as follows:—

———	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.
New cases... ...	8,749	8,456	8,332	Records destroyed in hospital fire. 3rd February, 1920.	8,152	5,654	10,573	11,335	10,955	14,106
Subsequent attendances	19,535	21,139	13,836	do.	13,270	16,209	10,443	36,985	38,475	22,335
Total	28,284	29,595	22,168	...	21,422	21,863	21,016	48,320	49,430	36,441

2. The European hospital remained in the same building at Hill Station as mentioned in last year's report. A new concrete annexe containing an operating theatre and an office and consulting room below was added during the year.

The total number of patients was 111 with one death from cerebral malaria in a Government official from Makeni in the Northern Province. In 1924 the total number of admissions was 150 with two deaths. No operations were performed during the year.

The number and status of those who received treatment were as follows:—

	Admissions.	Deaths.
Government officials	45	1
Shipping	43	...
Mercantile	15	...
Ladies	4	...
Miscellaneous	4	...
Total ...	111	1

KISSY INSTITUTIONS.

The total number of cases treated at Kissy and Wellington dispensaries was 2,707. Statistics for other Kissy institutions are as follows:—

	Admissions.	Total Treated.	Died.
Lunatic Asylum ...	60	147	18
Infirmaries ...	203	255	52

HOSPITALS AND DISPENSARIES OUTSIDE FREETOWN.

Two new dispensaries were opened during the year, one at Panguma and one at Pendembu.

Hospital and Dispensary Statistics.

Table showing the total number of new cases treated at all hospitals and dispensaries during the past ten years:—

Years ...	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Patients ...	49,368	57,765	55,562	44,698	51,287	48,270	51,689	50,260	53,270	64,752

Quinine Prophylaxis.

During the year under review quinine was issued gratuitously to the public to the extent of 354,600 grains for the prophylaxis of malaria. This shows an increase of 83,415 grains as compared with 1924 when 271,185 grains were issued.

IV—Scientific.

Reports appear as appendices.

W. D. INNESS,
Director of Medical and Sanitary Services.

V—Sanitation.

ADMINISTRATION.

Owing to the simultaneous absence on leave of the Director of Medical and Sanitary Services and the Senior Sanitary Officer, Dr. O'Hara May combined the offices of Director of Medical and Sanitary Services and Deputy Director of Sanitary Service from July to September. Dr. Peacock acted as Deputy Director of Sanitary Service from 26th September to 4th December. Complete details as to leave and resumption of duty will be found in Table I.

2. New offices are shortly to be built to house under the same roof the entire administrative staff of the Medical and Sanitary Department and also the Medical Officer of Health, Freetown. A good site has been found immediately to the west of the new Connaught Hospital, and it is hoped that the building will be ready for occupation by the end of 1927. Each branch will have its own offices and clerical staff, but, to avoid duplication, there will be a joint records office.

3. Difficulty was again experienced in obtaining suitable recruits for training as sanitary inspectors, and for the greater part of the year the establishment was below strength.

4. Outside Freetown sanitary inspectors are now stationed at Bonthe, Waterloo, and at the following places in the Protectorate:— Port Lokko, Makeni, Moyamba, Bo, Pendembu and Pujehun. All the inspectors in the Protectorate belong to the tribe amongst whom they are stationed, and are therefore familiar with the language and customs of the people. Three ex-Bo school boys have now passed out as sanitary inspectors and three others are in training.

5. The Deputy Director of Sanitary Service inspected the following stations during the year:— Moyamba, Sembehun, Bonthe and York Island, Pujehun, Sumbuya, Bo, Segbwema, Daru, Pendembu and Port Lokko. The Senior Sanitary Officer spent a month in the Konno District, in the course of which he visited Kaiyima, where a medical officer was posted in 1924, principally for the purpose of carrying out preventive measures against schistosomiasis and endemic goitre. He also examined a number of sites for a new political headquarters, but was unable to approve any of them.

6. The total cost of the Sanitary Department during the year was distributed as follows:—

	£
Salaries, allowances and transport	8,168
Labour	7,930
Special anti-mosquito work	372
Preventive measures against infectious disease	490
Materials and maintenance	430
Rent of buildings	264
Meteorology	36
Miscellaneous	85
Total	£17,775

7. The subjoined statement shows the ratio of estimated expenditure of the Medical and Sanitary Department to total estimated revenue for the last five years:—

Year.	Medical Vote.	Sanitary Vote.	Ratio to Estimated Revenue.
	£	£	
1921	57,642	25,252	1 : 12·4
1922	51,164	24,106	1 : 11
1923	46,658	21,375	1 : 11·1
1924	48,416	19,309	1 : 10·6
1925	54,052	19,679	1 : 11

NOTE.—1. The sum voted is not necessarily expended in full.

2. The foregoing statements do not include sanitary works executed by the Public Works Department, but comprise only expenditure controlled by the Medical and Sanitary Department.

LEGISLATION.

8. In order to give the Sanitary Authority wider powers to deal with outbreaks of infectious disease, an Ordinance was passed amending the Public Health Ordinance in certain important respects. It is principally an enabling Ordinance giving wider scope than before to make rules. Provision is also made for the constitution of Compensation Boards to deal with claims resulting from the measures taken for the control of epidemics.

9. An Ordinance amending the Freetown Improvement Ordinance with a view to better control over streets and buildings was drafted, but had not been introduced in the Legislative Council at the end of the year.

10. The following towns were by Order in Council constituted sanitary districts under the Public Health (Protectorate) Ordinance:—

Northern Province—Sumbaria
Central Province—Kaiyima and Boadjibu
Southern Province—Sumbuya.

Rules were subsequently applied to each of these places, and additional rules to Yonni and Pujehun.

11. By Order in Council vaccination was made compulsory in the Sherbro Judicial District.

12. The following table shows the places which were declared infected under the Quarantine Ordinance, and subsequently declared free from infection, with dates and diseases on account of which action was necessary:—

Place.	Country.	Disease.	Infected.	Free.
Lagos	Nigeria ...	Plague	27th August, 1924	18th February, 1925
Coomassie ...	Gold Coast ...	,,	22nd November, 1924	25th February, 1925
— ...	Canary Islands ...	,,	9th April, 1925	6th May, 1925
Lagos	Nigeria ...	,,	11th April, 1925	25th June, 1925
Lagos	Nigeria ...	,,	14th July, 1925	—
Monrovia ...	Liberia ...	Yellow fever	4th August, 1925	2nd September, 1925
— ...	Teneriffe ...	Plague	30th December, 1925	—

II

ii—(*a*) PREVENTIVE MEASURES AGAINST INSECT-BORNE DISEASES.

Malaria.

13. The following is taken from the report of Dr. J. Y. Wood, Acting Medical Officer of Health, Freetown:—

"(*a*) *House to House Inspection.*—95,520 compounds were inspected during the year and 470 mosquito breeding places discovered. Prosecutions were undertaken with the following result: 392 were fined, fifty-six withdrawn, fifteen cautioned and discharged, and seven dismissed. The fines from these prosecutions amounted to £97 16*s*.

"(*b*) *Oiling of Pools and Gutters.*—68,952 pools and gutters were oiled by the inspectors and oiling gangs. The oiling gangs operated for six months only. 648 mosquito breeding places were discovered and dealt with in the usual manner.

"(*c*) *Inspection of Trees.*—From May to November a systematic inspection of trees was carried out. 317,856 trees were inspected and 30,081 holes (in which mosquito larvæ were breeding or likely to breed) were discovered. Mosquito larvæ were found in 392 of these holes. All holes were either filled with cement, chipped so that water could not settle in them, or the trees were cut down.

"(*d*) *Mosquito Larvæ Index.*—The mosquito larvæ index, which was taken at the end of each quarter, gave the following figures:—

1st Quarter	1·6	per cent.
2nd „	1·1	„
3rd „	·85	„
4th „	1·4	„

350 compounds were examined at each index.

"(*e*) *Cesspools.*—Durng the dry season the usual disinfection was carried out and during the rains oiling was done.

(*f*) *Canalization of Streams.*—During the month of December Alligator Brook, Nicol's Brook, Sanders Brook and Moore's Brook were regulated and canalized and all mosquito breeding places filled up, but owing to the lateness of the rains this work was not completed by the end of the year.

"(*g*) *Inspection of Boats and Canoes.*—4,434 boats and canoes were inspected for stagnant water and 1,210 were oiled. Mosquito larvæ were found in fifteen.

"(*h*) The following drainage work was carried out by the Public Health Engineer:—

(1) *New Concrete Drains.*—The drainage of Easton Street, Malta Street, Bethel Street and collecting drain in Fourah Bay Road completed:—regrading of Dundas Street drain; construction of Campbell Street drain; construction of Dundas Street drain; construction of Rawdon Street drain; construction of Wilberforce Street drains; construction of Krutown Road drain.

(2) *Improvements to Existing Drains.*—Kissy Street, Fergusson Street, Circular Road, Brook Street, Fourah Bay Road and Regent Road.

14. Thanks to the work of Sir Alfred Jones Laboratory we are in possession of very complete information as to the incidence of malaria in Freetown in infants and school children up to the age of twelve. *Blacklock and Gordon found that of 809 children of all ages up to two years and a-half, 169, i.e. 20·9 per cent. had malaria parasites in the peripheral blood in a single examination.

15. Recent work by Macdonald carried out in conjunction with the Lady Medical Officer in charge of school inspection—Dr. M. Blacklock (*vide* Appendix IV)—confirms the view long held that the western area is the most malarious part of the town. As Macdonald points out, this is no doubt due to the fact that the central and eastern part of the town lies on a definite slope and has good natural drainage, whereas the western part is low-lying and flat.

16. He describes the western part of the town as a hyperendemic area, the central and eastern part as an endemic area, the difference being shown in the following table:—

	Number Examined.	Percentage with Enlarged Spleens.	Percentage with Parasites in Peripheral Blood.
Endemic area	722	50	41
Hyperendemic area	337	72	72

*Blacklock D. B. and Gordon R. M. (1925)—Annals of Tropical Medicine and Parasitology Vol. XIX p. 331.

This difference is accentuated by the fact that the endemic area was examined during what is normally the most malarious part of the year, the wet season and early part of the dry season, whereas the hyperendemic area was examined during the latter part of the dry season.

17. In many parts of the Tropics, owing to the presence of a number of species of anopheles capable of transmitting malaria, each with its own peculiar breeding habits, the question of prophylaxis is very complex. It can safely be said that in Freetown *Anopheles costalis* is the only important vector of malaria, and it has long been known that its breeding places are in the streams running through the town and in the ditches and gutters. These observations received further confirmation last year by a survey carried out by Blacklock and Evans.* A spot-map of Freetown prepared by them shows numerous breeding places along the course of the streams—Alligator Brook, Sanders Brook and Nicol's Brook—and in the flat rocky gutters in the western part of the town.

18. In 1918, after an investigation by Fleet Surgeon Steegmann, special anti-malaria work was instituted in Freetown as a war measure with the object of protecting troops and Naval ratings using this port as a base, £20,000 being voted for this purpose. A good deal of this was necessarily spent on measures of a temporary character, but it was also utilized to some extent after the war was over to install permanent surface drainage where it was most required. In this way the worst part of the western area of the town was greatly improved; rock ditches were replaced by concrete channels and a great deal of filling in of low-lying compounds was done at the same time. This work has been continued, and during the last five years permanent surface drainage, to the extent of about 6,500 linear yards, has been constructed in Freetown. A further programme to deal with what is probably the worst remaining section of the western area has recently been submitted to Government. Such work carried on steadily year by year cannot fail in the end to reduce the prevalence of malaria.

19. Mr. G. V. Herd, Superintendent Sanitary Inspector, made a detailed survey of anopheline breeding-places in an extensive area to the west of Freetown, which included Congo Town, Wilberforce, Signal Hill and Hill Station. 503 samples of larvæ were found. A few breeding-places were scattered generally over the area, but the largest number came from places known to breed anopheles before the survey was undertaken and which, with one exception, follow closely the course of the streams. Places examined included streams, swamps, rocks, gutters, cesspits, trees, and tins and bottles.

20. Of the 503 breeding-places found, 465 or 92 per cent. were either in the streams or in rock pools alongside streams, eight or 1·59 per cent. were found in small swampy areas, fourteen or 2·72 per cent. were found in rocky areas, eighteen or 3·4 per cent. were found in pools amongst scattered rocks, one or ·19 per cent. was found in a tin receptacle. In 413 or 82 per cent. of the pools various species of culicini were also found.

21. It is important to note that in no case were anopheles larvæ found in tree-holes. This is in agreement with many previous observations made in Sierra Leone.

22. Miss Evans, entomologist from the Liverpool School of Tropical Medicine, spent some six months in Sierra Leone during the year, and gave most valuable help to the Sanitary Department by identifying large numbers of mosquitoes collected in the Freetown district during the rains.

32. The following is a complete list of the species determined by her:—

ANOPHELINES.

Anopheles costalis—Theo.
A. funestus—Giles
A. rhodesiensis—Theo.
A. smithii—Theo.
A. marshalli var. freetownensis—Evans
A. squamosus—Theo.
A. theileri—Edw.
A. domicolus—Edw.

*Blacklock D. B. and Evans A. M. (1925)—Annals of Tropical Medicine and Parasitology Vol. XX, No. 1.

NON-ANOPHELINES.

Culex albiventris
C. annulioris Theo.
C. decens Theo.
C. decens var. *invidiosus* Theo.
C. duttoni Theo.
C. grahami Theo.
C. horridus Edw.
C. (*Culicomyia*) *nebulosa* Theo.
C. (*Culicomyia*) *cinereus* Theo.
Lutzia tigripes var *fusca* Theo.
Aedes (*Stegomyia*) *africana* Theo.
A. (*Stegomyia*) *argenteus* Poiret.
A. (*Stegomyia*) *blacklocki* Evans.
A. (*Stegomyia*) *fraseri* Edw.
A. (*Stegomyia*) *luteocephala* Newst.
A. (*Stegomyia*) *simpsoni* Theo.
A. (*Stegomyia*) *vittata* Bigot.
A. (*Finlaya*) *longipalpis* Grünb.
A. (*Aedimorphus*) *albocephalus* Theo.
A. (*Aedimorphus*) *apicoannulata* Edw.
A. (*Aedimorphus*) *domesticus* Theo.
A. (*Aedimorphus*) *occidentalis* n. sp.
A. (*Aedimorphus*) *simulans* Newst., and Carter
A. (*Aedimorphus*) *tarsalis* Newst.
Uranotaenia balfouri Theo.
U. conalli Edw.
U. fusca Theo.
U. nigripes Theo.
U. ornata Theo.
Hodgesia sanguinis Theo.
Ficalbia mediolineata Theo.
Harpagomyia trichorostris Theo.
Megarhinus brevipalpis Theo.
M. aeneus n. sp.
M. ? *phytophagus* Theo.
Eretmopodites chrysogaster Graham
E. chrysogaster var. *semisimplicipes* Edw.
E. dracenae Edw.
E. inornatus Newst.
E. leucopus Graham.
E. oedipodius Graham.

24. Dr. E. S. Walls took an index of mosquito breeding places in tree-holes at Bonthe during the height of the rains, 200 trees being examined, mostly mango, breadfruit and orange. 46 per cent. of the trees examined showed potential breeding places, and in 20 per cent. larvæ were found. Orange and breadfruit trees showed the highest percentage of breeding places. No attempt was made to differentiate the larvæ found.

25. At Daru measures were taken to reduce mosquito breeding in accordance with the recommendations made by Professor Blacklock (*vide* Annual Medical and Sanitary Report for 1924, Appendix 5). Soldiers of the West African Frontier Force were trained and employed to detect breeding places. The "hospital drain area" was dealt with by filling in, and laying a concrete drain at a higher level. Much clearing and tree cutting was carried out. A good deal of swamp filling is required, and this work will have to be pursued steadily for a number of years to achieve much tangible result. The Railway Department have put in a siding and will supply material for filling from various points on the line as it becomes available. In the meantime the swampy areas can be improved by cutting down bush and straightening and grading the stream beds.

26. At all stations paid and prison labour carried out anti-mosquito work on the usual lines. In stations where there are soldiers or court messengers, these also do some sanitary work. In the Colony villages the headman may, with the approval of the Governor, require the inhabitants to give, either personally or by paid substitute, not more than eighteen days work in any one year for the benefit of the town.

27. Seven thousand nine hundred and thirty pounds was spent on sanitary labour, distributed as follows:—

	£
Freetown	4,482
Wilberforce and Murray Town, suburbs of Freetown, and the Cape Quarantine station	345
Hill Station	603
Bonthe and York Island	710
Waterloo	71
Eighteen Protectorate towns and Government stations in amounts varying from £20 to £179	1,719
Total	**£7,930**

YELLOW FEVER.

28. None reported.

TRYPANOSOMIASIS.

29. For the greater part of the year prison labour was employed on the Cape Lghthouse peninsula clearing bush, cutting down trees and planting efwatakala grass. This

area was formerly a haunt of *Glossina palpalis*, but it is hoped that if the clearing is maintained it will remain permanently free from fly, and that the Lands and Forests Department will soon be able to maintain a small herd of dairy cattle with a view to supplying fresh milk to the Freetown medical institutions. If a cattle industry is worked up in the country, the Cape Lighthouse peninsula may one day be very useful as a quarantine station for imported cattle.

30. The following report on the examination of cattle in Freetown, was received from the Sir Alfred Jones Laboratory:—

"One hundred and twenty-eight cattle were examined between June and September on behalf of the Sanitary Department."

"An examination was made of a single thin stained film taken from the ear of cattle awaiting sale at Magazine Wharf. Wherever possible, this was supplemented by the immediate examination of a fresh film. Fifty-nine cattle were examined by stained film alone, revealing trypanosomes in six; thirty-three by both methods revealing trypanosomes in six. As it was thought that this method of examination underrated the actual figure, the "triple centrifugalisation" method was adopted on blood obtained from animals slaughtered at King Jimmy slaughterhouse. Thirty-six cattle were examined, trypanosomes being found in eight."

"*Result.*—The results of examination were as follows:—a total of 128 cattle were examined, showing infection with *T. congolense* in fourteen, with *T. vivax* in four, and a mixed infection with these two trypanosomes in two, the total rate of infection being 15·6 per cent.

Relapsing Fever.

31. None reported.

A circular was issued to all medical officers warning them to be on the look out for it and giving an account of the symptoms of the disease as met with in the epidemics in the Northern Provinces of Nigeria in 1924.

(*b*) PREVENTIVE MEASURES AGAINST INFECTIOUS AND EPIDEMIC DISEASES.

Influenza.

32. Small outbreaks were reported from a number of Protectorate stations during the last quarter of the year, but the type was mild as a rule and did not appear to have any appreciable effect on the death-rate.

Cerebro-spinal Meningitis.

33. None reported.

Plague.

34. No case was reported during the year.

35. The Medical Officer in charge of the Clinical Laboratory in Freetown carried out a systematic examination of rats collected in all parts of Freetown, but in no case was plague infection found. 18,714 rats were brought to the department and destroyed. Up to the end of July a bounty of 1*d*. per rat was paid, but as the numbers brought in tended to fall, this was raised to 2*d*. As a result of this the numbers were more than doubled.

36. Rat destruction was carried out systematically by departmental labour, especially in the area of the wharves, where infection is most liable to be introduced. Trapping and poisoning were employed, but the most effective method was found, as before, to be adhesive (lithographic) varnish spread on brown paper with a bait in the centre. The varnish is so tenacious that once a rat sets foot on it it hardly ever escapes.

37. In December, 1924, the Senior Sanitary Officer was sent to Lagos to study anti-plague measures. He also took the opportunity of visiting Accra, Coomassie and Seccondee. On his return in January he drew up a scheme for dealing with plague in

Freetown and, as a result of his recommendations, the Government approved the following programme to be carried out in 1926:—

(1) A new method of refuse disposal by sea dumping.

(2) A wharf disinfection station to be erected, equipped with a high-pressure steam disinfector, and provision for spray baths for both sexes.

(3) An improvement scheme for the principal market at King Jimmy.

(4) Enlargement and extension of the infectious diseases hospital. Approval had already been given for the erection of permanent buildings at the quarantine station.

38. It was further decided that as soon as the Ordnance Survey of Freetown (now in progress) is completed, a committee should be appointed to consider the question of housing, with a view to improving certain congested areas, which might prove to be a menace in the event of an outbreak of plague.

Smallpox, Chicken-pox, Vaccination.

39. The Colony and Protectorate remained almost entirely free from smallpox during the year. Only one district, Konno, reported any cases at all—one at Kaiyima in March, five at Foitoma in December.

40. Two cases, native firemen, were removed from s.s. "Elmina" in February, one on the outward, the second on the homeward voyage. The infection was almost certainly contracted in England. A suspicious case was landed from a British warship in February, but was subsequently diagnosed as chicken-pox.

41. Chicken-pox was reported throughout the year from various parts of the Colony and Protectorate.

42. Record of vaccinations performed.

	1923.	1924.	1925.
Number vaccinated	21,517	9,636	10,367
„ successful	10,294	4,925	4,806
„ unsuccessful	4,266	2,052	3,226
„ not inspected	6,957	2,659	2,335

Tuberculosis.

43. The question of tuberculosis was considered by a special committee, who made certain recommendations with regard to hospital treatment and propaganda to make this effective. They deemed it inadvisable to make this disease compulsorily notifiable until the confidence of the people had been gained by doing something for them in a practical way.

44. The Medical Officer of Health or his staff pay domiciliary visits to all cases voluntarily notified by medical practitioners or attending for treatment at Government institutions. In this way it is possible to do something to prevent the spread of infection to other members of the same household, but with the housing conditions that prevail in Freetown even this is a difficult matter.

45. Twenty-six deaths from tuberculosis, nearly all pulmonary, were certified during the year in Freetown, but only 23 per cent. of all deaths were certified by medical practitioners. If tuberculosis occurred in the same proportion in the uncertified deaths, the death-rate from that disease was 2·56 per 1,000, taking the population on the basis of the last census. The average age of the twenty-six fatal cases was thirty-nine, the youngest being twenty-two and the oldest seventy-six.

46. Little is known of the disease in infants or young children. Up to the present no cases have been reported from the infant clinics. Bronchitis is a common cause of death in childhood, and it is probable that some of the deaths so recorded are really due to tuberculosis. This is a matter worthy of investigation.

Anthrax.

47. During the whole of the year an inspector was detailed to examine all cattle arriving in Freetown and to inspect cattle yards and feeding grounds. Five cases of anthrax in cattle were discovered. No human cases were reported.

Schistosomiasis.

48. A full report by Professor Blacklock on the anti-schistosomiasis campaign at Kaiyima in the Konno District is given in Appendix 8. A beginning has been made with similar work in other towns in this district, and this will gradually be continued and extended. This should lead not only to a diminution in the amount of schistosomiasis infection, but to a reduction in the prevalence of many other diseases with a resultant improvement in the general health of the people.

(*c*) PORT HEALTH WORK, FREETOWN.

49. The port was never in quarantine during the year. All ships arriving from infected ports were visited and inspected by the Medical Officer of Health. On two occasions cases of smallpox or suspected smallpox were landed from ships. Owing to the presence of plague in Lagos throughout the year the port health work was usually heavy. Approval has been given for the purchase of a motor-boat for the Medical Officer of Health, which will greatly facilitate the boarding work.

III—GENERAL MEASURES.

50. Freetown. A summary of routine sanitary work is given in Table II.

(*a*) General Sanitary Work.

Sanitary Inspections.

51. Seven thousand six hundred and sixty-seven notices to remove insanitary conditions on premises were served. 189 persons were summoned for non-compliance and seventy-three were fined small sums, the fines totalling £13 18*s*. 6*d*.

Refuse Disposal.

52. The present system whereby refuse is collected by mule or bullock carts or carried in head-loads to twelve incinerators in various parts of the town has long been recognized to be a very unsatisfactory one. Such a system leads, in the wet season at any rate, to the formation of dumps of unburned refuse at the various incinerators which, besides being insanitary in themselves and also very unsightly, are a great attraction to rats. As the simple type of incinerator in use is incapable of dealing with the vast amount of wet vegetable matter which has to be disposed of in the rains, a great deal of the refuse has had to be dumped into the sea, causing a serious nuisance along the foreshore.

53. Fortunately approval has been obtained to proceed with a new and far more satisfactory method by sea dumping outside the harbour. It is proposed to load the refuse directly from lorries into barges at a point near Cline Town and take it by tug outside the harbour sufficiently far to preclude the possibility of any nuisance along the foreshore. The present type of dust-bin is to be replaced by a rat-proof bin.

Meat Inspections.

54. Two thousand nine hundred and sixty-seven bullocks and 279 sheep were slaughtered during the year. 624 bullocks and eighty-six sheep were slaughtered in the Imperial slaughterhouse for the Imperial Government and the remaining 2,343 bullocks and 193 sheep were slaughtered in the Municipal slaughterhouse for public sale. Fourteen quarters of beef were condemned by the department and destroyed by order of the Police Magistrate for *Cysticercus bovis*.

Food Inspection.

55. Food-stuffs condemned during the year consisted of maize, cheese, and tinned provisions of various kinds.

(*b*) Waterworks.

56. The following report is submitted by Mr. Wilfred S. Cole, Superintendent of Freetown Municipal Waterworks:—

The works were maintained in good condition during the year.

The following new works were undertaken and completed during the year:

New Mains.—Four hundred and seventy yards of 4 ins. and 3 ins. C.I. mains with five fire hydrants were laid along Malta Street, East Ward, from Patton Street to Savage Square. This met a long felt want, as this large and populous area bounded by Fourah Bay Road, Savage Square, Kissy Road and Patton Street, had hitherto been without any adequate means of protection from fire.

These additional five hydrants bring the number of fire hydrants in the City up to 339.

Public Stand-posts.—Seven new public stand-posts were erected during the year under review at the following streets:—Cline, Grandcess, Nana Kru, Settra Kru, Little Kru, and Elizabeth Streets in the West Ward, and Mercer Street in the East Ward. The total number of public stand-posts at the end of the year was 223.

Nineteen new private services were laid during the year, and thirteen disconnected from one cause or other. The total number of private services in connexion with the Freetown Waterworks at the end of the year was 426.

Pumping Season.—The pumping season this year lasted from the 19th March to the 14th of June, during which period pumping operations were carried on for forty-one days.

Shortage of Supply.—There was a shortage of water supply from the 8th to the 20th May, during which period the City was placed on a restricted supply.

Consumption.—The total consumption of water for the year under review was 154,201,700 gallons, or an average daily consumption of 422,470 gallons.

The maximum daily consumption for the year was 564,040 on the 26th of March, and the minimum daily consumption, 296,800 on the 16th of July.

(*c*) Hill Station.

57. Dr. O'Hara May reports as follows:—

This was maintained in a satisfactory sanitary condition during the year.

Conservancy.—There was no change in the system during the year. An effort was made to dig a deep pit (septic tank) for night soil, but no place was found where solid rock was not present. An effort should be made soon to construct a septic tank, fly-proof, as the ground available for trenching is becoming exhausted: this would require a considerable amount of blasting.

Mosquitoes.—During the early rains mosquitoes were occasionally reported. A rigid anti- mosquito campaign was kept up well into the dry season. The department was fortunate in having the services of Miss A. M. Evans of the Liverpool School of Tropical Medicine, who made an extensive survey of the breeding-places of Hill Station and surrounding valleys, took specimens of all larvæ found and identified them. It is interesting to note that in only three places in Hill Station (rock pools) were anopheles larvæ found, none of which was a known malaria carrier. Anopheles larvæ were found, in several streams and water courses in the valleys, but in no case was a known malaria carrier identified.

During the year some 500 tree breeding-places were found, and dealt with, also all rock depressions capable of retaining water. Tree-holes which could not be drained were filled up with a mixture of tar and sand. No residents were summoned during the year.

Water supply was efficiently maintained during the year.

The provision of a new motor road round the bungalows has greatly increased the pleasure of living by opening up the view and allowing more air to most bungalows.

(*d*) Health Week.

58. With the co-operation of the City Council a successful Health Week was held in Freetown at the beginning of November. Posters and leaflets were widely distributed dealing with such subjects as tuberculosis, rat destruction, the mosquito danger, vaccination and smallpox, and infant care. Addresses were given in most of the places of worship. Visits were organized to the Connaught Hospital and to the Waterworks. A health talk was given in the Wilberforce Hall by the Senior Sanitary Officer. The most successful event of the week was a Mothercraft and baby competition in the Victoria Park, organized by Dr. E. J. Wright. There were numerous entries, and great interest was taken by the public. The prizes were presented by Lady Slater.

(*e*) Infant Welfare.

59. Full reports by the Medical Officers in charge of the centres will be found in an appendix. Two new centres were opened during the year, one at a private house in Campbell Street for the western part of the town, largely patronized by Kru people, the other at the Princess Christian Mission Hospital, which makes an admirable centre for the eastern district. The latter was in charge of Dr. M. Blacklock, Lady Medical Officer. Dr. Wright had charge of the original centre at the Connaught Hospital and the Campbell Street one. All three centres were extremely well attended. A total of 7,582 attendances for the second year of infant welfare work in Freetown is very encouraging.

60. It is satisfactory to note that over 200 confinements took place in the maternity wards of the Connaught and Princess Christian Mission Hospitals. In view of the high infant death-rate at or very soon after birth in unattended cases it is essential to make every effort to induce women of the poorer classes to avail themselves of the maternity wards of the hospitals.

Statistics of maternal morbidity and mortality are not available, but it is safe to assume that in the absence of skilled help they are high. It is unfortunate that the majority of women insist on leaving the hospitals two or three days after their confinement.

61. There is great need of an extern midwifery department to provide aid for the large number of women who wish for skilled assistance in labour but for various reasons are unable to enter the hospitals. More health visitors are also required. There are probationers in training for both these purposes and in time the need will be met. It is proposed to give both health visitors and midwives the full nursing curriculum in addition to training in their own speciality.

(*f*) School Hygiene.

62. A report on the first year's work in school medical inspection by Dr. M. Blacklock, Lady Medical Officer, will be found in Appendix IV. A survey was made of 1,000 children, between the ages of four and twelve, attending the elementary schools in Freetown. Of these 1,000 children nearly three-quarters were Creoles, and it is worthy of note that there were only sixty-eight Mendes or Temnes, the two largest tribes of the Protectorate, although the 1921 census return shows a combined Mende and Temne population in Freetown of over 12,000 or more than a quarter of the total population.

63. As was to be expected, malaria was found to be the most prevalent and debilitating disease among the children. Reference has already been made to this and to the measures that are being taken to extirpate the breeding-places of *Anopheles costalis* in the town.

64. It is encouraging to note that the disabilities common in children in the elementary schools of Great Britain are here conspicious by their absence, and that the chief complaints from which the Freetown children suffer are undoubtedly preventible.

65. There has been some difference of opinion as to the prevalence of rickets in infants, but the comparative rarity of rachitic bony deformities in school children seems to prove fairly definitely that rickets is not a disease of serious importance here. This can hardly be attributed to diet. The staple food-stuffs are rice, vegetable oil, fish—sometimes fresh, but commonly dried—ground-nuts or beans, vegetables and fruit. Fresh milk and butter (both imported) and eggs are beyond the reach of all except the well-to-do. With such a diet rickets would no doubt be common, were it not for the fact that, here as elsewhere, abundant sunshine plays an important part in antagonizing dietetic deficiencies.

66. The question of the sanitary condition of the schools is of the greatest importance. It is obviously of little value to teach hygiene to school children unless their school environment conforms to the principles taught. As nearly all the schools inspected are Mission schools, progress in sanitation has undoubtedly been hampered by lack of funds, but under the Education Code schools which are prepared to provide half the cost of improvements can obtain a grant of the remainder from Government for approved work.

IV—MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

67. Hygiene is taught in all the schools of the Colony, but it is doubtful if the instruction given is sufficiently practical to be of real use to the children.

68. Dr. M. Blacklock, Lady Medical Officer in charge of school medical inspection, has recently written a school primer in two parts entitled "An Elementary Course in Tropical Hygiene," which will be of great value for teaching purposes. Part I is very simple and is designed for quite small children. In this part only the most essential points of tropical hygiene are dealt with. Part II is intended for older children.

68. It is of the greatest importance that the teachers themselves should be thoroughly grounded in practical hygiene, and it is hoped that this subject will receive the attention it deserves when the curriculum of the new training colleges is drawn up. A lectureship in hygiene at the new agricultural college at Njala would be of great value.

V—VITAL STATISTICS.

(1) Freetown.

Year.	Population, 1921 Census.	Births Registered.	Birth Rate per 1,000.	Deaths Registered.	Death-rate per 1,000.	No. of Deaths under Twelve Months.	Infant Mortality Rate.
1923	44,142	853	19·3	1,332	30	373	437
1924	,,	982	22·2	1,143	25·9	316	321
1925	,,	1,102	25	1,124	25·5	321	291

(2) Colony other than Freetown.

Year.	Population, 1921 Census.	Birth Registered.	Birth Rate per 1,000.	Deaths Registered.	Death-rate per 1,000.	No. of Deaths under Twelve Months.	Infant Mortality Rate.
1923	41,021	769	18·7	887	21·6	198	257
1924	,,	825	20·1	789	19·2	163	198
1925	,,	888	21·6	831	20·3	167	188

(3) Table showing Number of Deaths in Freetown by Months.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1923	92	95	98	115	104	118	167	129	106	120	100	88
1924	85	89	82	79	106	119	133	107	94	95	84	70
1925	98	67	82	92	92	107	126	86	90	104	83	97

(4) Table showing Age Distribution of Infant Mortality in Freetown.

Age at Death.	Infant Mortality Rate.			Percentage of Total Infant Mortality.		
	1923.	1924.	1925.	1923.	1924.	1925.
Under 14 days	197	169	134	45	53	46
14 days to 1 month ...	17	24	23	4	7	8
1 to 3 months	70	35	52	16	11	18
3 to 6 months	61	45	32	14	14	11
6 to 9 months	62	31	23	12	10	8
9 to 12 months	39	17	26	9	5	9

70. It will be seen from the foregoing tables that the death-rate of 25·5 in Freetown compares with a rate of 25·9 in 1924. As usual it was highest during the rains, reaching a maximum in July. The increase in births registered noted last year has continued. There is no reason to suppose that this is a natural increase, and it is attributable to the activity of the Registrar's officer, assisted by the sanitary inspectors.

71. For the rest of the Colony both the general death-rate and the infant mortality rate are appreciably lower than in Freetown. These figures must, however, be accepted with some reserve.

72. The diminution in the infant mortality rate in Freetown as compared with 1924 is due solely to the increase in the number of registered births, the actual number of infant deaths remaining about the same. The marked fall in the rate between three and nine months may reasonably be attributed to the work of the infant welfare centres, but this was unfortunately neutralized by a higher rate at other ages.

VI—RECOMMENDATIONS FOR FUTURE WORK.

73. (1) Improved sanitation in the Protectorate. Some increase in staff, both European and African, will soon be needed to carry on and extend the practical sanitation started in the Konno District two years ago, and also to improve the sanitary condition of the trading centres in the Protectorate.

(2) Continuance of permanent anti-malaria work in Freetown to abolish breeding-places of *Anopheles costalis* in the stream beds and street gutters.

74. The recommendations made last year were as follows:—

(1) New infectious diseases hospital for Freetown.

(2) Wharf disinfection station.

(3) Improved methods of refuse disposal for Freetown.

(4) Improvement scheme for King Jimmy market.

(5) Water supply for Bonthe.

Provision has been made to carry out the first three items in 1926. Item (4) has been deferred for a year. As regards item (5) additional public rain-water tanks are to be provided for Bonthe and York Island. It is hoped, however, that a pipe-borne water supply will eventually be provided for Bonthe.

VII—Meteorology.

The rainfall for the year at Freetown (Tower Hill) was 140·23 inches, which was below the average for the past forty years viz., 152·47 inches. As usual August with 34·38 inches was the wettest month. The maximum rainfall in one day was 8·40 inches on the 4th August.

Hill Station, situated on a ridge to the West of Freetown, always has a higher rainfall than Tower Hill. The total for the year was 180·60 inches and the maximum in one day was 12·38 inches.

Records of temperature, humidity, and rainfall at the various stations for 1925 are given in Table III.

W. H. PEACOCK,

Acting Deputy Director, Sanitary Service.

Tables.

I—STAFF.

A—Medical Staff.

Office.	Name.	Absent on Leave. From			To			Remarks.
Director of Medical and Sanitary Services ...	W. J. D. Inness ...	8	7	25	4	12	25	
Deputy Director of Medical Service ...	J. B. Bate ...		—			—		
Senior Medical Officer	J. C. Murphy ...	1	1	25	13	2	25	
„ „ ...	A. M. Dowdall ...	1	1	25	17	1	25	
Medical Officer ...	J. Y. Wood ...	24	6	25	7	11	25	
„	M. Jackson ...	20	8	25	31	12	25	
„	J. M. Mackay, M.C.	25	11	25	31	12	25	Acting Medical Officer of Health.
„	J. D. Dimock ...	4	3	25	3	7	25	
„	E. S. Walls ...	23	12	25	31	12	25	
„	J. W. Hartley ...	23	7	25	20	11	25	
„	W. A. A. Malone ...	1	1	25	5	6	25	
„	C. B. Jennings ...		—			—		
„	R. F. Campbell ...		—			—		
„	A. W. Lewis ...	25	11	25	31	12	25	
Lady Medical Officer	Mrs. M. G. Blacklock		—			—		
African Medical Officer	E. J. Wright ...		—			—		
„	M. C. F. Easmon	1	4	25	14	8	25	
„	E. H. Cummings ...	30	9	25	31	12	25	
„	G. N. Metzger ...		—			—		
„	E. A. Rennér ...		—			—		
„	W. B. E. Hughes ...		—			—		
„	J. A. Williams ...		—			—		
„	W. F. O. Taylor ...		—			—		

B—Sanitary Staff.

Deputy Director of Sanitary Service ...	H. O'Hara May ...		—			—		
Senior Sanitary Officer	Major W. H. Peacock	18	3	25	25	9	25	
Medical Officer of Health	J. M. Mackay ...		—			—		Acting.
Superintendent Sanitary Inspector ...	D. S. Bowen ...	18	2	25	17	7	25	
„	G. V. Herd ...	17	8	25	31	12	25	

C—Nursing Staff.

Matron and Senior Nursing Sister ...	Miss L. R. Stevens	25	11	25		—		
Senior Nursing Sister	Miss K. G. Appleton	2	9	25	31	12	25	
„ „ ...	Miss C. Littlewood	4	2	25	29	7	25	
Nursing Sister ...	Miss I. Stevens ...	4	2	25		—		Retired on pension.
„	Miss V. Bell ...	1	1	25	17	1	25	
„	Miss A. E. Macmaster		—			—		
„	Miss C. B. H. Goodwin		—			—		

D—African Medical Subordinate Staff.

Office.	Name.	Absent on Leave. From	Absent on Leave. To	Remarks.
Chief Dispenser ...	O. E. King ...	...	...	Retired on pension 30th June, 1925.
Store-keeper and Assistant Chief Dispenser	E. G. Luke ...	...	...	Promoted Chief Dispenser 1st July, 1925, died at Wembley, 23rd July, 1925.
Chief Dispenser ...	D. T. Betts ...	...	...	Promoted Chief Dispenser, 24th July, 1925.
Assisstant Chief Dispenser	I. H. Wright ...	15 10 25	14 12 25	Promoted Assistant Chief Dispenser, 24th July, 1925.
First Class Dispenser	O. E. Nylander ...	...	...	
,, ,,	H. E. Frazer ...	...	...	
,, ,,	P. J. John ...	...	...	
,, ,,	M. O. Frazer ...	...	...	
,, ,,	M. P. Neville ...	22 4 25	21 6 25	
,, ,,	P. Q. A. John ...	...	...	
,, ,,	I. B. Doherty ...	9 9 25	15 3 25	Promoted First Class Dispenser, 1st January, 1925.
,, ,,	T. M. Scott ...	...	...	
Second Class Dispensers	Eight	...	...	
Third Class Dispensers	Twelve	...	...	
Laboratory Assistant ...	J. T. Roberts ...	1 7 25	15 7 25	
Male Nurses and Apprentices ...	Twenty-five	...	...	
Female Nurses and Probationers ...	Twenty-four	...	...	

E—African Sanitary Subordinate Staff.

Health Visitors ...	Miss E. Thomas and two others ...	...	...	
Public Vaccinator, Freetown ...	S. H. Browne ...	18 5 25	1 6 25	
Fourth Grade Sanitary Inspector ...	E. A. Nicholson ...	1 4 25	30 11 25	
Fourth Grade Sanitary Inspector ...	C. E. King ...	...	...	
Fifth Grade Sanitary Inspectors ...	Twenty-five	...	...	
Sanitary Learners ...	Seven	...	...	

F—Clerical Staff.

First Grade Clerk ...	Vacant	...	...	
Second Grade Clerk ...	S. G. Randall ...	30 5 25	30 7 25	Acting Chief Clerk.
,, ,,	M. St. G. Auber ...	...	...	
Third Grade Clerk ...	Six	...	...	
Fourth Grade Clerk ...	,,	...	...	

II—SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR IN THE TOWN.

1. Freetown.

—	Approximate Area.	Number of Proclaimed Open Spaces.
1923	$2\frac{3}{4}$ square miles.	2 Public recreation grounds.
1924		
1925		

2. Population.

—	No. of Natives.		No. of Europeans.		Total.
	Males.	Females.	Males.	Females.	
1921 Census	24,830	19,312	700	71	44,913

3. Housing.

—	Number Occupied by Europeans.	Number Occupied by Natives.
Number of houses :		
1923	...	...
1924	...	...
1925	157	6,689 and 94 unoccupied.

Number of huts :
1923 ... ...
1924 ... ...
1925 ... ...
} Included in the number of native houses.

4. Erection of New Buildings during the Year.

—	1923.	1924.	1925.
Number of houses built without sanction	...	...	...
Number of huts built without sanction	...	...	...

Action Taken.

Nil.

5. Latrines.

	For Males.		For Females.	
	Number.	Number of Seats.	Number.	Number of Seats.
Number of public latrines :—				
1923	12	98	12	73
1924	12	98	12	73
1925	12	103	12	78
Number of new public latrines erected during the year :—				
1923	...	...	...	...
1924	...	...	...	...
1925	1	7	1	7

	1923.	1924.	1925.
Number of private latrines	306	459	459*
Average number of pails of night-soil removed daily ...	316	479	422
Average number of soiled pails removed and cleaned pails substituted	...	...	...
Number of night-soil men employed to clean latrines and remove excreta	Prisoners employed		
Number of cesspools	4,325	4,371	3,847
Number of cesspools cleansed	1,033	1,996	604
Number of new cesspools constructed during the year ...	...	...	...
Number of old cesspools abolished	67	68	41

6. Removal of Refuse.

	1923.	1924.	1925.
Number of dust-bins	71	72	71
Number of carts (if employed) at work, etc.	6	6	6
Amount of refuse removed daily from streets	about 35 tons.		
Number of carts (if employed) at work daily, etc.	6	6	6
Amount of refuse removed daily, etc.	...	...	...
Number of men employed for removing refuse	...	...	...

*Includes schools and public latrines.

7. Mode of Disposal of Excreta, Refuse and Offal.

—	Daily Average Number of Pails of Excreta.			Daily Average Number of Cartloads of Refuse.			Daily Average Number of Cartloads of Slaughter-house and Market Offal.		
	1923.	1924.	1925.	1923.	1924.	1925.	1923.	1924.	1925.
Buried or trenched ...	...	...	...	...	...	...	...	...	...
Burnt	...	...	...	...	...	...	...	...	..
Thrown into sea ...	...	...	...	...	...	..	...	...	...
Otherwise dealt with ...	...	...	...	...	...	...	...	...	...

8. Average Daily Number of Cartloads of Tin Cans, Bottles, Broken Crockery and other Incombustible Material removed from Houses, Huts, and Compounds.

1923.	1924.	1925.
12	12	12

9. Water Supply.

Nature of Water Supply.	1923.	1924.	1925.
Pipe-borne water :—			
Source (river, lake or spring) :—			
Number of stand-pipes along roads	214	216	223
Number of stand-pipes in compounds and houses ...	443	463	469
Wells :—			
Public :			
Number	1	1	1
Number with pumps protected against surface water and mosquito-protected	...	...	...
Private :			
Number	...	...	...
Number protected against surface water and mosquito-protected	...	...	...
*Tanks :—			
Public :			
Number	4	4	4
Number mosquito-protected	...	...	...
Private :			
Number	35	35	35
Number mosquito-protected	15	15	15
Nature of tanks :			
Wood	...	...	...
Iron	21	21	21
Concrete	18	14	14
Barrels :—			
Number	2,025	1,448	1,891
Number mosquito-protected	231	256	Nil

* The heading "Tanks" covers all fixed receptacles (including reservoirs) for storage of water.

10. Drainage.

Nature of Drainage.	Public.	Private.
Masonry drains :—		
Linear yards of masonry drains :		
1923	13,964	...
1924	15,693	...
1925	17,987	...
Linear yards reconstructed during the year :		
1923	32	...
1924	366	...
1925	Nil	...
Linear yards repaired during the year :		
1923	62	...
1924	777	...
1925	800	...
Linear yards of new drains constructed during the year :		
1923	1,156	...
1924	1,729	...
1925	2,294	...
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :		
1923	40,122	...
1924	39,809	...
1925	90,643*	...
Number of linear yards of ditches dug and graded :		
1923	63	...
1924	224	...
1925	800	...
Average frequency of clearing ditches of grass :		
1923	Quarterly.	...
1924		...
1925		...

11. Inspections and Prosecutions.

—	1923.	1924.	1925.
Number of Inspectors employed	19	19	23
Number of houses inspected	98,002	100,655	95,520
Number of houses where larvæ were found ...	578	353	470
Number of notices served to remove conditions causing the breeding of larvæ	...	...	...
Number of persons fined for having mosquito larvæ on premises	474	314	392
Number of notices served to remove insanitary conditions on premises	7,903	9,206	7,667
Number of persons fined for not removing insanitary conditions after notice ...	127	87	73
Number of soda and aerated water factories inspected	1	Nil	Nil

* This includes 56,032 yards of drains frequently made up in short lengths constantly recurring. This was not included in previous years.

III—METEOROLOGICAL RETURNS.

Freetown (Tower Hill).

Latitude 8° 29′ 30″ N. Longitude 13° 13′ 55″ W.

Month.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	91	65	88	70	66	...
February	97	67	90	73	70·5	...
March	93	71	90	73	67·5	·15
April	95	68	90	74	74·5	2·76
May	94	69	90	73	75·5	5·68
June	92	68	86	72	79·5	16·37
July	88	67	83	72	84	30·72
August	85	71	82	73	83.5	34·38
September	86	69	82	72	85	22·88
October	90	68	85	73	84	19·74
November	90	69	86	73	81·5	7·40
December	89	72	87	75	79	·15
The Year ...	97	65	87	73	77·5	140·23

Batkanu.

Latitude 9° 4′ N. Longitude 12° 26′ W.

January	97	45	94	53	47·5	...
February	104	56	97	51	53	·07
March	104	59	100	61	64·5	1·56
April	100	59	96	63	64·5	3·58
May	99	68	93	71	71	10·27
June	95	60	89	71	77	12·79
July	91	62	86	70	82	11·69
August	90	69	85	72	85·5	17·02
September	92	69	87	71	85·5	19·24
October	93	67	90	70	81·5	20·20
November	98	67	91	70	81	14·0
December	94	60	91	68	76·5	·65
The Year ...	104	45	92	66	73	111·07

Bonthe (Sherbro).

Latitude 7° 32′ N. Longitude 12° 30′ W.

Month.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	90	60	88	67	73·5	...
February	97	64	92	71	76	...
March	95	69	91	71	73·5	1·72
April	95	68	91	73	78	5·47
May	93	69	89	72	80·5	9·21
June	93	68	87	71	83·5	26·76
July	99	69	89	71	84·5	45·79
August	98	68	92	70	81·5	22·73
September	97	68	89	70	85·5	23·70
October	98	64	87	70	83·5	7·01
November	96	68	89	71	79	3·02
December	92	64	89	70	81	·41
The Year ...	99	60	89	71	80	145·82

Bo.

Latitude 7° 56′ N. Longitude 11° 47′ W.

January	95	55	91	63	59·5	...
February	98	65	94	67	65	·38
March	97	65	93	69	65·5	5·26
April	95	68	92	71	71·5	7·05
May	95	65	90	70	77	7·05
June	97	68	87	71	85·5	15·66
July	90	68	83	71	86	18·76
August	89	68	82	71	89	26·87
September	92	69	85	71	86	15·20
October	90	68	87	71	82	10·65
November	93	69	89	71	76	9·48
December	96	68	90	71	81·5	·83
The Year ...	98	55	89	70	77	117·19

Kaballa.

Latitude 9° 34′ N. Longitude 11° 31′ W.

Month.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	94	49	90	55	59·5	...
February	97	57	93	65	54	·77
March	99	64	94	67	59	3·91
April	97	65	92	70	70	1·46
May	103	62	91	68	76	9·08
June	90	64	86	67	83	15·79
July	88	65	83	67	86·5	10·67
August	86	64	82	68	88·5	11·21
September	86	64	83	68	88	14·31
October	89	64	85	67	86	18·03
November	89	61	86	67	84	5·76
December	90	51	87	60	70·5	1·08
The Year ...	103	49	88	66	75·5	92·07

IV—RETURN OF DISEASES AND DEATHS.

(*a*) European.

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	§Remaining in Hospital at end of 1924.	Total		‡Total Cases treated.	‖Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
Infective Diseases.							
Beri-beri							
Cerebro-spinal fever ...							
Chicken-pox ...							
Cholera							
Dengue							
Diphtheria							
Dysentery:—							
(*a*) Amœbic ...							
(*b*) Bacillary ...	...	1	...	1	...	1	
(*c*) Type not determined	1	...	...	1	...	...	
Endocarditis—infective							
Enteric							
Erysipelas							
Gonorrhœa	...	...	...	...	...	2	
Influenza	...	...	...	..	...	2	
Kala-azar							
Leprosy:—							
(*a*) Nodular ...							
(*b*) Anæsthetic ...							
Malaria:—							
(*a*) Tertian ...	...	...	...	...	...	5	
(*b*) Quartan ...							
(*c*) Aestivo-autumnal	1	37	...	38	...	9	
(*d*) Chronic ...							
(*e*) Type not determined ...	2	18	1	20	2	25	
Blackwater fever ...	...	...	...	...	...	2	2
Measles							
Papataci fever ...							
Plague							
Pneumonia							
Pyrexia of uncertain origin	1	...	...	1	...	2	
Rabies							
Relapsing fever ...							
Rheumatic fever ...							
Septicæmia ...							
Smallpox							
Syphilis :—							
(*a*) Primary ...	...	...	...	...	...	1	
(*b*) Secondary† ...							
(*c*) Inherited ...							
Tetanus							
Trypanosomiasis (sleeping sickness) ...							
Tuberculosis ...							
Carried forward ...	5	56	1	61	2	49	2

*In-patients are those treated in hospitals and institutions, and the term does not apply to those treated in their own quarters, even though they would ordinarily be in-patients if there were suitable accommodation.

†"Tertiary Syphilis" is a term sometimes applied to the later symptoms.

‡"Total cases treated" will, of course, include those remaining in hospital at the end of the previous year.

§i.e., the year previous to that for which the return is made.

‖The figures in this column to be carried on to the next month's return.

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
INFECTIVE DISEASES—*continued.*							
Brought forward ...	5	56	1	61	2	49	2
Undulant fever ...							
Whooping cough ...							
Yaws							
Yellow fever ...							
Other diseases ...							
INTOXICATIONS.							
Alcoholism							
Morphinism ...							
Other intoxications ...							
GENERAL DISEASES.							
Anæmia	...	1	...	1	...	4	
Anæmia—pernicious ...							
Diabetes	...	1	...	1	1	...	
Exophthalmic goitre ...	...	1	...	1	...	...	
Gout							
Leucocythæmia ...							
Lymphadenoma ...							
Myxœdema							
Purpura							
Rickets							
Scurvy							
Other diseases ...	...	10	...	10	...	26	
LOCAL DISEASES. *Diseases of the Nervous System.* Sub-section 1. Diseases of the Nerves:—							
Neuritis	...	...	...	...	...	2	
Meningitis ...							
Myelitis							
Hydrocephalus ...							
Encephalitis ...							
Abscess of brain ...							
Congestion of brain							
Other diseases ...	...	...	...	...	...	1	
Sub-section 2. Nervous Disorders of Undetermined Nature:—							
Apoplexy ...							
Paralysis	...	1	...	1	...	...	
Chorea							
Epilepsy	...	1	...	1	...	...	
Carried forward ...	5	71	1	76	3	82	2

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	5	71	1	76	3	82	2
Neuralgia ...	...	...	...	...	...	16	
Hysteria							
Other diseases ...	...	...	...	...	...	3	
Sub-section 3.—Mental Diseases :—							
Idiocy							
Mania							
Melancholia ...							
Dementia ...							
Delusional insanity ...							
Other diseases ...							
Diseases of the Eye.							
Conjunctivitis ...							
Keratitis							
Ulceration of cornea ...	...	1	...	1			
Iritis							
Optic neuritis ...							
Cataract							
Other diseases ...	...	1	...	1			
Diseases of the Ear.							
Inflammation ...							
Other diseases ...	...	...	...	...	...	2	
Diseases of the Nose.							
Inflammation ...							
Other diseases ...	...	1	...	1	...	11	
Diseases of the Circulatory System.							
Pericarditis							
Endocarditis ...							
Valvular Disease :—							
(*a*) Mitral ...							
(*b*) Aortic ...							
(*c*) Tricuspid ...							
(*d*) Pulmonary ...							
Arterio-sclerosis ...							
Aneurism							
Other diseases ...	...	1	...	1	...		
Carried forward ...	5	75	1	80	3	114	2

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	5	75	1	80	3	114	2
Diseases of the Respiratory System.							
Laryngitis							
Bronchitis	...	..	...	...	...	43	
Broncho-pneumonia ...	...	1	...	1			
Abscess of lung ...							
Gangrene of lung ...							
Emphysema ...							
Pleurisy							
Empyema							
Other diseases ...	...	...	...	...	...	3	
Diseases of the Digestive System.							
Stomatitis							
Caries of teeth ...	...	...	...	...	...	3	
Pyorrhœa alveolaris ...							
Glossitis							
Sore throat ...	...	...	...	...	...	4	
Inflammation of tonsils	...	4	...	4	...	11	
Gastritis	...	4	...	4	...	9	
Ulceration of stomach	...	...	...	...	...	2	
Hæmatemesis ...							
Dilatation of stomach							
Stricture of stomach ...							
Dyspepsia	...	3	...	3	...	98	
Enteritis	...	...	...	...		2	
Appendicitis ...	...	2		2			
Colitis	...	1	...	1	...	1	
Ulceration of intestines	•						
Sprue							
Hernia							
Diarrhœa	...	...	...	...	...	23	
Constipation ...	...	...	...	...	...	15	
Colic	...	...	...	...	...	3	
Hæmorrhoids ...							
Pancreatitis ...							
Hepatitis—acute ...	...	...	...	...	...	9	
Abscess of liver ...							
Cirrhosis of liver ...							
Jaundice	...	1	...	1	...	1	
Peritonitis							
Ascites							
Other diseases ...	...	1	...	1	...	6	
Carried forward ...	5	92	1	97	3	347	2

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	5	92	1	97	3	347	2
Diseases of the Lymphatic System.							
Inflammation of lymphatic gland ...	...	...	...	...	...	3	
Splenitis							
Suppuration of lymphatic gland ...							
Lymphangitis ...	1	...	...	1	...	1	
Elephantiasis ...							
Other diseases ...	...	1	...	1	...	1	
Diseases of the Urinary System.							
Acute nephritis ...							
Bright's disease ...	...	1	...	1			
Pyelitis							
Calculus							
Renal colic							
Cystitis	...	1	...	1			
Vesical calculus ...							
Suppression							
Hæmaturia							
Chyluria							
Other diseases ...							
Diseases of the Generative System.							
Male organs :—							
Urethritis							
Gleet							
Stricture							
Prostatitis							
Soft Chancre ...	...	1	...	1			
Condyloma							
Inflammation of scrotum							
Hydrocele							
Orchitis	...	...	...	...	...	1	
Epididymitis ...							
Abscess in testicle ...							
Other diseases ...	...	2	...	2			
Female organs:—							
Ovaritis							
Ovarian cyst ...							
Endometritis ...							
Displacement of uterus							
Vaginitis							
Carried forward ...	6	98	1	104	3	353	2

EUROPEAN—*continued.*

Diseases.	IN PATIENTS.					OUT-PATIENTS	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	6	98	1	104	3	353	2
Diseases of the Generative System—contd.							
Female organs, *contd.*							
Amenorrhœa ...							
Dysmenorrhœa ...							
Menorrhagia ...							
Leucorrhœa ...							
Other diseases ...	...	1	...	1			
Affections connected with Pregnancy.							
Abortion	...	...	...	...	...	1	
Other affections ...	...	...	...	...	...	1	
Affections connected with Parturition.							
Delayed labour ...							
Retained placenta ...							
Premature birth ...							
Other affections ...							
Affections consequent on Parturition.							
Post-partum hæmorrhage							
Puerperal septicæmia ...							
Mastitis							
Abscess of breast ...							
Other affections ...							
Diseases of Organs of Locomotion.							
Osteitis	...	...	...	...	...	1	
Arthritis	...	...	...	...	...	1	
Spondylitis							
Burstiis							
Myalgia	...	...	...	...	...	2	
Other diseases ...	...	...	...	...	...	1	
Diseases of Connective Tissue.							
Cellulitis	...	2	...	2			
Abscess	...	...	...	...	...	1	
Other diseases ...	...	2	...	2			
Diseases of the Skin.							
Ulcer	...	...	...	...	...	3	
Urticaria							
Eczema							
Carried forward ...	6	103	1	109	3	364	2

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	6	103	1	109	3	364	2
Diseases of the Skin—continued.							
	...	...	...	...	...	1	
Boil							
Carbuncle							
Herpes							
Psoriasis							
Oriental sore ...							
Tinea	...	...	...	...	...	2	
Scabies	...	...	...	...	. .	2	
Acne							
Prickly heat ...	...	...	...	...	...	2	
Other diseases ...	...	1	...	1	...	7	
Injuries.							
General	1	...	...	1	...	...	
Local	...	4	...	4	...	20	1
Tumours.							
Benign							
Malignant							
Malformations ...							
Poisons.							
Vegetable							
Animal							
Other poisons ...							
Parasites.							
Animal Parasites							
Protozoa							
Trematoda (flukes) ...	...	...	...	...	...	1	
Cestoda :—							
Tænia solium ...							
Tænia saginata ...							
Other cestodes ...							
Nematoda :—							
Ascaris							
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Filaria							
Strongylus ...							
Ankylostomum ...							
Oxyuris							
Other nematodes ...							
Insecta :—							
Insects producing Myiasis							
Dematophilus penetrans ...							
Other insects ...							
No appreciable diseases	...	...	...	...	...	1	
Total ...	7	108	1	115	3	400	3

V—RETURN OF DISEASES AND DEATHS.

(*b*) African.

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	§Remaining in Hospital at end of 1924.	Total Admissions.	Total Deaths.	‡Total Cases treated.	‖Remaining in Hospital at end of 1925.	Cases treated. New.	Deaths.
Infective Diseases.							
Beri-beri	...	2	1	2	1	...	
Cerebro-spinal fever ...							
Chicken-pox ...	2	40	...	42	2	26	
Cholera							
Dengue							
Diphtheria							
Dysentery :—							
(*a*) Amœbic ...	...	34	4	34	...	69	
(*b*) Bacillary ...	...	1	...	1	...	10	
(*c*) Type not determined ...	...	15	3	15	...	67	
Endocarditis—infective							
Enteric							
Erysipelas							
Gonorrhœa	3	35	...	38	...	1,483	
Influenza	...	4	...	4	...	102	
Kala-azar							
Leprosy :—							
(*a*) Nodular ...	1	7	2	8	3	19	
(*b*) Anæsthetic ...	...	5	1	5	1	26	
Malaria :—							
(*a*) Tertian ...	...	25	3	25	...	411	1
(*b*) Quartan ...	...	12	...	12	...	41	
(*c*) Aestivo-autumnal	2	204	2	206	2	392	
(*d*) Chronic ...	...	1	1	1	...	121	
(*e*) Type not determined ...	...	80	...	80	...	2,364	
Blackwater fever ...	...	...	...	...	...	1	
Measles	...	1	...	1	...	36	
Papataci fever ...							
Plague							
Pneumonia	2	57	27	59	11	39	1
Pyrexia of uncertain origin	1	34	2	35	...	377	
Rabies							
Relapsing fever ...							
Septicæmia	...	2	2	2	...	...	
Smallpox							
Tetanus							
Syphilis :—							
(*a*) Primary ...	...	16	...	16	...	93	
(*b*) Secondary† ...	7	38	...	45	8	710	
(*c*) Inherited ...	...	17	2	17	2	123	
Tetanus	...	15	10	15	...	23	
Trypanosomiasis (sleeping sickness) ...							
Tuberculosis ...	4	69	25	73	6	121	2
Undulant fever ...							
Carried forward ...	22	714	85	736	36	6,654	4

*In-patients are those treated in hospitals and institutions, and the term does not apply to those treated in their own quarters, even though they would ordinarily be in-patients if there were suitable accommodation.

†"Tertiary Syphilis" is a term sometimes applied to the latter symptoms.

‡"Total cases treated" include those remaining in hospital at the end of the previous year.

§i.e., the year previous to that for which the return is made.

‖The figures in this column to be carried on to the next year's return.

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
INFECTIVE DISEASES.—*continued.*							
Brought forward ...	22	714	85	736	36	6,654	4
Whooping cough ..	...	2	...	2	...	109	
Yaws	1	28	2	29	1	522	
Yellow fever ...							
Other diseases ...	...	2	...	2	...	47	
INTOXICATIONS.							
Alcoholism	...	...	...	...	...	14	
Morphinism ...							
Other intoxications ...							
GENERAL DISEASES.							
Anæmia	...	6	3	6	...	710	
Anæmia, pernicious ...	...	1	1	1	...	1	
Diabetes							
Exophthalmic goitre ...	...	...	...	...	...	96	
Gout							
Leucocythæmia ...							
Lymphadenoma ...							
Myxœdema ...							
Purpura							
Rickets	...	...	...	...	...	14	
Scurvy							
Other diseases ...	11	136	16	147	17	2,221	
LOCAL DISEASES. *Diseases of the Nervous System.*							
Sub-section 1.—Diseases of the Nerves :—							
Neuritis	2	6	1	8	3	27	
Meningitis ...	...	1	...	1	...	...	
Myelitis							
Hydrocephalus ...							
Encephalitis ...							
Abscess of brain ...							
Congestion of brain	...	1	...	1	...	3	
Other diseases ...	...	10	2	10	1	209	
Sub-section 2.—Nervous Disorders and Diseases of Undetermined Nature :—							
Apoplexy ...	...	12	5	12	8	9	
Paralysis ...	3	19	1	22	1	28	
Chorea	...	1	...	1	...	1	
Epilepsy	1	5	2	6	...	19	
Neuralgia ...	...	4	...	4	...	293	
Carried forward ...	40	948	118	988	67	10,977	4

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	40	948	118	988	67	10,977	4
Hysteria	...	...	...	...	...	2	
Other diseases ...	...	8	1	8	...	457	
Sub-section 3.—Mental diseases.—							
Idiocy							
Mania	1	2	...	3	...	...	
Melancholia ...							
Dementia ...	4	18	1	22	4	1	
Delusional insanity...	...	1	...	1	...	1	
Other diseases ...	...	1	...	1	...	11	
Diseases of the Eye.							
Conjunctivitis ...	...	42	..	42	1	628	
Keratitis	...	1	...	1	...	14	
Ulceration of cornea ...	...	...	...	...	...	15	
Iritis	...	2	...	2	...	37	
Optic neuritis ...	...	...	...	...	...	3	
Cataract	...	4	...	4	3	28	
Other diseases ...	5	11	...	16	...	131	
Diseases of the Ear.							
Inflammation ...	...	...	...	...	...	107	
Other diseases ...	...	4	...	4	...	286	
Diseases of the Nose.							
Inflammation ...	...	1	...	1		63	
Other diseases ...	1	30	...	31	...	407	
Diseases of the Circulatory System.							
Pericarditis ...	...	...	...	...	...	6	
Endocarditis ...							
Valvular Disease :—							
(*a*) Mitral ...	1	41	18	42	...	79	1
(*b*) Aortic ...	1	3	3	4	...	12	
(*c*) Tricuspid ...							
(*d*) Pulmonary ...							
Arterio-sclerosis ...	...	...	..	...	...	1	
Aneurism	...	...	...	...	...	11	
Other diseases ...	...	13	5	13	...	243	
Diseases of the Respiratory System.							
Laryngitis	...	...	...	...	...	56	
Bronchitis	3	127	3	130	2	6,204	
Broncho-pneumonia ...	...	14	5	14	...	30	
Abscess of lung ...							
Gangrene of lung ...							
Emphysema ...	...	...	...	...	...	5	
Carried forward ...	56	1,271	154	1,327	77	19,815 .	5

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.				OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	56	1,271	154	1,327	77	19,815	5
Diseases of the Respiratory System—continued.							
Pleurisy	2	16	...	18	1	171	
Empyema	...	4	2	4	1	19	
Other diseases ...	...	9	4	9	1	1,076	1
Diseases of the Digestive System.							
Stomatitis	...	4	...	4	...	174	
Caries of teeth ...	...	...	...	...	...	1,151	
Pyorrhœa alveolaris ...	...	4	...	4	...	39	
Glossitis	...	...	...	...	...	101	
Sore throat ...	...	1	...	1	...	232	
Inflammation of tonsils	...	13	...	13	...	355	
Gastritis	...	10	...	10	2	89	
Ulceration of stomach	...	2	2	2	...	...	
Hæmatemesis ...	...	...	...	...	...	4	
Dilatation of stomach	...	...	...	...	...	2	
Stricture of stomach ...							
Dyspepsia	...	30	1	30	...	3,431	
Enteritis	...	12	2	12	...	32	
Appendicitis ...	...	...	...	...	...	1	
Colitis	...	1	...	1	...	14	
Ulceration of intestines	...	3	3	3	...	...	
Sprue							
Hernia	2	32	2	34	...	326	
Diarrhœa	...	55	2	55	...	908	
Constipation ...	...	5	...	5	...	4,863	
Colic	...	10	...	10	...	903	
Hæmorrhoids ...	...	5	...	5	...	152	
Pancreatitis ...	...	...	...	...	...	2	
Hepatitis, acute ...	1	11	1	12	...	55	
Abscess	...	7	...	7	...	21	
Cirrhosis	...	...	...	...	...	18	
Jaundice	1	4	...	5	...	38	1
Peritonitis	...	7	4	7	..	1	
Ascites	1	8	5	9	...	60	
Other diseases ...	1	22	1	23	...	719	2
Diseases of the Lymphatic System.							
Splenitis	...	6	...	6	...	212	
Inflammation of lymphatic gland ...	2	55	1	57	2	331	
Suppuration of lymphatic gland ...	...	8	...	8	1	23	
Carried forward ...	66	1,615	184	1,681	85	35,338	9

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
GENERAL DISEASES—*continued.*							
Brought forward ...	66	1,615	184	1,681	85	35,338	9
Diseases of the Lymphatic System—continued.							
Lymphangitis ...	...	...	...	...	...	6	
Elephantiasis ...	5	27	1	32	3	81	
Other diseases ...	...	5	...	5	...	120	
Diseases of the Urinary System.							
Acute nephritis ...	1	11	3	12	...	67	
Bright's disease ...	...	...	...	...	...	19	
Pyelitis							
Calculus	...	1	...	1	...	...	
Renal colic ...							
Cystitis	...	4	1	4	...	59	
Vesical calculus ...							
Suppression ...	...	...	...	...	...	6	
Hæmaturia	...	1	...	1	...	12	
Chyluria	1	5	1	6	...	29	
Other diseases ...	...	16	3	16	1	164	
Diseases of the Generative System.							
Male Organs :—							
Urethritis	...	3	...	3	...	54	
Gleet	1	...	...	1	...	66	
Stricture	...	15	1	15	1	56	1
Prostatitis	...	1	...	1	...	3	
Soft chancre ...	1	12	...	13	...	133	
Condyloma	...	...	...	...	...	5	
Inflammation of scrotum	...	...	...	...	...	24	
Hydrocele	2	4	...	6	...	145	
Orchitis	...	35	...	35	...	286	
Epididymitis ...	...	6	...	6	...	67	
Abscess of testicle ...	1	1	...	2	...	...	
Other diseases ...	2	31	2	33	2	207	
Female Organs:—							
Ovaritis	...	...	...	...	...	19	
Ovarian cyst ...	...	..	...	...	...	3	
Endometritis ...	1	...	...	1	...	25	
Displacement of uterus	...	2	...	2	...	4	
Vaginitis	...	2	...	2	...	25	
Amenorrhœa ...	...	...	...	...	...	245	
Dysmenorrhœa ...	...	1	...	1	...	136	
Menorrhagia ...	...	1	...	1	...	70	
Leucorrhœa ...	...	1	...	1	...	67	
Other diseases ...	2	22	1	24	...	542	
Carried forward ...	83	1,822	197	1,905	92	38,083	10

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	83	1,822	197	1,905	92	38,083	10
Affections connected with Pregnancy.							
Abortion	...	10	...	10	...	23	
Other affections ...	1	29	1	30	1	169	
Affections connected with Parturition.							
Delayed labour ...	2	2	1	4	...	3	
Retained placenta ...	...	4	...	4			
Premature birth ...	...	1	...	1	...	1	
Other affections ...	...	150	...	150	...	1	
Affections consequent on Parturition.							
Post-partum hæmorrhage	...	5	...	5	...	1	
Puerperal septicæmia	...	4	4	4			
Mastitis	...	16	...	16	...	58	
Abscess of breast ...	...	...	...	...	...	7	
Other affections ...	...	8	3	8	...	17	
Diseases of Organs of Locomotion.							
Osteitis	...	5	...	5	...	146	
Arthritis	...	25	1	25	2	775	
Spondylitis							
Bursitis	...	...	...	...	...	7	
Myalgia	...	24	...	24	...	2,232	
Other diseases ...	1	31	1	32	2	1,723	
Diseases of Connective Tissue.							
Cellulitis	4	24	...	28	...	191	
Abscess	...	54	...	54	3	645	
Other diseases ...	...	14	...	14	...	58	
Diseases of the Skin.							
Ulcer	25	244	4	269	24	5,518	
Urticaria	...	2	...	2	...	41	
Eczema	...	9	...	9	...	231	
Boil	...	29	...	29	...	385	
Carbuncle	...	4	...	4	...	11	
Herpes	...	2	...	2	...	124	
Psoriasis	...	...	...	...	...	31	
Oriental sore ...							
Tinea	...	2	...	2	...	194	
Scabies	1	2	...	3	...	975	
Carried forward ...	117	2,522	212	2,639	124	51,650	10

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1924.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1925.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward...	117	2,522	212	2,639	124	51,650	10
Diseases of the Skin—continued.							
Acne							
Prickly heat ...	...	...	...	...	...	14	
Other diseases ...	1	23	...	24	...	760	
Injuries.							
General	3	9	3	12	...	45	1
Local	15	328	8	343	6	5,472	
Tumours.							
Benign	...	23	1	23	...	102	
Malignant	1	13	1	14	2	11	
Malformations ...	...	1	...	1	...	15	
Poisons.							
Vegetable							
Animal	...	1	...	1	...	2	
Other poisons ...	...	2	2	2	...	1	
Parasites.							
Animal Parasites.							
Protozoa							
Trematoda (flukes) ...	...	1	...	1	...	11	
Bilharzia	...	...	...	...	...	221	
Cestoda :—							
Tænia solium ...	...	7	...	7	...	180	
Tænia saginata ...	...	1	...	1	...	60	
Other cestodes ...							
Nematoda :—							
Ascaris	1	21	...	22	...	2,028	
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Filaria	...	1	...	1	...	5	
Strongylus ...	...	...	..	...	...	1	
Ankylostomum ...	...	26	3	26	...	99	
Oxyuris	...	...	...	...	...	2	
Other nematodes ...	...	1	1	1	...	2	
Insecta :—							
Insects producing myiasis ...							
Dematophilus penetrans	...	...	...	...	...	7	
Other insects ...	...	...	...	...	...	43	
No appreciable disease	...	59	...	59	...	271	
Undiagnosed ...	...	30	...	30	23	28	
Total ...	138	3,069	231	3,207	155	61,030	11

VI—(*a*) TABLE OF SURGICAL OPERATION PERFORMED IN CONNAUGHT HOSPITAL IN 1925.

Nature of Operation.	Number.	Cured.	Relieved.	Unrelieved.	Died.
Removal of tumours	3	3	...	...	...
Amputation of arm and hand ...	4	4	...	..	...
Elephantiasis scroti-removal	4	4	...	...	...
Elephantiasis of leg	1	1	...	...	...
For recto-vaginal fistula	1	1	...	...	...
Removal of ganglion	1	1	...	...	...
External urethrotomy	2	2	...	...	...
Circumcision	2	2	...	...	...
Strangulated hernia	4	...	4	...	...
Periosteal cyst of skull	1	1	...	...	...
Osteomyelitis	3	3	...	...	...
For fistula	1	1	...	...	...
Repair of wounds and ligature of arteries	4	4	...	...	...
Rupture of bladder-suturing	1	...	...	...	1
Removal of foreign body	2	2	...	...	...
Mycetoma-removal	1	1	...	...	...
Amputation of foot	1	1	...	...	...
Removal of appendix	1	1	...	...	...
Fracture dislocation-reduction and setting	2	2	...	...	..
Ludwig's angina	1	1	...	...	...
Necrosis of hip-scraping	1	...	1	...	...
Total	41	35	5	...	1

(*b*) LIST OF SURGICAL OPERATIONS PERFORMED IN EUROPEAN HOSPITAL.

Nature of Operation.	Total Number.	Cured.	Relieved.	Unrelieved.	Died.
No operations were performed.					

(*c*) LIST OF SURGICAL OPERATIONS PERFORMED ELSEWHERE, REPORTED BY MEDICAL OFFICERS.

Nature of Operation.	Number.	Cured	Relieved.	Unrelieved.	Died.
Port Lokko	4	4	...	...	...
Daru	81	66	5	5	5
Kennema	3	1	2	...	...
Bonthe	48	25	21	1	1
Moyamba	1	1	...	...	...
Bo	2	1	1	...	...
Pujehun	5	5	...	...	...
Makeni	5	4	...	...	1
Kissy	36	36	...	...	...
Sumbuya	3	2	1	...	...
Kaballa	3	3	...	...	...
Njala	5	5	...	...	...
Total	196	153	30	6	7

Appendices.

I—CONNAUGHT HOSPITAL CLINICAL LABORATORY REPORT.

Dr. Hartley was in charge for four months of the year.

The work has mainly consisted of routine examination of material from the European Hospital, Connaught Hospital, Freetown Prison and Kissy Hospital.

During the year 1,728 specimens were sent to the laboratory for examination.

Blood.—Three hundred and twenty-six samples were examined chiefly for suspected malaria. Plasmodium falciparum was found on sixty-nine occasions. Plasmodium vivax on two and Plasmodium malariæ on four occasions. The relative proportion of these three types of malaria to one another has not changed.

Of the blood microfilariæ, F. bancrofti was found on twelve and F. loa on five occasions. Chemical, microscopical or spectroscopical examinations were made of 319 specimens of urine.

One hundred and seventy-seven specimens of sputum were examined, in thirty-seven of which B. tuberculosis was found.

Eighty-one specimens of pus, chiefly from cases of suspected venereal disease, were examined.

Particulars of findings of fæces examination are tabulated below.

Total number of specimens examined	805	
Total number in which nothing of pathological significance was observed	435	
Ova of ankylostoma found on	274	occasions
Ova of ascaris lumbricoides found on	302	„
Ova of trichuris trichiura found on	63	„
Ova of tæniidæ found on	15	„

Entamœba histolytica, either encysted or as free forms, found on thirty-two occasions.

During the year ten post-mortem examinations were made. The cause of death in each of the cases is shown below.

Cause of Death.	Number.
Rupture of right lung (motor-car accident) ...	1
Rupture of aortic aneurysm	1
Acute pneumonia	2
Myocardial degeneration	2
Killed by lightning	1
Acute dysentery	1
Cerebral hæmorrhage	1
Acute capillary bronchitis	1
Total	10

One exhumation was carried out at Cline Town.

Several slides from sheep and cattle were examined for the presence of B. anthracis.

Sections of several tumours were made for diagnostic purposes.

Examination of rats from various districts in Freetown were made for the presence of plague—so far, with negative results.

Freetown Prison.

Blood—Forty-six specimens were examined from cases of clinical malaria.
In twelve cases P. falciparum was found.
No cases of infection with P. vivax or P. malariæ found.
Examination was made of two hundred and thirty-seven samples of urine.
No cases of Tuberculosis occurred in the Prison during the year.
One hundred and seventy specimens of fæces examined chiefly from prisoners employed in the kitchen, bakery, etc.

Ova of ankylostome found on sixty-two occasions.
Ova of ascaris lumbricoides found on sixty-three occasions.
Ova of tæniidæ found on seventeen occasions.
Ova of trichuris trichiura found on twelve occasions.
Entamœba histolitica either in cysts or free forms was found on twenty-six occasions

J. D. DIMOCK,
Medical Officer-in-charge of Laboratory.

20th May, 1925.

II—CONNAUGHT HOSPITAL MATERNITY WARD REPORT.

There were admitted to the maternity ward during the year 214 patients. 152 gave birth, forty-five had complicated pregnancies, three were admitted during the puerperium and the remaining fourteen were urgent cases temporarily accommodated.

The 152 cases of parturition were made up as follows:—fifty-three primiparæ and ninety-nine multiparæ. They gave birth to 163 children, there being twelve cases of twins; in one instance the first twin was born at home.

There were forty-three abnormal cases, made up as follows:—

Eclampsia	5	(1 forceps 1 twins 2 maternal deaths)
Premature	8	
Forceps	2	(1 dead birth)
Cephalotripsy	1	(Generally contracted rachitic pelvis in an achondroplasic dwarf. Maternal death)
Torn Perinæum	6	
Craniotomy	1	
Premature rupture of membranes ...	1	(Still birth)
Prolapsed Funis	1	
Dead birth	3	(1 præclamptic)
Breech with extended arms ...	1	(Dead birth, peeling)
Placenta Prævia	3	(1 premature 1 premature with still-birth)
Premature twins	2	
Twins	8	(1 Sapræmic before delivery. Maternal death. 2 with one child transverse. 1 with torn perinæum. 1 with both dead born. 1 with prolapsed cervix before delivery)
Post partem haemorrhage	1	

In the list no case has been counted twice—each case has been designated by its most salient feature.

There were four maternal deaths amongst these cases:—

i. Ante and post partum eclampsia—died comatose.

ii. Ante-partum eclampsia—died comatose after spontaneous delivery.

iii. Sapræmia—macerated twins—exhaustion.

iv. Dystocia—cephalotripsy—collapse.

The following table gives the fate of the 163 children born in hospital:—

	Dead Births.		Still-Births.		Deaths.	Age.
1.	No reason	1.	Premature rupture of membranes	1.	Premature	5 days
2.	Breech with extended arms	2.	A twin with hydrocephalus	2.	Placenta prævia	1 hour
3.	Maternal pre-eclampsia	3.	Placenta prævia	3.	Placenta prævia	1 hour
4.	No reason			4.	Premature twins	died in 24 hours
5.	Premature—macerated			5.	Premature twins	died in 24 hours
6.	Forceps			6.	A Twin	
7.	Twins: maternal eclampsia			7.	4lb. baby	7 days
8.	Twins: maternal eclampsia			8.	Premature	
9.	Twins: Sapræmic			9.	Premature	
10.	Twins Sapræmic			10.	Premature	
11.	Dystocia			11.	Premature	6 days
12.	A twin: neglected shoulder presentation			12.	Prolapsed fundus	1 day
13.	Craniotomy			13.	One twin	

It will be seen that out of 163 children delivered in hospital, twenty-nine perished, that is 18 per cent. Out of the twenty-nine lost 34 per cent., that is ten, were associated with twin pregnancy. 8 per cent. of the 163 cases gave birth to twins. Dead births are considered to be those children that could not have been lost in the birth but had been dead in utero some time, as evidenced by skin peeling and discolouration of the cord.

The forty-four complicated pregnancies were made up as follows:—

Abortion	12
False pains	8
Threatened misscarriage	1
Incomplete misscarriage	2
Pre-eclampsia	5
Observation	3
Ante-partum hæmorrhage	3
Vaginitis	1
Conjunctivitis	1
Mastitis	1
Malaria	1
Septic foot	1
Jaudice	1
Dental caries	1
Coryza	1
Contusions	1
Dyspepsia	1

The three cases admitted during the puerperium were—

Retained placenta	2
Pyrexia	1

During the first six months of the year the Sir Alfred Jones Laboratory continued to examine specimens of placenta and blood from mother and child. July completed a full year's records, so the investigation was terminated. The findings up to 31st December, 1924, were reviewed in the annual report for that year and I have no further observations to make.

The Sir Alfred Jones Laboratory decided to make a routine test of the maternal blood for syphilis. The test (Sigma) necessitated the withdrawal of a few c.c's of intravenous blood. By the time some eighteen mothers had had their blood examined it became abundantly evident that the patients strongly objected to the examination, so it was forthwith abandoned.

Appended is a list of the seventeen cases examined, together with the fate of the children:—

Case.	Sigma Units.	Type of Case.	Fate of Child.
A. W.	...	Twins	Dead born
G.	45·2	O. P. and P. P. eclampsia	Living child, 6½ lb.
R. A.	...	Normal	,,
H. G.	...	,,	,,
D. J.	...	,,	,,
J. B.	38	,,	Living child, 6 lb.
E. J.	...	,,	,,
E. D.	272	,,	Living child, 8 lb.
M. W.	...	,,	,,
J. C.	...	Premature	,,
R. M.	2·7	Normal	Living child, 6 lb.
A. F.	...	Premature	Died.
S. C.	...	Normal	,,
G (S. N, 404)	...	,,	,,
N. T.	35	,,	Living child, 5½ lb.
J.	9	,,	Living child, 7½ lb.
M.	...	,,	,,

This list of findings (each case a routine examination and not selected) is of interest, because it shows that, although six out of seveteen were positive, not one of the six children was apparently prejudiced up to the time of leaving hospital.

As this research was brought to an untimely end, and it has not been possible to follow up these cases, it is not possible to express any views on these findings

E. J. WRIGHT,

Medical Officer-in-charge, Maternity Ward.

III—INFANT WELFARE CLINIC AT THE PRINCESS CHRISTIAN MISSION HOSPITAL.

A weekly infant clinic was started in August and became popular almost at once. There were 1,983 attendances in the five months. The babies were weighed in one room and then examined in another by the medical officer, who gave advice to the mothers with regard to feeding, clothing, and general care.

2. Malaria was the most important cause of ill-health, especially among the two three-year old chidren. Among the newly born children sepsis of the cord occurred in many of those not born in hospital, thrush and gastro-enteritis were very common and there were nine cases of ophthalmia neonatorum. Among the older children scabies, localiy included in the rather vague term "craw-craw," was often seen and in the soft skin of the children frequently developed into suppurative conditions, especially about the hands, feet and buttocks. Jigger-fleas and cuts about the feet often gave rise to ulcers with inflamed inguinal glands in walking children; in these children too an eruption of small blisters and sometimes pustules occurred occasionally, which generally affected the soles of both feet; this was diagnosed as "ground itch" due to the invasion of the skin by ancylostome larvæ. Mild bronchitis occurred frequently, especially during the rainy season, and there were a few cases of severe broncho-pneumonia who were admitted to hospital.

3. Many of the chldren had unsightly umbilical hernia; an attempt was made to find the cause of its prevalence. It developed frequently in the first six months of life and in children who were entirely breast-fed so that bulky carbohydrate diet could not be held responsible. It occurred in children with splenic enlargement; but also in children without such enlargement. It seldom occurred in chiildren who had been born in hospital.

4. As a result of observing its development in a few cases, it would appear to be due to lack of abdominal support in infancy in combination with a week umbilical scar due to sepsis of the cord. A broad evenly rolled binder is seldom employed, only a narrow piece of cloth being worn until the remainder of the cord drops off. Thus the abdominal muscles are quite unsupported. If the abdominal pressure is increased as in bronchitis, whooping cough, enlargement of the spleen, flatulence or as the result of straining when such conditions as phimosis or enteritis occur, hernia develops. It is a fairly common practice to pull off the cord-stump if it has not already fallen off by the fourth day which increases the tendency to sepsis.

5. There were two cases of congenital syphilis in infants of two and a-half and three months respectively. These two children were wizened, had snuffles and also epiphysitis, the ankles and wrists of one child being very much swollen and tender. One child died, the other is improving rapidly under anti-syphilitic treatment.

6. There was one definite and fairly severe case of rickets—a child of eighteen months, whose mother had died and who had been fed almost from birth on rice and "pap."

7. There were also a few cases of flabby children with delayed dentition and delayed closure of the fontanelles. These children were generally in the second year of life and were either still being breast-fed (many of the mothers feed their children for two years) or were being fed on "pap." They did not show very definite epiphysitis but had had fever, had enlargement of the spleen, and were anæmic; whether their unhealthiness was due to malaria alone or to malaria combined with a lack of anti-rachitic vitamin as a result of prolonged breast feeding or unsuitable food, it is difficult to say; but I think the latter view is probably correct.

8. Comparing this clinic with similar clinics in an English town, however, one is struck by the rarity of rickets. That it can occur here and in a fairly severe form due to gross ill-feedings we know, and that mild cases occur, especially during the nine to twenty-four months ago is also true, but the disease is not prevalent to any great extent.

9. Occasionally an older child with rachitic bony deformity has been seen at the hospital out-patient department, and the medical inspections of the school children reveals a few deformities of this nature, but they are not very numerous.

10. This comparative rarity of rickets even among those children who are not fed on milk and whose diet appears relatively deficient in anti-rachitic vitamin is easily understood when we consider the markedly preventive and curative effect of sunlight in this disease. Considering the outdoor or at least the door-step life of the general population here, the sunlight has ample opportunity for exercising its preventive and curative action.

The position appears to me to be as follows:—

(1) Infants one to nine months breast-fed show no signs of rickets. These constitute the great majority of the infants seen at the clinic.

(2) Infants one to nine months not breast-fed and not given milk but given rice or "pap" may develop definite signs of rickets in spite of sunlight.

(3) Children of nine months to two years who are still being breast-fed or who are fed on an almost entirely starchy food, such as rice or cassava "pap" or some starchy patent food, may become flabby and show symptoms suggestive of rickets. Malaria is common among children of this age-period, probably rendering the child more liable to rickets while it complicates the diagnosis.

(4) Children of two years and over seldom show signs of rickets. These children play daily in the sunlight and their diet becomes more varied. Green vegetables, sweet-potatoes, millet, tomatoes and fish, together with banana, palm-oil, palm kernels, and soups made with fish, fowl or meat, are at this stage added to the diet and appear to supply adequate anti-rachitic substances for these children in this sunlight country.

11. No cases of scurvy have been seen. Fruit is cheap and oranges and mangoes, are freely eaten by the children.

12. Almost all the infants attending the clinic are breast-fed for the first year of life at least. If the mother dies the infant may be fed on diluted goat's milk and thrive fairly well. Its chances of survival on artificial feeding are poor and depend on the education of the mother as gastro-enteritis is so liable to be set up by dirty bottles or bad milk from tins which have been too long opened. One motherless child is thriving well on a dried milk preparation.

13. The nine to twenty-four months children are generally given some form of "pap." "Pap" is a rather vague term used for the product formed when various substances, e.g. maize, millet, cassava, rice, are softened in water, pounded in a mortar, strained and the sediment boiled with water. The pap is mixed with sugar and, by those who can afford it, with milk.

M. G. BLACKLOCK.

IIIb.—INFANT WELFARE.

Connaught Hospital and Campbell Street.

The works has steadily progressed. The clinic at the Connaught Hospital continues to be held on Friday afternoons and that at Campbell Street, is held on Monday mornings.

The Sir Alfred Jones' Laboratory continued the routine examination of the children's blood until a complete year's records had been obtained. In July the routine examination ceased.

At the end of 1924 there were 512 individuals on the register. At the end of the year under review there was a total of 1,336 showing that there have been added 824 new names, an increase of 312 last year.

One hundred and thirty-four cases out of last year's number have continued to attend the clinics this year, so that the actual number of individuals attending has been 958.

During the year the monthly attendance at each of the two clinics has been as follows:—

—	Central: Connaught Hospital.	Remarks.	West: Campbell Street.	Remarks.
January	242		...	
February	260		7	First clinic 22nd February.
March	225		112	
April	165	Good Friday—no clinic.	15	Only one clinic held
May	321		77	Two public holidays, etc.
June	335		74	
July	509		122	
August	496		136	
September	529		152	
October	661	Baby competition.	186	
November	309	One clinic short Baby competition.	195	
December	290	Christmas Day no clinic.	181	
Total ...	4,242		1,257	

The total attendances—5,599—were made by 958 individuals, giving an average attendance of 5·8 per baby, this is more than double the average attendance for last year.

Early in the year nurse B. O. W. Cole resigned and nurse Edith Thomas took over from her. I append a summary of the work done by her during the year.

The table shows the number and kind of visits made each month:—

—	Newly Born.	New Cases.	Repeated Visits.
January	33	24	203
February	37	40	211
March	41	34	176
April	83	43	48
May	75	64	68
June	69	70	80
July	89	45	134
August	76	80	186
September	83	50	166
October	89	130	140
November	88	88	136
December	38	90	130
Total	801	728	1,678

The increase in the number of newly born babies visited monthly is a very promising feature of the above list.

Nurse Thomas in her monthly reports for the last quarter says, the majority of infants under the supervision of the clinic are now being almost entirely breast-fed. It is impossible to give a detailed analysis of the cases treated. Practically all the minor ailments of children were seen and treated. Qunine was liberally distributed to the children as also was Cod Liver Oil to cases requiring it.

The first Mothercraft and Baby Competition restricted to mothers and children attending one of the welfare centres was held in connexion with Health Week.

The competition had a very stimulating effect upon the people as was shown by their subsequent attendances at the clinics and their attitude towards the movement.

During a portion of this year, special attention has been paid to rickets and an attempt made to determine how prevalent it really is. For several years it has been apparent that the disease is really much more prevalent than is generally supposed.

Owing to the pressure of the work it was found impossible to take records over long periods, but on occasion observations were recorded without any preparation.

On 11th December every child attending the clinic was examined for evidence of rickets i.e. enlarged epiphyses always, usually bronchitis often a typical chest and sometimes a typical cranium.

On another occasion the dentition of 115 children was examined as they arrived at the clinic and as many were too young or too old for useful observations to be made, the children between nine and eighteen months have been chosen and give the following result:— Thirty-three children out of 115 unselected children were within the desired age and of these fourteen, i.e. 42 per cent., had delayed dentition as follows:—

Age.	Number of Teeth.
9 months	...
9 „	...
9 „	...
9 „	2
11 „	2
11 „	2
11 „	3
12¼ „	6
12½ „	6
12¾ „	..
13 „	4
13 „	6
14 „	7
16 „	6

This is, I think, fairly representative of what is usually seen at the clinic.

Even in the breast-fed child manifestations of rickets are seen more often than one would expect.

A survey of the usual dietary of the people shows clearly that the diet must predispose to rickets and consequently to other diseases. The usual diet will be found to consist of rice and other starchy foods, dried fish, palm oil, some greens and seeds. Whereas fresh fish, milk, meat, butter, eggs, animal fats are but sparingly used and, in fact, are not easily obtainable by the people.

In the absence of a sufficiency of animal fats it would appear that an abundance of fresh green and other vegetables is essential, but the local conditions, do not permit of this at present.

Again the staple food of the country—rice—is the poorest in the two most important salts in the dietary viz.—calcium and phosphorus.

The additions of cod liver oil to the maternal diet when required and also to the infants diet when indicated has proved to be extremely useful and beneficial to many of the sickly children attending the clinic.

E. J. WRIGHT,
Medical Officer in charge of Infant Welfare.

IV—MEDICAL REPORT ON FREETOWN PRISON.

Dr. Wood was in charge until 9th March, when Dr. Hartley took over. Dr. Dimock relieved Dr. Hartley on 21st July.

Health of Prison Officers.

European.—Satisfactory. One contracted malaria and was transferred to European hospital.

African.—Fair. Fifty-two were treated of whom twenty-seven were placed on the sick list. Eight were transferred to the Connaught Hospital and two sent to the isolation hospital at Kissy. None of these cases were invalided from the Service and no death occurred.

Health of Prisoners.

The general health of the prisoners has been very good. During May, there was a mild outbreak of diarrhœa and dysentery which lasted for a few days.

Out of the total of thirty-five treated during this month, one prisoner died. This was the only outbreak of disease during the year.

The gang of prisoners working at the Cape Sanitary station was withdrawn on 27th October, through shortage of prison labour in Freetown.

Work at this station was eagerly sought after by prisoners and the incidence of disease in those so employed was singularly low.

Five deaths occurred amongst prisoners during the year. Two from pneumonia, two from amœbic dysentery and one from organic heart disease.

The daily average of sick in hospital was 4·13, on an average prison strength of 244·84 or 1·72 per cent.

One prisoner suffering from malignant disease of the gall bladder was released on medical recommendation. One prisoner was admitted suffering from leprosy. He was isolated and treated with special preparations of chaulmoogra oil.

No cases of beri-beri have occurred throughout the whole year.

Six persons were transferred to Kissy under mental emergency certificates.

All new arrivals are now vaccinated on admission.

Malaria.—Forty-four cases were admitted to hospital. Subtertian malaria was the only variety seen.

Varicella.—There were three cases only. One was a new prisoner and two cases amongst the African staff, who were isolated at Kissy.

Pneumonia.—Two cases occurred, both of which died.

Amœbic Dysentery.—Ten cases, of which two terminated fatally.

Helmenthn Infection.—The vast majority of prisoners are infected with one or more varieties of parasite. Of these the most commonly seen are ascaris lumbricoides ankylostomidæ. Infection with trichuris trichiura, strongyloides stercoralis are less common.

Total number of attendances at the dispensary—3·015.

Recommendations.

(1) There are at present no proper facilities for cooking the food of prisoners who are placed on special diet when in hospital. The whole of the kitchen accommodation is taken up in preparing the ordinary prison diet and, moreover, the large steam kettles are not suitable for dealing with some of the food included in the hospital diet scale. Food for such prisoners is at present cooked over an open fire underneath the execution block; the remainder of the space available there being used as a general store. I suggest that a small cook house be constructed, as the present arrangements are unsatisfactory and not in keeping with the high standard of sanitation which holds good throughout the prison.

(ii) The large store pit used for storing slaked lime should be fenced off, as there is good reason for believing that certain prisoners have been in the habit of consuming quantities of this substance probably with a view to admission to hospital.

Statistical Return for the Year 1925.

In-patient.

In hospital at end of December, 1924	Nil
Admitted during the year	137

	March Quarter.	June Quarter.	September Quarter.	December Quarter.	Total.
Admission	25	54	27	31	137
Cured	10	33	21	23	87
Relieved	12	13	9	9	43
Not relieved	...	...	1	...	1
Died	1	2	1	1	5
Remaining in hospital at end of 1925	...	...	...	1	1
Under observation and treatment ...	...	...	...	...	178

Deaths :—Causes as follows :—

Organic diseases of the heart	1
Amœbic dysentery	2
Pneumonia	2

Out-patients.

	New Cases.	Subsequent Attendances.
March Quarter	285	454
June Quarter	240	479
September Quarter	187	429
December Quarter	178	682
Total	890	2,044

Daily average number of prisoners :—

Males	241·60
Females	3·24
Total	244·84

Average weight of prisoners, 133 lb.

	New-comers Examined.	Remands and Trials Examined.	Solitary Confinement.	Corporal Punishment.	Execution.
March Quarter	220	62	87	4	...
June Quarter	175	73	62	4	...
September Quarter ...	155	108	64	4	2
December Quarter ..	185	151	69	3	...
Total	735	394	282	15	2

J. D. DIMOCK,
Medical Officer in charge of Prison.

V—MEDICAL INSPECTION OF SCHOOL CHILDREN.

From July, 1925 to March, 1926, a medical examination was made of 1,000 children up to twelve years of age attending the elementary schools in Freetown, in order to discover the amount of ill-health, and the nature and prevalence of certain diseases, preparatory to organizing a routine medical inspection of schools, in the Colony and Protectorate. While the work was thus of the character of a survey, yet where any defect in a child was found a letter was sent to its parents stating the nature of the defect and advising them to have the child medically treated.

Dr. Macdonald of the Sir Alfred Lewis Jones Research Laboratory examined the blood of each of the 1,000 children and also made measurements for the presence of, and for the degree of, splenic enlargement. In addition he examined samples of fæces from 400 children.

In all the schools every possible assistance was given by the school authorities who frequently took a keen interest in the examination and impressed me with their desire to learn in what way the health of the children could be improved. The result of the combined examination are given below.

Table (1) showing for 1,000 children the number of males and females examined in each school.

School.	Males	Females.	Total.
Government Model	53	29	82
Cathedral Infants	80	70	150
Holy Trinity	99	75	174
Bethel Wesleyan	61	63	124
St. Joseph's Convent	6	131	137
St. Anthony's	145	50	195
Buxton Wesleyan	65	73	138
Total	509	491	1,000

Table (2) showing the race distribution of the 1,000 children examined.

Creole	728
Mulatto	21
Aku	40
Mende	29
Temne	39
Kru	92
Susu	9
Limba	2
Lokko	2
Mandingo	6
Syrian	7
Jollof	5
Eboe	7
Fanti	2
French-African	3
Liberian	3
Bassa	2
Popo	3

Table (3) showing the proportion of males and females examined at different age periods.

Age.	Males.	Females.	Total.
4–6 ...	41	59	100
6–8 ...	152	140	292
8–10 ...	145	147	292
10–12 ...	171	145	316

TABLE OF RESULTS OF MEDICAL EXAMINATION.

	Boys.				Total.		Girls.				Total.		Combined Total.
	4-6	6-8	8-10	10-12			4-6	6-8	8-10	10-12			
1. Nutrition:													
Good	29	71	77	111	288		42	73	75	90	280		568
Fair	11	64	55	44	174		12	47	52	42	153		327
Poor	1	17	13	16	47		5	20	20	13	58		105
2. Average height	3 ft. 5 ins.	3 ft. 9 ins.	4 ft. 1 in.	4 ft. 4 ins.	3 ft. 11 ins.		3 ft. 5 ins.	3 ft. 8 ins.	4 ft. 1 in.	4 ft. 4 ins.	3 ft. 10½ ins.		3 ft. 10¾ ins.
3. Average weight	2 st. 8 lb.	3 st. 1 lb.	3 st. 9 lb.	4 st.	3 st. 4 lb.		2 st. 6 lb.	3 st. 5 lb.	3 st. 8 lb.	4 st. 2 lb.	3 st. 5 lb.		3 st. 4½ lb.
4. Vaccinated	...	8	28	64	100		4	14	15	46	79		179
5. Skin diseases:													
Scabies	16	70	70	96	252		23	44	57	45	169		
Impetigo	1	3	1	3	8		1	1	1	3	6		
Ulcers	4	16	14	13	47	329	...	7	8	15	30	218	
Tinea	...	5	4	5	14		...	1	2	2	5		547
Others	1	1	3	3	8		3	2	2	1	8		
6. Enlarged lymphatic glands:													
Neck	10	41	40	32	123		17	50	54	34	155		278
Groin	21	95	91	131	338		11	49	43	39	142		480
7. Enlarged tonsils:													
Slight	3	9	12	6	30	35	3	7	14	17	41	47	82
Great	...	1	2	2	5		1	1	...	4	6		
8. Eyes:													
Defect of vision	...	3	3	6	12		1	1	4	3	9		21
External defects	1	3	3	7	24		2	1	3	3	9		3
Blind one eye	...	1	...	...	1		...	...	...	...	...		1
Squint	...	...	...	...	...		...	...	...	1	1		1
Could-not-read	22	42	9	7	80		40	41	8	5	94		174
9. Ears—otitis	1	1	1	1	4		2	1	3	5	11		15
10. Heart:													
Arrhythmia	1	7	4	5	17		1	5	7	7	20		37
Valvular defects	...	2	1	1	4		4	5	1	1	11		15
11. Lungs—bronchitis	3	3	6	5	17		...	6	3	1	10		27
12. Hernia	16	62	60	53	191		25	71	59	32	187		378
13. Enlarged spleen	25	91	84	97	297		30	84	72	90	276		573
14. Deformities:													
Scoliosis	1	2	4	2	9		2	2	3	6	13		22
Kyphosis	1	7	14	3	25		4	12	12	8	36		61
Angled scapalæ	2	16	14	9	41		8	40	39	40	117		158
Paralysis	...	...	...	...	...		...	...	...	...	...		...
Fracture	1	...	...	1	2		...	...	...	...	...		2
Osteomyelitis	...	...	1	...	1		...	...	...	...	...		1
Rickety (bow legs)	...	1	...	...	1		1	1	...	...	1		2
15. Mental deficiency	...	...	...	...	...		...	...	1	1	2		2

TABLE OF RESULTS OF MEDICAL EXAMINATION—*continued.*

	Boys.				Total.	Girls.				Total.	Combined Total.
	4-6	6-8	8-10	10-12		4-6	6-8	8-10	10-12		
16. Teeth :											
One carious	1	5	6	9	21 } 62	2	3	11	13	29 } 87	149
Two or more carious	3	9	13	16	41 }	5	20	20	13	58 }	
17. Blood :											
Anæmia	17	73	49	68	207	29	63	74	61	227	434
M. T. malaria parasites ...	17	67	73	67	224 } 273	13	59	48	71	191 } 236	509
B. T. malaria parasites ...	1	—	1	1	3 }	3	2	1	—	9 }	
Quartan malaria parasites ...	4	20	9	13	46 }	3	17	10	6	36 }	
18. Temp :											
99° 100°F	17	73	48	93	231	27	71	52	74	222	453
100° 101°F	21	51	70	61	203	17	59	60	48	184	387
101° 102°F	—	1	2	—	3	—	—	—	—	—	3
102° and over F	1	1	2	—	4	—	1	—	—	1	5
19. Number examined	41	152	145	171	509	59	140	147	145	491	1,000

TABLE V—Showing the number infected and nature of helminths found in sample of faeces from 400 children :—

Number examined ...	400	Males ...	191	Females ...	209
Ankylostomes	177 = 44 per cent.	,, ...	89 = 47 per cent.	,, ...	88 = 42 per cent.
Ascaris	219 = 55 ,,	,, ...	103 = 54 ,,	,, ...	116 = 56 ,,
Trichuris	267 = 67 ,,	,, ...	129 = 67·1 ,,	,, ...	138 = 66 ,,

Discussion on the Results of Examination.

From the examination of such a small number as 1,000 it would be rash to draw any hard and fast conclusion. Again the age of the children—four to twelve—limits the information derived; the number of cases of eyestrain, postural deformities, and carious teeth would, in all probability, have been greater had children of twelve to sixteen been included. With this reserve the following observations and suggestions appear justifiable from a study of the results obtained.

Nutrition.—As judged from inspection there appears to be a considerable amount of mal-nutrition among these children.

Comparison between these children in age-groups and English children of the same age-group is difficult, as it is almost impossible to ascertain the exact age of these children accurately; taking the age four to twelve as a whole, however, we find that while the average height of English children is slightly less, their weight is decidedly greater.

Thus : Average height of Freetown children aged 4–12	...	...	3 ft. 10¾ ins.
„ „ English „ „	...	...	3 ft. 9½ ins.
Average weight of Freetown „ „	...	...	3 st. 4½ lb.
„ „ English „ „	...	...	4 st. —

Cleanliness and Clothing.—As a rule the children were remarkable for their cleanliness—their clothes, though often scanty and sometimes ragged, were usually clean and free from lice or fleas. Almost all the children were barefoot and to this fact I attribute much of their illness; 6·6 per cent. had sores due to jiggers and 20·2 per cent. had cut toes. Many of the boys had almost all their toe nails deformed and several had lost one or more toes due to sepsis. The figures for enlargement of lymphatic glands of the groin was very great, reaching 57 per cent. among the boys; in some cases abscesses of the glands had arisen. Cuts and entrance of foreign bodies into the sole of the foot, cause a large amount of disability. In the Princess Christian Mission Hospital this year there have been two cases of tetanus following sores of the feet. It is well known that the danger of becoming infected with ankylostome larvæ is much greater among the unshod.

It seems desirable, therefore, that parents should be encouraged to obtain some type of footwear for their children. The expense of European boots and shoes or even of locally made leather shoes makes it impossible at present for most parents to obtain such, but it would be possible to produce a locally made variety either of wooden shoe, or wooden sandal or sandal made of closely plaited fibre, which would be cheap. Such cheap plaited sandals are worn by some of the hill tribes of India with advantage. Sandals made from worn-out motor-car tyres are cheap and serviceable. I stress this point because so many children suffering from injuries of the feet have been seen by me at the hospital out-patient clinic.

Vaccination.—The number of unvaccinated children, 82·1 per cent., is alarming when we consider that small-pox is present in the Protectorate and that it may at any time spread to Freetown. The Medical Officer of Health is taking steps to have the school children vaccinated.

Deformities.

Spinal curvature—both scoliosis and kyphosis—were seen but not of a permanent nature, except in two cases where the scoliosis was compensatory to deformity resulting from a fractured leg. As these conditions arise generally due to faulty posture when reading and writing it would seem advisable that more attention should be paid to supplying school furniture suitable to the height of the child. In two schools this has already been done. That these spinal deformities were not more common was due possibly to the early age of the children examined and to the corrective character of the household duties of the children, who frequently carry the water supply and other loads on their head.

Angled scapulæ showing weak musculature was common among the older girls and to a less extent among the boys. A graduated amount of drill or of games would be beneficial, but I hesitate to advise this indiscriminately, as I have frequently been informed by teachers, that many of the children on arrival at school are very tired as the result of doing housework and running messages before school hours. I think this condition of affairs could be remedied by the earlier opening of the schools, many of which do not open until ten—a late hour in any country and more particularly so in a tropical one. Basket-ball and skipping are games which assist in strengthening the shoulder and spinal muscles, do not require much ground space, and are generally popular with girls of all countries. These might be suggested to the school authorities, who should be advised to give a short period of rest after all games.

Among the 1,000 cases there were two cases of definite bowing of the legs, combined with flat feet and beading of the ribs, a condition almost certainly caused by rickets in infancy. Many of the children had protuberant abdomens, which produced a transverse sulcus across the chest as in Harrison's sulcus, but the bones showed no deformity and there was no evidence that the condition was due to rickets. There were, however, a few cases in which the shape of the chest was suggestive of a mild attack of rickets in infancy.

Teeth.—14 per cent. of the children had one or more carious teeth. In addition there were several cases of pyorrhœa alveolaris and cases in which the teeth were discovered with a deposit of tartar. Compared with the English children of the same age, however, the condition of the teeth would appear good.

Tonsils and Adenoids.

The amount of the tonsillar enlargement requiring treatment was considerably less than among English children, being 1·1 per cent. as compared with 5·1 per cent. Nasal catarrh was also much less common as were also adenoids as judged by inspection, though there were three children with definite adenoid facies.

From recent experimental work it would appear that the conditions giving rise to the well-known rickety signs also tend to produce defective development of teeth, a catarrhal state of the nasopharynx, and enlargement of tonsils and adenoids. All these defects are rarer here than in English towns; that they are not more frequent is most probably due to the sunshine as the diet of many of the children is deficient in fat soluble vitamins. It is hoped to make suggestion with regard to diet later, but in the meantime, it is desirable to see that the children get full value of the sunshine by daily exercise in the opening air and that the hours spent in dark damp basement class-rooms are curtailed.

Eyes and Vision.—Of these 1,000 children 174 could not read; of the remaining 826, twenty-one had defective vision generally, however, of a slight degree. External eye defects such as styes, conjunctivitis, etc., existed in 2·3 per cent., but from the hospital out-patient examinations I believe that this figure would be much larger, were it not that children with conjunctivitis absent themselves from school.

Tongue.—Many of the children had a peculiar form of glossitis—which was seen in three stages: (1) A white coating resembling thrush but generally localized to the tongue. (2) Patches of white fur alternately with raw areas. (3) A raw red and sometimes a glossy appearance of the tongue. This condition did not appear to cause any illness and was independent of fever, but in the raw stage evidently gave rise to discomfort as several of the children made complaint with regard to it.

Skin.—More than one-half of the children suffered from some form of skin disease. Scabies was most frequently seen and was often severe in the region of the buttocks. Impetigo and small ulcers as the results of insects bites were also seen. Ringworm, chiefly of the scalp but occasionally on the body, was seen—a white rash resembling tinea alba in the region of the mouth and nose, and sometimes on the chest, was fairly common. A few cases of molluscum contagiosum and warts occurred.

Helminths.—The examination for helminths was not considered a sufficiently satisfactory one upon which to base conclusions; the children were given small jars on one day and instructed to bring a sample of fæces the following day. Except in those cases were teachers or parents supervised the children, it was impossible to be sure that the sample actually belonged to the child who brought it.

Dr. Gordon's examination on the effect of ascaris, ancylostome and trichuris on older school boys tend to show that there is a considerable tolerance to these parasites in Sierra Leone. I believe, however, that in younger children, in Freetown, a considerable amount of suffering and ill-health are due to infection with ascaris or ancylostome worms.

Malaria.—This I believe to be the most prevalent and debilitating disease among the children. Dr. Macdonald's figures for the various schools are as follows:—

School.	Number Examined.	Parasites in the Blood.	Enlarged Spleen.
Model Government	82	40 = 48 per cent.	38 = 46 per cent.
Cathedral Infants	149	50 = 33 ,,	74 = 50 ,,
Holy Trinity	174	63 = 36 ,,	78 = 45 ,,
Bethel Wesleyan	124	67 = 54 ,,	70 = 50 ,,
St. Joseph's Convent	137	55 = 40 ,,	73 = 53 ,,
St. Anthony's	199	146 = 73 ,,	149 = 75 ,,
Buxton Wesleyan	138	98 = 71 ,,	95 = 69 ,,

Dr. Macdonald has made a comparison of these figures, with a survey map of the anopheline breeding places in Freetown, which was made by Professor Blacklock and Miss Evans during last wet season. This comparison shows that those schools which have a high percentage of infection are situated in the neighbourhoods where on the spot map numerous anopheline breeding pools are marked. These are in most cases in close proximity to the large streams which pass through the town. On the other hand those schools which have the lowest infection are situated in the central parts of the town which are well drained, and through which no streams flow. The children attending the schools in the majority of cases live in the neighbourhood of the school. There are European school-teachers leaving in the centre of the town where, for the most part, good concrete drains have been laid down, who sleep without mosquito-nets in dormitories occupied by infected native children and do not take quinine and who, except during the wet season when a few anopheline breeding pools form, suffer little from malaria fever. On the other hand European school-teachers in another part of the town living on the banks of an anopheles breeding stream, who have mosquito-proofed bed-rooms, sleep under mosquito nets, and in some cases take quinine, go down with malaria fever at comparatively frequent intervals.

The results of this survey of school children serve to demonstrate how widespread malaria infection is in Freetown; further, it confirms the close relationship which malaria has with the anopheline breeding places in the streams traversing the town.

The following extract are taken from the summary of Dr. Macdonald's Paper:—

(1) " It was found possible to divide the town into two areas, a hyperendemic area in close proximity to the breeding places of *A. costalis* and an endemic area remote from them.

(2) " The spleen rates in the endemic and hyperendemic area respectively were fifty and seventy-two, and the parasite rates forty-one and seventy-two."

(3) " In the endemic area there was no sign of diminution of the spleen or parasite rate during the age examined, in the hyperendemic area, however, the parasite rate diminished at the age of twelve."

(4) " It was shown by the intensive examination of eighty-six children living under endemic conditions that although only 48 per cent. had parasites in their peripheral blood at a single examination, yet at least 85 per cent. were suffering from malaria."

(5) " The cause of the varying severity of malaria in different districts of the town was demonstrated by selecting two areas, one containing numerous anopheline breeding places, one only a few or none, and comparing the condition of the children in each."

(6) " The temperature of over 1,000 children was taken and it was found that a temperature conforming to a normal of 98·4°F. was a comparative rarity. Evidence is given which goes to prove that this is not due to the Africans normal temperature being higher than the Europeans, as suggested by some, but is a pathological rise due to malaria. It is possible that in the elevation of the temperature we have a more accurate indication of malarial infestation in endemic areas than in either the parasite or the spleen rate."

Temperature.—It will be seen from the figures that only 15·2 per cent. of these children had a temperature below 99°F.

Morbidity caused by the various Diseases.—This has been difficult to estimate. Many of the children with a temperature over 100°F. said that they felt quite well, having no " fever " nor headache. Children with cut toes and enlarged lymphatic glands were seen to run about actively during the recess period. From the school inspection, therefore, one got the impression that these children had acquired a considerable tolerance to their parasites and even to septic conditions; this impression, however, was altered by seeing these children at hospital from time to time. It seems that such tolerance breaks down frequently and is only acquired at the expense of much sickness and suffering.

Sanitary Condition of School Buildings and Environment.

Buildings.—Few of the school buildings are entirely satisfactory. In some cases a church is utilized as school, the pews are narrow hymn-book rests proving quite unsatisfactory as school furniture, in such schools classes are frequently held in the basement of the building also; some of these are dark and damp and are frequently overcrowded. Ventilation of the school buildings is generally good, except in basements class-rooms,

In only two of the schools had desks graduated to the height of the child and with a back rest been supplied, and in few schools, even in those built specially for educational purposes, is the school furniture satisfactory.

Under the new Educational Code the matter of school buildings and furniture, has been dealt with; it is sufficient, therefore, to point out here that improvement is desirable and that should conditions not be improved and should the hours of work be increased, deformity and eye-strain will result. The habit of writing on a slate held on the crook of the left arm tends to produce both these conditions and this habit is contracted either when there is no desk supplied or when it is of an unsuitable height.

Latrines.—These have been of an insanitary nature in many of the schools inspected and in some cases definitely unsafe for the children to use. In one school held in a church building and with almost 400 children on the roll, there was no latrine of any description. In some cases the latrines were kept carefully locked, the key either being in the possession of the head-master or having been lost. None of the latrines were fly-proof.

The two systems in use were the deep pit and so-called dry earth-closet: but dry is an inappropriate adjective and earth was not used: it is really a bucket system. In both systems high wooden seats are built with round seat openings, as a rule without covers. The floor were in some cases of cement and in some mud.

From my observation of the school-latrines I would recommend the following points for observation:

(1) All school latrines to be models for the education of the children in healthy living, and the education authorities advised to appoint monitors and mistresses who would change weekly, and whose duties it would be to see that the latrines were kept in a clean condition, and where the bucket system is used, to report on the work of the person employed to empty the receptacles. Pupil teachers to supervise the visits to the latrines of the very young children.

(2) All latrines to have covers to the seat openings.

(3) The floor to be of cement.

(4) The floors to slope towards the back wall of the latrine where any fluid, which might collect, could drain away into a suitable drain.

(5) In the bucket latrines the receptacles to have a diameter slightly larger than that of the seat opening and of a suitable height to prevent soiling.

(6) Bucket latrines to have the receptacles removed by means of an opening through the back wall.

(7) In all school latrine houses one or more squatting type of latrine to be supplied for small children and for the children of those tribes who are unaccustomed to high box seats.

(8) That in certain suitable and well drained inland parts of the town the deep pit type of latrine might be tried; with an arrangement either for smoking or for spraying with an arsenical preparation from time to time by the school teachers.

Water Supply.—There is generally a good supply of drinking water obtained from a stand-pipe either situated in the school compound or near by. In the case of much used stand-pipes and where efficient drainage is not made for the escape of waste water, there is a danger of mosquito breeding pools being produced around the pipe. As in the case of the latrines the water supply should be of a model type to assist in educating the children. For this reason too, it is advisable that all schools should have a stand-pipe in the grounds as, where this is not the case, water is collected in various receptacles in the school building—a method with obvious disadvantages.

In one school—a boarding school—provision has been made for shower baths.

Playgrounds.—Some of the schools have no playgrounds and in one case the children during recess play in a street through which motor-cars pass frequently. It should be the aim of each school to provide a sufficiently large playground for the number of pupils attending the school.

Most of the schools examined are mission schools and are for financial reasons unable of themselves to make much improvements in their buildings and equipment. In the new Educational Code, however, Government has agreed to assist schools willing themselves to improve their buildings and equipment. For this reason, and for the advice of those planning new schools, I point out here such conditions as at present appear to me to be tending to produce ill-health among the school children.

It is now being recognized that the future of school medical work lies in prevention rather than in treatment. After eighteen years of school medical inspection in England and Wales, we read the following remarks in the 1924 Annual Report of the Chief Medical Officer of the Board of Education.

> " Every year there appears to be the same tide of disease the same burden of defect requiring treatment.
>
> " Preventible, though a great mass of the condition is, it is not yet prevented, and the bad alternative of palliative remedy is perforce resorted to at the expenditure of much money and effort.
>
> " .....there has been little or no change in the causes and origin of disease in school children.
>
> " .....there is evidence that the physique of a number of children degenerates while they are at school. It would seem that there must be conditions in the school or in our educational system which are favourable to, or perhaps even produce, some of the physical defects which are found—insanitary school premises, infections, unsuitable curriculum or equipment.
>
> " .....there should be a definite preventive aspect to all school medical work."

On the inauguration of a scheme for complete school medical inspection in Sierra Leone, it would appear wise to profit by this eighteen years experience, and to concentrate on the preventive aspect of the work—rather than to spend time and money in the continual alleviation of conditions that should never have been allowed to arise. We are fortunate in that for most of the prevalent diseases, e.g. malaria, helminths, cut feet, scabies, malnutrition, postural deformities, the means of prevention are known.

In the prevention of these diseases improved sanitation is of great importance, but in addition more efficient and practical teaching of hygiene in the schools is required and the realization by the school authorities that school buildings and school life should teach the child how to live in a healthy manner and how to keep his or her own home, in a sanitary state.

In assisting the school authorities to achieve this end, it would appear advantageous for the medical authorities to make out an advisory syllabus dealing with school buildings, and also giving advice with regard to exercise and suitable local diet for the children.

Treatment of Minor Ailments.—It seems necessary that some provision should be made in the future for the treatment of minor ailments. On the re-examination of the 1,000 children it would be possible to say whether the letters sent this year to the parents recommending treatment for their children has been acted upon. I think, however, that a Saturday morning school clinic at one or both of the hospitals at which children found by the medical officer to have defects could be treated, is desirable.

In this work close co-operation between the school medical officer and the school teachers is required; the latter should be responsible for seeing that defective children attend the clinic regularly. For ailments requiring daily dressing a health nurse could be in charge of a daily clinic.

Summary.—(1) An account is given of the medical examination of 1,000 children aged four to twelve in elementary schools in Freetown.

(2) Tables are given showing the schools examined, the race distribution and the ages of the children examined; together with the results of examination as found at various age periods for both boys and girls.

(3) A discussion is given on the prevalence and effects of the various defects found.

(4) A general account is given of the sanitary conditions of the schools, together with recommendations with regard to their improvement.

(5) Attention is drawn to the value of preventive action in school medical work.

(6) The chief agents which tend to produce defects among the school children are
(*a*) anopheline breeding pools in the streams which pass through the town;
(*b*) insanitary latrines;
(*c*) lack of protection to the feet;
(*d*) unsuitable school furniture;
(*e*) unsuitable and, in some cases, insufficient food;
(*f*) the late hour at which many of the schools open, which allows the children to be employed at domestic work before coming to school.
(*g*) lack of physical training in many schools.

M. G. BLACKLOCK.

References.

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VI—REPORT ON THE WORK OF THE PRINCESS CHRISTIAN MISSION HOSPITAL FOR THE PERIOD MAY TO DECEMBER, 1925.

In 1924 an arrangement was made by which the Government should give assistance to the Princess Christian Mission Hospital. This assistance consisted of financial aid for renovation and better equipment, and for the building of a new operating theatre and out-patient department. The Government also gave the part-time services of a medical officer, from 1st May, 1925. As a result of the Government grant the accommodation and equipment at the hospital has been gradually much improved.

The in-patient accommodation at present consists of forty-five beds arranged as follows:—

(1) General ward	22 beds	(18 beds, 4 cots).
(2) Gynæcological ward	7 „	
(3) Maternity ward	11 „	(7 „ 4 „).
(4) Private rooms for Africans	2 „	
(5) European ward	3 „	(2 „ 1 „).

There is also a small labour ward, a dressing theatre, and an operating theatre.

The out-patient department is entirely new and consists of a waiting room, an undressing room, an examination room and a dispensary, all conveniently situated in one block on the ground floor.

The latrine accommodation and the drains are unsatisfactory and should be improved as soon as possible.

The staff in May consisted of—

(1) One part-time Medical Officer, Dr. M. G. Blacklock;

(2) The Matron, Miss Ward;

(3) One Nursing Sister, Miss Strickland, and four African nurses—Jones, Macarthy, Johnson, and Weaver. In September the part-time services of a clerk—Miss O. Tuboku-Metzger were obtained. In October Sister Horsnell arrived to relieve Sister Strickland who went on leave, and in this month also Nurse Davies was appointed as an additional nurse owing to the increase of work.

The figures for out-patient attendances, admissions, etc., for the eight months are as follows:—

	May to December, 1924.	May to December, 1925.
Total number of out-patients ...	4,556	11,035
Admissions	149	357
Deaths	1	15
Births	13	53
Operations	2	64
Infant welfare clinic (Aug. to Dec.) ...	...	1,983

Owing to the absence of any clerical staff until the month of September, accurate figures for the various diseases treated cannot be given. This is to be deplored as there is ample material in the hospital to make a statistical study of the maternity and gynæcological conditions especially valuable. It is hoped that accurate figures can be kept in future.

General Account of Work Done.

(1) *Out-patient.*—There were 11,035 attendances during the eight months. Among the women gynæcological ailments, malaria, digestive derangements and ulcers were most common. Dysentery was fairly common, most of the cases coming from the Fourah Bay district. Yaws was rare; but a few cases from Bullom and one from Boia were seen. There were several cases of tuberculosis; in October there was an outbreak of mild influenza.

Among the children malaria, helminth infections, ulcers and sores on the feet due to jiggers and injury, were the chief diseases.

(2) *In-patient.*—There were 357 admissions during the eight months—injuries, pneumonia, dysentery, bronchitis, heart disease, ulcers and gynæcological condition (endometritis, fibroids, gonorrhœa and disorders of menstruation) being most common. There was one case of typhoid fever (Widal test positive for B. typhosus) one case of severe gangrene on the back from the sting of a sting-ray fish and one case of phosphorus poison, a woman who had eaten a fowl that had eaten rat-poison. Among children malaria and *broncho-pneumonia* were most serious, ulcers and injuries were common.

(3) *Ante-natal and Maternity Work.*—All pregnant cases attending the out-patient department underwent a general examination, had their urine tested, were given advice and encouraged to enter hospital for their confinement. Special ante-natal examinations were made on Saturday mornings, and patients found to have any abnormality were advised to have corrective intern treatment. All eight to nine months pregnant cases were given a course of anti-malaria treatment.

Fifty women were confined in the Maternity Ward during the eight months, most of them during the latter months when, chiefly as a result of the ante-natal work, confinement in hospital become more popular.

Of these fifty women three, i.e. 6 per cent., gave birth to twins; all six children survived and, apart from two breech deliveries, the labours were normal.

There were forty-six live-births, five still-births, two cases of abortion, one forceps delivery, one craniotomy, one case of hydrammios, three breech deliveries and three cases of retained placenta.

Several women were admitted to the maternity ward suffering from hæmorrhage due to retained products of conception.

There were three cases of eclampsia; one with post-partum fits, who recovered, the baby having been born dead before admission; one with fits during labour, who also recovered, the baby being born alive; one who had many fits before admission and who died undelivered.

In addition to these definite cases of eclampsia, there were numerous cases of pre-eclampsia. Such cases when seen at the out-patient clinic were urged to enter hospital and undergo pre-eclampic and anti-malaria treatment.

VII—AN UNUSUAL CASE OF LABOUR IN A TWIN PREGNANCY.

Mrs. F. J., 30th October, Multi six: had twins at two previous confinements; admitted in labour at 8.30 p.m. on 29th April.

She stated that in the morning she felt perfectly well, at 2 p.m. pains started and later something appeared at her valva, so she travelled by train from Wilberforce to Freetown to seek advice.

On examination the cervix uteri was outside the vulva, œdematous and swollen to size of a small coco-nut.

The curvix admitted two fingers, the membranes were unruptured, exceedingly tough and had to be cut with scissors before the presenting foot could be brought down through the curvix.

The child, a boy, was delivered as a half breech but not without some damage to the friable cervix.

Examination revealed the presence of a second child which was presenting by the vertex. A second bag of membranes was torn through with ease and the second twin, a girl, was born spontaneously. Both children were born alive.

The placenta was of unusual interest. One of the cords was greatly hypertrophied, the placenta showed *amniotic cysts* and most interesting of all was the fact that one bag of membranes was included in the other; this no doubt accounting for the difficulty encountered when trying to rupture the first bag of waters.

E. J. WRIGHT,
Medical Officer in charge, Maternity Ward.

VIII—The Prevention of Human Schistosomiasis in Sierra Leone:

Progress Report on the Kaiyima Scheme

By D. B. Blacklock, M.D., Professor of Tropical Diseases of Africa, University of Liverpool, Director, Sir Alfred Lewis Jones Research Laboratory, Freetown.

In a report to the Government of Sierra Leone, published in the Medical and Sanitary Report for 1924, it was shown that among other diseases schistosomiasis due to *S. hæmatobium* is very common in certain parts of the Protectorate. Evidence of an epidemiological and of an experimental nature was given which proved that the intermediate snail host responsible for the transmission of this disease from man to man in this region is a species of *Physopsis* akin to *globosa* Morel. Numerous observations on the bionomics of the snail, especially its normal habitat, viability and rate of infection were also recorded. Various means of dealing with the population of the affected areas were discussed, including the treatment of the people in the mass by curative drugs. It was concluded that education in methods of village sanitation and personal hygiene offered the best prospects of permanent benefit to the natives.

Although schistosomiasis is serious enough to merit consideration in any district where it is endemic on a large scale, it cannot be too strongly emphasized nor too frequently reiterated that endemic schistosomiasis is only one sign—doubtless a serious one—of inadequate education in hygienic principles. Even if the disease could be swept away immediately by a simple and specific treatment, such as for example oral administration of a curative drug, the main problem would remain unaffected. Schistosomiasis and the many diseases which accompany it constitute a problem in preventive medicine and the solution of this depends chiefly upon education; the native has to be carefully educated out of those unhygienic habits which constitute him a danger to himself and his neighbours. As an educational means demonstration appeared best adapted to illiterate natives; the suggestion was therefore made that Kaiyima, a large village of the Konno District, and one heavily infected with schistosomiasis, goitre, and various intestinal diseases, should be converted into a good state of sanitation and that it should be maintained as a model which adjacent villages could afterwards be called upon to imitate.

In the present report a brief account is given of the progress of the Kaiyima scheme and the measures which have been taken with a view to eliminating schistosomiasis and the types of disease referred to above. It will be seen, I think, from the present report that the experiment of Kaiyima has justified itself and that there appears now to be no obvious reason why people, who prove themselves so willing and apt as the Konnos have done, should not, under proper guidance and with adequate encouragement, rapidly raise their villages by their own efforts to a comparatively high level of sanitation.

The scheme outlined for Kaiyima in the report referred to comprised the following parts:—

(*a*) Provision of a pure drinking water supply.

(*b*) Provision of a safe method of disposal of excreta and village refuse away from water.

(*c*) Provision of snail-free bathing and washing places for all classes of the population.

(*d*) The treatment of such polluted waters as those of the Sewi and Sukubeyi streams.

(*e*) The effective control of the water supply and the bathing places.

The means adopted to give effect to these recommendations at Kaiyima, and later at other places, are enumerated below.

(*a*) *Provision of a Pure Drinking Water Supply.*—The natives have here a strong prejudice against wells as a drinking water supply, due to fear of poisoning; the use of the springs which give origin to the small contaminated streams is temporarily in abeyance during the preliminary educative period of the scheme. These springs will come into use as soon as the population has learned the necessity for protecting them from contamination. The population has meantime been provided with selected and fixed points on a large *Physopsis*-free stream from which drinking water can be obtained; they have been forbidden by the chief to take water for drinking from the small muddy streams infested with infected snails and, until recently, used as latrines. In order that persons going to fetch water should not acquire schistosome infection by wading through these snail infested streams, simple pole footbridges have been placed across them at suitable points.

(*b*) *Provision of a Safe Method of Disposal of Excreta and Village Refuse away from water.*—In order to endeavour to fulfil this provision various steps have been necessary.

(i) *Construction of latrines.*—Deep trench latrines are constructed close to the village sufficient for the whole population, allowing one aperture to twenty persons. The trench usually dug is about 20 ft. long by 2 ft. 6 ins. wide, 10 ft. deep at one end and 12 at the other; at the deep end a hole 2 ft. deep is dug and filled with loose stones to act as a sump; where the ground is high deeper trenches are made. The trench is covered by pole frames made in sections, each section having one aperture in it, and there being five sections for each trench. The cover is made thus in sections, (photographs 6 and 7,) so that any one section can be taken up and replaced without disturbing the rest of the latrine. The sections being in place over the trench, the whole is covered in with the mud used for building purposes (photograph 8,) the apertures being reinforced by a half-inch thick wooden fitting, 20 ins. square with an aperture 12 ins. in diameter cut in it; this wooden plate is embedded over each aperture flush with the mud covering. A solid plate of $\frac{1}{2}$ inch wood 16 ins. square, with a handle fitted on it, is laid over this to cover the aperture when not in use and so exclude flies; the floor is levelled up to the level of the covered trench by means of the earth excavated from the trench.

Light partitions are erected between the apertures, and over the whole a rain-proof thatched roof with large overhang is erected on strong poles, the central poles standing about 10 ft. clear of the ground and the side poles about 6 ft. 6 ins. The sides of the building and the partitions are made of bundles of stems of elephant grass cut in five-foot lengths and tied side by side. There is therefore an open space above the side walls and above the partitions and no mud or other such material is used for the building, which is thus freely ventilated—(photograph 9.) Provision for permanent smoking of the latrine is made by a covered trench, with steps leading down to a fireplace separated from the deep end of the latrine trench by a 2 feet thickness of soil through which a pipe from the fireplace leads slantingly up into the latrine trench, the smoke being carried out at the top of the far end by large bamboos protected at their end from rain by a wooden cowl. The whole of the work and materials are supplied by the villagers; the

only exception is the wood fittings for the apertures, which are made from old packing case wood and require to be supplied at present. It would be of advantage to have some material as the main supports of the trench cover sections, which will resist white ants more than do wooden poles; probably such might be obtained from the Railway Department in the shape of old discarded metal sleepers.

(ii) *Protection of Streams.*—The latrines having been provided for the population, the next step is to prevent the people from using the streams adjacent to the village (photograph 1) for latrine purposes. In order to do this a line is cleared through the bush, keeping alongside the stream, but at the same time on sufficiently high ground to enable a wide path and a fence to be made above the level of the wet season high watermark,—(photographs 4 and 5.) The fence is erected of poles tied together so closely that children cannot pass between them and so high (about 7 ft.) that an adult would have difficulty in climbing the fence; outside the fence, i.e. on the stream side the path is made; the fence and path being as nearly as possible straight. At each of the main roads into the village a suitable gap is left in the fence, but it is run across all the small footpaths which the clearing reveals leading down to the streams from all parts of the village.

(iii) *Bush Clearing.*—When the fence is in position and the road made the whole of the area which intervenes between this and the stream is thoroughly cleared of bush. At the same time the far side of the stream is cleared of bush along its immediate margin. When this clearing is completed the condition of the stream can be examined; it is found that it pursues a very winding course with numerous and often acute bends; it is blocked at many points by trees which have fallen into it and by sticks and rubbish which have been thrown in. As a result of the blockage and frequent change of course, the stream is stagnant and silted up with mud and the whole surrounding area is a quagmire. The stream thus exposed is treated as described later.

By the latrines provided the population is supplied with a safe method of disposal of excreta away from water; by the fence erected around the village the people are prevented from access to the streams except at given points; by the road outside the fence the water guard, referred to later, is enabled easily to patrol his section of the water and since the bush is cut down he can readily detect any person endeavouring to climb the fence or approach the streams at unauthorized points.

There remains to be dealt with under this head the disposal of village refuse. This is an easy matter when done by the Konnos in the Konno manner. If they wish to build a house the people of this tribe dig the mud for construction out of the nearest available place, generally the village street between two adjacent houses. This leaves a large cavity which serves all the houses in its neighbourhood as a convenient refuse dump; there may be half a dozen such dumps in a moderate-sized village.

While the elimination of these unsightly ill-smelling refuse-dumps is an easy matter, it is by no means so easy to institute a method of disposal to replace them satisfactorily. Incineration in the wet season is impossible, and the digging of deep holes for the sole purpose of burying refuse a laborious proceeding. Their natural impulse when forbidden to deposit refuse in holes in the street is to carry it to the nearest available stream and dump it there. Up to the present the most satisfactory solution found is to fill in low ground, on the outskirts of the village, with alternate layers of refuse and soil, the whole being covered by a deep layer of soil beaten hard.

(c) *Provision of Snail-free Bathing and Washing Places for all Classes of the Population.*—Separate portions of the large stream which has a sandy bottom and which is free from *Physopsis* are now allocated to men, women and children for bathing places; where access to these points necessitates crossing one of the small stagnant streams, bridges are provided. Bathing and wading in the small streams are prevented.

(d) *The Treatment of Polluted Waters—Clearing and Rectification of Line of Streams.*—Starting from below the village, each stream already exposed by the bush-cutting is cleared by a work party of all logs, large stones and other obstacles to the flow of water, which lie in the stream bed (photograph 2.) As the small muddy streams all end beyond the town in a large and fairly rapidly flowing stream, the clearing-out process is started at this point of junction. The effect of this very simple operation is remarkable; the water dammed back and spread over a large tract, speedily finds its way down the cleared bed of the stream; and accumulations of several feet deep are washed away as soon as the rotten logs supporting them are removed. The flooded area drains into the stream and, after some days' flow, the sandy bottom of the stream appears and the surrounding land is comparatively dry.

When the marshy area has drained dry, steps are taken to eliminate the tortuous bends of the stream and to cut a straight channel so as to give a good flow of water (photograph 3). This channel has clean cut sides and is kept clear of weeds and grass, and is swept throughout periodically with long native brooms.

(e) *The Effective Control of the Water Supply and the Bathing Places.*—This is maintained by the chief, who has made laws with regard to the protection of the water, and has appointed headmen whose function is to inspect their own quarters of the village, to act as water guards, and to be responsible to him for the observance of the sanitary laws made by him for the people.

Results of the Work Done at Kaiyima.

(i) *Use of Latrines by the Population.*—Since the introduction of latrines there has been a steady and progressive increase in the numbers using them; it is estimated that at the present time about 90 per cent. of the population make use of the latrines.

(ii) *The Stream.*—No person now uses the stream for latrine purposes; those few who do not use the latrines going far away into the bush.

(iii) *Prevalence of Physopsis.*—Dr. Renner, African Medical Officer, who is in charge of the sanitary work at Kaiyima, has at my suggestion employed men in collecting *Physopsis* snails from the small streams since the inception of the scheme. From each of the three small streams adjacent to the town snails have been collected by these men twice each month, the collections commencing in December, 1924.

It is of interest to quote here for comparison with the present findings the results obtained at Kaiyima in 1923–1924, prior to the commencement of this scheme. The total number of *Physopsis* dissected at Kaiyima at that time was 373; of these 112 or approximately 30 per cent. proved to be infected with cercariæ of *S. hæmatobium*. I visited Kaiyima in February, 1926, and proposed to collect snails and dissect them. This proved impossible, however, for the very satisfactory reason that in the treated streams no *Physopsis* whatever could be discovered. On February 18th Dr. Renner sent out his collectors to collect snails for me, but they proved unable to find any *Physopsis*; village boys were then employed by me and taken out under a court messenger, but in spite of the offer of a shilling for a snail found in the treated area, none was forthcoming from any of the three streams.

Of the three streams the Beyi was finally canalized in November, 1925; the Sewi and Suku-beyi in December of the same year. From the time of completing the canalization to the time of my visit no *Physopsis* had been found. In the table are given the results of collecting *Physopsis* for the months of January and February of 1925 and 1926.

Table showing numbers of *Physopsis* (bi-monthly collection) in the three streams before and after treatment.

	Beyi.		Sewi		Suku-beyi.	
	January.	February.	January.	February.	January.	February.
1925	112	62	31	74	102	64
1926	0	0	0	0	0	0

It is seen from the table that the combined effects of such simple means as those outlined above have had an immediate effect upon the snail prevalence. This creature begins to be in difficulties from the very first day that the treatment of the streams commences.

The clearing of the bush admits strong sunlight into its haunts, the removal of obstructions in the stream beds allows the swampy areas of mud on which the snail lives to dry up, and the increased flow of water washes both mud and snails away. The rectification of the stream beds, which gives a good flow and clear channel for the water, appears to be the last straw as far this snail is concerned.

General Improvements.—There are several ways in which this work has yielded important advantages over and above those which have been described. For example, the areas extending from the fence to the streams formerly acted as an extensive breeding ground for mosquitoes; the

elimination of these swampy areas has produced a noticeable diminution in the numbers of mosquitoes present in the village and constitutes an excellent anti-malaria measure; a large extent of faecally contaminated soil has been adequately dealt with, so that breeding places of ankylostomes and sources of many other intestinal parasites have been destroyed. Again the bush clearing outside the fence has not only removed a permanent shelter for many insects such as *Simulium* but has also rendered available a large tract of land adjacent to the village suitable for the cultivation of low crops and for the planting of trees of economic value; this immediate advantage has been appreciated by the people, who are now being advised by the Agricultural Department as to the best use to make of the area. The area included inside the fence contains a considerable extent of uncleared land. This is cleared by the chiefs and used to extend and lay out the village on new and better lines. The village of Kaiyima is now practically a new village, the old houses having been demolished and new ones built in proper lines and properly spaced.

Extension to Other Villages.—Already several other large villages have set to work to imitate the example of Kaiyima, and during my recent visit to Jiama, Nimmi Yemma, the chief asked me to undertake similar work in his village. This I did, constructing latrines, fence and road and clearing as at Kaiyima. Dr. Gordon, on proceeding to Jiama, Nimmi Korro, inaugurated the same scheme there at the chief's request and Dr. Renner has completed this and, in addition, has carried out the scheme at Kainkordu, a village situated in the eastern side of the Konno District, at the request of the paramount chief.

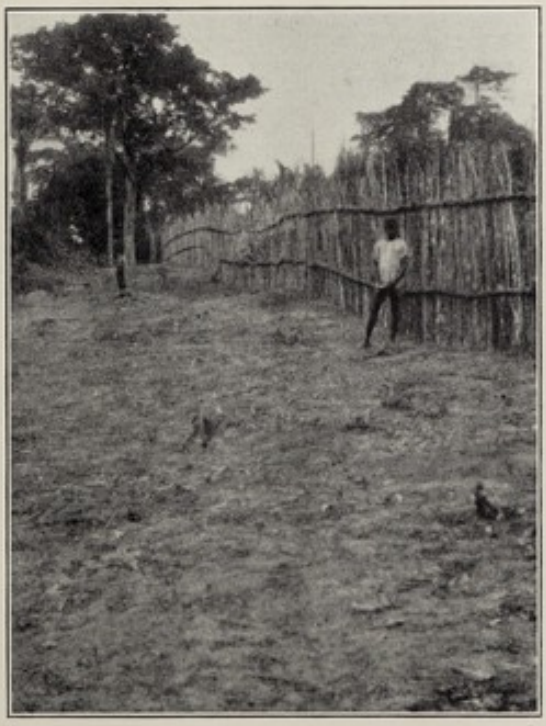
Maintenance Work required.—The most laborious piece of work involved in the scheme is the construction of the fence. This fence will not require to be rebuilt if the people are properly supervised during the period of its existence. It is necessary at first as an actual protection to the water, but once the people have been educated to understand that the water must be protected, the fence will no longer be necessary. The success which the chiefs have so far had in obtaining their people's acceptance of the new code justifies the belief that by the time the fence has been destroyed, as it will be by white ants, the conditions which rendered it necessary will have ceased to exist. The upkeep of the latrines, the road and clearing, and the care of the trained streams, will not involve any labour beyond what should reasonably be required of any people living in a village community.

STREAM IN DENSE BUSH VILLAGE.

BUSH CLEARED AND STREAM BED CLEANED.

BENDS IN THE STREAM CUT OUT GIVING
STRAIGHT RUN FOR WATER.

CLEARING FOR FENCE, AND FENCING MATERIAL



FENCE ERECTED; NOTE HEIGHT COMPARED WITH MAN; AND THE CLEARED AREA OUTSIDE FENCE.

WOODEN FRAME ONE-APERTURE SECTION TO BE LAID ON THE DEEP TRENCH.

A NUMBER OF SUCH SECTIONS READY FOR UTTING ON TRENCHES.

APPEARANCE OF PART OF A DEEP TRENCH AFTER THE SECTIONS HAVE BEEN PLACED IN POSITION AND COVERED WITH NATIVE MUD WHICH HAS HARDENED IN THE SUN.

LATRINE COMPLETED; ON RIGHT THE LATRINE PROPER. ON LEFT THE ROOF OVER THE STEPS DOWN TO THE FIREPLACE.