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

SIERRA LEONE.

ANNUAL MEDICAL AND SANITARY REPORT

1927.

FREETOWN:
Printed at the Government Printing Office
SIERRA LEONE
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ANNUAL

MEDICAL AND SANITARY

REPORT

1927.

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ANNUAL
MEDICAL AND SANITARY REPORT
FOR THE YEAR
1927.

I—Administration.

(a) ESTABLISHMENT, INCLUDING VACANCIES, ACTING APPOINTMENTS AND PROMOTIONS.

MEDICAL STAFF.

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

EUROPEAN NURSING STAFF.

2 Senior Nursing Sisters.
4 Nursing Sisters.

SUBORDINATE MEDICAL AND SANITARY STAFF.

1 Sanitary Superintendent and Training Officer
2 European Superintendent Sanitary Inspectors
34 Dispensers
25 Male Nurses and Apprentices
23 Female Nurses and Probationers
3 Health Visitors
34 Sanitary Inspectors and Learners
1 Head Attendant, Lunatic Asylum
1 Assistant Head Attendant, Lunatic Asylum
1 Matron, Lunatic Asylum
12 Male Attendants, Lunatic Asylum
3 Female Attendants, Lunatic Asylum
1 Laboratory Assistant
1 Vaccinator, Freetown.

There are in addition to above, cooks, stokers, gate-keepers, watchmen, labourers, hospital porters, carpenter and motor-ambulance-driver, etc.

CLERICAL STAFF.

Sixteen clerks—one first grade, one second grade, six senior third grade and eight junior third grade.

Temporary Assistance.

No necessity arose for temporary assistance during the year.

Principal Acting Appointments.

(Substantive Holders are given in Table I).

Dr. H. O'Hara May acted as Director of Medical and Sanitary Service from 6th July to 19th August.

Major W. H. Peacock acted as Director of Medical and Sanitary Service from 20th August to 30th December.

Dr. M. Jackson acted as Senior Medical Officer from 8th April to 11th November.

Dr. J. M. Mackay acted as Deputy Director of Sanitary Service from 6th July to 12th August and from 20th August to 8th November.

New Appointments.

Dr. D. T. Birt, Medical Officer, Nigeria, was promoted Senior Medical Officer from 25th March to complete the establishment.

Mr. Quintin Stewart was appointed Surgical Specialist on 27th September.

Dr. H. J. Bermingham was appointed Medical Officer and arrived in Freetown on the 20th August, *vice* Dr. F. V. Hill.

Dr. G. L. Alexander was appointed Medical Officer to complete the establishment and arrived in Freetown on the 27th August.

Mr. A. E. Wilkinson was appointed Superintendent Sanitary Inspector, *vice* Mr. D. S. Bowen retired on pension, and arrived in Freetown on the 20th August.

Mr. P. Osment was appointed Superintendent Sanitary Inspector, *vice* Mr. G. V. Herd promoted, and arrived in Freetown on the 27th August.

Miss N. M. Brown was appointed Nursing Sister, *vice* Miss A. E. Macmaster promoted, and arrived in Freetown on the 17th September.

Promotions.

Dr. W. J. D. Inness, Director of Medical and Sanitary Service, was promoted to Director of Medical and Sanitary Service, Gold Coast, from the 18th March and left the Colony on the 11th May (on leave).

Dr. J. C. S. McDouall, Assistant Director of Medical Service, Nigeria, was promoted Director of Medical and Sanitary Service, Sierra Leone, from the 18th March and arrived in the Colony on the 13th April.

Dr. H. O'Hara May, Deputy Director of Sanitary Service, was promoted Deputy Director of Sanitary Service, Gold Coast, from 17th June and proceeded to Accra on the 20th August.

Major W. H. Peacock, Senior Sanitary Officer, was promoted Deputy Director of Sanitary Service from 17th June, *vice* Dr. O'Hara May.

Dr. J. M. Mackay, Medical Officer of Health, was promoted Senior Sanitary Officer, *vice* Major Peacock.

Dr. F. V. Hill, Medical Officer, was appointed Medical Officer of Health *vice* Dr. J. M Mackay, on 17th June.

G. V. Herd, Superintendent Sanitary Inspector, was promoted Sanitary Superintendent and Training Officer from 18th May.

Miss A. E. Macmaster, Nursing Sister, was promoted Senior Nursing Sister from 24th February, *vice* Miss K. G. Appleton.

Deaths.

Dr. M. Jackson, Medical Officer, died whilst on leave in England on the 5th December.

Mr. E. T. Ajax, Second Class Dispenser, died in Freetown on 22nd May.

(b) LIST OF ORDINANCES, ETC., AFFECTING PUBLIC HEALTH ENACTED DURING THE YEAR.

Ordinance.

Public Health Amendment Ordinance, No. 9 of 1927—An Ordinance to Amend the Public Health Amendment Ordinance.

Governor's Order.

Dakar Quarantine Order, No. 7 of 1927.

Orders in Council.

1. Kambia Sanitary District Order in Council, No. 5 of 1927.
2. Kambia Public Health Order in Council, No. 7 of 1927.
3. Kabala Sanitary District Order in Council, No. 14 of 1927.
4. Yogomaia Sanitary District Order in Council, No. 15 of 1927.
5. Public Slaughterhouse Order in Council, No. 18 of 1927.

(c) FINANCIAL.

The following table gives the revenue and expenditure* for the years 1926 and 1927:—

Medical Revenue.	1926.			1927.		
	£	s.	d.	£	s.	d.
Connaught Hospital receipts	91	16	0	135	4	0
European Hospital receipts	448	10	5	572	6	6
Sundry receipts (out-patients' fees, etc).	497	18	8	361	7	11
Druggist fees (registration)	1	10	0		—	
Maintenance of lunatics	190	8	4	149	9	7
Departmental fines	22	2	0	25	14	1
Total	£1,152	5	11	£1,244	2	1

Medical Expenditure.	1926.			1927.		
	£	s.	d.	£	s.	d.
Personal Emoluments	33,193	7	3	33,395	11	10
Other Charges	17,191	10	6	18,916	17	6
Total	£50,384	17	9	£52,312	9	4

Sanitary Revenue.	1926.			1927.		
	£	s.	d.	£	s.	d.
Sanitary services (contributions from Bonthe) ...	204	17	10	208	0	0
Maintenance of persons in quarantine	15	0	0		—	
Total	£219	17	10	£208	0	0

Sanitary Expenditure.	1926.			1927.		
	£	s.	d.	£	s.	d.
Personal Emoluments	7,788	11	10	8,615	5	9
Other Charges	12,500	0	7	13,255	6	0
Total	£20,228	12	5	£21,870	11	9

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

	£	
1923	68,033	1 : 11·1
1924	67,725	1 : 10·6
1925	73,731	1 : 11
1926	78,916	1 : 11·7
1927	82,206	1 : 11·8

* This sum is the expenditure controlled by the Director of Medical and Sanitary Service and does not include money spent by the Public Works Department on new buildings, sanitary works, etc.

ANALYSIS OF HOSPITAL EXPENDITURE FOR THE YEAR 1927.

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 ...	136	3·90	1,426	88 4 3¾	178 18 7	0 3 8¾	48 7 10	0 0 8¼	0 4 5¼	31 4 4	52 10 9½	399 5 10¼	0 5 7½	
Connaught Hospital	2,046	76·54	27,478	606 16 11¼	923 4 2¼	0 1 1¼	32 2 2	0 0 0¼	0 1 1¼	156 10 3½	60 17 6¾	1,723 11 2¼	0 1 3½	
Lunatic Asylum ...	145	92·06	33,605	38 19 2	951 10 6	0 0 7	30 2 7	0 0 0¼	0 0 7¼	40 19 0	28 17 7¼	1,090 8 10½	0 0 7¾	
Kissy Infirmaries ...	235	74·99	27,394	50 9 10½	802 6 10¼	0 0 7¼	15 3 9	0 0 0¼	0 0 7¼	53 6 8	20 5 7¾	941 12 9½	0 0 8	
Bonthe Hospital ...	464	22·54	8,229	42 6 0	329 18 10	0 0 10¾	2 12 8	0 0 0¼	0 0 11	16 16 10	10 16 9	402 11 1	0 0 11¼	

II—Public Health.

(a) GENERAL REMARKS.

(i)—General Diseases.

The health of the European community has been much less satisfactory than the previous year. The invaliding rate per 100 official residents shows a considerable increase—6·40 as compared with 3·26 for 1926. The tables showing the causes of invaliding are set out on pages 9 and 10. There is nothing in the lists to show that the increased rate of invaliding was due to unfavourable climatic or other conditions.

The invaliding rate for the past ten years is shown below:—

Year.	Average Number Resident.	Total Number of Invalidings.	Percentage of Invaliding to Average Resident.	Remarks.
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	
1925	180	5	2·77	
1926	184	6	3·26	5 returned to Colony. 11 permanently invalided.
1927	250	16	6·40	

Forty-six cases of malaria were treated as in-patients and 107 as out-patients, as compared with fifty-nine and sixty-seven for 1926.

The following table shows the relative position of malaria as a cause of time lost through sickness (Imperial troops excluded) during the past five years.

Year.	Average Number 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 Residents.
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
1926	184	1,575	487	1,088	30·92	264
1927	250	1,816	497	1,319	27·36	198

There was an increase in the number of cases treated, but the average time for each case off duty was reduced from 3·86 to 3·24 days.

The general health of the African officials has been little different from the previous years, which showed a great reduction from 1,121 cases in 1925 to 950 in 1926.

There has been a further reduction in the number of cases to 933, but an increase in the number of days lost from 5,375 in 1926 to 7,919 days in 1927, an average of each case off duty of 5·6 and 8·5 days, respectively.

The general health of the community compared favourably with previous years. There were mild outbreaks of whooping cough and chicken-pox. The number of patients seeking relief at the various hospitals and dispensaries is still on the increase.

The following table shows the total number of new cases treated:—

	1925.	1926.	1927.
IN-PATIENTS:			
European	115	132	149
African	3,207	3,345	3,544
OUT-PATIENTS:			
European	400	262	568
African	61,030	64,236	76,874
Total	64,752	67,975	81,135
DEATHS:			
European	3	9	6
African	242	265	244
Total	245	274	250
Percentage of deaths to total number treated ...	·37	·40	·30

Showing an increase of 13,160 in the total number of new cases treated.

The subsequent attendances numbered 168,759, an increase of 30,380 on 1926.

There has been a steady increase in the number of cases treated during the last five years.

The following table contrasts the incidence of the prevalent diseases during the past three years:—

	1925.	1926.	1927.
Smallpox	...	...	16
Chicken-pox	68	64	64
Dysentery	191	193	299
Influenza	108	55	21
Malaria:			
Tertian	441	136	318
Quartan	53	11	4
Aestivo-autumnal	122	240	4,549
Unclassified	2,489	3,362	...
Cachexia	...	...	...
Blackwater	3	7	9
Whooping Cough	98	102	92
Tuberculosis	194	172	156
Measles	37	6	12
Yaws	551	427	2,035
Pneumonia	98	102	179

The figures for æstivo-autumnal malaria are misleading. Owing to there being no heading in the new classification for "Unclassified" malaria, all the dispensers' stations and several medical officers also, have lumped all their cases under æstivo-autumnal.

The very great increase in the number of cases of yaws seen is not due to an increase in the prevalence of the disease, but to the great and increasing popularity of the treatment with arsenical compounds with its spectacular results.

(ii) COMMUNICABLE DISEASES.

Malaria.—The total number of cases treated was 4,968 as against 3,749 in 1926—an increase of 1,219. The reported deaths from malaria were three.

Blackwater Fever.—Nine cases were reported this year with six deaths. Two European Government officials with one death; two non-official Europeans with one death; four Syrians with four deaths and one African native cured. In 1926 there were seven cases with two deaths.

One official died of blackwater fever whilst on his way home on leave. (Mr. F. O'Doherty, European Foreman of Works, Public Works Department.)

Trypanosomiasis.—Only one case was reported. Two more are observed in the returns of the Princess Christian Mission Hospital.

Smallpox.—Sixteen cases were collected in the returns from all stations. Only one imported case was seen in Freetown.

Chickon-pox.—Sixty-four cases were reported from all stations.

Dysentery.—The returns from all stations revealed a total of 299 cases, an increase of 106 on 1926 when 193 were treated.

Tuberculosis.—156 cases were reported with thirteen deaths, as compared with 172 and 27 for 1926.

Venereal Diseases.—2,286 cases of gonorrhœa were treated as against 1,701 for 1926, an increase of 585. The figure for syphillis was 2,116 as against 874 for 1926. The marked increase in both is partly due to the activities of the Venereal Diseases Clinic, but large numbers of doubtful cases are diagnosed as tertiary syphilis by dispensers and African medical officers.

TABLE OF INCIDENCE.

Disease.	1923.	1924.	1925.	1926.	1927.
Tuberculosis	138	131	194	172	156
Dysentery	306	481	191	193	299
Gonorrhœa	1,126	1,248	1,523	1,701	2,286
Syphilis	723	919	1,005	874	2,116

Influenza.—Twenty-one cases reported.

Leprosy.—Eighty cases were reported from all stations as against forty-five for 1926.

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

Place.	Number Examined.	Number Infected with Ankylostomes.	Per Cent.	Remarks.
Freetown ...	255	19	7·41	Connaught Hospital laboratory.
Freetown ...	311	25	8·03	Freetown Prison.
Bonthe ...	203	25	9·50	In and out-patients.
Bo ...	194	94	48·40	In and out-patients, Bo School.
Port Loko ...	75	12	16	Court messengers, their wives and children.
Moyamba ...	115	70	60·87	Prisoners, in and out-patients.
Sumbuya ...	8	8	100	Out-patients.
Kaiyima ...	110	58	52	Out-patients.

Yaws.—Owing to the success of modern methods of treatment there has been a very great increase in the number of cases of yaws presenting themselves for treatment, 2,035 as against 427 in 1926. At Kaiyima (Kono) about 907 cases were treated by Dr. Taylor Cummings. Except in in-patients from the Protectorate, yaws is seldom seen at the Freetown hospitals. Forty-five cases were treated at the Connaught Hospital and forty-three at the Princess Christian Mission Hospital. *Bismuth sodium potassium tartrate* is being used with great success. The mass treatment of yaws in its primary or secondary stages will, no doubt, in time materially reduce the tertiary manifestations, such as rhino-pharyngitis mutilans, bone lesions, ulcers, etc., which are now comparatively common.

(*b*) VITAL STATISTICS.

(i) General Population.

The only available statistics of population are those of the 1921 Census, which are as follows:—

Colony and Protectorate	1,541,311
Colony	85,163
Colony, excluding Freetown	41,021
Freetown	44,142

With the possible exception of Freetown all these figures are approximate.

Registration.—There are in the Colony seventeen registration districts and in the Protectorate fourteen. In the Protectorate registration is permissive and practically non-existent. In the Colony it is nominally compulsory, but difficult to enforce outside Freetown. Even in Freetown, owing to the floating Protectorate population, registration of births is not fully carried out, but registration of deaths is satisfactory. It is hoped that an Ordinance will shortly be enacted placing the control of registration entirely in the hands of the Sanitary Department and strengthening the law in various respects.

The following table gives the birth, death and infant mortality rates in Freetown for the last four years:—

Year.	Population, 1921.	Births Registered.	Birth Rate.	Deaths Registered.	Death-rate.	Number of Deaths under Twelve Months.	Infant Mortality Rate.
1924	44,142	982	22·2	1,143	25·9	316	321
1925	44,142	1,102	25	1,124	25·5	321	291
1926	...	1,074	24	1,231	27·9	318	296
1927	...	1,010	22·8	1,290	29·2	355	351

The apparent excess of deaths over births is largely to be accounted for by failure to register births. Another factor of importance is the excess of males over females in the population of Freetown, 28·5 per cent. at the 1921 census. This is no doubt due to the number of young labourers without wives who came to Freetown from the Protectorate to work.

There were no epidemics of any kind during 1926 and 1927, and the increase in the number of deaths is perhaps due to an actual increase in the population by immigration from the Protectorate. It is impossible to get accurate information on this point, but most of the tribal rulers report an increase in the number of their people. Deaths of natives of places outside Freetown occurring in the Freetown hospitals and gaol and the Kissy institutions are registered in Freetown.

The following table shows the deaths in Freetown under five years. It will be seen that 38·8 per cent. of the total deaths took place in children under five years. In England and Wales in 1926 the corresponding figure was 15·8 per cent.

Age-period.	Number of Deaths.	Percentage of Total Deaths.
0–1	355	27·5
0–4	146	11·3

The following table shows the deaths in Freetown at various ages up to twelve months. It will be seen that over 47 per cent. of the deaths under twelve months occurred during the first month. Nearly 67 per cent. of these deaths under one month took place within the first seven days.

Age-period.	Number of Deaths.	Percentage of Deaths under Twelve Months.
Under one month	169	47·6
One to three months	44	12·4
Total under three months	213	60·0
Three to six months	56	15·8
Six to twelve months	86	24·2

The following table gives the births and deaths recorded at all registration districts in the Colony :—

DISTRICT.	BIRTHS.			DEATHS.			DEATHS UNDER TWELVE MONTHS.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
COLONY.									
Freetown	445	436	881	652	509	1,161	173	137	310
Cline Town ...	70	59	129	72	57	129	29	16	45
Regent	9	23	32	14	15	29	5	7	12
Wilberforce ...	27	33	60	27	28	55	10	8	18
Kissy	23	22	45	49	34	83	6	4	10
Tassoh Island ...	47	36	83	52	33	85	21	16	37
Murray Town ...	26	30	56	36	27	63	7	3	10
Wellington ...	20	19	39	14	17	31	1	1	2
Hamilton	16	9	25	22	5	27	9	—	9
Hastings	38	36	74	38	24	62	6	2	8
Kent	9	7	16	11	14	25	4	3	7
Waterloo	91	110	201	75	50	125	11	11	22
Tombo	34	25	59	44	25	69	11	8	19
York	15	22	37	12	13	25	—	1	1
Songo Town ...	46	61	107	50	36	86	10	10	20
Banana Island ...	8	9	17	8	8	16	2	2	4
Sherbro Judicial ...	36	40	76	41	43	84	13	9	22
Total	960	977	1,937	1,217	938	2,155	318	238	556

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

Table showing Sick, Invaliding and Death-rates of European Officials.

——	1925.	1926.	1927.
Total number of officials resident	200	231	300
Average number resident	180	184	250
Total number on sick list	176	181	210
Total number of days on sick list	1,683	1,575	1,816
Average daily number on sick list	4·61	4·31	4·97
Percentage of daily sick to average number resident	2·56	2·34	1·98
Average number of days on sick list to each patient	9·50	8·70	8·64
Average sick time to each resident	9·35	8·55	7·26
Total number invalided	5	6	16
Percentage of invalidings to total residents ...	2·50	2·56	5·33
Percentage of invalidings to average number resident	2·77	3·26	6·40
Total number of deaths	2	1	3
Percentage of deaths to total residents ...	1·00	·42	1·00
Percentage of deaths to average number resident	1·11	·54	1·20

Causes of Invalidings and Deaths of European Officials.

Cause.	Invalided.	Died.
Blackwater fever	...	3
Pulmonary tuberculosis	1	...
Pleurisy	1	...
Enlarged glands of neck probably tubercular	1	...
Septic (old shrapnel) wounds	1	...
Neurasthenia	1	...
Mucous colitis and malignant growth	1	...
Anæmia	2	...
Purulent synovitis of knee	1	...
Appendicitis	1	...
Thrombosed hæmorrhoids	1	...
Diabetes	1	...
Persistent headache and eye strain	1	...
Cystitis with hæmaturia	2	...
Multiple neuritis	1	...
Total	16	3

(iii)—Health of European Non-officials.

Table showing Sick, Invaliding and Death-rates of European Non-officials.

	1926.	1927.
Total number of non-officials resident	390	369
Average number resident	299	299
Total number on sick list	46	40
Percentage of sick to average number resident	15·38	13·37
Average number of days on sick list to each patient ...	...	...
Average sick time to each resident	...	...
Total number invalided	13	16
Percentage of invalidings to total residents	3·33	4·32
Percentage of invalidings to average number resident ...	4·34	5·35
Total deaths	8	5
Percentage of deaths to total residents	2·05	1·35
Percentage of deaths to average number resident ...	2·67	1·67

Causes of Invalidings and Deaths of European Non-officials.

Causes.	Invalided.	Died.
Injuries sustained from a fall	1	...
Heart failure following pneumonia	...	1
Tuberculosis	2	...
Defective hearing	1	...
Rheumatism	1	...
Renal colic	1	...
Septic skin eruptions	1	...
Cardiac affection	1	...
Neurasthenia	2	...
Malaria	4	...
Blackwater fever	2	1
Acute catarrhal jaundice	...	1
Cerebral malaria	...	1
Accidental drowning	...	1
Total	16	5

(iv)—Health of African Officials.

Table showing the Sick, Invalidings, and Death-rates of African Officials.

	1925.	1926.	1927.
Total number of officials resident	1,009	1,200	1,200
Average number resident	997	1,000	1,000
Total number on sick list	1,121	950	933
Total days on sick list	8,735	5,375	7,919
Average daily number on sick list	23·93	14·72	21·69
Percentage of daily sick to average number resident	2·40	1·47	2·16
Average number of days on sick list to each patient	7·79	5·65	8·48
Average sick time to each resident	8·76	5·37	7·91
Total number invalided	18	6	20
Percentage of invalidings to total resident ...	1·78	·50	1·66
Percentage of invalidings to average number resident	1·80	·60	2·00
Total deaths	10	4	4
Percentage of deaths to total residents ...	·99	·33	·33
Percentage of deaths to average number resident	1·00	·40	·40

Causes of Invalidings and Deaths of African Officials.

Causes.	Invalided.	Died.
Double inguinal hernia and chronic rheumatism ...	1	
Pulmonary tuberculosis	3	...
Intermittent albuminuria and glycosuria	1	2
Neuritis and defective vision	1	...
Delusional insanity	1	...
Ataxia and peripheral neuritis	1	...
Epilepsy	2	...
Chronic arthritis and D. A. A.	1	...
Senility and chronic prostatitis	1	...
Fibrosis of lung and cardiac hypertrophy	1	...
Cardiac disease	1	...
Cardiac hypertrophy and arterio-sclerosis	1	...
Corneal opacity following corneal ulceration ...	1	...
Arterio-sclerosis	1	...
Incipient dementia	1	...
Chronic asthma	1	...
Stricture of urethra and orchitis	1	1
Fracture of skull (result of an accident)	—	1
Total	20	4

TABLE SHOWING THE COMPARATIVE HEALTH OF AFRICAN OFFICIALS FOR THE LAST TEN YEARS.

Year.	Average Number of Officials.	Number on Sick List.	Number of Days off Duty through Sickness.	Average Sick Time to each Official.	Number Invalided.	Percentage of Invaliding to Average Number.	Total Deaths.	Percentage of Deaths to Average Number.
*1918	550	866	37,878	68·86	30	5·45	51	9·27
1919	Records	destroyed in hospital	fire of 3rd	February, 1920.				
1920	750	1,862	5,742	7·60	23	3·06	9	1·20
1921	750	1,248	7,780	10·37	24	3·20	6	1·20
1922	750	1,071	7,887	10·38	7	0·93	6	0·80
1923	750	879	7,586	10·11	13	1·73	7	0·93
1924	900	1,009	8,920	9·91	18	2·00	5	0·55
1925	997	1,121	8,735	8·76	18	1·80	10	1·00
1926	1,000	950	5,375	5·37	6	0·60	4	0·40
1927	1,000	933	7,919	7·91	20	2·00	4	0·40

* Year of Pandemic Influenza.

(v)—Health of Troops and Police.

Imperial Troops (European)—Summary.

	1925.	1926.	1927.
1. Average strength	283	268	248
2. Total number on sick list	647	660	703
3. Percentage of sick to average strength	228·62	316·41	287·50*
4. Total number invalided	4	6	8
5. Percentage of invalidings to average number of residents ...	1·41	2·23	3·22
6. Total number of deaths	1	...	1
7. Percentage of deaths to average number resident ...	·35	...	·40

Royal West African Frontier Force (Non-European).

Average Strength of Battalion in 1927.	Total Number of Deaths.	Death-rate per 1,000.	Total Number of Men on Sick List.	Sick Rate per 1,000
335	—	—	625	1,865

Police.

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.
307	1	3·25	163	530·94

(vi)—*Prisoners.*

Freetown Prison.	1925.	1926.	1927.
Total number of prisoners admitted	985	1,140	762
Average strength	245	298	298
Total deaths	5	5	8
Total number of prisoners on sick list	137	288	176
Daily average number on sick list	4	7	8
Daily sick rate per 1,000 of average strength	16·86	23·48	26·97
Death-rate per 1,000 of average strength	20·40	16·77	26·85

Prison.	Daily Average Number in Custody in 1927.	Daily Sick Rate per 1,000 of Average Strength.	Death-rate per 1,000 of Average Strength.
Freetown	298	26·97	26·85
Batkanu	24	12·29	...
Kabala	10	35·50	...
Moyamba	37	·05	...
Kenema	43	20·04	...
Pujehun	24	6·11	21·6

*This figure is not comparable to the corresponding one for civilians, as it includes every one who reports himself to a medical officer for any ailment however trivial; whereas the civilian is only shown as sick when he is actually off duty on account of illness.

III—Hygiene and Sanitation.

A—GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

1—Preventive Measures.

(a) *Insect-borne Diseases.*

Malaria.—Although other species, especially perhaps *A. funestus*, no doubt play a minor part in the transmission of malaria in Sierra Leone, there is abundant evidence that *A. costalis* is the important insect-host. In Freetown the chief breeding places of this mosquito are in and around the various streams that run through the town, and in ditches and gutters, especially in the flat western area. Larvæ are most commonly found in pools which contain algæ and are exposed to the sun for some part of the day.

In some of the schools in the western area of Freetown, malaria parasites have been found in the peripheral blood of over 70 per cent. of the children. Permanent canalization of the streams is out of the question at present owing to the prohibitive cost, but each year at the end of the rains temporary canalization is carried out. This has the effect of obliterating large numbers of breeding places for some six months of the year. The provision of concrete surface drains in place of the old street gutters is gradually leading to the disappearance of many breeding-places in close proximity to houses, but much remains to be done in this direction. Pools which cannot be dealt with in any other way are oiled once a week. Various oiling mixtures have been tried; the one at present in use, which has proved satisfactory, consists of equal parts of Sanitas "Soldis fluid" and kerosene with the addition of 5 per cent. of crude castor oil. The castor oil is a great aid to penetration through water weeds or other obstructions. In all out-stations minor anti-malaria measures are carried out by paid labour gangs or by prisoners, and by court messengers or troops in the places where they are stationed. Dr. R. M. Gordon of the Sir Alfred Jones Research Laboratory made a malaria survey on the site of the proposed Government oil-palm plantation near Mabang, a town on the railway, forty miles from Freetown. His results are published as Appendix C. Out of 212 persons examined in several small villages he found malaria parasites in the peripheral blood of 12·4 per cent. of the adults and 75·8 per cent. of the children. No *Anopheles costalis* were collected during this survey, but they are numerous in this area during the rains. Large numbers of anopheles were found in the Lands and Forests bungalow, and there were many breeding-places in the vicinity. It is probable that a healthier site can be found for the European staff of the plantation.

Trypanosomiasis.—One death occurred at Makeni. The patient was a soldier of the West African Regiment whose case was described in the last annual report. It is not known where he became infected.

Two cases were treated at the Princess Christian Mission Hospital in Freetown. One of these was a girl from the village of Aberdeen, some four miles west of Freetown.

Glossina palpalis is numerous in the vicinity of this village and anti-fly measures are about to be undertaken. At the invitation of Government, Dr. Gordon made a survey of the site of the proposed oil-palm plantation near Mabang. As cases of sleeping sickness had been reported from Mabang in the past, it was considered advisable to exclude as far as possible the risk of this in an area where it is proposed to employ native labour on a large scale.

The result of the investigation (*vide* Appendix C) was reassuring. Very few flies were caught within the boundaries of the proposed site, and the clearing necessary to establish the plantation will doubtless reduce them still further. It remains to be seen whether the growing oil-palms will be attractive to the fly. If this proves to be the case, action will be necessary on the lines recommended by Dr. Gordon. In 120 flies examined no salivary gland infections were found, but 10 per cent. showed gut or proboscis infection. Two hundred and twelve persons living in villages on or adjacent to the site of the plantation were examined, but none were found to be suffering from trypanosomiasis.

Yellow Fever.—No case was reported during the year.

The following extract from the Medical Officer of Health's report summarizes the measures taken against insect-borne disease in Freetown:—

House to House Inspection.—99,274 compounds were inspected during the year, and 461 mosquito breeding places were discovered. The owners of the compounds were prosecuted with the following results:—387 were fined, 72 dismissed or withdrawn and 2 cautioned or discharged. The fines from prosecutions amounted to £91 15*s.* 6*d.*

6,053 notices were served for the cleaning of compounds; of these, 173 were summoned, 133 were fined, 33 dismissed or withdrawn, and 7 cautioned or discharged. The fines amounted to £31 7*s.*

2,885 notices were served for the cleaning and repairing of cesspits: 206 of these were summoned, 150 were fined, 50 dismissed, and 6 cautioned or discharged. The fines amounted to £38 11*s.* 6*d.*

Oiling of Pools and Gutters.—60,860 pools and gutters were oiled by the sanitary inspectors and oiling gangs. The oiling gangs operated for six months only during the year. Mosquito breeding places were discovered and dealt with in the usual manner.

Several stand-pipes in the town caused the department a good deal of trouble and expense on account of their situation and condition, but where possible the City Council are either repairing or shifting them to better positions where drainage can be made possible.

Inspection of Trees.—From July to November a systematic inspection of trees was carried out. 17,778 trees were inspected and 3,785 holes, in which mosquito larvæ were breeding or likely to breed, were discovered. Mosquito larvæ were found in 241 of these holes. All holes were either filled with a mixture of tar, cement and sand, chipped so that the water could run out, or the trees were cut down.

Mosquito Larvæ Index.—The mosquito larvæ index which was taken at the end of each quarter gives the following figures:—

First quarter	... ...	Nil
Second „	... ...	·011 per cent.
Third „	... ...	·017 „
Fourth „	... ...	·003 „

350 compounds were examined in every case before an index was arrived at.

Cesspools.—During the dry season the usual disinfection of cesspools was carried out by the inspectors, and during the rains oiling was done by the oiling gangs.

Canalization of Streams.—Though we did not start the canalization of the streams in and around Freetown until well on in December, they were almost all finished by the end of the year. Besides the regulating of the brooks, the gangs cleaned the river beds and filled in all holes and swampy places.

Inspection of Boats and Canoes.—4,661 boats and canoes were inspected for stagnant water, and 617 were oiled. Mosquito larvæ were found in 9.

(b) Epidemic Diseases.

Plague.—No case was reported during the year.

Rats collected from all parts of Freetown were examined at the Sir Alfred Jones and Connaught Hospital laboratories, but in no case was plague infection found. 74,191 rats were brought to the Sanitary Department and destroyed. For the greater part of the year a bounty of twopence was paid, but this was later reduced to a penny, as it was feared that rat breeding might be encouraged. Inside buildings adhesive varnish spread on brown paper was found to be the most efficient trap. As many as half-a-dozen rats have been caught in a night on one such trap. From time to time intensive measures by trapping or poisoning are adopted in the area of the wharves and Customs sheds, where it is of special importance to keep down the rat population. Such measures are of course mere palliatives, and it is recognized that the only way to get rid of rats is to build them out.

Passengers and baggage from plague infected ports are passed through the wharf disinfection station whenever this is considered necessary by the Medical Officer of Health.

Smallpox.—Three cases were reported at Makeni in March, and 15 at a town in the Kono District in November. In each instance the disease was of a mild type. 1 imported case—an infant of seven months was admitted to the Infectious Disease Hospital at Kissy from a ship.

The subjoined table records the vaccinations performed during the year in the Colony and Protectorate:—

Place.	Total Number Vaccinated.	Successful.	Unsuccessful.	Not Seen.
Freetown	4,240	2,643	811	786
Kent	112	105	6	...
Regent	99	74	23	2
York	23	11	6	6
Waterloo	241	234	4	3
Daru	96	77	16	3
Batkanu	161	117	36	8
Kenema	200	164	29	7
Njala	460	297	87	76
Panguma	194	144	30	20
Pendembu and Segbwema	595	337	178	80
Sembehun	386	326	31	29
Sumbuya	192	136	55	1
Bo	462	248	157	57
Bonthe	237	95	70	72
Makeni	1,829	925	412	492
Moyamba	943	578	271	94
Port Loko	487	329	35	123
Pujehun	891	463	211	217
Kabala	558	219	6	333
Kaiyima	687	422	163	102
Mano Salija	170	105	64	...
Kissy	8	7	1	...
Kanre Lahun	92	36	9	47
Goderich	26	16	4	6
	13,389	8,110	2,715	2,564

Out of 10,825 vaccinations inspected, 8,110, nearly 75 per cent. were successful. Only in Freetown can lymph be stored on ice. It is sent to the more remote parts of the Protectorate in vacuum flasks.

Dysentery.—No cases of bacillary dysentery were reported, but in view of Butler's results (*vide* Annual Medical and Sanitary Report for 1919), it must not be assumed that this disease does not occur in Sierra Leone. Butler described 19 cases, occurring at the Connaught Hospital or in Freetown gaol. Of these, 14 were due to Flexner Y strains and 1 to a Shiga strain, the remainder being undetermined. There was an increase in the number of cases of amœbic dysentery treated in the various hospitals and dispensaries, but this is to be attributed mainly to a general increase in the number of patients under treatment. In Freetown favourable factors are an excellent water supply and comparative absence of flies: on the other hand, there is the human carrier, especially dangerous in overcrowded dwellings, and the contamination of food while exposed for sale in dusty streets or subject to constant human handling.

The Enteric Group.—1 European case of paratyphoid B, which proved fatal, was admitted to hospital in Freetown from a steamer. 1 private case notified as true enteric in an African boy of seven, also fatal, was reported in Freetown, but nothing could be ascertained as to the source of infection. There is some reason to believe that diseases of this group are commoner than is generally supposed. From time to time cases have occurred which were clinically paratyphoid but gave a negative Widal to all strains, and further investigation is required.

Tuberculosis.—There was a slight fall in the number of African cases recorded and only 13 deaths were reported as compared with 27 in 1926. With the exception of 3 cases of meningitis all were of the pulmonary type. There seems to be little doubt that this disease is much more prevalent in Freetown than in the Protectorate. Overcrowding doubtless plays an important part, and it must be remembered that the African, having none of the resistance, inherited or acquired, possessed by the European, is apt to fall an easy prey. As a rule the duration of the disease is only a matter of months and recovery is rare.

Compulsory notification is not considered to be practicable in this Colony at present, but all cases seen by Government medical officers and a few by private practitioners are reported to the Sanitary Department, and the Medical Officer of Health takes such action as is possible. Regular visits are paid to the houses where tuberculosis has been notified, patients and their relatives are given advice and instructed as to the precautions necessary to prevent the spread of infection, and periodical disinfection is carried out. In 1925 a ward in the Connaught Hospital was set apart for the treatment of early cases of tuberculosis, but so little use was made of this that the Government was advised that the time was not yet ripe to provide a special tuberculosis sanatorium. As the Surgical Specialist has pointed out in his report, abdominal, bone and joint tuberculosis is exceedingly rare in Sierra Leone. This is no doubt related to the almost total absence of bovine tuberculosis. For many years no tuberculous carcase has been seen in the Freetown slaughterhouse.

Leprosy.—Modern methods of treatment appear gradually to be attracting a larger number of cases to the various hospitals and dispensaries. 80 cases were under treatment during the year as compared with 45 in 1926.

(c) *Helminthic Diseases.*

Cysticercus bovis is very common in cattle slaughtered in Sierra Leone, consequently human infection with *Tænia saginata* is of frequent occurrence. Two hundred and fourteen cases were treated during the year. It is said to be particularly prevalent amongst the Syrian community, who prefer their meat undercooked.

Ankylostomiasis is very widely distributed, but the native appears to have considerable resistance to this disease, and severe symptoms are exceptional. Out of 165 boys at Bo School (a boarding school for the sons and nominees of chiefs) drawn from all parts of the Protectorate, Dr. Walls found 104 infected. This is probably fairly typical of the Protectorate as a whole. The native habit of surface defæcation in unsanitated area, together with the almost entire absence of any kind of footwear easily accounts for this state of affairs.

A case of *Schistosoma mansoni*, apparently a very rare condition in Sierra Leone, was reported by Dr. Walls. The patient was a Bo School boy, a Yalunka from the extreme north-east of the Protectorate.

Schistosomiasis (*S. hæmatobium*) is endemic in parts of the Central Province, especially in the Kono District. The work at Kaiyima (*vide* Annual Medical and Sanitary Reports for 1923 and 1925) has been well maintained. The medical officer stationed there reports that he has not been able to find any physopsis in the streams around Kaiyima. Treatment has been energetically carried out. Preventive measures have now been extended to all the chief towns in Kono. The chiefs and people are quite ready to undertake sanitary measures when the medical officer is actually in their town, but tend to revert to their traditional habits when he goes away. Time and patience are needed to bring them to realize the importance to their health of a sanitary environment.

2—General Measures of Sanitation.

Sewage Disposal.—Except for a few private installations in which sewage is dealt with in septic tanks or by discharge directly into the sea, water carriage is non-existent in Sierra Leone. In the European and some of the better class African houses the pail system is used, the contents being emptied into the sea or disposed of by trenching. At Hill Station an " Otway " pit is used with great success. In Freetown there are thirteen public latrines, the pail system being used. In the African quarters of Freetown cesspits are almost universal. This is not a hygenic method, but the nuisance is much less than might be imagined. The amount of fly-breeding is comparatively small. As there are no longer any wells in Freetown the danger of contamination of water supplies does not arise, but the constant pollution of the sub-soil with fæcal matter cannot fail indirectly to be detrimental to health. Sooner or later, when finances permit, a water carriage system will be required. Pit latrines are used to a considerable extent in the sanitated areas of the Protectorate, fly-breeding being controlled by the use of a smoke bucket. Elsewhere the people simply use the bush around their villages or even, amongst the Mendes and Konos, the very streams from which their drinking water is derived.

Scavenging.—In Freetown there is house to house collection of domestic refuse in a limited area, but for the most part household refuse is deposited by the inhabitants in public dust-bins, the contents of which are removed by motor-lorries. An improved type of refuse-bin, which is more or less rat-proof, has recently been introduced and is a great improvement on the open receptacles formerly constructed.

Refuse Disposal.—As stated in the last report, a scheme for refuse disposal in Freetown by sea-dumping has been approved. The refuse will be taken by lorries to a wharf at the east end of the town and dumped at sea from hopper barges. The tug and barges arrived at the end of the year and it is anticipated that the new system will be working early in 1928. One or more incinerators will be used to deal with the readily combustible material.

A new type of incinerator has recently been introduced which is proving very successful. The essential feature is a "drying hearth" on which the refuse is thoroghly dried by the heat of the burning rubbish before it is raked into the fire. This is a great advantage in the wet season when the rubbish arrives at the incinerators in a saturated condition.

Drainage.—The following drainage work was carried out in Freetown by the Public Health Engineer:—

(1) New Concrete Drains.—Garrison Street, Kissy Road.

(2) Improvements to existing Drains.—Moore's Brook (outfall), Fura Bay Road, Priscilla Street (outfall), Philip Street, Sackville Street.

Other Sanitary Improvements.—A new public slaughterhouse in Freetown was completed by the Public Works Department and handed over to the City Council. The old slaughterhouse, which was a disgrace to the town, was repaired and brought into use as an accessory market.

A new market in Bombay Street, serving a very congested area, was completed and brought into use. Minor improvements were effected to existing markets, and the Council proposes to carry out an extensive programme of repairs and improvements in 1928. New latrines were erected at Brass Street and Lombard Street.

Hill Station Sanitation.

General Sanitation.—Throughout the year Hill Station was maintained in an excellant sanitary condition. There is a very large area under grass and this has to be cleared four times yearly

All drains and ditches were swept at least three times weekly and compounds inspected once a week.

Water Supply.—The water supply remains excellent, and during the year a new storage reservoir was commenced. This reservoir will have a capacity of 280,000 gallons and is expected to be completed very early next year. This will obviate the shortage of water which generally occurs towards the end of the dry season.

Conservancy.—The "Otway" pit is still in use and gives immense satisfaction. No free flies are now to be found in the vicinity of the pit and no other nuisances caused. The pit was emptied during December and the contents used as manure.

Anti-mosquito Measures.—Mosquitoes are not commonly found at Hill Station except at the beginning and the end of the rains, when they breed in trees in the uncleared valley below. These are blown up when there is sufficient wind to do so.

During the year 208 samples of larvæ were discovered as follows:—

	Anopheles.	Culex.	Stegomyia.
Tins, bottles and rock pools	2	58	84
Trees	—	10	54

The sources were dealt with and all rock pools and holes in trees were filled in with a mixture of tar, sand and cement, 184 trees being dealt with and 52 rock pools.

Disposal of Refuse.—All household refuse is collected daily, combustible refuse being burnt in the incinerator and tins and bottles being sorted out aud sent to Freetown for disposal at sea.

During the year 820 headloads of tins and bottles were collected and so dealt with.

Water Supplies.

The Superintendent of Freetown Waterworks reports as follows:—

The works were maintained in good condition during the year.

Public Stand-posts.—Only one public stand-post was erected during the year, that at Pultney Street. Application for the erection of a stand-post at Cline Street, Krutown Road, could not be entertained as, owing to absence of drainage of any sort, it would have created a public nuisance.

Private Services.—13 private services were laid during the year. There were at the end of the year 450 private services in operation, with 865 taps. Water services were laid to the administrative block of the Medical and Sanitary Department at Oxford Street, to the out-patients' block of the Connaught Hospital, to the new Secretariat buildings and to the Freetown Electricity Supply works during the year. There are in all 80 Government services with about 400 taps in connexion with the Freetown Waterworks.

The total consumption for all purposes during the year was 158,000,000 gallons. Of this, 5,281,000 gallons were supplied to shipping, 7,734,000 gallons for trade and other non-domestic purposes and the balance of 144,985,000 gallons represent the purely domestic consumption.

The maximum daily consumption was 599,000 gallons on the 5th March and the minimum 243,000 gallons on the 16th August. There was no actual shortage of water this year.

Pumping Operations.—Pumping operations were carried on for seventeen days between the 18th March and 6th April.

Offensive Trades.

Tanning.—2,687 oxen were slaughtered in Freetown during 1927. Of this number of hides approximately one-third are exported, the remainder being tanned in Freetown for the use of the local boot and shoe repairers. There are eighteen tanyards distributed throughout Freetown, half of which are alongside the streams running through the town. The hide is first soaked in a mixture of lime and water for three days and then scraped clean from hair. It is then washed, preferably in running water, to free it from lime. It is next placed in the tanning pit containing a decoction of mangrove bark. Here it is left for five or six days when it is removed, washed and sun-dried.

The dangers connected with this trade are chiefly from the hides of animals suffering from anthrax, a common disease in the dry season. Fortunately no cases of anthrax have been reported amongst tan-yard workers since this disease was first seen. The sanitary inspectors have received instructions to advise the burning of all hair scraped from the hides. A most offensive smell is present while the hides are being removed from the tanning pit and while they are drying.

Dyeing.—There are 138 native dyers in Freetown. It is carried out in wooden barrels by means of an infusion of leaves imported from Conakry, Bathurst and Dakar, and known locally as " garrah." The people controlling this industry are the Susus and Mandingoes. The infusion itself does not carry out the process of dyeing, but local products in the shape of a finely scraped root known locally as " brimstone " and a crude potassium hydrate made by burning plaintain and pawpaw stems are added. The articles to be dyed are not put in until this mixture has been standing for twenty-four hours. Until comparatively recently native dyers were the greatest offenders as a class against the anti-mosquito sections of the Public Health Ordinance. By adding a larger amount of crude potassium hydrate (" lubi ") this offence has been greatly reduced owing to the increased alkalinity of the mixture. A peculiar and not altogether offensive smell comes from the barrels of dye and from recently dyed clothing.

Fish Curing.—This is at times distinctly an offensive trade, but it will be considered under the heading of food.

3—School Hygiene.

The report of the School Medical Officer will be found in Appendix F. A survey of the Freetown schools was completed and most of the rural schools of the Colony were visited. Altogether 1,384 children were examined. It is hoped next year to establish at the Connaught Hospital a school clinic in addition to medical inspection in the schools. The medical officer attributes a good deal of the lack of fitness in school children to malaria and intestinal parasites, insufficient or unsuitable food, and lack of regular and appropriate exercise. It is understood that in future some instruction in poultry, dairy, vegetable and fruit farming will be given in most of the schools, especially in the Protectorate.

A committee consisting of the Director of Education, the Deputy Director of Sanitary Service and the School Medical Officer was appointed during the year to consider and advise upon school health, school sanitation and the teaching of hygiene in schools. A school essay competition in hygiene was held during Health Week in December, and prizes were awarded for the best essays. The standard of knowledge showed marked improvement on previous years. The School Medical Officer gave a course of lectures in hygiene at the Teachers' Vacation Training Course held during the summer vacation.

4—Labour Conditions.

With the exception of the Kru community in Freetown, practically all labour in Sierra Leone is on a daily-wage basis. Large numbers of labourers from the Protectorate are employed in Freetown by the Government and by commercial firms. These labourers live under normal conditions and make their own arrangements as regards housing and food. The welfare of each tribe resident in Freetown is in the hands of an elected tribal ruler, who is invested by the Government with power to deal according to native law and custom with minor disputes and offences.

There is a large Kru colony in Freetown from which labour is obtained for working the cargo of ships calling at the various West African ports. Many Krumen are also employed as firemen and greasers. Practically all outward bound vessels engage from sixty to a hundred Kru labourers at Freetown as deck-hands. They are discharged on the homeward voyage after a period of from three to eight weeks. Careful attention is paid by the Port Health Officer to the health of these labourers and they are strictly examined before landing to prevent the entry of infectious disease. In case of doubt they are passed through the wharf disinfection station, where they have baths and their clothing is dealt with in a Washington-Lyon steam disinfector.

Up to the present Sierra Leone has been a purely agricultural Colony with no industrial conditions whatever. Recent discoveries of minerals may, however, in the near future alter the situation materially, and it will be necessary to watch the development of events and introduce special public health legislation should circumstances necessitate this.

5—Housing and Town Planning.

Owing to the absence of proper building regulations in the past the original lay out of Freetown, which was excellent, is sadly marred by congested and overcrowded areas, which would not have existed if the original plot of 50 feet frontage and 75 feet depth for each house had been maintained.

Recent legislation gives power to control new streets and buildings, but it will take a very long time to rectify the errors of the past. Some of the more important public health provisions of the Freetown Improvement (Amendment) Ordinance of 1926 are as follows:—

(1) The building authority has power to fix the level, width and building line of every new street, the size of the street blocks and building plots, the drainage arrangements and the areas which shall remain open spaces:

(2) The roofs of all buildings in the central parts of the town to be of non-inflammable material:

(3) The roof of a new building shall not be provided with guttering except with the approval of the building authority:

(4) The distance of any new building from the centre line of the street is regulated:

(5) The amount of open space in the rear of a building is regulated:

(6) Not more than two-thirds of the total area of any plot of land shall be occupied by building except in the case of warehouses.

(7) No cesspit shall be constructed within 15 feet of any building used as dwelling-house or kitchen:

(8) Damp proof courses are required in the walls of all buildings constructed of stone, brick or cement:

(9) Every habitable room shall have one or more windows the total area of which shall be not less than one-eighth of the floor area:

(10) Every habitable room shall have not less than ninety-six square feet of floor area

By the Freetown Improvement (Extension) Ordinance, 1927, power has been obtained to extend the provisions of the Freetown Improvement Ordinance to parts of the Colony outside the city of Freetown, and this has now been done in the case of what is known as the First Urban Area, which includes Congo Town, Murray Town and certain parts of Wilberforce and Lumley villages.

By the Public Health (Protectorate) Ordinance, 1926, an attempt has been made to establish better control over the growing towns of the Protectorate. Under the old Ordinance of 1915 the chief was the sole sanitary authority in all sanitary districts. This will continue to be the case in the purely native towns, but the new Ordinance gives power

in any sanitary district where there is a considerable non-native population to create a sanitary authority composed of four persons: namely, the district commissioner, the medical officer, the paramount chief and one other person being a non-native. By this Ordinance rules, necessarily of a simple character, have been made for the control of streets and buildings and of sanitation in general in any area of the Protectorate which is declared to be a sanitary district.

A committee sat during the year to consider the question of housing arrangements for European officials. Three type plans were recommended for (*a*) senior officers, (*b*) junior married officers, (*c*) two Class B officers.

6—Food in Relation to Health and Disease.

In Freetown and at all stations where there is a medical officer meat is regularly inspected.

In Freetown 2,687 bullocks, 644 sheep, 2 goats and 1 pig were slaughtered in the public slaughterhouses. A few quarters of beef were destroyed by order of the Police Magistrate owing to infection with *cysticercus bovis*. No cases of anthrax were reported. A quantity of fish exposed for sale in the public fish market was similarly condemned as being unfit for human consumption. Regular inspection of imported tinned foods was carried out by the department.

The staple native food throughout the Colony and Protectorate is locally-grown rice. It is cut when ripe, dried, thrashed, heated in water for a sufficient time to loosen the husk, partially dried and pounded in a mortar to remove the husk. It is then again pounded, winnowed, washed in water, and is then ready for cooking. This method of preparation leads to the loss of much of the germ and pericarp, but from the almost entire absence of beri-beri it would appear that the ordinary native diet, which contains in addition to rice, cassada, corn, palm oil, pepper, fish (usually dried), fruit, vegetables and beans of various kinds, is not seriously deficient in vitamin B. Only three cases of beri-beri were reported during the year, all in Kru seamen. In former years outbreaks of beri-beri occurred in Freetown gaol. These were investigated in 1923 by a medical committee, and the recommendations made with regard to diet led to the total disappearance of the disease. Most of the cases occurred just before the new season's rice came into use, indicating that deterioration of rice by age and storage led to a loss of vitamin B.

Rickets is by no means uncommon in Freetown and appears to occur quite early in life, even in breast-fed infants; consequently attention is now being paid to the maternal diet at the ante-natal and infant clinics. Cod liver oil is administered on a large scale and use will be made in future of the new vitamin D preparations. Under Head IX—Scientific—Dr. E. J. Wright describes a condition attributed to avitaminosis which is strongly suggestive of pellagra.

Fish Curing.—Enormous numbers of fish caught in the estuary of the Rokel River are cured in the Colony villages, both for local and Protectorate consumption. All kinds of fish are dealt with, but the most important numerically and financially is the bonga.

Two methods of curing are employed—

(*a*) artificial drying and smoking

(*b*) Salting with subsequent drying.

The former method consists of drying the fish on a wooden framework raised about 2 feet above a fire of mangrove wood. Drying takes about three days, the fish being "turned" twice daily. After sufficient drying has taken place the fire is damped down so as to give out large quantities of smoke. Following one day's smoking the fish is placed on a higher rack or "flake" until such time as it is required for sale.

Salting is resorted to chiefly with larger fish such as "Spanish," cowrie and barracuta. The fish are gutted, eyes and gills removed, and opened up in much the same way as a herring in preparation for making kippers. Salt is then sprinkled freely over the exposed flesh and then enclosed in the fish. This method is much more suitable for the dry season; when moisture gets to salted fish it cannot compete with the dried and smoked fish. Very little—if any—fish is cured within the limits of Freetown. Much, however, comes into the city in bulk from the surrounding villages and from Bullom for packing and transmission to the Protectorate. The packing rooms are rendered most offensive from the smell which has earned for dry bonga the name of "Stink fish." The fish is packed in large round native-made baskets holding two or three bushels, and covered with sacking. The baskets are used so long as they will hold fish, and the sacking until it is worn out. During the rains tarpaulins replace the sacking.

Dried and salted fish may be sold outside the markets. The Public Health Ordinance makes provision only for fresh fish, and during the dry season large quantities of dust and other impurities must be deposited on the fish exposed for sale in the streets.

On several occasions bonga purchased by this department for use as bait for rats have been found to contain maggots.

House flies, of which there are comparatively few in Freetown, are common around the places in which the fish are packed.

Soda Water.—There are two soda water factories in Freetown, both of which are under European control. The first is in the hands of the Military Authorities who are responsible not only for producing the soda water but for its being run on hygienic principles. The second is controlled by the Freetown Cold Storage Company, Limited—water from the Freetown Waterworks supply is used after a double filtration. All departments of this Company are subject to visits by officers of this department, and on no occasion has any complaint been made.

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

In July and August the School Medical Officer gave a three weeks' course in hygiene to teachers, eight lectures a week being given, followed by practical demonstrations.

The teachers were divided into two sections. Section 1—elementary teachers who had not obtained any teaching certificate. Section 2—those who had already obtained the first part of the Teachers' Ceritificate. To teachers in section 1 the lectures were chiefly given from an elementary course in Tropical Hygiene (Part II) by Dr. Mary Blacklock with amplification, and illustrating the various chapters by an account of the local sanitary conditions (i.e. Freetown, Protectorate and West Africa). Demonstrations were given of specimens of all the prevalent parasites and disease-carrying insects; photographs of mosquito breeding areas around Freetown and of modern sanitary constructions were shown.

In section 2 the same type of lectures was given but of a more advanced nature, including lectures on exercise and diet. In addition, an account was given of the commonest and most serious diseases affecting school children in Sierra Leone, and methods by which such diseases could be prevented and cured were explained—particular stress being laid on the influence of school teachers in this matter. The sanitation of school building, furniture, latrine, water supply and play-ground was also dealt with.

As already stated, a successful school essay competition in hygiene was held in connexion with Health Week.

During Health Week leaflets and posters dealing with health subjects were widely circulated both in Freetown and throughout the villages of the Colony. The subjects dealt with were as follows:—

(*a*) Venereal Disease.
(*b*) Consumption.
(*c*) Rats and Plague.
(*d*) Vaccination and Smallpox.
(*e*) Mosquitoes.
(*f*) Infant Welfare.

C—TRAINING OF SANITARY PERSONNEL.

The complete syllabus for the training of sanitary inspectors was given in the annual Medical and Sanitary Report for 1926. An important step was taken in the appointment of Mr. G. V. Herd, Superintendent Sanitary Inspector, to be Sanitary Superintendent and Training Officer. Previously the training of the sanitary staff was almost entirely in the hands of the Medical Officer of Health, who has little time available for systematic teaching.

The Council of the Royal Sanitary Institute having authorized the formation of a joint Board of Examiners for British West Africa, it is hoped in the near future to train one or more of the better educated Sierra Leone inspectors to take the certificate of the Institute.

D—RECOMMENDATIONS FOR FUTURE WORK.

(1) Increase in staff of African sanitary inspectors to meet the growing needs of the Protectorate.

(2) Appointment of special sanitary authorities for Protectorate towns.

(3) Improvement in lay out of growing Protectorate towns.

(4) Additional pipe-borne water supplies for the Protectorate.

(5) Continuation of surface drainage of Freetown with a view to the reduction of the present heavy incidence of malaria.

W. H. PEACOCK,
Deputy Director, Sanitary Service.

IV—Port Health Work and Administration.

During the year 410 vessels arrived in Freetown Harbour from the North and 426 from the South. In addition to these, 200 sailing vessels and motor-launches arrived from Sherbro and other places in the Colony. Owing to the prevalence of yellow fever in Senegal, the Gold Coast and Monrovia, and plague in Nigeria, practically all ships entering the harbour were boarded by the Medical Officer of Health. Passengers from infected ports were kept under strict surveillance. One case of smallpox which proved fatal was landed from a steamer from Nigeria. Disinfection and vaccination were carried out and no further case occurred amongst the passengers who landed at Freetown. The number of passengers and deck labourers examined during the year was 966 cabin passengers, 1,820 deck passengers and 15,610 deck labourers.

V—Maternity and Child Welfare.

Maternity and child welfare work in Freetown was well maintained during the year.

There were 177 labour cases in the maternity ward of the Connaught Hospital and seventy-eight at the Princess Christian Mission Hospital. The response to the establishment of the ante-natal clinics has been most encouraging. These clinics are held once a week at the Princess Christian Mission Hospital and at the Welfare centre in Campbell Street. At the latter centre there were 270 women on the register during the year, and at the former, 115.

At the three infant welfare centres—the Princess Christian Mission Hospital, Connaught Hospital and Campbell Street—there was an average weekly attendance of 283. There was a satisfactory increase in the number of aborigines attending the infant clinics, but these people are still reluctant to enter the hospital for their labours and only come as a last resort when serious complications occur.

In Appendix D Dr. E. J. Wright gives comparative figures of infant mortality in the various races in Freetown. He estimated the infant mortality rate amongst the Creoles, who make full use of all maternity and child welfare facilities, at 204 deaths under twelve months per 1,000 births.

The most important factor in the infant mortality rate is the very high neonatal mortality. Out of 355 deaths under twelve months, 169 (47·6 per cent.) took place within the first month. Of these 169, 113 (nearly 67 per cent.) occurred within the first seven days. This is a clear indication of the need for more ante-natal work and better midwifery, especially amongst the aborigines. The maternity hospital accommodation is adequate, and midwives are being trained with a view to starting an extern midwifery department. It would appear, therefore, as suggested by Dr. Blacklock in Appendix D, that our next step must be to make an attempt to give some elementary instruction to a selected number of older native women who act as tribal midwives. It is very difficult to change age-old native customs, and much tact, patience and sympathy will be required.

VI—Hospital and Dispensaries.

Connaught Hospital.

Owing to the severe tax on the accommodation in the Connaught Hospital, two extra beds were placed in each of the five main wards, and even then it was found very difficult to keep emergency beds vacant.

A new ward block with two wards of fourteen beds each, and four cubicles for better class patients is to be commenced early in 1928.

The administrative offices, stores, laboratory, dispensary and out-patient departments are still in the old Law Court buildings.

The new out-patients' block, store and administrative office are very near completion and will be occupied early in 1928.

The total number of admissions during the year was 2,046 with 146 deaths as compared with 1,867 and 164 in 1926.

The prevailing diseases were as usual—malaria, bronchitis, ulcers, injuries, intestinal parasites and those of the digestive system. The Surgical Specialist, a new appointment, assumed duty in October, and there has been a rapid increase in surgical cases from that date. A report by Mr. Quintin Stewart, the Surgical Specialist, appears as Appendix A page 68.

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

Year.	Total In-patients.	Maternity In-patients.	Remarks.
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	
1926	1,867	251	
1927	2,046	301	

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

———	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
New cases	8,332	Records destroyed in hospital fire, 3rd February, 1920.	8,152	5,654	10,573	11,335	10,955	14,106	13,834	14,780
Subsequent attendances	13,836	...	13,270	16,209	10,443	36,985	38,475	22,335	32,176	34,780
Total ...	22,168	...	21,422	21,863	21,016	48,320	49,430	36,441	46,010	49,560

European Hospital.

The European Hospital remains as before, an ancient wooden structure containing one large, two small wards and an isolation ward with a modern concrete addition of operating theatre and ward for operation cases.

A bungalow has been erected inside the hospital compound for the medical officer-in-charge, a very great convenience in the work of the hospital.

The number of non-official admissions remained practically the same as in 1926, with an increase of about 25 per cent. among officials.

No operation of any magnitude was performed during the year; there were three minor operations. Only four ladies were admitted.

Altogether, forty-two cases of malaria, i.e. 33⅓ per cent. of total admissions were treated and of these only nine were Government officials.

Deaths.—One official from blackwater fever, four non-officials, viz.:—para typhoid B, malignant malaria, pneumonia, jaundice.

In the last-mentioned case, the patient himself reported he had had blackwater fever for several days in an open boat while travelling to Freetown.

	Admissions.	Deaths.
Government officials	51	1
Non-Government officials (including 4 ladies) ...	85	4
Total	136	5

KISSY INSTITUTIONS.

The total cases treated at Kissy and Wellington dispensaries was 4,313.

	Ramaining in Hospital at the end of 1926.	Admissions, 1927.	Total Cases Treated.	Total Deaths.
Lunatic Asylum	90	55	145	8
Infirmaries	74	161	235	51

HOSPITALS AND DISPENSARIES IN THE COLONY AND PROTECTORATE.

The first of a projected series of Protectorate type hospitals was commenced at Bo in 1926 and was completed and opened during 1927. The second will be erected at Makeni in 1928.

Sumbuya, which was closed down as a medical officer's station owing to shortage of qualified medical staff, was reopened during the year. New buildings of native construction were provided.

Kanre Lahun in the Protectorate, and Goderich in the Colony, dispensaries were also reopened with dispensers in charge. The former is under the supervision of the Medical Officer, Daru.

HOSPITAL AND DISPENSARY STATISTICS.

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

Years.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Patients. ...	55,562	44,698	51,287	48,270	51,689	50,260	53,270	64,752	67,975	81,135

QUININE PROPHYLAXIS AT ALL HOSPITALS AND DISPENSARIES.

During the year quinine was issued gratuitously to the public to the extent of 471,320 grains for the prophylaxis of malaria.

This shows an increase of 18,404 grains as compared with 1926 when 452,916 grains were given.

In addition to this a quantity totalling 303,680 grains was issued at the Infant Welfare clinics, but part of this was probably for treatment, though the bulk was prophylactic.

VII—Prisons and Asylums.

KISSY LUNATIC ASYLUM.

Staff.—Medical Officer-in-charge
First Class Dispenser
Chief attendant
Assistant chief attendant
12 male attendants
Matron
3 Female attendants
1 cook
4 porters.

The following table gives the statistical details of patients during the year:—

	Males.	Females.	Total.
Remaining 31st December, 1926	57	33	90
Admitted on temporary certificate	38	16	54
Discharged after observation (1 to 3 weeks)	27	11	38
Certified	9	9	18
Discharged cured	2	3	5
Died	9	2	11
Remaining 31st December, 1927	55	37	92

The general health of the inmates has been good, and there has been no outbreak of infectious disease during the year. Deaths were all from natural causes, and the number, 9, is the lowest for several years. Occupation is found for the inmates as far as possible, chiefly gardening for the males and laundry work, house cleaning, etc. for females. A few do mat-making.

No mechanical restraint of any kind has been used during the year. A certain number of cases have to sleep in single rooms, being too noisy and quarrelsome to sleep in the wards. Other cases, with recurrent attacks of mania, have had to be confined to single rooms for several days at a time. The numbers so confined during the year have been—males 37; females 29; total 66.

The dietary has been varied and of excellent quality, the quantity very liberal. Tobacco is issued to those desiring it regularly, but in limited amount. The water supply from a dam above the asylum, is very pure, and unlimited in quantity.

The Visiting Committee inspected the Asylum quarterly and reported favourably on each occasion.

FREETOWN PRISON.

Dr. Renner was in charge up to 15th February, when he was relieved by Dr. Jennings: the latter was in charge up to 25th August, and Dr. Bermingham succeeded him. Dr. Bermingham was in charge up to 10th October, and was relieved by Dr. Alexander, who continued to the end of the year.

Health of Prison Officers.

European.—Good. One was treated and subsequently transferred to the European Hospital for surgical operation and was discharged cured after thirty days.

African.—Fairly good. Sixty-four were treated, eight of whom were placed on the sick list, and thirteen were transferred to the Connaught Hospital for admission; of these, seven were invalided from the service.

Health of Prisoners.

The general health of the prisoners, including those transferred to the Cape Sanitary Station, was on the whole good. The number of admission to hospital was seventy-eight and the number taken under observation and treatment was ninety-eight as against seventy and 218 of the year preceding. The daily average on sick list was 8·04 on a daily average prison strength of 298·14. The death-rate per 1,000 on the daily average prison strength was 26·85.

There was a mild outbreak of dysentery during the month of May, and early in June, when six prisoners were admitted into hospital with one death. Active measures were taken with good results. Three cases of diarrhœa were also treated during the same period as against the following figures for the two preceding years and occurring during the same quarter.

	Dysentery.	Diarrhœa.
1925	7	29
1926	—	5

It is interesting to note that nearly all cases of diarrhœa and dysentery occurring almost simultaneously amongst prisoners in the form of an outbreak have occurred during June quarter or notably during the month of May. One case of dysentery and five of diarrhœa were also treated at different periods during the year.

Chicken-pox was discovered in a female prisoner and she was immediately isolated: active measures were taken and no other prisoners had the infection.

Eight deaths took place during the year, *vide* statistical return attached.

Four post-mortem examinations were performed.

The prevailing diseases treated were malaria, diseases of the digestive system, affections of the skin and cellular tissues and local injuries.

Three prisoners were transferred to the Lunatic Asylum, Kissy, under certificate of emergency.

Total number of prisoners executed during the year was nine.

Weight of prisoners ranged between 60 and 200 lb.

Total number of prisoners vaccinated during the year was 324, successful 227.

Total number of attendances at the dispensary, 6,206.

The sanitary condition of the prisons remained excellent.

Visit.—His Excellency the Governor.

A statistical return is attached.

GEORGE ALEXANDER,
Medical Officer-in-charge of Freetown Prison.

Statistical Return for the Year 1927.

In hospital at end of December, 1926	5
Admitted during the year	78

——	March Quarter.	June Quarter.	September Quarter.	December Quarter.	Total.
Admission	9	25	26	18	78
Cured	6	20	25	10	61
Relieved	2	1	3	2	8
Not relieved	1	1	—	2	4
Died	1	3	1	3	8
Remained in hospital at end of 1927	—	—	—	2	2
Under observation and treatment (not admitted into hospital)	31	28	23	16	98

Deaths—Causes are as follows :—

Senility and epilepsy	1
Double pneumonia, pleurisy and empyema	1
Myocardial disease and nephritis	1
Amœbic dysentery	1
Cardiac failure following valvular disease of the heart	1
Subphrenic abscess	1
Malaria and ankylostomiasis	1
Acute meningitis	1

Out-patients.

——	New Cases.	Subsequent Attendances.
March quarter	141	1,573
June quarter	162	1,539
September quarter	141	1,327
December quarter	128	1,165
Total	572	5,604

(iii) Daily average of prisoners:—

Males	294·71
Females	3·43
	298·14

	New-comers Examined	Remands and Trials Examined	Solitary Confinement.	Corporal Punishment.	Execution.
March quarter	170	25	69	—	1
June quarter	207	17	89	—	2
September quarter ...	216	22	127	—	—
December quarter ...	169	27	80	4	6
Total	762	91	365	4	9

VIII—Meteorology.

The rainfall for the year at Freetown (Tower Hill)—135·12 inches—was again below the average. The average for the forty years ending in 1921 was 152·47 inches; for the period 1922–27 it was 138·92 inches. July was the month of heaviest rainfall with a total of 34·16 inches. The maximum rainfall in one day was 8·96 inches on the 12th July.

Hill Station, the European residential area on the ridge immediately to the west of Freetown, always has a higher rainfall than Tower Hill. The total for the year was 176·13 inches and the maximum precipitation on one day was 9·75 inches on the 26th July. On the 12th July 9·10 inches fell.

Records of temperature, humidity and rainfall at various outstations in the Colony and Protectorate will be found in Table IV.

IX—Scientific.

Notes on Two Cases of Cancer.

There is nothing out of the ordinary from the European standpoint in the history of the following cases. I am simply placing them on record, as I believe that in the present state of knowledge of malignant disease in native races it is desirable to report all cases which have been verified by microscopical examination of sections.

Briefly the histories of the respective cases are as follows:—

Scirrhus Carcinoma of the Breast.

Phebean Cole, a fish seller, 46 years of age and a native of Freetown, was admitted to the Connaught Hospital, Freetown, on the 7th November, 1927, complaining of a painful swelling in the right breast of four months duration. On examination the right breast was found to be markedly enlarged by the presence of a tumour in its lateral half, bulging under the skin between the nipple and the axilla. The skin over the growth was thickened, tense and shiny, and distended veins were to be seen on the surface. The whole lateral half of the breast felt hard and brawny and was tender on handling. A mass of glands could be seen in the axilla and another mass felt above the clavicle. Under chloroform the breast was excised with the pectoral muscles glands, and fascia according to Handley's technique.

The pathological report states:—Alveolar carcinoma of the usual scirrhus type. A gland shows extensive replacement of the lymphoid tissue by carcinomatous growth.

Squamous Epithelioma of Foot.

Allie, a farmer, 46 years of age and a native of Mahera, Sierra Leone, was admitted to the Connaught Hospital on the 28th September, 1927, complaining of an ulcer of the right foot of three years duration. A jiece of stick had entered the sole of his foot, the wound became septic and had remained open ever since.

On examination an ulcerating granulomatous growth could be seen on the sole of the right foot. It was roughly circular in outline, four inches in diameter and raised about one inch from the surface. A thin foul discharge was present. There was an impression of malignant change at the edges of the growth but no glands were evident in the groin.

Under spinal anæsthesia the growth was completely excised through apparently healthy tissue.

The pathological report states:—Section shows the presence of a papilloma which has become malignant-squamous epithelioma.

I am indebted for both the above reports to Mr. D. M. Greig, F.R.C.S.E., Conservator of the Royal College of Surgeons Museum, Edinburgh, where the sections were cut.

Q. STEWART,
Surgical Specialist.

DISEASES DUE TO A AND B AVITAMINOSIS.

The following is an account of the symptoms of A and B avitaminosis as observed in the Ante-natal Clinic during the year: supplemented by observations made previously in the maternity and female wards of the hospital and private practice.

In the majority of cases the disease is seen in poor people, although cases are seen in persons who appear comfortably well off. It may be present from the commencement, but more frequently manifests itself during the latter half of pregnancy. The earliest symptoms are various degrees of glazing of the tongue due to loss of the *filiform papillæ*, and sometimes a soreness or smarting on taking hot or spiced foods or even on eating anything, but this smarting is not always complained of.

It would appear that secondarily to this the angles of the mouth get sore and take on a white appearance as is seen in thrush, although this condition does not exist inside the mouth. The tongue is frequently tremulous and sometimes sufficiently so as to embarrass the patient when showing it for inspection.

The eyes often show some definite changes—the skin at the canthi may become glazed as if some thin varnish had been applied—they may become irritable for which the patient seeks some eyewash. The lower lid may be altered in appearance so that it seems deficient in eyelashes. Sometimes the lid is actually deficient in eyelashes and sometimes these are gummed down by discharge. The eyes may water profusely and there may be some obvious conjunctivitis, whereas in others the ocular conjunctiva may be quite insensitive and can be boldly touched with the finger without any inconvenience to the patient. The condition so far described responds readily to treatment by supplementing the diet with vitamins A and B. For this, cod liver oil and marmite were used. Marmite was given for its vitamin B value and was used because it was available in fair quantities.

The symptoms found in connexion with mucous membranes are considered to be due to A avitaminosis and it should be mentioned here that in more advanced cases the vulva may be affected as well as the anus, mouth and eyes, the skin at its junction with the vaginal mucous membrane taking on a white sodden thrush-like appearance.

The tremulous condition of the tongue is possibly the first indication of the onset of the nervous symptoms due to B avitaminosis. When it is remembered how easily beri-beri may be induced in the race under discussion, it should not be a matter of surprise if pregnancy should prove to be a factor in precipitating manifestations of nervous disease in the mother due to B avitaminosis induced by the demands of the growing fœtus.

The knee jerks may be increased, normal, diminished or absent, and it has been observed that the reactions are not always symmetrical. If the condition progresses there are added to all the above symptoms others of nervous origin. The patient may complain of a sensation of heat or " pins and needles " in the extremities, and dimness of vision. It is usual in the cases precipitated by pregnancy for these symptoms to come on after delivery, and several such cases have been seen in which the nervous symptoms after delivery have progressed so as to render walking difficult or impossible. The disease when so far developed seems refractory to all treatment, but if the diet is attended to, the symptoms eventually yield, and from three to six months treatment may be necessary before the patient is able to move about. The sight is usually the last to recover if it has been involved.

It has been suggested that this condition is specific, but in those cases in which anti-syphilitic treatment was tried: Novarsenobillon, Bismuth and Iodides were of no avail, in fact one of the patients got worse. In the two cases quoted at the end of this note it will be seen that the man had a negative Wassermann reaction on two occasions, and the woman had no Spironema Pallida in the placenta. Some of the cases seen before the disease was associated with a food deficiency were lost sight of in the course of a long and unsatisfactory treatment. It must not be thought that this avitaminosis is solely associated with pregnancy, for it is not so, nor must it be thought that the condition is confined to the female sex, for it is found in both sexes; furthermore, school children are frequently sufferers from the effects of this condition, and I have often been consulted by parents on account of the failure of vision of their children whose general condition usually indicated the true nature of the trouble.

It is interesting to note in this connexion that in a report on medical inspection of school children, published in the Annual Medical and Sanitary Report for 1925, Dr. M. G. Blacklock says, under the heading " Tonsils and Adenoids " :

> " *Tongue.*—Many of the children have 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. The 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."

If this condition is the first stage of the disease now being described, it is not surprising that no evidence of illness was noticeable, because the 1,000 children examined were all under twelve years of age, and it would appear from observations made that it is the older children who show the more definite signs of illness calling for treatment.

In the same report under the same heading Dr. M. G. Blacklock notes that " the diet of many of the children is deficient in fat soluble vitamins "—" It is hoped to make suggestions with regard to diet later."

A further note of interest is that a medical officer in the Protectorate informed me he was called upon to examine a number of girls from a school and found them all with defective vision which he was unable to treat. When I mentioned the question of diet in relation to defective vision he at once volunteered the information that the school to which the girls belonged was notorious for its bad diet.

These children steadily improve when their diet is corrected. Out of 107 pregnant women examined for symptoms of A and B avitaminosis, 32 were negative: 22 showed a glazed condition of the tongue alone: 19 had a tremulous tongue alone: 15 showed both conditions: 19 showed the following condition on two different dates as set out in the table:—

TONGUE

Case	Date.	Normal.	Glazed.	Tremulous.	Remarks.
1	August 30			yes	
	October 10		yes	yes	
2	September 13	yes			
	November 11		yes	yes	
3	September 13	yes			
	October 4		yes		
4	September 13		yes		
	December 13		yes		
5	September 13		yes	yes	
	November 13		yes	yes	Eyes affected
6	September 27			yes	
	November		yes	yes	
7	September 27			yes	
	November		yes	yes	
8	September 27			yes	
	December 20		yes	yes	Knee jerks
9	September 27		yes		
	December 12		yes		Knee jerks
10	September 13		yes		
	October 25		yes	yes	
11	October 11			yes	
	December 20		yes	yes	Mouth affected
12	October 18			yes	
	November 15		yes	yes	
13	October 18	yes			
	November 22		yes		
14	October 25		yes		Mouth and eyes affected
	November 15		yes	yes	
15	October 25	yes			
	November 15		yes		
16	October 25		yes		
	December 20		yes	yes	
17	November 1	yes			
	December 20		yes		
18	November 8	yes			
	November 22		yes		
19	November 8		yes		
	November 29		yes	yes	

From an analysis of the 107 case just mentioned, it will be seen that there is no fixed order for the manifestation of symptoms of vitamin A and B deficiency, although the tendency is for the former to appear first. It would seem that there may be some relation, not at present understood, between these two vitamins in producing this condition which, if not treated, ends in a multiple neuritis.

The following note is of a typical case in a male adult following the occupation of a typist aged 37 years.

He was first seen on 28th November, 1927, complaining of pain in the chest since April, giving a sensation of excessive heat in the back. Same sensation in the left left hand and both fee. Two Wassermann reactions were negative in August and he himself wants an X-ray of his chest as he feels sure there must be some gross lesion of his spine. On examination he appeared well nourished, his tongue was glazed all over and the angles of his mouth were sore and showed a white soddened thrush-like appearance which had been deliberately camouflaged with soot for cosmetic effect. He stated that the tongue symptoms were present before the onset of the chest symptoms and that the eyes had been giving trouble for a month with failure of vision and an altered condition of the lower eyelids, which gave him the impression that the lower eyelashes were deficient, although on close inspection some could be seen to be present. The skin at the canthi had a varnished appearance and the scrotum was in an irritative condition. The left knee jerk was much exaggerated and the right normal. Wrist jerks normal.

A diagnosis of A and B avitaminosis was made and he was given cod liver oil and marmite, but no drug or local treatment to mouth and eyes. He steadily improved, the appearance of the eyes and mouth first, then the vision and other nervous symptoms, so that after three months treatment the eyes appear normal the angles of the mouth are quite healed, the tongue has lost all its gloss, vision is nearly normal and sensations of heat are now quite tolerable. He also finds the scrotum practically well. Knee jerks so variable that no result is recorded.

The following note is of a case of this disease seen in a multigravida in 1924, at which date it was not definitely recognized as a deficiency disease although the symptoms leading up to it were known. Patient was a 2 para, both children living and was in her third pregnancy. She gave the following history:—

At the fifth month of pregnancy lips and tongue sore.
At the seventh month fingers numb for which she used to dip them in hot water.
At the eighth month the right foot was painful.

Admitted to Maternity Ward, 28th October, 1924, and gave birth normally but the baby died for no apparent reason on the third day. The day the baby died the mother insisted on leaving hospital. The mother's blood was negative for malarial parasites and so was the baby's. The placenta was negative for both Spironema Pallida and malarial parasites.

On the 10th day of the puerperium I was called to see the patient at her home when it was found that she had fallen from her bed and was unable to get up again. It was on this occasion that she first noticed that her vision was failing.

She did not have any definite dietetic treatment; two months after falling out of bed was able to walk with stick. Her condition was as follows:—Fairly well nourished: knee jerks absent; no Rombergism or Argyll-Robertson pupils. Unable to see sufficiently to read or sew. Five months later she was able to walk with the aid of a stick out of doors, and after a further five months, that is just a year after delivery, she felt her legs strong. Her sight had been slowly improving so that early in 1926, about fifteen months after delivery, she could see to read. In October, 1927, she presented herself for examination for her fourth pregnancy and was placed on a diet supplemented by cod liver oil and marmite. Ostelin tablets and calcium lactate were given when the vomiting of pregnancy was a little troublesome. At the 30th week all was going well and vision was practically normal when tested with Snellens type.

It may be asked how did this patient get well without any treatment. I think the answer is, that finding herself so ill, the natural diet called for, both instinctively and under advice, affected the cure. This was possible in the above mentioned case because the patient was in moderate circumstances. Had she been of very poor class the end result might have been quite different.

Henry Harold Scott 1918 in item 3 of the discussion at the end of his paper on " An Investigation into an Acute Outbreak of ' Central Neuritis ' describes ' the so-called Peripheral Neuritis of Jamaica,' and it would appear that this disease bears some resemblance to the deficiency disease here described.

In conclusion, I would draw attention to the report on congenital rickets published in the Annual Medical and Sanitary Report for 1926, in which the vitamin A, vitamin D and calcium deficiency of the maternal diet were pointed out, and suggested in view of the B deficiency that some preparation containing these vitamins, together with calcium, be used freely in the ante-natal clinics in Freetown. If the school children be taught the rudiments of dietetics, are shown in a practical way the value of scientific dieting in relation to health—as suggested by Dr. M. G. Blacklock in her report already referred to—the way will be prepared for the members of the future generation to live healthily without having their diets supplemented at clinics.

Blacklock (M. G.)—Annual Medical and Sanitary Report, 1925, p. 62.

Scott (H. H.)—Annals of Tropical Medicine and Parasitology, October 31, 1918, p. 179.

Wright (E. J.)—Annual Medical and Sanitary Report, 1926, p. 53.

E. J. WRIGHT,
Medical Officer.

Tables.

I—STAFF.

Medical Staff.

Office.	Name.	Absent on Leave. From	Absent on Leave. To	Remarks.
Director of Medical and Sanitary Service ...	W. J. D. Inness ...	11 5 27	—	Did not return to this Colony. Transferred to Gold Coast.
Director of Medical and Sanitary Service ...	J. C. S. McDonall ...	6 7 27	4 11 27	
Surgical Specialist ...	Q. Stewart ...	—	—	
Senior Medical Officer	J. Y. Wood	1 1 27	8 4 27	
„ „ ...	D. T. Birt	—	—	Appointed S. M. O. 25-3-27.
Medical Officer ...	M. Jackson	31 8 27	—	Died in England 5-12-27.
„	J. D. Dimock ...	5 1 27	1 7 27	
„	E. S. Walls	7 12 27	31 12 27	
„	J. W. Hartley ...	20 7 27	31 12 27	
„	W. A. A. Malone ...	1 1 27	19 8 27	
„	C. B. Jennings ...	1 1 27	11 2 27	
„	R. F. Campbell ...	1 1 27	28 1 27	
„	A. W. Lewis ...	—	—	
„	G. L. Alexander ...	—	—	
„	H. J. Bermingham ...	—	—	
Lady Medical Officer	Mrs. M. G. Blacklock	—	—	
African Medical Officer	E. J. Wright ...	—	—	
„	M. C. F. Easmon ...	—	—	
„	E. H. Cummings ...	—	—	
„	G. N. Metzger ...	—	—	
„	E. A. Renner ...	—	—	
„	W. B. E. Hughes ...	1 3 27	10 6 27	
„	J. A. Williams ...	—	—	
„	W. F. O. Taylor ...	1 5 27	31 7 27	

Sanitary Staff.

Office.	Name.	Absent on Leave. From	Absent on Leave. To	Remarks.
Deputy Director of Sanitary Service ...	H. O'Hara May ...	—	—	Left Sierra Leone on transfer to Gold Coast
„	Major W. H. Peacock	2 2 27	25 9 27	
Senior Sanitary Officer	J. M. Mackay ...	9 11 27	31 12 27	
Medical Officer of Health	F. V. Hill ...	—	—	
Superintendent Sanitary Inspector ...	D. S. Bowen ...	1 1 27	—	Retired.
„	G. V. Herd ...	11 5 27	31 12 27	
„	P. Osment ...	—	—	
„	A. E. Wilkinson ...	—	—	

Nursing Staff.

Senior Nursing Sister	Miss C. Littlewood	5 1 27	7 5 27	
„ „ ...	Miss A. E. MacMaster	2 11 27	31 12 27	
Nursing Sister ...	Miss C. B. H. Goodwin	5 1 27	6 5 27	
„	Miss M. A. Henry ...	11 5 27	26 8 27	
„	Miss L. D. S. McPetrie	6 7 27	4 11 27	
„	Miss N. M. Browne	—	—	

African Medical Subordinate Staff.

Office.	Name.	Absent on Leave						Remarks.
		From			To			
Chief Dispenser ...	D. T. Betts ...	19	11	27	31	12	27	
Assistant Chief Dispenser	I. H. Wright ...		—			—		
First Class Dispenser	O. E. Nylander ...		—			—		
,, ,,	H. E. Frazer ...		—			—		
,, ,,	P. J. John		—			—		
,, ,,	M. O. Frazer ...	1	12	27	31	1	28	
,, ,,	M. P. Neville ...		—			—		
,, ,,	P. Q. A. John ...		—			—		
,, ,,	I. B. Doherty ...		—			—		
,, ,,	T. M. Scott	13	9	27	12	11	27	
,, ,,	J. C. May	15	2	27	14	4	27	
,, ,,	S. B. Williams ...	26	3	27	25	5	27	
Second Class Dispensers	Ten		—			—		
Third Class Dispensers	Twelve		—			—		
Laboratory Assistant ...	J. T. Roberts ...		—			—		
do.	E. J. Cole		—			—		
Male Nurses and Apprentices ...	Twenty-five		—			—		
Female Nurses and Probationers ...	Twenty-two		—			—		

African Sanitary Subordinate Staff.

Health Visitors ...	Miss C. Crawford and two others ...		—			—		
Public Vaccinator, Freetown ...	S. H. Browne ..		—			—		
Fourth Grade Sanitary Inspector ...	E. A. Nicholson ...		—			—		
Fourth Grade Sanitary Inspector ...	C. E. King ...		—			—		
Fifth Grade Sanitary Inspectors and Learners ...	Twenty-seven		—			—		

Clerical Staff.

First Grade Clerk ...	S. G. Randall ...		—			—		Chief Clerk
Second Grade Clerk ...	M. St. George Auber		—			—		
Senior Third Grade Clerk	Six		—			—		
Junior Third Grade Clerk	Eight		—			—		

Store-Keeping Staff.

Chief Store-keeper ...	K. A. King ...		—			—		
Assistant Store-keeper	E. J. Beale ...		—			—		
,, ,,	D. G. Kawaley ...		—			—		

II—FINANCE.

1927 Estimates.—Expenditure.

Medical.

Personal Emoluments :

European	£15,870
African	18,850
Allowances, etc.	1,600
Total	£36,320

Other Charges :

Medical supplies and hospital equipment	£8,300
Diets, provisions, etc.	6,000
Contributions to various associations and subsidies to Institutions	2,050
Passages, transport, freight, etc.	4,520
Other items	1,626
Total	£22,496

Sanitary.

Personal Emoluments :

European	£5,077
African	3,775
Labour	9,000
Total	£17,852

Other Charges :

Refuse disposal	£1,550
Preventive measures	1,700
Apparatus, etc.	750
Transport	1,200
Other items	320
Total	£5,520

Receipts.

African hospital fees	£136
European hospital fees	574
Lunatic hospital fees	151
Sale of medicines	361
Total	£1,222

IV—METEOROLOGICAL RETURNS.

FREETOWN (TOWER HILL).

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

MONTH.	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	RAINFALL.		WINDS.	
							Amount in inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	88	72	16	80	...	63·5	...	...
February	...	...	89	74	15	81·5	...	70·5	...	...
March	...	...	89	75	14	82	·22	72·5	...	...
April	...	...	88	75	13	81·5	6.90	76	...	...
May	...	...	89	74	15	81·5	9·52	77·5	...	..
June	...	...	87	72	15	79·5	20·46	80·5	...	...
July	...	...	84	72	12	77·5	34·16	85·0	...	...
August	...	...	83	72	11	77·5	22·02	83·5	...	...
September	...	...	84	72	12	78	24·50	84	...	...
October	...	...	87	72	15	79·5	12·63	83	...	...
November	...	...	87	73	14	80	4·48	80·5	...	...
December	...	...	89	75	14	82	·23	74·0	...	...
The Year ...	...	...	87	73	13·0	80·04	135·12	76·5	...	...

Batkanu.

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

Month.	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Rainfall.		Winds.	
							Amount in inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	95	63	32	79	...	57	...	...
February	...	...	99	69	30	84	...	53	...	...
March	...	...	100	71	29	85·5	·31	43	...	...
April	...	...	97	72	25	84·5	·094	65	...	...
May	...	...	93	71	22	82	8·34	75	...	...
June	...	...	89	69	20	79	19·50	71	...	...
July	...	...	87	71	16	79	12·43	83	...	...
August	...	...	84	72	12	78	15·31	86	...	...
September	...	...	90	70	20	80	18·00	85	...	...
October	...	...	93	72	21	82·5	19·30	82	...	...
November	...	...	96	73	23	84·5	1·68	80	...	...
December	...	...	96	70	26	83	...	72	...	...
The Year ...	...	...	93·2	70·2	23	81·75	92·381	71	...	...

Bonthe (Sherbro).

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

Month.	Solar, Maximum.	Minimum on Grass.	Shade, Maximum.	Shade, Minimum.	Range.	Mean.	Rainfall.		Winds.	
							Amount in inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	90	72	18	81	...	80·5	...	...
February	...	...	91	71	20	81	0·80	78·5	...	...
March	...	...	91	72	19	81·5	1·56	78	...	...
April	...	...	91	71	20	81	8·50	80	...	...
May	...	...	91	71	20	81	12·58	78	...	...
June	...	...	89	71	18	80	34·17	80·5	...	...
July	...	...	87	70	17	78·5	42·66	83	...	...
August	...	...	87	71	16	79	15·52	81·5	...	...
September	...	...	86	70	16	78	24·94	86·5	...	...
October	...	...	87	71	16	79	17·29	80	...	...
November	...	...	90·5	73·3	17·2	81·9	7·70	79·5	...	...
December	...	...	91	73	18	82	·74	79	...	...
The Year ...	...	...	89·3	71·4	18·0	80·3	166·46	80	...	...

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

Month.	Solar, Maximum.	Minimum on Grass.	Shade, Maximum.	Shade, Minimum.	Range.	Mean.	Rainfall.		Winds.	
							Amount in inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	91	64	27	77·5	·27	66·5	...	...
February	...	...	91	73	18	82	·42	75	...	...
March	...	...	95	72	23	83·5	4·74	63	...	...
April	...	...	93	71	22	82	3·34	70·5	...	...
May	...	...	92	65	27	78·5	9·06	80·5	...	...
June	...	...	89	69	20	79	19·51	84	...	...
July	...	...	87	70	17	78·5	18·89	89	...	...
August	...	...	83·3	70	13·3	76·6	12·93	88·5	...	...
September	...	...	90·3	69	21·3	79·6	13·75	87·5	...	...
October	...	...	89·5	70	19·5	79·7	12·34	86·5	...	...
November	...	...	91	70	21	80·5	4·75	89·5	...	...
December	...	...	91	70	21	80·5	1·43	90·5	...	...
The Year ...	...	...	90·3	69	20·8	79·8	101·43	81	...	...

KABALA.

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

Month.	Solar, Maximum.	Minimum on Grass.	Shade, Maximum.	Shade, Minimum.	Range.	Mean.	Rainfall.		Winds.	
							Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	89	56	33	72·5	...	69	...	...
February	...	...	94	60	34	77	·11	62	...	...
March	...	...	97	66	31	81·5	·78	69	...	...
April	...	...	92	69	23	80·5	4·48	79·5	...	...
May	...	...	89	69	20	79	10·73	83	...	...
June	...	...	85	67	18	76	14·33	85·5	...	...
July	...	...	83	69	14	76	9·05	89·5	...	. .
August	...	...	82	68	14	75	8·05	91	...	...
September	...	...	83	67	16	75	20·93	92·5	...	...
October	...	...	84	66	18	75	20·06	88·5	...	...
November	...	...	86	66	20	76	1·05	85·5	...	...
December	...	...	88	59	29	73·5	·33	78·5	...	...
The Year ...	...	...	88	65	22·6	76·4	89·90	81·5	...	...

Pujehun.

Latitude 7° 20′ N. Longitude 11° 43′ W.

Month.	Solar, Maximum.	Minimum on Grass.	Shade, Maximum.	Shade, Minimum.	Range.	Mean.	Rainfall.		Winds.	
							Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.
January	...	...	91	68	23	79·5	...	92·5	...	...
February	...	...	88	73	15	80·5	2·50	91·5	...	...
March	...	...	96	71	25	83·5	3·40	89·5	...	...
April	...	...	95	73	22	84	4·55	89·5	...	...
May	...	...	94	72	22	83	11·70	91·5	...	...
June	...	...	90	73	17	81·5	22·20	71·5	...	...
July	...	...	87	72	15	79·5	35·60	76	...	...
August	...	...	86	72	14	79	23·10	92	...	...
September	...	...	86	72	14	79	9·50	92	...	...
October	...	...	89	72	17	80·5	16·10	91·5	...	...
November	...	...	86	73	13	79·5	9·50	91	...	...
December	...	...	92	71	21	81·5	1·60	91·5	...	...
The Year ...	...	...	90	71	18	80·9	139·75	88·5	...	...

V—RETURN OF DISEASES AND DEATHS.—EUROPEAN.

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	‡Remaining in Hospital at end of 1926.	Total Admission.	†Total Cases treated	Deaths.	§Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
I—Epidemic, Endemic, and Infectious Diseases							
Enteric Group :							
(*a*) Typhoid fever ...							
(*b*) Paratyphoid A. ...							
(*c*) Paratyphoid B. ...	...	1	1	1	...	...	
(*d*) Type not defined ...							
Typhus							
Relapsing fever ...							
Undulent fever ...							
Malaria :							
(*a*) Tertian ...	...	1	1	...	...	...	
(*b*) Quartan ...	...	...	...	...	...	2	
(*c*) Aestivo-autumnal ...	...	43	43	1	...	105	
(*d*) Cachexia ...	...	2	2	...	...	...	
(*e*) Blackwater ...	...	3	3	2	...	2	
Smallpox :							
Alastrim							
Measles							
Scarlet fever							
Whooping cough ...							
Diphtheria							
Influenza	...	2	2	...	...	2	
Miliary fever							
Mumps							
Cholera							
Epidemic diarrhœa ...							
Dysentery :							
(*a*) Amœbic ...	...	2	2	...	...	2	
(*b*) Bacillary ...							
(*c*) Undefined or due to other causes ...	...	5	5	...	...	3	
Plague :							
(*a*) Bubonic ...							
(*b*) Pneumonic ...							
(*c*) Septicæmic ...							
(*d*) Undefined ...							
Yellow fever							
Spirochætosis ictero-hæmorrhagica							
Leprosy							
Erysipelas							
Acute poliomyelitis ...							
Carried forward ...	...	59	59	4	...	116	

The form shows in the main the arrangement of diseases in the International Nomenclature, 1921 Edition. To save space the unimportant diseases of any class can be grouped in their places as "Other Diseases" of the class.

* i.e. the month previous to that for which the Return is made.

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

‡"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 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ..	...	59	59	4	...	116	
I—EPIDEMIC, ENDEMIC, AND INFECTIOUS DISEASES—*continued.*							
Encephalitis lethargica ...							
Epidemic cerebro-spinal fever							
Other Epidemic Diseases :							
(*a*) Rubeola (German measles)							
(*b*) Varicella (chicken-pox)	...	1	1	...	...	...	
(*c*) Kala-azar ...							
(*d*) Phlebotomus fever							
(*e*) Dengue							
(*f*) Epidemic dropsy ...							
(*g*) Yaws							
(*h*) Trypanosomiasis ...							
Glanders							
Anthrax							
Rabies							
Tetanus							
Mycosis							
Tuberculosis, pulmonary and laryngeal	1	2	3	...	...	...	
Tuberculosis of the meninges or central nervous system							
Tuberculosis of the intestines or peritoneum							
Tuberculosis of the vertebral column							
Tuberculosis of bones and joints							
Tuberculosis of other Organs :							
(*a*) Skin or subcutaneous tissue (Lupus) ...							
(*b*) Bones							
(*c*) Lymphatic system							
(*d*) Genito-urinary ...							
(*e*) Other organs ...							
Tuberculosis, Disseminated :							
(*a*) Acute							
(*b*) Chronic							
Carried forward ...	1	62	63	4	...	116	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	62	63	4	...	116	
I—EPIDEMIC, ENDEMIC, AND INFECTIOUS DISEASES—*continued.*							
Syphilis :							
(*a*) Primary ...	...	...	...	...	...	2	
(*b*) Secondary ...							
(*c*) Tertiary ...							
(*d*) Hereditary ...							
(*e*) Period not indicated							
Soft chancre	...	1	1	...	...	4	
A.—Gonorrhœa and its complications	...	1	1	...	...	4	
B.—Gonorrhœal opthalmia							
C.—Gonorraœl arthritis ...							
D.—Granuloma venereum ...							
Septicæmia							
Other infectious diseases ...							
II—GENERAL DISEASES NOT MENTIONED ABOVE.							
Cancer or other malignant tumours of the buccal cavity							
Cancer or other malignant tumours of the stomach or liver							
Cancer or other malignant tumours of the pertoneum intestines, rectum ...							
Cancer or other malignant tumours of the female genital organs							
Cancer or other malignant tumours of the breast ...							
Cancer or other malignant tumours of the skin ...	...	1	1	...	...	...	
Cancer or other malignant tumours of organs not specified							
Tumours, non-malignant ...							
Acute rheumatism ...	...	1	1	...	...	1	
Chronic rheumatism ...	...	...	...	...	...	5	
Scurvy (including Barlow's disease)							
Pellagra							
Beri-beri							
Rickets							
Diabetes (not including insipidus)							
Carried forward ...	1	66	67	4	...	132	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	66	67	4	...	132	
II—GENERAL DISEASES NOT MENTIONED ABOVE, *continued.*							
Anæmia :							
(*a*) Pernicious ...							
(*b*) Other anæmias and chlorosis ...	...	1	1	...	...	37	
Diseases of the pituitary body							
Diseases of the Thyroid Gland :							
(*a*) Exophthalmic goitre							
(*b*) Other diseases of the thyroid gland, myxœdema ...							
Diseases of the parathyroid glands							
Diseases of the thymus ...							
Diseases of super-renal glands							
Diseases of the spleen ...	...	1	1	...	...	..	
Leukæmia :							
(*a*) Leukæmia ...							
(*b*) Hodgkin's disease							
Alcoholism							
Chronic poisoning by mineral substances (lead, mercury, etc.,) ...							
Chronic poisoning by organic substances (morphia, cocaine, etc.) ...							
Other General Diseases :							
Auto-intoxication ...							
Purpura hæmorrhagica							
Hæmophilia							
Diabetes insipidus ...							
Other general disease	...	...	...	...	...	5	
III—AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.							
Encephalitis (not including encephalitis lethargica)							
Meningitis (not including tuberculosis meningitis or cerebro-spinal meningitis)							
Carried forward ...	1	68	69	4	...	174	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	68	69	4	...	174	
III—AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES, *continued.*							
Locomotorataxia ...							
Other affections of the spinal cord							
Apoplexy :							
(*a*) Hæmorrhage ...							
(*b*) Embolism ...							
(*c*) Thrombosis ...							
Paralysis :							
(*a*) Hemiplegia ...	...	1	1	...	...	...	
(*b*) Other paralysis ...							
General paralysis of the insane							
Other forms of mental alienation	...	...	...	...	...	8	
Epilepsy							
Eclampsia, convulsions (non-puerperal) 5 years ...							
or over							
Infantile convulsions ...							
Chorea							
A.—Hysteria							
B.—Neuritis	...	4	4	...	...	4	
C.—Neurasthenia ...	...	...	...	...	...	3	
Cerebral softening ...							
Other affections of the nervous system, such as paralysis agitans ...	...	...	...	...	...	3	
Affections of the Organs of Vision :							
(*a*) Diseases of the eye							
(*b*) Conjunctivitis ...	...	...	...	...	...	2	
(*c*) Trachoma ...							
(*d*) Tumours of the eye							
(*e*) Other affections of the eye	...	...	...	...	...	2	
Affections of the ear or mastoid sinus ...	...	...	...	...	...	11	
Carried forward ...	1	73	74	4	...	207	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances
Brought forward ...	1	73	74	4	...	207	
IV—AFFECTIONS OF THE CIRCULATORY SYSTEM.							
Pericarditis							
Acute endorcarditis, or myocarditis							
Angina pectoris							
Other Diseases of the Heart	...	3	3	...	...	...	
(*a*) Valvular :							
Mitral							
Aortic							
Tricuspid							
Pulmonary							
(*b*) Myocarditis ...							
Diseases of the Arteries							
(*a*) Aneurism							
(*b*) Arterio-sclerosis ...							
(*c*) Other diseases ...							
Embolism or thrombosis (non-cerebral) ...							
Diseases of the Veins :							
Hæmorrhoids	...	2	2	...	...	5	
Varicose veins							
Phlebitis							
Diseases of the Lymphatic System.							
Lymphangitis							
Lymphadenitis, bubo (non-specific)	...	...	...	...	...	2	
Hæmorrhage of undetermined cause							
Other affections of the circulatory system ...							
V—AFFECTIONS OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Passages							
Adenoids							
Polypus							
Rhinitis							
Coryza	...	...	...	...	...	18	
Affection of the Larynx :							
Laryngitis	...	...	...	...	...	3	
Carried forward ...	1	78	79	4	...	235	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	78	79	4	...	235	
V—AFFECTIONS OF THE RESPIRATORY SYSTEM, *continued.*							
Bronchitis :							
(*a*) Acute	...	...	...	...	...	34	
(*b*) Chronic	...	2	2	...	...	3	
Broncho-pneumonia ...	...	1	1	...	...	1	
Pneumonia :							
(*a*) Lobar							
(*b*) Unclassified ...	...	1	1	1	..	...	
Pleurisy, empyema ...	...	1	1	...	...	...	
Congestion of the lungs ..							
Gangrene of the lungs ...							
Asthma	...	1	1	...	...	1	
Pulmonary emphysema ...							
Other affections of the lungs	...	1	1	...	...	2	
Pulmonary spirochætosis ...							
VI—DISEASES OF THE DIGESTIVE SYSTEM.							
A.—Diseases of the Teeth or Gums.							
Caries, pyorrhœa, etc.	...	...	...	...	...	3	
B.—Other Affections of the Mouth.							
Stomatitis							
Glossitis, etc. ...							
Affections of the Pharynx or Tonsils.							
Tonsillitis	...	2	2	...	...	14	
Pharyngitis	...	..	...	...	...	6	
Affections of the Aesophagus							
A.—Ulcer of the Stomach	...	...	...	...	...	1	
B.—Ulcer of the duodeum	....	1	1	...	...	...	
Other Affections of the Stomach.							
Gastritis	..	3	3	...	...	18	
Dyspepsia, etc. ...	...	1	1	...	1	29	
Diarrhœa and Enteritis.							
Under two years ...							
Two years and over ...	...	1	1	...	...	25	
Colitis	...	2	2	...	1	1	
Ulceration							
Sprue							
Ankylostomiasis							
Carried forward ...	1	95	96	5	2	373	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	95	96	5	2	373	
VI—DISEASES OF THE DIGESTIVE SYSTEM—*contd.*							
Diseases due to intestinal Parasites.							
(*a*) Cestoda (tænia) ...							
(*b*) Trematoda (flukes) ...							
(*c*) Nematoda (other than Ankylostoma)—							
Ascaris	...	1	1	...	...	...	
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Strongylus ...							
Oxyuris							
(*d*) Coccidia							
(*e*) Other parasites ...							
(*f*) Unclassified ...							
Appendicitis	...	3	3	...	...	...	
Hernia							
A.—Affections of the Anus fistula, etc.	...	2	2	...	1	...	
B.—Other Affections of the Intestines— ...							
Enteroptosis ...							
Constipation ...	...	...	...	...	...	34	
Acute yellow atrophy of the liver							
Hydatid of the liver ...							
Cirrhosis of the liver—							
(*a*) Alcoholic							
(*b*) Other forms ...							
Biliary calculus							
Other Affections of the liver :	...	3	3	...	...	1	
Abscess							
Hepatitis	...	1	1	...	...	12	
Cholecystitis							
Jaundice	...	1	1	1	...	...	
Diseases of the pancreas ...							
Peritonitis (of unknown cause)							
Other Affections of the digestive system	...	1	1	...	...	5	
Carried forward ...	1	107	108	6	3	425	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	107	108	6	3	425	
VII—DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).							
Acute nephritis	...	1	1	...	...	...	
Chronic	...	1	1	...	...	...	
A.—Chyluria							
B.—Schistosomiasis ...							
Other affections of the Kidneys	...	2	2	...	...	..	
Pyelitis, etc. ...							
Urinary calculus							
Diseases of the Bladder— Cystitis	...	...	...	...	...	5	
Diseases of the Urethra— (*a*) Stricture ...							
(*b*) Other	...	1	1	...	...	7	
Diseases of the Prostate— Hypertrophy ...							
Prostatitis							
Diseases (non-venereal) of the Genital Organs of man							
Epididymitis ...							
Orchitis	...	2	2	...	...	1	
Hydrocele							
Ulcer of penis ...							
Cysts or other non-malignant tumours of the ovaries							
Salpingitis :							
Abscess of the pelvis ...							
Uterine tumours (non-malignant)							
Uterine hæmorrhage (non-puerperal)							
A.—Metritis							
B.—Other Affections of the Female Genital Organs—							
Displacements of uterus							
Amenorrhœa							
Dysmenorrhœa ...							
Leucorrhœa							
Diseases of the Breast (non-puerperal.)							
Mastitis							
Abscess of breast ...							
Carried forward ...	1	114	115	6	3	438	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	114	115	6	3	438	
VIII—PUERPERAL STATE.	...	...	...	...	...	...	
A.—Normal labour ...							
B.—Accidents of Pregnancy—							
(*a*) Abortion ..							
(*b*) Ectopic gestation ...							
(*c*) Other accidents of pregnancy ...							
Puerperal hæmorrhage ...							
Other accidents of parturition							
Puerperal septicæmia ...							
Phlegmasia dolens ...							
Puerperal eclampsia ...							
Sequeæ of labour ...							
Puerperal affections of the breast							
IX—AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.							
Gangrene							
Boil	...	4	4	...	...	6	
Carbuncle	...	1	1	...	...	...	
Abscess—	...	3	3	...	...	1	
Whitlow	...	...	...	...	...	1	
Cellulitis	...	...	...	...	...	5	
A.—Tinea	...	...	...	...	...	8	
B.—Scabies	...	1	1	...	...	2	
Other Diseases of the Skin :—	...	2	2	...	...	3	
(*a*) Erythema ...	...	1	1	...	...	3	
(*b*) Urticaria ...	...	1	1	...	...	2	
(*c*) Eczema ...	...	1	1	...	...	7	
(*d*) Herpes ...							
(*e*) Psoriasis ...							
(*f*) Elephantiasis ...							
(*g*) Myiasis ...	...	...	...	...	...	1	
(*h*) Chigoes ...							
(*i*) Cutaneous Leishmaniasis							
(*j*) Ulcer	...	...	...	...	...	1	
X—DISEASES OF BONES AND ORGANS OF LOCOMOTION (OTHER THAN TUBERCULOUS.)							
Diseases of Bones—							
Osteitis							
Carried forward ...	1	128	129	6	3	478	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	128	129	6	3	478	
X—DISEASES OF BONES AND ORGANS OF LOCOMOTION (OTHER THAN TUBERCULOUS).—*contd.*							
Diseases of Joints—							
Arthritis	...	...	..	...	...	4	
Synovitis	...	2	2	...	...	1	
Other diseases of bones or organs of locomotion ...	...	...	...	...	...	3	
XI—MALFORMATIONS.							
Malformations—							
Hydrocephalus ...							
Hypospadias ...							
Spina bifida, etc. ...							
XII—DISEASES OF INFANCY.							
Congenita debility ...							
Premature birth ...							
Other affections of infancy							
Infant neglect (infants of three months or over ...							
XIII—AFFECTIONS OF OLD AGE.							
Senility—							
Senil dementia ...							
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.							
Suicide by poisoning ...							
Corrosive poisoning (intentional)							
Suicide by gas poisoning							
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES—*contd.*							
Suicide by hanging or strangulation							
Suicide by drowning ...							
Suicide by firearms ...							
Suicide by cutting or stabbing instruments ...							
Suicide by jumping from a height							
Suicide by crushing ...							
Other suicides							
Carried forward ...	1	130	131	6	3	486	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	130	131	6	3	486	
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES—*contd.*							
Food poisoning :—							
Botulism	...	...	...	...	...	1	
Attacks of poisonous Animals :							
Snake bite							
Insect bite	...	...	...	...	...	2	
Other accidental poisonings							
Burns (by fire)	...	...	...	...	...	2	
Burns (other than by fire)							
Suffocation (accidental) ...							
Poisoning by gas (accidental)							
Drowning (accidental) ...							
Wounds (by firearms, war excepted)							
Wounds (by cutting or stabbing instruments) ...	...	...	...	...	...	1	
Wounds (by fall) ...	...	...	...	...	..	15	
Wounds (in mines or quarries)							
Wounds (by machinery)							
Wounds (crushing, e.g. railway accidents, etc.) ...							
Injuries inflicted by animals, bites, kicks, etc. ...	...	...	...	...	...	1	
Wounds inflicted on active service	...	1	1	...	...	...	
Executions of civilians by belligerents							
A.—Over fatigue ...							
B.—Hunger or thirst ...							
Exposure to cold, frost btte, etc.							
Exposure to Heat :							
Heat stroke							
Sunstroke	...	1	1	...	...	1	
Lightning stroke ...							
Electric shock							
Murder by firearms ...							
Murder by cutting or stabbing instruments ...							
Murder by other means ...							
Infanticide (murder of an infant under one year)							
Carried forward ...	1	132	133	6	3	509	

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	1	132	133	6	3	509	
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES—*contd.*							
A.—Dislocation	...	3	3	...	...	2	
B.—Sprain	...	...	..	...	...	5	
C.—Fracture	...	1	1	...	...	...	
Other external injuries ...	...	3	3	...	...	30	
Deaths by violence of unknown cause							
XV—ILL-DEFINED DISEASES.							
Sudden death (cause unknown)							
A.—Diseases not already specified or ill-defined:							
Ascites							
Œdema	...	...	...	...	...	1	
Asthenia	...	4	4	...	...	6	
Shock							
Hyper-pyrexia ...							
B.—Malingering ...							
No appreciable disease ...	...	1	1	...	...	...	
P.U.O	...	3	3	...	...	2	
Insomnia	...	1	1	...	...	...	
N.Y.D.	...	3	3	...	...	13	
Total	1	151	152	6	3	568	

RETURN OF DISEASES AND DEATHS—AFRICAN.

Diseases	*IN-PATIENTS.					OUT-PATIENTS.	
	‡Remaining in Hospital at end of 1926.	Total Admission.	†Total Cases treated	Deaths.	§Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
I—Epidemic, Endemic and Infectious Diseases							
Enteric Group :							
(*a*) Typhoid fever ...							
(*b*) Paratyphoid A. ...							
(*c*) Paratyphoid B. ...							
(*d*) Type not defined ...							
Typhus							
Relapsing fever ...							
Undulant fever ...							
Malaria :							
(*a*) Tertian	...	40	40	1	...	277	
(*b*) Quartan	...	2	2	...	...	...	
(*c*) Aestivo-autumnal ...	...	191	191	1	1	4,210	
(*d*) Cachexia	...	...	...	...	...	95	
(*e*) Blackwater ...	...	1	1	4	...	3	
(*f*) Type not determined	2	...	2	...	...	46	
Smallpox :—	...	16	16	1	...	...	
Alastrim							
Measles	...	...	...	...	...	12	
Scarlet fever							
Whooping cough ...	...	...	...	...	...	92	
Diphtheria							
Influenza	...	1	1	...	...	16	
Miliary fever							
Mumps	...	...	...	...	...	10	
Cholera							
Epidemic diarrhœa ...							
Dysentery :							
(*a*) Amœbic	...	34	34	9	...	76	
(*b*) Bacillary							
(*c*) Undefined or due to other causes ...	1	42	43	1	...	135	
Plague :							
(*a*) Bubonic							
(*b*) Pneumonic ...							
(*c*) Septicæmic ...							
(*d*) Undefined ...							
Yellow fever							
Spirochætosis ictero-hæmorrhagica							
Leprosy	5	5	10	...	4	70	
Erysipelas	...	...	...	...	...	1	
Acute poliomyelitis ...							
Encephalitis lethargica ...							
Epidemic cerebro-spinal fever							
Carried forward ...	8	332	340	17	5	5,043	

The form shows in the main the arrangement of diseases in the International Nomenclature, 1921 Edition. To save space the unimportant diseases of any class can be grouped in their places as "Other Diseases" of the class.

* i.e. the month previous to that for which the return is made.

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

‡ The figures in this column to be carried on to the next month's Return.

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	8	332	340	17	5	5,043	
I—EPIDEMIC, ENDEMIC, AND INFECTIOUS DISEASES, *continued.*							
Other Epidemic Diseases:							
(*a*) Rubeola (German measles)							
(*b*) Varicella (chicken-pox)	...	46	46	...	1	17	
(*c*) Kala-azar ...							
(*d*) Phlebotomus fever ...							
(*e*) Dengue							
(*f*) Epidemic dropsy ...							
(*g*) Yaws	...	26	26	...	2	2,009	
(*h*) Trypanosomiasis ...	1	...	1	1	...	...	
Glanders							
Anthrax							
Rabies							
Tetanus	3	22	25	8	...	4	
Mycosis							
Tuberculosis, pulmonary and laryngeal	3	47	50	11	4	88	
Tuberculosis of the meninges or central nervous system	...	2	2	2	...	1	
Tuberculosis of the intestines or peritoneum ...							
Tuberculosis of the vertebral column							
Tuberculosis of bones and joints							
Tuberculosis of other Organs:							
(*a*) Skin or subcutaneous tissue (Lupus) ...	...	1	1	...	1	2	
(*b*) Bones	...	1	1	...	1	4	
(*c*) Lymphatic system ...	...	...	...	...	...	3	
(*d*) Genito-urinary ..							
(*e*) Other organs ...							
Tuberculosis Disseminated:							
(*a*) Acute							
(*b*) Chronic	...	...	...	...	...	1	
Syphilis:							
(*a*) Primary ...	2	8	10	...	...	552	
(*b*) Secondary ...	7	2	9	1	...	25	
(*c*) Tertiary ...	...	69	69	4	6	1,316	
(*d*) Hereditary ...	...	4	4	...	...	21	
(*e*) Period not indicated	...	...	..	...	...	108	
Carried forward ...	24	560	584	44	20	9,194	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admissions.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	24	560	584	44	20	9,194	
I—EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES, *continued.*							
Soft chancre	...	10	10	...	1	117	
A.—Gonnorrhœa and its complications	...	65	65	...	3	2,216	
B.—Gonorrhœal ophthalmia	...	15	15	...	...	21	
C.—Gonorrhœal arthritis	...	5	5	1	1	127	
D.—Granuloma venereum	...	...	...	...	...	1	
Septicæmia	...	5	5	1	...	...	
Other infectious diseases ...	...	...	...	...	...	32	
Pneumonia	6	...	6	...	...	...	
II—GENERAL DISEASES NOT MENTIONED ABOVE.							
Cancer or other malignant tumours of the buccal cavity							
Cancer or other malignant tumours of the stomach or liver							
Cancer or other malignant tumours of the peritoneum intestines, rectum	...	...	...	...	...	1	
Cancer or other malignant tumours of the female genital organs							
Cancer or other malignant tumours of the breast ...							
Cancer or other malignant tumours of the skin ...	...	17	17	...	...	...	
Cancer or other malignant tumours of organs not specified	1	1	2	...	...	7	
Tumours, non-malignant	3	...	3			74	
	...	29	29	. .	..		
Acute rheumatism ...	...	81	81	1	..	826	
Chronic rheumatism ...	...	20	20	...	8	2,807	
Scurvy (including Barlow's disease)							
Pellagra							
Beri-beri	...	3	3	1	...	...	
Rickets	...	...	...	...	...	54	
Diabetes (not including insipidus)	...	...	...	...	...	4	
Anæmina :							
(*a*) Pernicious ...	...	...	...	...	...	2	
(*b*) Other anæmias and chlorosis ...	...	34	34	1	...	908	
Carried forward ...	34	845	879	49	33	16,391	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	34	845	879	49	33	16,391	
GENERAL DISEASES NOT MENTIONED ABOVE—*contd.*							
Diseases of the pituitary body							
Diseases of the Thyroid Gland :							
(*a*) Exophthalmic goitre	...	2	2	1	...	4	
(*b*) Other diseases of the thyroid gland, myxœdema	...	...	...	...	...	171	
Diseases of the parathyroid glands							
Diseases of the thymus ..							
Diseases of the super-renal glands							
Diseases of the spleen ...	...	2	2	...	...	343	
Leukæmia :							
(*a*) Leukæmia							
(*b*) Hodgkin's disease ...							
Alcoholism							
Chronic poisoning by mineral substances (lead, mercury, etc.)							
Chronic poisoning by organic substances (morphia, cocaine, etc.) ...							
Other General Diseases ...	20	1	21	...	...	247	
Auto-intoxication ..							
Purpura hæmorrhagica							
Hæmophilia							
Diabetes insipidus ...							
III—AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.							
Encephalitis (not including encephalitis lethargica)							
Meningitis (not including tuberculous meningitis or cerebro-spinal meningitis)	...	1	1	1	...	...	
Locomotor ataxia ...	...	8	8	...	1	1	
Other affections of the spinal cord	...	...	...	...	...	243	
Neuralgia	...	...	...	...	...	35	
Apoplexy :							
(*a*) Hæmorrhage ...	...	1	1	1	...	...	
(*b*) Embolism							
(*c*) Thrombosis ...							
Carried forward ...	54	860	914	52	34	17,435	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	54	860	914	52	34	17,435	
III—AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES—*continued.*							
Paralysis :							
(*a*) Hemiplegia ...	...	25	25	3	5	74	
(*b*) Other paralysis . .	8	14	22	8	4	24	
General paralysis of the insane							
Other forms of mental alienation	4	21	25	1	9	81	
Epilepsy	1	11	12	...	...	31	
Eclampsia, convulsions, (non-puerperal) 5 years or over	...	...	...	...	...	1	
Infantile convulsions ...	...	8	8	2	...	3	
Chorea	...	...	...	...	...	1	
A.—Hysteria	1	1	2	...	...	4	
B.—Neuritis	2	18	20	...	2	145	
C.—Neurasthenia ...	...	...	...	...	...	26	
Cerebral softening ...							
Other affections of the nervous system, such as paralysis agitans	1	11	12	...	...	529	
Affections of the Organs of Vision :							
(*a*) Diseases of the eye	...	1	1	...	...	3	
(*b*) Conjunctivitis ...	1	27	28	...	2	863	
(*c*) Trachoma							
(*d*) Tumours of the eye							
(*e*) Other affections of the eye	5	17	22	...	6	346	
Affections of the ear or mastoid sinus	...	11	11	...	1	653	
IV—AFFECTIONS OF THE CIRCULATORY SYSTEM.							
Pericarditis							
Acute endorcarditis, or myocarditis							
Angina pectoris							
Other Diseases of the Heart :							
(*a*) Valvular :							
Mitral	4	28	32	6	...	100	
Aortic	1	10	11	2	...	20	
Tricuspid	...	...	...	...	...	1	
Pulmonary ...							
(*b*) Myocarditis ...	...	2	2	2	. .	15	
Carried forward ...	82	1,065	1,147	76	63	20,358	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	82	1,065	1,147	76	63	20,358	
IV—AFFECTIONS OF THE CIRCULATORY SYSTEM, *continued.*							
Diseases of the Arteries :							
(*a*) Aneurism	...	7	7	2	1	12	
(*b*) Arterio-sclerosis ...	...	4	4	2	...	73	
(*c*) Other diseases ...	...	9	9	...	...	...	
Embolism or thrombosis (non-cerebral)							
Diseases of the Veins :							
Hæmorrhoids	...	11	11	...	...	85	
Varicose veins	...	...	...	...	...	3	
Phlebitis	...	...	...	...	...	3	
Diseases of the Lymphatic System :							
Lymphangitis	2	45	47	...	...	68	
Lymphadenitis, bubo (non-specific) ...	...	11	11	...	2	288	
Hæmorrhage of undetermined cause ...	...	...	...	...	...	14	
Other affections of the circulatory system ...	2	7	9	2	...	130	
V—AFFECTIONS OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Passages :							
Adenoids	...	...	...	...	...	5	
Polypus	...	10	10	1	...	4	
Rhinitis	...	...	...	...	...	41	
Coryza	...	16	16	...	...	1,293	
Affections of the Larynx :							
Laryngitis	...	...	...	...	...	120	
Bronchitis :							
(*a*) Acute	1	81	82	1	1	4,740	
(*b*) Chronic ...	...	5	5	2	...	2,520	
Broncho-pneumonia ...	...	20	20	5	4	38	
Pneumonia :							
(*a*) Lobar	...	52	52	14	2	30	
(*b*) Unclassified ...	...	47	47	10	...	43	
Carried forward ...	87	1,390	1,477	115	73	29,868	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	87	1,390	1,477	115	73	29,868	
V—AFFECTIONS OF THE RESPIRATORY SYSTEM, *continued.*							
Pleurisy, empyema ...	1	...	1	...	...	...	
	3	28	31	1	2	154	
Congestion of the lungs ...							
Gangrene of the lungs ...							
Asthma	...	13	13	...	2	115	
Pulmonary emphysema ...	..	1	1	...	..	1	
Other affections of the lungs—	1	2	3	1	...	884	
Pulmonary spirochætosis ...							
VI—DISEASES OF THE DIGESTIVE SYSTEM.							
A.—Diseases of Teeth or Gums :							
Caries, pyorrhœa, etc. ...	...	4	4	...	...	1,340	
B.—Other affections of the mouth :							
Stomatitis	...	1	1	1	...	438	
Glossitis, etc. ...	...	6	6	...	...	48	
Affections of the Pharynx or Tonsils :—							
Tonsillitis	...	1	1	...	...	557	
Pharyngitis	...	4	4	...	...	98	
Affections of the œsophagus							
A.—Ulcer of the stomach							
B.—Ulcer of the duodenum							
Other affections of the Stomach :							
Gastritis	...	5	5	...	...	199	
Dyspepsia, etc. ...	5	43	48	...	...	3,796	
Diarrhœa and Enteritis :							
Under two years ...	1	2	3	...	...	187	
Diarrhœa and Enteritis :							
Two years and over ...	...	50	50	6	1	798	
Colitis	...	..	...	...	...	77	
Ulceration							
Sprue							
Ankylostomiasis	...	2	2	...	...	27	
Carried forward ...	98	1,552	1,650	124	78	38,587	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	98	1,552	1,650	124	78	38,587	
VI—DISEASES OF THE DIGESTIVE SYSTEM, *continued.*							
Diseases due to Intestinal Parasites:	...	22	22	...	...	78	
(*a*) Cestoda (tænia) ...	...	2	2	...	...	212	
(*b*) Trematoda (flukes) ...							
(*c*) Nematoda (other than ankylostoma—	...	...	..	...	...	3	
Ascaris	...	14	14	...	...	2,992	
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Strongylus	...	...	...	...	..	2	
Oxyuris	...	...	...	...	...	3	
(*d*) Coccidia							
(*e*) Other parasites ...							
(*f*) Unclassified ...	...	...	...	...	...	38	
Appendicits	...	...	...	...	...	2	
Hernia	...	44	44	11	3	299	
A.—Affections of the anus, fistula, etc.	...	2	2	...	...	19	
B.—Other Affections of the Intestines:							
Enteroptosis ...							
Constipation ...	...	21	21	...	...	7,339	
Acute yellow atrophy of the liver							
Hydatid of the liver ...							
Cirrhosis of the liver:							
(*a*) Alcoholic	...	1	1	...	...	...	
(*b*) Other forms ...	...	2	2	...	...	13	
Biliary calculus							
Other Affections of the Liver:							
Abscess	...	1	1	1	...	3	
Hepatitis	...	21	21	...	...	65	
Cholecystitis							
Jaundice	...	18	18	...	...	66	
Diseases of the pancreas							
Peritonitis (of unknown cause)	...	5	5	2	...	1	
Other affections of the digestive system ...	...	12	12	1	...	689	
Carried forward ...	98	1,717	1,815	139	81	50,411	

AFRICAN—*continued.*

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	†Remaining in Hospital at end of 1926.	Total Admission.	†Total Cases treated	Deaths.	§Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	98	1,717	1,815	139	81	50,411	
VII—DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).							
Acute nephritis ...	1	13	14	6	...	57	
Chronic	1	5	6	2	1	18	
A.—Chyluria							
B.—Schistosomiasis ...	...	1	1	...	...	71	
Other Affections of the Kidneys :	...	...	...	...	...	10	
Pyelitis, etc.	...	...	...	...	...	1	
Urinary calculus ...	...	...	...	...	...	2	
Diseases of the Bladder :							
Cystitis	...	43	43	6	...	112	
Diseases of the Urethra :							
(*a*) Stricture	1	40	41	6	3	74	
(*b*) Other	1	32	33	9	...	316	
Diseases of the Prostate :							
Hypertrophy							
Prostatitis	...	33	33	...	2	2	
Diseases (non-venereal) of the Genital Organs of Man :	...	...	...	...	...	51	
	...	8	8	...	...	1	
Epididymitis	...	18	18	...	2	122	
Orchitis	1	...	1	...	...	...	
	2	34	36	...	1	273	
Hydrocele	1	37	38	...	2	120	
Ulcer of penis	...	44	44	...	...	162	
Cysts or other non-malignant tumours of the ovaries	...	...	...	...	...	4	
Salpingitis	...	1	1	...	...	7	
Abscess of the pelvis ...	...	2	2	...	...	2	
Uterine tumours (non-malignant	...	...	...	...	...	2	
	...	21	21	...	4	4	
Uterine hæmorrhage (non-puerperal)	...	2	2	1	...	24	
A.—Metritis	2	14	16	...	...	91	
B.—Other affections of the female genital organs :	...	10	10	...	...		
	1	...	1	...	...	93	
Displacements of uterus	...	...	...	...	...	6	
Amenorrhœa	...	4	4	...	...	356	
Carried forward ...	109	2,079	2,188	169	96	52,392	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	109	2,079	2,188	169	96	52,392	
VII—DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL), *contd.*							
Dysmenorrhœa ...	...	4	4	...	...	238	
Leucorrhœa	...	15	15	...	...	69	
Diseases of the Breast (Non-puerperal):							
Mastitis	...	22	22	...	...	37	
Abscess of breast ...	...	20	20	...	...	23	
VIII—PUERPERAL STATE.							
A.—Normal labour ...	...	163	163	...	...	19	
B.—Accidents of Pregnancy:							
(*a*) Abortion	...	9	9	...	...	37	
(*b*) Ectopic gestation ...							
(*c*) Other accidents of pregnancy	1	33	34	5	...	154	
Puerperal hæmorrhage ...	...	...	...	...	...	1	
Other accidents of parturition	...	1	1	...	...	...	
	5	31	36	1	9	12	
Puerperal septicæmia ...	...	1	1	1	...	...	
Phlegmasia dolens ...							
Puerperal eclampsia ...	...	5	5	...	...	...	
Sequelæ of labour ...	...	...	...	...	...	4	
Puerperal affections of the breast	...	6	6	...	...	1	
IX—AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.							
Gangrene	...	...	...	...	...	1	
Boil—	...	20	20	...	...	538	
Carbuncle	...	11	11	...	...	70	
Abscess—	6	50	56	...	1	507	
Whitlow	...	51	51	...	...	672	
Cellulitis	2	56	58	...	1	451	
A.—Tinea	...	3	3	...	...	373	
B.—Scabies	...	21	21	1	...	1,188	
Other Diseases of the Skin—	1	3	4	...	1	226	
(*a*) Erythema	...	2	2	...	...	133	
(*b*) Urticaria	...	6	6	...	...	32	
(*c*) Eczema	1	4	5	...	2	393	
(*d*) Herpes	...	1	1	...	...	40	
(*e*) Psoriasis	...	...	...	...	...	8	
(*f*) Elephantiasis ...	2	27	29	1	2	80	
Carried forward ...	127	2,644	2,771	178	112	57,699	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	127	2,644	2,771	178	112	57,699	
IX—AFFECTIONS OF THE SKIN AND CELLULAR TISSUES—*contd.*							
Other Diseases of the Skin—*continued.*							
(*g*) Myiasis							
(*h*) Chigoes	...	...	...	...	...	33	
(*i*) Cutaneous Leishmaniasis							
(*j*) Ulcer	39	154	193	...	40	8,028	
X—DISEASES OF BONES AND ORGANS OF LOCOMOTION (OTHER THAN TUBERCULOUS.)							
Diseases of Bones:							
Osteitis	...	6	6	...	...	257	
Diseases of Joints:	3	27	30	...	2	1,201	
Arthritis							
Synovitis	...	10	10	...	...	113	
Other diseases of bones or organs of locomotion ...	5	15	20	1	...	2,267	
XI—MALFORMATIONS.							
Malformations:							
Hydrocephalus ...	...	...	...	...	...	1	
Hypospadias							
Spina bifida, etc. ...							
XII—DISEASES OF INFANCY.							
Congenital debility ...	...	...	...	...	...	3	
Premature birth							
Other affections of infancy	...	...	...	...	...	10	
Infant neglect (infants of three months or over) ...							
XIII—AFFECTIONS OF OLD AGE.							
Senility—	...	15	15	5	...	24	
Senile dementia ...	...	1	1	1	...	6	
Carried forward ...	174	2,872	3,046	185	154	69,642	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	174	2,872	3,046	185	154	69,642	
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.							
Suicide by poisoning ...							
Corrosive poisoning (intentional)							
Suicide by gas poisoning							
Suicide by hanging or strangulation ...							
Suicide by drowning ...							
Suicide by firearms ...							
Suicide by cutting or stabbing instruments ...	...	...	...	...	...	1	
Suicide by jumping from a height							
Suicide by crushing ...							
Other suicides							
Food poisoning:							
Botulism							
Attacks of Poisonous Animals:							
Snake bite	...	6	6	...	...	20	
Insect bite	...	5	5	...	...	34	
Other accidental poisonings	...	43	43	14	2	103	
Burns (by fire) ...	...	4	4	...	...	45	
Burns (other than by fire)							
Suffocation (accidental) ...							
Poisoning by gas accidental							
Drowning (accidental) ...	...	1	1	...	...	9	
Wounds (by firearms, war excepted)	...	13	13	..	1	18	
Wounds (by cutting or stabbing instruments) ...	...	66	66	6	2	944	
Wounds (by fall) ...	...	86	86	9	8	684	
Wounds (in mines or quarries)	...	...	...	...	...	4	
Wounds (by machinery) ...	...	...	...	...	...	26	
Wounds (crushing, e.g. railway accidents, etc.) ...	...	7	7	1	...	209	
Injuries inflicted by animals, bites, kicks, etc. ...	...	7	7	1	...	232	
Wounds inflicted on active service							
Executions of civilians by belligerents							
A.—Overfatigue ...							
B.—Hunger or thirst ...	...	2	2	...	1	3	
Exposure to cold, frostbite, etc.	...	...	...	...	...	6	
Carried forward ...	174	3,112	3,286	216	168	71,980	

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1926.	Total Admission.	Total Cases treated.	Deaths.	Remaining in Hospital at end of 1927.	New Cases treated.	Subsequent Attendances.
Brought forward ...	174	3,112	3,286	216	168	71,980	
XIV—AFFECTIONS PRODUCED BY EXTERNAL CAUSES—*contd.*							
Exposure to Heat:							
Heat stroke	...	1	1	...	...	...	
Sunstroke	...	...	...	...	...	3	
Lightning stroke	...	...	...	...	...	2	
Electric shock							
Murder by firearms ...							
Murder by cutting or stabbing instruments ...							
Murder by other means ...							
Infanticide (murder of an infant under one year) ...							
A.—Dislocation	...	6	6	...	...	26	
B.—Sprain	...	43	43	..	1	567	
C.—Fracture	...	44	44	11	6	61	
Other external injuries ...	13	73	86	1	3	3,357	
Deaths by violence of unknown cause							
XV—ILL-DEFINED DISEASES.							
Sudden death (cause unknown)							
A.—Diseases not already specified or ill-defined ...	...	...	...	...	...	13	
Ascites	1	2	3	1	...	9	
Œdema	...	5	5	...	...	75	
Insomnia	...	6	6	..	...	...	
Asthenia	...	32	32	15	12	407	
Shock							
Pyrexia	...	2	2	...	...	93	
Hyper-pyrexia ...	...	...	...	...	...	157	
B.—Malingering	...	5	5	...	...	62	
No appreciable disease ...	5	11	16	...	...	58	
Undiagnosed	...	9	9	...	10	4	
Total ...	193	3,351	3,544	244	200	76,874	

Appendix A.

REPORT OF THE SURGICAL SPECIALIST, CONNAUGHT HOSPITAL.

I took over three wards of the Connaught Hospital—Nos. 1, 3 and female, comprising 45 beds—on the 14th October, 1927, and began operative work on the 17th October, 1927.

The accommodation of these wards has been somewhat severely taxed from time to time and it has been necessary to put in extra beds and to utilize beds in the medical wards.

So far, I have looked after all surgical in-patients myself as I wished to train the staff, but in the future, especially when the new surgical block is opened, the assistance of a house surgeon will be necessary if the patients are to have the individual attention they require.

I found that the ideas of the nursing staff on modern surgical technique were somewhat vague; to add to the difficulty none of the sisters had had recent surgical experience in England. I feel that it would be a great help if a sister fresh from surgical work in theatre and ward could be appointed to supervise the theatre and surgical wards of this hospital; there is any amount of work for a whole-time sister in this particular sphere, and in this connexion it may be noted that operative work has become much heavier of late—during the last two-and-a-half months of 1927 more operations were performed than in the previous nine-and-a-half months of the year.

In view of the surgical cases met with during my short term of duty the following points might be commented on:—

(*a*) The apparent infrequency of abdominal disease, such as gastric and duodenal ulcer, cholecystitis and appendicitis.

(*b*) The apparent low incidence of cancer, two cases out of 200 patients treated, a percentage of one.

(*c*) The apparent freedom from abdominal, bone and joint tuberculosis—this may bear some relation to the absence of bovine infection. The contact afforded in these three aspects to European practice is striking. In any attempt at investigating these conditions, in the diagnosis of disease in general at this hospital, in the estimation of the patient's ability to stand operation, and in the assessment of the value of certain forms of treatment, the want of a pathologist is acutely felt.

(*d*) Inguinal hernia would appear to be the most prevalent condition calling for operative treatment—many of these are of an advanced and difficult type and are often seen in elderly patients whose musculature is poor. In all but simple oblique hernias I find that Gallie's method of fascial weaving gives by far the most satisfactory results.

(*e*) The presence of fibroid tumours of the uterus in fair numbers.

(*f*) The number of neglected septic sores observed.

(*g*) The prevalence of stricture of the urethra often accompanied by sinuses—many of the strictures seen have been beyond any treatment except a permanent suprapubic opening.

(*h*) The necessity of dealing with a scabies infection before proceeding to operation in a large number of cases.

While on the subject of these latter conditions, it would appear to be relevant to put forward a plea for the provision of hospital accommodation for Africans of a status locally corresponding to our middle classes in England. I find that educated people of this category are reluctant to enter the wards of the Connaught Hospital and perhaps have to occupy a bed next to a patient whose ideas about cleanliness may be distinctly primitive and whose disease may be somewhat obviously unpleasant. The question arises here just as in England where the middle classes find it difficult to get surgical treatment and for much the same reasons. One solution of the difficulty is to provide in the general hospital cubicle wards containing one or two beds, and this is being done in England and America.

Several improvements are in process of being carried out in the surgical side of the hospital, the most important being the provision of a steam sterilizer and a special type of lighting for the main theatre. Modern operative instruments and appliances are also being introduced. On the completion of the new surgical block and with the installation of the X-ray and electro-therapeutic plant, there should only remain the appointment of a pathologist to bring the hospital into line with present day surgical requirements.

Statistics of operative work are included in the report and notes on two cases of cancer are appended.

Q. STEWART,
Surgical Specialist.

Operation at the Connaught Hospital in 1927.

	Cured.	Relieved.	Unrelieved.	Died.
(*1*) *Abdominal:*				
Herniotomy inguinal ...	29	...	...	1
Herniotomy for strangulated inguinal hernia	5	...	...	...
Exploratory laparotomy ...	2	...	..	2
Aspiration of liver ...	...	...	...	1
(*2*) *Ano-Rectal:*				
Excision of fistula in ano ...	1	...	...	...
Re-establishment of canal in imperforate anus ...	1	...	...	...
Drainage of pelvic abscess per rectum	1	...	...	...
(*3*) *Blood Vessels:*				
Excision of aneurism of popliteal artery	1	...	...	...
Excision of varicose veins ...	1	...	...	...
(*4*) *Brain:*				
Decompression	...	...	...	1
(*5*) *Ear, Nose and Throat:*				
Removal of foreign bodies ...	2	...	...	..
Tonsillotomy	2	...	...	...
(*6*) *Eyes:*				
Extraction of cataract ...	1	1	...	...
Excision of eyeball ...	1	...	...	...
Extraction of foreign bodies	1	...	...	...
Excision of cyst of eyelid ...	4	...	...	...
(*7*) *Genito-urinary (Male):*				
Excision of scrotum for elephantiasis	10	...	...	...
Drainage for extravasation of urine	1	...	...	2
Suprapubic cystostomy for drainage of bladder ...	2	...	...	1
Circumcision	9	...	...	...
Exploration of kidney ...	...	...	1	...
Dilatation of stricture ...	4	12	6	...
Radical cure of hydrocele ...	18	...	...	.
(*8*) *Gynæcological:*				
Colpotomy ...	1	...	...	...
Perineal repair ...	1	...	...	...
Plastic operation for ruptured ectopic gestation ...	1	...	...	...
Subtotal hysterectomy ...	3	...	...	..
(*9*) *Miscellaneous:*				
Drainage of abscesses ...	42	...	...	...
Suture of wounds ..	10	...	...	...
(*10*) *Neck:*				
Excision of cyst ...	1	...	...	...
(*11*) *Orthopædics:*				
Setting of fractures ...	7	...	...	...
Reduction of dislocations ...	4	...	1	. .
Sequestrectomy and removal of bone necrosis ...	7	...	...	...
Freshening and replacement of bone-ends in ununited fracture	1	...	...	...
Suture of tendons ...	4	...	...	...
Suture of nerves	1	...	...	...
Plastic operation for in-growing toe nails ...	1	...	...	...

	Cured.	Relieved.	Unrelieved.	Died.
Amputation of leg ...	2	...	...	...
Amputation of toes ...	6	...	...	...
Amputation of hand ...	1	...	...	...
Amputation of fingers ...	7	...	...	...
(*12*) *Skin and Subcutaneous Tissues:*				
Excision of ulcers ...	3	...	...	...
Skin grafting ...	3	...	...	...
(*13*) *Thorax:*				
Thoractomy for empyema ...	1	...	...	...
Aspiration of pleural cavity ...	1	...	...	...
(*14*) *Tumours:*				
Excision of				
(*a*) Benign	14	...	...	...
(*b*) Squamous epithelioma of foot	1	...	...	...
(*c*) Scirrhus carcinoma of breast	...	...	...	1
Seven operations were performed on Europeans either at the Connaught Hospital or in the European Hospital:—				
Excision of septic cyst ...	1	...	...	...
Drainage of abscess leg ...	1	...	...	...
Drainage of septic finger ...	1	...	...	...
Drainage of septic arm ...	1	...	...	...
Excision of fistula in ano ...	2	...	...	...
Tonsillotomy	1	...	...	...
Total ...	226	13	9	9

Major Operations.	Minor Operations.	Percentage of Deaths.
102	155	3·5

Anæsthetics:

Spinal.	Chloroform.	Local.	Ether.
82	142	13	1

Number of operations performed in:

1926.	1927.
29	257

VII—SURGICAL OPERATIONS PEREORMED IN THE EUROPEAN HOSPITAL.

——	Number.	Cured.	Relieved.	Unrelieved.	Died.
Minor operations	3	3	—	—	—
Total	3	3	—	—	—

SURGICAL OPERATIONS PERFORMED ELSEWHERE REPORTED BY MEDICAL OFFICERS.

——	Number.	Cured.	Relieved.	Unrelieved.	Died.
Kissy	56	56	...	...	...
Daru	64	54	9	...	1
Bonthe	6	6	...	...	...
Moyamba	1	1	...	...	...
Bo	14	14	...	...	...
Makeni	22	18	...	1	3
Kabala	7	7	...	...	...
Kaiyima	2	1	...	...	1
Total	172	157	9	1	5

Appendix B.

CONNAUGHT HOSPITAL LABORATORY REPORT.

During the year 1,252 specimens were examined from the European and Connaught Hospitals

Of 360 blood films:—

Plasmodium vivax were found in	2
Plasmodium malariae were found in	3
Plasmodium falciparum were found in	52
Micro-filariæ were found in	1

Of 157 specimens of sputum, tubercle bacilli were present in thirty-five, four from Europeans and thirty-one from Africans.

Of 255 specimens of fæces:—

Entamœba histolytica or cysts were found in	23
Ascaris ova were found in	39
Ankylostoma ova were found in	19
Strongyloides larvae were found in	9
Trichiuris ova were found in	7
Tænia sp. were found in	3
Lamblia intestinalis were found in	1

Of 125 urethral smears, gonococci were present in seventy-one: and of fifteen vaginal smears in seven.

Twenty-eight post-mortem examinations were made, the cause of death in these cases being—

Strangulation	1
Drowning	3
Fracture base of skull	1
Multiple injuries	1
Burns	2
Starvation	1
Ruptured spleen	1
Gastric and intestinal hæmorrhage	2
Cerebral hæmorrhage	1
Ulcerative endocarditis	2
Syphilitic aortitis	1
Heart failure	1
Septicæmia	1
Cerebral sinus thrombosis	1
Pneumonia	2
Pulmonary tuberculosis	5
Intestinal volvulus	1
Carcinoma of liver	1

No B lepræ, B. anthracis or schistosome ova were found in specimens sent for diagnosis.

No B. pestis were found in 231 rats examined.

In addition, 408 specimens from Freetown Prison were examined. Of 94 blood films—
Plasmodium vivax was found in 10.
Plasmodium falciparum was found in 74.

Of 311 specimens of fæces, nothing of interest was found in 204.

Entamœba histolytica or cysts were present in eight.

Single infections with helminthic ova as follows:—

Ankylostomes	25
Ascaris	23
Strongyloides larvæ	22
Tænia	6
Trichiuris	3

Double infections as follows:—

Ankylostoma and strongyloides	2
Tænia and strongyloides	1
Ascaris and ankylostomes	4
Tænia and ascaris	2
Ascaris and trichiuris	1
Tænia and ankylostomes	1

Triple infections as follows:—

Ankylostomes, tænia and trichiuris 1

Of three specimens of sputa examined, all were negative for tubercle bacillus.

Unfortunately shortage of staff and lack of apparatus prevented any bacteriological or serological work being done.

G. L. ALEXANDER,
Medical Officer-in-charge of Laboratory.

Appendix C.

REPORT ON A PROPOSED SITE FOR AN OIL-PALM PLANTATION AT MABANG,
by R. M. Gordon, Assistant Director, The Sir Alfred Lewis Jones Research Laboratory.

INTRODUCTION.

The investigation of the oil-palm site occupied one month, work being commenced on 5th November and completed on 3rd December.

Rain fell on fourteen of the twenty-eight days. The maximum temperature recorded was 86°F. and the minimum 70°F. The relative humidity as recorded at the Lands and Forests bungalow was rather high, the average 6 a.m. reading being 89 and the 6 p.m. 86 as compared with 84 and 80 recorded at Freetown during the same period. The fact that the bungalow is closely surrounded by trees and bush may, in part at any rate, account for the high humidity.

The Lands and Forests bungalow was used as a headquarter and from there expeditions were made to the different villages on, or adjacent to, the proposed site; on these occasions four forest-guards and five carriers usually accompanied the party; on arrival at the village which it was proposed to examine, these men were used as fly collectors. By always employing the same carriers a group of nine expert fly collectors was available and the results obtained in different areas were more accurately comparable than if casual labour recruited on the spot had been employed. It will be noted from Table I that the average number of collectors employed per day was always less than nine; this is due to the fact that villages were usually visited only on alternate days; on intervening days small groups of carriers under charge of one or more forest-guards were sent to different localities to collect tsetse flies. The village having been reached and the fly collectors set to work at the stream or swamp nearest to the village, all the inhabitants available were medically examined and finally an inspection was made of all houses to ensure that no cases were being concealed either deliberately, to avoid examination, or because they were too sick to move; only two cases were discovered in this manner, and I was much impressed with the readiness with which the natives in the area submitted to examination; even when gland puncture was performed little or no opposition was met with. Each individual had his or her blood examined for sleeping-sickness and malaria, the results being recorded in the form shown below.

Date ...	Nov. 11			Cervical glands	R. posterior +
Number	91			Gland puncture	Not done
Name	Titi		Fresh film	Auto-agglutination	Neg.
				Trypanosomes	Neg.
				Microfilaria	+
		blood	Stained thin film	Trypanosomes	Neg.
Sex ...	... Female			Malaria malignant tertian ...	+
Age	30		stained thick film	Trypanosomes	Neg.
Tribe ...	Lokkoh			Malaria	+
				Microfilaria	+ ? bancrofti
Village at which living				Royemah	
Remarks Rheumatism: given medicine.					

During the period 247 persons were examined in this manner.

As already stated, villages were usually visited only on alternate days, the intervening days being spent in sending out fly collectors and preparing and examining the material collected on the previous day. A large village such as Mosangue occupied three days, a small one such as Robanga was finished in one day. A visit to the water supply, washing places, etc., completed the examination.

I understand that if work is commenced on the oil-palm site the question of housing Europeans in the Lands and Forests bungalow will be considered. As this area is distinct from the oil-palm site, and as the condition of affairs as regards the danger of malaria was investigated in this restricted area in more than was possible elsewhere, I propose to divide the report that follows into two parts:—Part I being concerned with the general health conditions found to exist on the proposed oil-palm site, special attention being paid to the question of trypanosomiasis, and Part II dealing with the suitability or otherwise of the Lands and Forests bungalow as a residence for Europeans.

PART I.

The Proposed Oil-palm Site.

The site chosen at Mabang for the proposed Oil-palm Plantation occupies an area of about 2,000 acres, the greater portion of which is covered with dense bush. As it was obviously impossible, in the time available to examine the whole areas, attention was concentrated on the two villages, Mosangue and Robanga, Mongiri and Matongo lying near the north-eastern boundary. Further information regarding the land lying outside the north-western boundary will be found in Part II.

1—Trypanosomiasis.

(a) Prevalence of Tsetse Flies.—234 flies comprising 232 specimens of *glossina palpalis* and two specimens of *glossina fusca*, were collected in the manner described in the introduction. Table I shows the number and proportion of fly captured in or near each village.

Table I showing number and proportion of fly captured at villages in or near the oil-palm site:—

Site.	Number of days on which collected.	Total Number of Flies collected.	Average Number of Collectors per Day.	Average Number of Hours per Day per Collector.	Average Number of Flies per Collector per Day of Six Hours.
Robanga	1	0	8·0	3·5	0·00
Matongo	3	1	7·6	3·8	0·07
Mosangue	4	2	6·7	4·7	0·09
Mongiri	2	6	6·0	3·6	0·83
Royemah	3	6	6·0	3·8	0·88
Masehloo	16	219	4·8	6·0	2·71

These figures were interesting, as they showed that the main source of fly appeared to be the villages Mongiri, Royemah and Masehloo. An examination of this more heavily infected area at once revealed the cause. All three villages are situated beside, or close to, a small river; while Robanga, Matongo and Mosangue have no water supplies larger than streams or springs.

This river was not shown on the copy of the map which was kindly supplied to me by the Lands and Forests Department and which I have attached to my report; I have therefore roughly outlined its position and also that of the path leading from Royemah to the river and labelled them red. The natives near this river always call it "The Ribbi" and for the purpose of distinction it will be referred to in the text as "Little Ribbi."

The Little Ribbi is navigable by canoe from Mabang to Mongiri; the stretch between Mabang and Masehloo was not investigated, but the natives at Masehloo state they use it regularly as a means of travelling to Mabang and that the main body of the stream is clear from obstruction. The river at Masehloo is about 6 yards wide and is fordable at all points observed by us between there and Mongiri. Between Masehloo and Royemah the river has been partially cleared of obstructions and is fairly frequently used as a fairway, but from Royemah to Mongiri progress is obstructed everywhere by vegetation and in many places floating logs form a barrier; the river was not explored beyond Mongiri. It is quite clear that very little labour would be required to produce a clear waterway for canoes from Mongiri to Mabang. Both banks of the river are covered with dense bush except where small clearings have been made at some half-dozen landing places; when landing was attempted at points other than these, swamp was usually encountered. Masehloo and Mongiri are situated close to the river bank, Royemah is some 200 yards from the river and the path from the village to the river crosses no swamp or stream.

(*b*) *Dissection of Tsetse Flies.*—120 flies (119 *glossina palpalis* and 1 *glossina fusca*), obtained from the neighbourhood of the villages, were dissected; of these twelve, i.e. 10 per cent. were infected. The site of infection in these flies is shown in Table II.

Table II showing site of infection in twleve infected flies captured in the neighbourhood of the oil-palm site.

No.	Probosis Labial Cavity.	Hypopharynx.	Salivary Glands.	Gut.
		0		
1	0	0	0	+++
2	++	0	0	+
3	0	++	0	++
4	++++	0	0	0
5	0	0	0	+
6	0	0	0	+++
7	0	0	0	++
8	0	0	0	+++
9	0	0	0	+++
10	+	0	0	0
11	0	0	0	×++
12	0	0	0	×××

Table II shows that no gland infection was detected amongst the 120 flies examined, that is to say no evidence of human infection was obtained, and this finding is in accordance with the negative results, later recorded in the text, observed by blood and gland juice examination amongst the inhabitants of the villages; but it must be remembered that the number of flies dissected was small and that human cases of trypanosomiasis have been recorded at Mabang, two miles distant.

(*c*) *Examination of Population.*—A total of 212 persons (consisting of sixty adult males, sixty-nine adult females and eighty-three children) was examined amongst the six villages under consideration. A fresh film and thick and thin stained films were examined in each case; in no instance was trypanosome infection encountered, and marked auto-agglutination of the red cells was never observed. An examination of the cervical glands by palpation was made in every case; those cases in which the cervical glands were easily palpable but not visibly enlarged are marked with the sign +, visibly enlarged with the sign ++.

Table III showing number and percentage of persons with enlarged cervical glands.

Number of Persons Examined.	No. of Adults Examined.	Percentage of Adults with Cervical Glands.	Percentage of Adults with++ Cervical Glands.	Number of Children Examined.	Percentage of Children with+ Cervical Glands.	Percentage of Children with ++Cervical Glands.
212	129	6·9	1·5	83	19·2	11·1

The majority of the glandular enlargements were obviously due to skin disease or cuts and abrasions of the scalp. In six cases of visible gland enlargement gland puncture was performed; in all six cases the result was negative. Amongst the 212 persons examined only one case was observed in any way suggestive of trypanosomiasis; this case was a female child of ten years old; when first seen she was lethargic, the face was somewhat swollen, particularly below the eyes, and the posterior cervical glands were visibly enlarged; blood and gland juice examinations were negative and auto-agglutination was absent, seen again three weeks later her condition had greatly improved, the swelling beneath the eyes had almost disappeared and she seemed much less lethargic. I think the case was almost certainly not trypanosomiasis.

The above account of trypanosomiasis makes clear the following points:—The main haunt of the fly is along the "Little Ribbi," fly being scanty within the actual boundaries of the proposed site. No evidence of human infection was detected either as a result of dissecting flies or of examining the population of the villages, although the high proportion i.e. 10 per cent. of flies infected in the gut or proboscis suggests that the area would be dangerous for cattle. The danger of human trypanosomiasis is probably therefore remote, but remains a possibility as fly exist in the area and in the past cases of sleeping-sickness have been proved to exist at Mabang only 2 miles away.

2—Malaria.

All the villages are highly malarious, the number and percentage of persons harbouring malaria parasites is shown in Table IV.

Table IV showing the number and percentage of persons with malaria parasites in the peripheral blood.

Number of Persons Examined.	Number of Adults Examined.	Percentage of Adults with Malaria Parasites.	Number of Children Examined.	Percentage of Children with Malaria Parasites.
212	129	12·4	83	75·8

All the villages lie close to swamp land, while Masehloo, Royemah and Mongiri are in addition situated close to a river; potential breeding places therefore exist at all the villages and anopheline larvæ when searched for were found without difficulty, the most common breeding place being the muddy pools lying along native paths where these enter and leave a swampy area. Mosangue, lying at the centre of the site, is freest from swamp and is indeed very well situated from a malaria point of view. It is true that the swamp lies within a few hundred yards of it, but that the swamp is not very extensive is shown by the fact that on the way to Matongo it is crossed by a native bridge only 3 yards long; this observation was made at the end of the wet season, so presumably it is even less extensive during the dry. This appears to be confirmed by the fact that I am informed the mark "AX" on the map represents the point at which a sample of soil was taken for analysis during April. While considering this question of the extent of the swamps I might mention that, in general, the swamps did not appear to be nearly as formidable as a previous examination of the attached map led me to believe; thus the path from Mabang to Masehloo crosses no swamp or stream, while if the path be followed to Royemah the only water noticed is a sluggish swampy stream about 20 yards wide, which is traversed by a native footbridge; again the path from Royemah to the "Little Ribbi" can be walked along dry shod. The large swamp shown west of the railway is fairly typical of the others, it is really not a single large swamp but a series of small swamps connected by sluggish streams.

The situation as regards malaria may perhaps be summed up as follows:—All the villages adjacent to and on the site are intensely infected with malaria, but the same remark probably applies to all villages in West Africa. Potential breeding places occur at all the villages and the situation at Masehloo, Royemah and Mongiri is complicated by their close proximity to the river. The actual site as enclosed by the boundaries to the proposed oil-palm site appears to me a good one, while the village of Mosangue, which is situated on high land, possesses advantages as regards absence of anopheline breeding places, which suggest its suitability for a native labour camp.

General Considerations.—A record was kept of the diseases noted in the villages; no infectious disease such as smallpox, was encountered although, judged from the amount of pitting seen, it has been a common disease in the past.

Masehloo and Royemah draw their water supply for nine months of the year from the "Little Ribbi," but during the height of the dry season the water becomes too salty for drinking purpose and they then make use of wells dug near the villages; at Mongiri the same state of affairs probably exists, but it was difficult to obtain reliable information. At Matongo and Robanga streams are used for drinking and washing. At Mosangue drinking water is obtained from a stream about 200 yards from the village; this stream dries up during the latter part of the dry season and they then sink a shallow well near the same site; the natives state that it always yields an abundant supply of water.

Recommendations.

Trypanosomiasis.—The main haunts and breeding places of the fly are undoubtedly along the "Little Ribbi" and the majority of flies that occur within the boundaries of the site are probably derived from the same source. If the attached map be consulted it will be observed that the river "Little Ribbi," whose position I have roughly outlined, really forms a drainage centre for the main swamp which closes the oil-palm site along its north-western and north-eastern borders. I was not able to follow the river beyond Mongiri, but it appears probable that the same river also drains the swamp between Mongiri and Matongo and possibly for some distance beyond the latter town.

I would therefore recommend that the river, from above Mongiri to below Masehloo, be cleared from all obstructions in the form of vegetation, dead trees and floating logs, etc., which at present impede the river and consequently diminish the drainage of the swamps. The left bank of the river should be cleared entirely of all potential tsetse fly breeding places over a distance extending from above Mongiri to below Masehloo. The clearing of the breeding places on this side of the river should extend right up to the north-eastern boundary of the proposed site, and to the northern boundary of the S. B. Thomas' Estate and as far as a line joining the north-eastern points of the two estates. The right bank of the river should be cleared for a distance of about 30 yards from the edge of all bush and small trees leaving only some of the larger trees. The length of the clearing should be the same as that of the left bank, i.e. from above Mongiri to below Masehloo. In my opinion the result of such a clearing would be threefold: (1) It would immediately reduce the number of fly on the whole area. (2) It would destroy a number of breeding places of mosquitoes at Masehloo, Royemah and Mongiri. (3) It would result in at once increasing the drainage, and finally in greatly reducing the size of the swamp which at present bounds the north-eastern and north-western sides of the plantation, and in parts invades the selected site. I have no knowledge of the nature of the proposed works at the oil-palm site, but imagine that a river cleared of all obstructions and easily navigable by canoes from Mabang to Mongiri might be of decided importance as a means of transport. As the number of men required to clear the proposed area of 2,170 acres is large, the extra labour required to clear the river and its banks is in comparison small, and I think the advantages gained would well repay the labour expended. As regards work on the site itself, the immediate effect of an entire clearing of the site preparatory to planting with young oil-palms will be to further reduce the already scanty number of fly. But it is possible that when these young oil-palms have reached a certain height, and afford sufficient shade, fly may be attracted to the area; this possibility renders it all the more essential that the source of supply of fly at present existing on the "Little Ribbi" should be destroyed before the planting of the plantation is commenced.

Malaria.—If the measures recommended under trypanosomiasis are carried out they should result in a great reduction in the number of anopheline breeding places, both directly by destroying breeding places near villages along the edge of the river and indirectly by reducing the size of the swamps which form the main breeding places near the other villages situated away from the river. As already noted, Mosangue is well situated, only one swamp existing in its vicinity. Robanga is built close to a swamp but it may be found possible to reduce the size of this by draining it into the large stream which flows at the foot of the village.

General.—Whatever site is selected for housing the natives employed on the plantation, the inhabitants of such a camp should be thoroughly disciplined in matters of sanitation so that a model village may eventually be formed. Such a procedure will not only result in maintaining a high standard of health in the camp itself but should by its example improve the standard of the villages near it.

From the point of view of freedom from tsetse fly and absence of anopheline breeding places, Mosangue or its vicinity appears the most suitable position for establishing such a camp.

PART II.

The Suitability of the Lands and Forests Bungalow as a Residence for Europeans.—The bungalow lies about 150 yards to the east of the railway, about 1,000 yards south of the Academy and about the same distance from the village of Masehloo. The only inhabited dwellings occurring within a radius of 800 yards are the barracks which lie 160 yards north of the bungalow, and a small farm lying west of the railway and about 500 yards from the bungalow. The bungalow and the barracks are surrounded by fairly dense bush estimated by Mr. Mallam as being from one to four years old; in addition there are some mango and guava trees and also a few clumps of bananas which are situated within a few yards of the house. The land surrounding the bungalow is of a loamy and very porous character and surprisingly free from rock, so that apart from the streams and swamps, later discussed, pools of water do not occur. This fact was well proved by offering half-a-crown reward to any forest-guard or carrier discovering any pool of water—no matter how small—occurring within 400 yards of the bungalow and persisting for twenty-four hours, the springs and swamps marked on the map being counted as dead ground. In spite of the fact that the forest-guards had already proved themselves very expert at the discovery of collections of water in trees and at tracing the course of streams and swamps, this reward was never claimed.

From a medical standpoint, the suitability of the bungalow may be considered under three heads: (1) Trypanosomiasis (2) Malaria (3) General conditions as regards water supply, etc.

Trypanosomiasis.—With the exception of two *glossina fusca* collected near the barracks, no flies were taken nearer than 800 yards from the house and then only fifteen flies were taken. From comparison with Table I in Part I, the proportion of flies taken and boys employed is expressed as follows:—

Table V showing number and proportion of flies captured near the Lands and Forests bungalow.

Number of Days on which Collected.	Total Number of Flies Collected	Average Number of Collectors per Day.	Average Number of Hours per Day per Collector.	Average Number of Flies per Collector per Day of six Hours.
6	15	5·6	6·2	0·42

The figure 0·42 is almost certainly too high, as in spite of supervision the collectors constantly attempted to wander towards Masehloo knowing that a greater number of fly existed in that area.

Four of the fifteen flies were dissected; none of these showed the presence of trypanosomes in the salivary glands. One was found to be infected in the gut.

As already stated, the only habitations within a radius of 800 yards are the barracks and a small farm west of the railway. Twenty-seven persons were examined at the barracks and seven at the farm, none of these showed any evidence of trypanosomiasis, fresh blood films, thick and thin stained films and gland examinations were alike negative. From these observations it is evident that the state of affairs at the bungalow is the same as for the rest of the area, that is to say the danger of trypanosomiasis incurred by residents at the bungalow is remote.

Malaria.—This is undoubtedly the chief danger to which residents at the bungalow will be exposed.

The natives living within 800 yards of the house are even more intensely infected with malaria than those on, or near, the oil-palm site. Table VI shows the number and percentage of persons harbouring malaria parasites.

Table VI showing the number and percentage of persons with malaria parasites in the peripheral blood:—

Number of Persons Examined.	Number of Adults Examined.	Percentage of Adults with Malaria Parasites.	Number of Children Examined.	Percentage of Children with Malaria Parasites.
35	28	21·4	7	85·7

During the month I was in residence at the bungalow mosquitoes in general, and anophelines in particular, were very numerous in the house, thus one morning, a few days after my arrival, I collected twenty-two female anpohelines between 6 and 6.15 a.m. in one room of the house. As this state of affairs, when considered in conjunction with the intense infection of the natives living near the bungalow, was obviously of a highly dangerous character, a very careful search was at once made for any possible breeding places. The breeding places discovered have been marked on the attached chart.

As already stated, owing to the absence of rock and to the porous nature of the soil, casual pools of water were never found near the bungalow; this was an important fact as it limited possible breeding places to—(*a*) Artificial receptacles (*b*) Tree holes, etc. (*c*) Springs, streams and swamps.

(*a*) *Artificial Receptacles.*—No discarded tins, etc., were found in the neighbourhood of the bungalow. The bungalow is supplied with a large 1,000-gallon tank in which is collected rain water from the roof; no larvæ were found in the tank. It was not found possible to examine the gutter which collects water from the roof, but it is well sloped and probably free from larvæ.

(*b*) *Tree Holes, etc.*—A very complete survey was made of all trees within 300 yards radius of the bungalow. The scheme adopted being the same as that employed by Professor Blacklock at Daru. The forest-guards proved themselves very expert at this work and in a few days examined and marked about 100 trees; of these about fifteen contained water and in ten of these larvæ were present. Adults bred from these larvæ proved to be culicines.

The banana trees close to the bungalow contained a few stegomyia larvæ and Major Peacock found a collection of culicine larvæ in some of the dead banana leaves lying on the ground.

(*c*) *Springs, Streams and Swamps.*—These appear to be entirely responsible for the large number of adult anophelines which occur in the neighbourhood of the bungalow. Five main breeding grounds were discovered, three of these were within 250 yards of the house, the remaining two being about 450 and 600 yards distant. The distribution of the anopheline larvæ in these situations was always similar. Larvæ do not tend to occur in the basin of the springs, or in the deeper portions of the streams, nor are they to be found at the centre of the swamps; they appear to be confined to the smaller channels and backwaters of the springs and streams and to the edges of the swamps. They are most abundant where the muddy edge of the stream or swamp is crossed by a native path. The absence of larvæ from the deeper portions of the springs, streams and swamps is probably mainly due to the enormous number of small top feeding fish which occur in these situations. The position and character of the five main anopheline breeding places were as follows:—

(1) A spring about 200 yards south-east of the bungalow. This is the source from which water is obtained for the bungalow when the rain water tank is exhausted; the larvæ were found along the edges of the small streams joining the spring to a swamp about 20 yards distant.

(2) Anopheline larvæ were found breeding about 250 yards from the bungalow at a point where the road from the bungalow to a farm enters the swamp about 50 yards from the one previously described.

(3) A spring which supplies the barracks and lies about 250 yards north-east of the bungalow. The larvæ were discovered at the edge of the swamp and along the margins of the muddy stream which joins the spring to the swamp.

(4) A spring supplying a farm about 200 yards west of the railway and some 450 yards from the bungalow. Larvæ were found in the back waters formed by grasses growing in the fairly fast flowing stream, which connects the spring to a swamp a few yards further away.

(5) This breeding ground also lies to the west of the railway and some 600 yards from the bungalow. Anopheline larvæ occurred in numbers along the edge of the swamp, but were most common in the muddy pools bordering a native path at the point where it entered the swamp.

Sufficient has been written to show that the bungalow is situated close to intensely infected native habitations and is surrounded by anopheline breeding places. It will be shown under " Recommendations " that this condition of affairs is capable of considerable improvement.

General Considerations.

The inhabitants of the barracks and of the farm across the railway line appear to be free from any infectious disease. The barracks struck me as being admirably clean and well kept. I was informed that the rain water collected in the tank at the bungalow only served one European for the first two or three months of the dry season, after that resource must be had to the spring, already referred to, which it is stated yields an abundant supply. It is impossible to express any opinion as to the condition of the water here at the barracks until the spring has been cleaned out, the surrounding vegetation cut down and a fence built round the supply.

Recommendations.

Trypanosomiasis.—If the recommendations suggested for the oil-palm site are carried out, they should result in the reduction of fly at Masehloo and a consequent reduction in the already small number of fly existing near the bungalow.

Malaria.—The present very unsatisfactory state of affairs appears capable of improvement in two distinct ways (1) by removing all the human sources of infection for anophelines (2) by the destruction of anopheline breeding places.

(1) The only inhabited buildings within 800 yards radius of the bungalow are the barracks and a small farm across the railway line, but both these places have already been shown to be most intensely infected with malaria. I would therefore recommend that both these sources of infection be removed to a distance of not less than 800 yards from the bungalow. The result of this measure would be that the chances of acquiring malaria at the bungalow would be very greatly reduced.

(2) It has been stated that no anophelines were found breeding in artificial receptacles or in trees; but the latter were found to form breeding places for culicines, and all such trees should have the holes drained or filled with cement; if this is not possible the tree should be cut down, indeed the number of trees at present surrounding the bungalow appears somewhat excessive, and if some of them were removed, especially those growing on the eastern side, it would probably allow of more breeze reaching the bungalow and reduce the high humidity which at present exists. The clumps of bananas beside the house should be thinned out or destroyed, they not only contain mosquito larvæ, but have obviously in the past served as a dumping ground for kitchen refuse, a native method of manuring which is difficult to eradicate. The grass and undergrowth surrounding the bungalow should be cut down within a radius of 200 yards.

The best methods of dealing with the main breeding places of the anophelines, that is to say the springs, streams and swamps, must now be considered. The eradication of larvæ from the springs should prove a simple matter, all vegetation surrounding the edge of the spring should be destroyed and the course of the spring to the nearest swamp should be canalized so as to obtain a briskly flowing stream devoid of vegetation; all of the three springs near the bungalow are within 10 yards of a swamp, so that the digging and maintaining of the canals should involve very little labour.

The problem of eradicating larvæ from the swamps and from the sluggish streams which connect these together is obviously a most important, and also, unfortunately, most difficult undertaking. Clearly the whole area might be dealt with in a radical manner by large schemes of swamp drainage, such as filling-in and canalization, but the cost of carrying out and maintaining such a scheme would most certainly involve an expenditure out of all proportion to the value of the bungalow. It has been shown that larvæ are confined to the edges of the swamps and streams and that great numbers of top feeding fish abound in both; I would therefore recommend that all the vegetation at present surrounding the edges, and growing in the shallow parts, of the swamps and connecting streams should be destroyed, and that the bed of the streams be deepened and their courses straightened. This should get rid of most of the shelters which at present protect the larvæ from the fish and should tend to reduce the size of the swamps by increasing the velocity of the outflow.

General.

The bungalow has not been occupied for some time and both the springs supplying the bungalow and the barracks have fallen into a state of disrepair. They should be thoroughly cleaned out, the ground round them cleared of all vegetation for a radius of fifteen yards and the branches of trees which at present overhang them cut down. The cleared area should then be surrounded by a strong fence with only one opening. The method of canalizing the overflow from the spring has already been discussed.

Within five yards of the spring which supplies the bungalow there is a large pool of water which is fed by a small spring, this pool is on a higher level than the bungalow spring, and appears to drain directly into it. I was informed that during the dry season this pool was used for obtaining water for the nurseries, there appears to be a decided risk that the pool may prove a source of contamination for the bungalow drinking supply, and I would suggest that it be filled in and water for the nurseries be obtained from some other place. I understand that the question of water supplies and general sanitation will be dealt with by Major Peacock.

Acknowledgments.

Major W. H. Peacock was working with me from 5th to 9th, and from 27th to 30th November. My thanks are due to him for much assistance and suggestion. I am also indebted to the Lands and Forests Department for allowing me the use of their bungalow and the assistance of their native staff at Mabang, and also for the loan of maps and various papers of reference.

Appendix D.

Infant Welfare.

INFANT WELFARE—CONNAUGHT HOSPITAL AND CAMPBELL STREET.

Clinics in connexion with Infant Welfare have been held every Friday afternoon at the Connaught Hospital in the Central Ward and on Mondays and Wednesdays at 99, Campbell Street in the West.

Nurse Edith Thomas, the Acting District Nurse, resigned early in the year and was succeeded by Nurse Crawford, who was later joined by Nurse Macfoy. Two district nurses were especially desirable because a regular antenatal clinic was started in April. Towards the end of the year Nurse Crawford resigned.

At the clinics, the district nurse, assisted by a pupil health visitor, weighs all the babies and records their weights. Every baby is then examined by the medical officer and given appropriate treatment and advice.

The total number of attendances at the clinics was 8,281 and the number of new individuals on the register for the year was 754. The following table shows the number of attendances at the clinics during the year.

Connaught Hospital.

Month.	Old Cases.	New Cases.	Total.
January	249	36	285
February	287	38	325
March	280	25	305
April	280	30	310
May	273	32	305
June	227	25	252
July	352	32	384
August	252	31	283
September	338	31	369
October	281	14	295
November	405	25	430
December	309	27	336
	3,533	346	3,879

Campbell Street

Month.	Old Cases.	New Cases.	Total.
January	369	38	407
February	417	43	460
March	447	26	473
April	279	25	304
May	420	45	465
June	413	37	450
July	326	29	355
August	442	38	480
September	374	42	416
October	440	38	478
November	589	35	624
December	232	12	244
	4,748	408	5,156

The percentage of nationalities of new cases attending the clinics in 1926 and 1927 was as follows:—

	Creoles.	Aborigines.	Krus.	Various.
1926	69 per cent.	17 per cent.	13 per cent.	1 per cent.
1927	60 per cent.	27 per cent.	12 per cent.	1 per cent.

This shows a very striking increase in the proportion of aboriginies attending.

The following table shows the number and kind of visit paid by the district nurse each month during the year:—

Month.	Newly Born.	New Cases.	Repeated Visits.
January	52	80	288
February	40	81	286
March	49	51	291
April	98	55	256
May	67	77	294
June	76	62	285
July	216	94	524
August			
September			
October	72	52	288
November	81	60	200
December	98	39	260
	859	651	2,972

It will be seen that the district nurses visited 849 children out of 881 registered for Freetown for the year.

It is impossible to give an analysis of the diseases treated, but most of the diseases usually seen in an infant welfare clinic in Europe are to be seen here, with the addition of malaria, more frequent helminthic infections and tetanus neonatorum. After malaria, respiratory troubles are the commonest. Pertussis is the most frequently seen of the infectious diseases.

A routine inspection of all children has revealed a common condition—viz. an erythema round the anus, sometimes with excoriation, which is usually due to hyperacid stools. In view of the general faulty metabolism of the mothers and children (which was referred to last year in a report on congenital rickets) this acidity may be an important factor in the already poor calcium metabolism of the young infant. An investigation was carried out in the materntty ward of the Connaught Hospital to determine the reaction of the young baby's stools with the following result:—Of eighty specimens examined ten were natural, one alkaline, two were amphoteric, sixty-seven acid.

The foliowing table gives the age at which the stool was examined with the result:—

Day.	Number Examined.	Neutral.	Acid.	Alkaline.	Amphoteric.
1	3	2	1	...	...
2	7	2	5	...	...
3	14	3	10	...	1
4	16	...	16	...	...
5	16	1	14	...	1
6	7	2	5	...	...
7	6	...	5	1	...
8	5	...	5	...	...
10	2	...	2	...	...
11	1	...	1	...	...
12	1	...	1	...	..
14	1	...	1	...	...
90	1	...	1	...	...
	80	10	67	1	2

The stool of a healthy infant should give an acid reaction, but I am of opinion that many of these stools were hyperacid and called for some treatment.

Infantile Mortality.—As regards statistics the results are disappointing. Although these are the only means of gauging the beneficial effects of the work, too much importance should not be attached to them at present. There has been a good deal of disappointment because the infant mortality rate for Freetown was higher this year than in the two preceding years, but I think the rate is a false one for the reasons which I will give.

In the first place it should be realized that the total births registered per annum for Freetown is round about a thousand and it is on the number of deaths among the children under twelve months that the infant mortality rate is calculated. The following table shows the infant mortality rate for 1927 calculated according to registration figures among the three important divisions of the Freetown community—Creoles, aborigines and Krus:—

——	Births.	Deaths.	Infant Mortality Rate.
Creoles	542	111	204
Aborigines	206	146	708
Krus	114	51	447

In extracting these figures European and Syrian children were omitted; this will account for any discrepancy in the above figures with those of the Registrar. It becomes apparent that the aborigines are the greatest difficulty we have to contend with as regards statistics, for we find out of a total of 308 infant deaths they account for 146, i.e. nearly one-half the total deaths, whereas out of 862 births they only account for 206 i.e. less than a quarter of the total births. This I think clearly indicates a failure to register births on the part of the aborigines.

The birth and death statistics as regards the Creole element in Freetown may be considered as fairly accurate, and this infant mortality rate of 212 as a fairly accurate figure

The Annual Mothercraft and Baby Competition in connexion with Health Week was held this year in the Victoria Park on Saturday the 17th December. The preliminary judging had been completed during the week, so that only a certain number, consisting of the likely winners, from each class had to be presented to the judges for their final decision.

There were five classes—Class I up to six weeks, Class II six weeks up to one year, Class III one year up to two years, Class IV two years up to three years, Class V twins.

There were some 500 entrants, of whom seventy-five were sent before the judges who were Lieutenant-Colonel Storrs, Doctors Pratt and Renner. The seventy-five finalists were apportioned to the different classes as follows: Class I—2 Class II—33 Class III—24 Class IV—7 Class V—9.

The sum of £25 15*s*. was given away in money prizes. The following rules for this competition were adhered to:—

1. To be eligible an Infant Welfare card showing six attendances during the year must be produced.
2. All babies who will be under six weeks of age on Friday, 9th December, will be considered eligible if they have an Infant Welfare card showing two attendances. A birth certificate will be considered essential.
3. There will be five classes, each class having its separate prize or prizes:—
   Class I Six weeks and under
   ,, II Over six weeks and up to one year
   ,, III Over one year and up to two years
   ,, IV Over two years and up to three years
   ,, V Twins.
4. The judges may ask to see the birth certificate of any entrant.
5. No names will be accepted for the competition after Friday, 2nd December.
6. The preliminary judging of entrants from the Connaught Hospital and Campbell Streets Centres will take place at noon at the Connaught Hospital on the following days:—

   Classes I and V—Tuesday, 13th December
   Class II—Wednesday, 14th December
   ,, III—Thursday, 15th December
   ,, IV—Friday, 16th December

   and of entrants from the Princess Christian Mission Hospital Centre at the Princess Christian Mission Hospital on days to be arranged by the Medical Officer-in-charge.

   Mothers should attend at the centre to which they belong.
7. The final judging and distribution of prizes will take place at the Victoria Park on Saturday afternoon, 17th December.

Owing to the high infant mortality rate during the first fourteen days, Class I was arranged with a view to encourage mothers to start attending the infant clinics as early as possible—but experience has shown that the entries are far too small in this class to justify its existence as a separate class.

As regards Class II practical experience has shown that it is far too large for the judges to deal with efficiently in the time at their disposal. It has been decided in consequence of this that these rules shall be altered for 1928.

Rule IV was inserted not only to ascertain the age of the child but to encourage the registration of births.

During Health Week pamphlets on various subjects of vital importance were freely distributed—those in connexion with infant welfare and antenatal work are quoted in full.

HEALTH WEEK.

INFANT WELFARE.

REMEMBER.

To-day's children are the makers of to-morrow.

Many babies die every year through improper feeding.

Baby needs his natural food—mother's milk, so give it to him.

Baby needs a clean, happy well-aired home.

Baby needs careful attention, for his only way of showing his needs is by crying and fidgeting.

Baby needs a doctor's care when he has fever.

Baby needs pure water, freshly boiled and cooled to drink three times a day. He will get sick without it.

Baby needs plenty of sleep lying down, and also needs to exercise his legs and arms freely.

Baby needs careful handling—his bones are soft and joints easily damaged.

The 5th remark is meant to allow of early treatment particularly in malaria.

The 8th remark is intended to hint at the undesirability of carrying the infant on the back with legs and arms motionless and often little fresh air to breathe.

The following pamphlet, which is given in full, was produced this year:—

HEALTH WEEK.

11th to 17th December, 1927.

ADVICE TO EXPECTANT MOTHERS.

1. Pregnancy is a natural condition, but experience has taught that certain precautions should be taken to prevent illness.
2. Always inform your doctor or attend one of the antenatal clinics when you think yourself pregnant.
3. Eat enough only to satisfy your appetite, but include in your meals sufficient animal fat, fresh green vegetables and drink plenty of water. A little cod liver oil and an egg taken every day is a great help towards preventing ill-health.
4. See that your bowels move at least once a day and that you pass a good quantity of urine.
5. Take exercise in the fresh air every day—walking is the most suitable.
6. Avoid all excitement and worry.
7. Sexual intercourse during pregnancy is not necessary, it should be indulged in with caution.
8. If you have fever always seek competent medical advice. Malaria during pregnancy is safely treated with quinine.

9. If headache are frequent, your urine is scanty, or feet swell, seek medical advice at once. You may be in danger.

N.B.—Clinics are held at the Princess Christian Mission Hospital on Thursdays, and at 99, Campbell Street on Tuesdays, at 8 a.m.

Item 3 is an attempt to remedy the serious deficiency which exists in the maternal diet.

Item 7 is to contradict a local tradition which sometimes causes disastrous results.

Item 8 is to contradict the popular belief that malaria cannot be treated with quinine during pregnancy.

E. J. WRIGHT,
Medical Officer.

REPORT ON INFANT WELFARE WORK IN EAST WARD FREETOWN.

The Infant Welfare Clinic was held on Thursday mornings at the Princess Christian Mission Hospital throughout the year.

There were 5,463 attendances as compared with 3,976, and an average weekly attendance of 124, as compared with 80 for last year.

January	389
February	455
March	543
April	405
May	479
June	515
July	443
August	595
September	632
October	544
November	646
December	817

Health Visitor.—In December Miss Beatrice Johnson was appointed Health Visitor to the East Ward and there has been a steady increase in the attendances at both the infant welfare and antenatal clinics, and also in the number of women giving birth in the hospital since her appointment.

Tribes attending the Clinic.—The babies belonging to the various tribes from the Protectorate show a gratifying increase in their attendances. Thus at one clinic held recently there were 137 infants: of these 61 per cent. were Sierra Leoneans and 39 per cent. Protectorate natives. At another 53 per cent. were Sierra Leoneans and 47 per cent. natives.

Of mothers giving birth in the hospital in 1927: Sierra Leoneans 81 per cent., Kru 7 per cent., Protectorate natives 12 per cent. Of these latter the majority only entered the hospital owing to serious complications.

The infant welfare clinic is therefore well attended by the more educated Sierra Leoneans who, as a rule, attend regularly and follow out the medical instructions given to them. It is becoming yearly more popular with the Protectorate natives, but their attendance is still irregular and treatment, even if followed, is frequently combined with their own native remedies.

Every year, however, shows a gradual improvement in these matters. The number of women of the Protectorate tribes giving birth in the hospital is not so satisfactory and there is evidence of much bad midwifery in the district among them. This is shown by the attendances at the infant welfare clinic of newly-born infants with septic umbilical cords, with ophthalmia, with convulsions and very frequently with gastro-enteritis and thrush due, I think, to the decoction of leaves, etc., which newly-born infants are given in order to make the bowels act.

Training of Native Midwives.—There is still a heavy infant mortality due to ignorance of untrained native midwives and, as the women of the Protectorate tribes are unwilling to enter hospital, and as it is so difficult to obtain enough educated midwives, especially of those speaking the tribal language, to work in the district, I would suggest that some elementary training in midwifery be given to a selected number of older women drawn from different tribes who now act as midwives. In the case of many of the poorer women with one or two children in the house it would appear to be quite impossible for the mother to leave the home to enter hospital.

Diseases as seen at the Clinic. Digestive disorders (due generally to unsuitable diet) and malaria continue to be the most common and debilitating diseases.

Complete quinine prophylaxis is not attempted—the theory held being (whether rightly or wrongly) that it interferes with the partial immunity which most natives of this country sooner or later acquire.

Regular attendants at the clinic can be kept free from enlarged spleen by treating such attacks of malaria as they get by small doses of quinine.

Roundworms are very commonly present in the older children. Pathological skin conditions are numerous and frequently puzzling. Eczema is the most common skin defect, due to the hard knotted strings or coarse beads tied around the neck and groins and which almost invariably get into sodden and septic condition. Scabies is also common.

Small blisters and pustles about the feet, and occasionally also on the hands due to the invasion of ankylostome larvæ are very frequently seen. Three cases of *Larvæ Migrans* were seen during the rainy season; in two cases on the foot and in one on the hand—the two cases on the foot being associated with the above pustular condition.

Several cases of yaws were seen and several congenital syphilitic cases.

Marked rickety bony deformities have been seen on a few occasions and lesser rickety manifestations more frequently, but this disease is not as common in this clinic as it is reported to be in those in the Central and West Ward.

Cases of whooping cough appeared from time to time throughout the year also bronchitis and pneumonia.

Convulsions are well known and much dreaded here by mothers, and there are several older children who suffer from paralysis as a result of convulsions.

Three motherless babies are at present being brought up at the Princess Christian Mission Hospital.

Health Week.—During Health Week in December, there were thirty-seven babies sent in from this clinic to the baby show which was very popular amongst the mothers and caused record attendances on the days immediately preceding the competition.

M. G. BLACKLOCK,
Lady Medical Officer.

Appendix E.

Antenatal Clinic.

On Tuesday, April 5, the first regular Antenatal Clinic was held at 99, Campbell Street, and seven patients attended. Subsequently clinics were held regularly on Tuesdays in the morning, and the attendances rapidly increased until there were usually between forty and fifty attendants at each clinic. There are 270 individuals on the register with a total of 1,159 attendances. Of the 270 individuals, 186 were multigravidæ and fifty-eight primigravidæ and twenty-six were spurious cases which included typical cases of pseudocyesis—a condition very common here—some with tumours mostly fibroids, and others at the menopause.

Out of 244 pregnant women the 186 multigravidæ had given birth previous to attending the clinic to 468 children, of which number 277 were still alive at the date of first attendance, the remainder, 191, were either stillborn or had died after birth. By the end of the year, of the 244 pregnant women one had aborted at the fourth month and 136 had given birth—seventy in the maternity ward and sixty-six at home. These births resulted in 138 children, there being two twin labours.

The records show that ten of these 138 children died within fourteen days and five (which included a pair of twins) were stillborn. When we consider that nearly half of our infant mortality occurs during the first two weeks of life and the above figure gives seventy-two deaths under two weeks per 1,000 births, the result is encouraging.

Of the ten infant deaths five were due to prematurity, two were twins, two of unknown cause and one tetanus neonatorum. Of the five mothers giving birth to premature children three were primiparæ, the remaining two had the following records:—

(*a*) One previous child died aged five months.

(*b*) One previous child alive aged two years.

The mothers of the two infants dying for no apparent reason, had each given birth to one child before and these children had only survived birth two months in one case and a few weeks in the other. Their present children survived seven days in the former and ten minutes in the latter case. Of the five stillborn children there was one pair of twins, the mother of whom had had one previous pregnancy resulting in a living child who died on the 8th day. One of the mothers was a primiparæ and the fate of the previous children of the remaining two was—

(*a*) Four alive, two dead.

(*b*) Three alive, two dead.

These facts concerning the fate of the previous children of the mothers who lost their children is of interest, for they point to a faulty maternal nutrition than to syphilis as the cause of mortality, in as much as they show that the tendency is for the children to be lost more frequently and earlier the greater the number of previous pregnancies, whereas in syphilis the reverse is the case.

Observations made at the clinic go to show that in addition to the deficiency causing congenital rickets, which was described in the annual report for last year, there is in all probability a deficiency of vitamins A and B in the maternal diet, which becomes obvious during pregnancy, and together give rise to certain definite symptoms which are described later and can be recognized early, and satisfactorily treated with cod liver oil and marmite.

As it is the vitamin needs of the fœtus which cause the maternal exhibition of symptoms of A and B avitaminosis,, it is reasonable to suppose that a liberal supply of these vitamins over a sufficient and early enough period should prevent the symptoms appearing.

A routine examination of the teeth of the women attending the clinic was made and the following is the result:—

Number of Teeth Decayed.	Number of Patients.	Total Number Decayed Teeth.
0	166	0
1	20	20
2	24	48
3	12	36
4	19	76
5	5	25
6	8	48
7	2	14
8	3	24
9	1	9
10	2	20
12	7	84
15	1	15
	270	419

So that 270 patients had 419 carious teeth, an average of 1·5 each—a figure which speaks for itself.

Maternity Ward.

During the year 301 patients were admitted to the maternity ward, fifty more than the previous year. Of these admissions, 124 were complicated pregnancies and 177 labour cases. Eighty of the labour cases were primiparæ and ninety-seven multiparæ, 183 children were born in hospital, there being six twin labours.

There were in all forty-nine abnormal cases—twenty-seven (i.e. 33 per cent.) among primiparæ and 22 (i.e. 22 per cent.) among multiparæ. Torn perinæum, as would be expected, was the chief factor increasing the abnormality rate in primiparæ; out of a total of twelve requiring suturing nine were primiparæ. It is gratifying to note that out of six breech labours only one of the children was lost, and this was a case in which the body of the child had been born four hours before admission—the arms were extended. The remaining five children left the hospital in good condition.

The result of the six twin labours as regards the children was very unsatisfactory, but the midwifery cannot be blamed, for in two of the labours the breech presented and all four children were dead born—macerated. Two others had both children presenting by the vertex and all were born alive. The remaining two had one a vertex and the other, a breech presentation: of these, one pair of twins was born alive and survived; of the other pair of twins only the one presenting by the vertex survived, the breech case dying on the third day.

For the purpose of this report a normal labour has been considered one in which the mother is healthy, vertex presents with the child's back to the front, membranes do not rupture prematurely, the placenta is implanted in the upper unterine segment, the labour ends without aid in twenty-four hours, with a living full-time child without injury to the mother.

The 177 maternity cases consisted of the following peoples:—

Creole	131
Kru	35
Temne	5
Mende	4
Mandingo	1
Fula	1

Of these only forty-six were married according to English law, and these would naturally be found among the 131 Creoles; thus it will be seen that approximately 65 per cent. of the Creole mothers delivered in hospital were unmarried— these large proportion of unmarried mothers may have an important bearing on the infant mortality rate, which is always higher among the unmarried in civilized races. This point is of little importance among the country people, as they have their own customs and laws which they abide by.

A few cases of ophthalmia neonatorum were seen during the year, but none serious and all responded to simple treatment with cold saline pads. It is worth recording that during the past twelve years the only routine prophylactic treatment given to the newborn baby's eyes is swabbing with boric lotion—even in cases of ophthalmia that have developed it has never been found necessary to use silver salts or astringents.

The average stay in hospital of the maternity cases was 7·8 days; last year it was 6·2 days. Many patients leave too early, some for domestic reasons, others to undergo certain traditional native treatment, and yet others through ignorance, believing that rest in bed is unnecessary after a normal childbirth.

The following table gives details of the forty-nine abnormal cases; no case has been counted twice and appears under the heading which designates its most prominent abnormality.

Designation.	No.	Remarks.
Ante-partum eclampsia	3	One living child, one forceps–episiotomy primipara–living child–maternal death, one dead-born child.
Ante and post-partum eclampsia ...	1	Dead-born–maternal death.
Breech	6	Two with extended arms, both living: one admitted with extended arms and body born.

Designation.	No.	Remarks.
Brow	1	Forceps–still-birth–maternal death 23rd day.
Dead-born	4	
Face	1	Stillborn.
Forceps	3	All children lost: two patients brought in exhausted.
Hydrocephalus	1	Perforation.
Persistent occipito post	1	Forceps living child–8½ lb.
Placenta prævia	2	One live birth: one transverse, podalic version, dead-born.
Retained placenta	1	Baby died two days after delivery.
Premature	5	One living: one died after two hours: one after twenty-four hours, one after forty-eight hours: one stillborn.
Still-births	2	
Torn perinæum	12	See text.
Twins	6	See text.
Total	49	

There were five deaths among the labour cases.

1. Cardiac failure twenty-four hours after delivery.
2. Dystocia: admitted collapsed: died immediately after forceps extraction.
3. Ante- and post-partum eclampsia: died comatose within twenty-four hours of delivery.
4. Impacted brow: no difficulty in forceps extraction: died on 23rd day from parametritis and sapræmia.
5. Ante-partum eclampsia: died comatose within twenty-four hours of admission.

The following table gives details of the 124 complicated pregnancies: cases admitted in puerperium and a case of pseudocysis have been included in this list:—

False pain and observation	36
Abortion—threatened	3
„ incomplete	9
„ complete	2
„ septic	1
Pre-eclampsia	8
Pyrexia	2
Malaria	10
Albuminuria	7
Undiagnosed	5
Miscarriage—complete	4
„ incomplete	2
„ threatened	—
Constipation	3
Hydatidiform mole	1
Rheumatism	1
Hyperemesis gravidarum	3
Ascariasis	2
Stomatitis	2
Retained placenta	2
Pseudocyesis	1
Ante-partum hæmorrhage	1
Baby born before admission	3
Cough	2
Placenta prævia	2
Abscess vulva	1
Septicæmia	1
Difficult micturition	1
Dyspepsia	1
Peritonitis	2
Puerperium observation	4
Post-partum eclampsia	1
Ante-partum eclampsia	1

Among the 124 complicated pregnancies there were four deaths:—

1. Retained placenta—death from collapse within twenty-four hours of manual removal of placenta. The patient had travelled overland from Goderich Village about 7 miles distant.

2. Septicæmia.

3. Miscarriage—enteritis—collapse.

4. Ante-partum eclampsia—died undelivered within twenty-four hours of admission.

Of the 183 babies born, twenty-six were lost, twelve dead-born (skin peeling or macerated), seven were stillborn and nine died after delivery.

Dead-births were accounted for as follows:—One perforation for hydrocephalus, two pairs twins, two eclampsia, one placenta prævia. No cause could be assigned for the death of the remaining four.

Still-births.—One premature: two dystocia: one brow: one face: two with no particular feature.

Died after Birth.—Three premature, one twin: three died after forty-eight hours, one after twenty-four hours, one after six hours.

It is interesting to draw a comparison between the infantile and maternal mortality rate at the hospital with those of the Rotunda and Coombe.

—	Infant Mortality.	Maternal Mortality.
Rotunda, 1926	97 per 1,000	·71 per cent.
Coombe, 1926	105 per 1,000	1·3 per cent.
Connaught hospital maternity, 1927 ...	153 per 1,000	2·8 per cent.

Considering that our maternity has no externe midwifery department and the others have, the comparison is favourable.

E. J. WRIGHT,
Medical Officer.

Appendix F.

Report on the Medical Inspection of Children in the Elementary Schools of Freetown and the Colony.

The medical inspection of school children had to be much curtailed this year due, during the first half of the year, to my duties at the Princess Christian Mission Hospital and Infant Welfare Clinics and during the second half to school vacation.

The following schools were examined :—

Table I.

Schools.	Number of Children Examined.
Freetown :	
Bathurst Street	130
Brookfields	112
Samaria	135
Colony :	
Kissy C. E.	144
Kissy Wesleyan	60
Murray Town	114
Lumley	61
Wellington C. E.	66
Wellington Wesleyan	31
Congo Town	42
Waterloo Amalgamated	153
Regent Amalgamated	79
Allen Town	40
Hastings C. E.	86
Hastings Wesleyan	31
Aberdeen Amalgamated	48
Madrasa Umaria Aberdeen	52

Detailed reports were kept of each case. In Freetown letters were sent to the parents of those children found to be suffering from disease, stating the nature of the disease and advising them to have the child treated.

In the Colony, on the completion of the medical inspection of the children, I met the parents of those children suffering from defect and gave the required medical treatment. In most of the villages the local dispensers assisted me in the treatment and were given instruction as to the subsequent treatment. Return visits to those villages have shown that this latter method gave satisfactory results.

Diseases affecting Children.—Malaria, helminth infections, injuries to feet, and skin affections were the most common complaints noticed. Cases of bronchitis, whooping cough (of which there was a serious epidemic in October), and yaws, were found, the last disease more especially in the Colony villages.

One severe case of phthisis was discovered in a girl aged about ten years. She died from hæmopytis a few weeks later.

Nutrition.—I still find difficulty in deciding how much actual malnutrition is present, but consider that in both Freetown and in the Colony schools there is a considerable amount but more marked in the former. To state the chief cause of such malnutrition I find still more difficult. There is scarcely a school-child who does not suffer from malaria and multiple parasitic infection. In addition, the diet is frequently both scanty and defective, and in few of the elementary schools is sufficient attention given to games or physical exercise.

The three Freetown schools examined this year were situated in the Central Ward of the town and in the two most central was noticed the largest number of cases of rickety deformity. These schools had litle or no playground and the children suffered from lack of exercise.

Yaws and Syphilis.—Several cases of florid yaws were met with in Freetown schools, but this condition was more common in some of the Colony schools.

A common skin condition among school children both in the Colony and also in Freetown consists of irregular patches of greyish white colour widely distributed over the body, but more marked on arms and limbs and back. The patches consists of enlarged follicles with small scales. A similar condition is described and illustrated by Sellards as a secondary rash occurring in volunteers inoculated with yaws.

The rash is transient and is apparently painless, the child making no complaint, and the condition if noticed at all gives no anxiety to the parents.

In many cases no primary sore is seen. In two boys the primary sore was a genital chancre, flat and indurated, and differing in no way from a typical hunterian chancre. The sister of one of these boys, however, while presenting a similar rash, had the primary sore in the form of a raised encrusted yaws pustule with no induration. We have therefore two cases, brother and sister, each presenting what is recognized as a secondary yaws rash, but, according to present opinion, the primary sore in the brother must apparently be classed as syphilitic whereas the primary sore in the sister must be termed yaws.

The same condition of the tongue which I drew attention to in a previous report was frequently seen and was generally associated with greyish patches and in some cases cracks or sores at the angles of the mouth.

School Sanitation.—During the year there has been considerable amalgamation of the schools in Freetown and to a lesser extent in the Colony. This has made it possible to close some of the more insanitary and overcrowded school buildings. It has also made it possible to better the existing school buildings, and in many schools the school furniture has been much improved.

Good progress is evident in provision for the smaller children. Formerly, these little children were frequently packed close together in a corner of a classroom on backless forms with feet unable to reach the floor. In most of the schools examined there is now an infant department with ample space—in one case, in a newly built open-air verandah. Here chairs and tables of suitable height are provided and also mats on the floor.

The curriculum—manual work—a modified Montessori system—combined with gentle physical exercises, often in the form of games in the open air, is also a great improvement on previous conditions and I have been very much struck with the happy, alert, and interested appearance of these children under this new treatment.

The most outstanding defects in the school sanitation are—

(1) Absence of or insanitary types of school latrines.

(2) Lack of playground accommodation.

There are still several large schools in Freetown with no latrine accommodation at all, there are still many schools, more especially, in the Colony, with latrines so defective as to be dangerous for the children to use. The bucket system, where labour for disposal can be obtained, would appear to be the most sanitary in practice. And the all-cement latrine with a seat cover is the only type so far evolved which will withstand the weather and insect conditions of the country.

I have not yet seen a latrine suitable for small children—the seats are invariably too high; I still think a few squatting type latrines might be useful. In one school with excellent newly-built latrines, it was found that these were kept locked and that the children *faute-de mieux*, were making use of the loose soil of the garden—an excellent method for the propagation of helminthic infection.

I realize that the state of the latrine accommodation is largely a question of finance, but I also know that the disease producing properties of insanitary latrines are not yet sufficiently realized by the teachers and managers of the schools. For this reason I emphasize it here.

Lack of Playground Accommodation.—In many of the Freetown schools this is a serious problem. In several crowded schools in the centre of the town there is no playground accommodation whatever; yet it is in these very schools that one finds most evidence of malnutrition and poor physique. Even in some of the Colony villages there is no definite school's playground, and while under present conditions the children can play in the open streets and neighbouring land, it would seem advisable for the school authorities to obtain land for school recreation before the adjacent land becomes built upon. In some Colony villages this building up has already happened. In all new buildings attention should be given to the provision of suitable open-air accommodation for recreation.

One of the most important developments in the school medical work this year was the formation of a committee consisting of the Honourable Director of Education, the Deputy Director of Sanitary Service and the School Medical Officer. At the meeting of this committee most of the points mentioned in this report were considered and plans were drawn up for improvement both in school buildings and also in the closer co-operation of medical and educational authorities in the discovery and in the treatment of health defects among the school children.

Teaching of Hygiene.—The teaching of hygiene is being undertaken more systematically and more practically. During Health Week essays on hygiene were sent in from the schools and prizes given to the best pupils.

During the summer vacation a course of lectures was given to the school teachers attending the teachers vacation course and in the examination held in October hygiene was made a compulsory subject.

Domestic Science and Dietetics.—That the diet of the general population of this country, as in other African countries, is deficient in certain substances has been pointed out by many authorities.

The effort to make up the deficiency by prescribing medicines containing such substances as vitamins seems an expensive and inadequate method of dealing with the problem. The real solution would seem to be widespread education in vegetable culture, in poultry keeping and in sheep and goat farming. These subjects naturally would be most easily taught in the Protectorate, but in mountain villages there is at present extensive if unscientific vegetable farming, which I think could and should be made use of for the education of the school children.

Domestic science together with some mothercraft training for the older girls is also of importance.

These subjects are, I know, being gradually introduced into the schools and plans are made for their extension. My excuse for mentioning them here is, that it does not appear to be generally realized that from a medical standpoint this is a serious problem. By means of work in the infant welfare clinics and in the schools we are trying to remedy the condition, but we realize that in so doing we are merely attempting to provide for a limited number those essentials of diet which should be within the reach of all.

M. G. BLACKLOCK,
School Medical Officer.

Appendix G.

REPORT OF THE WORK OF THE PRINCESS CHRISTIAN MISSION HOSPITAL.

Accommodation remains as in 1926, viz. forty-five beds arranged as follows:—

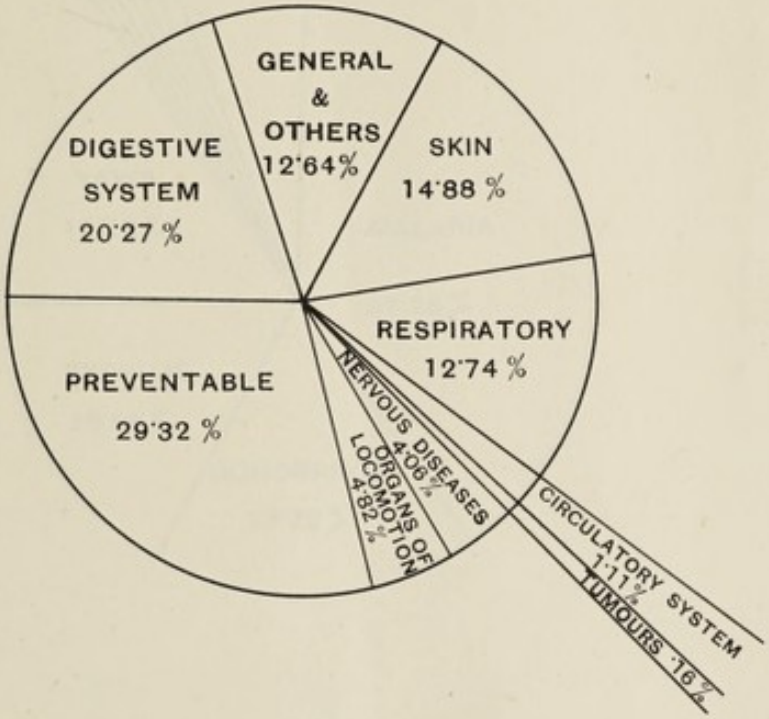
(1) General Ward	22 beds (18 beds, 4 cots)
(2) Gynæcological Ward ...	7 beds
(3) Maternity Ward	11 beds (4 beds, 4 cots)
(4) Private rooms for Africans ...	2
(5) European Ward	3 beds (2 beds 1 cot)

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

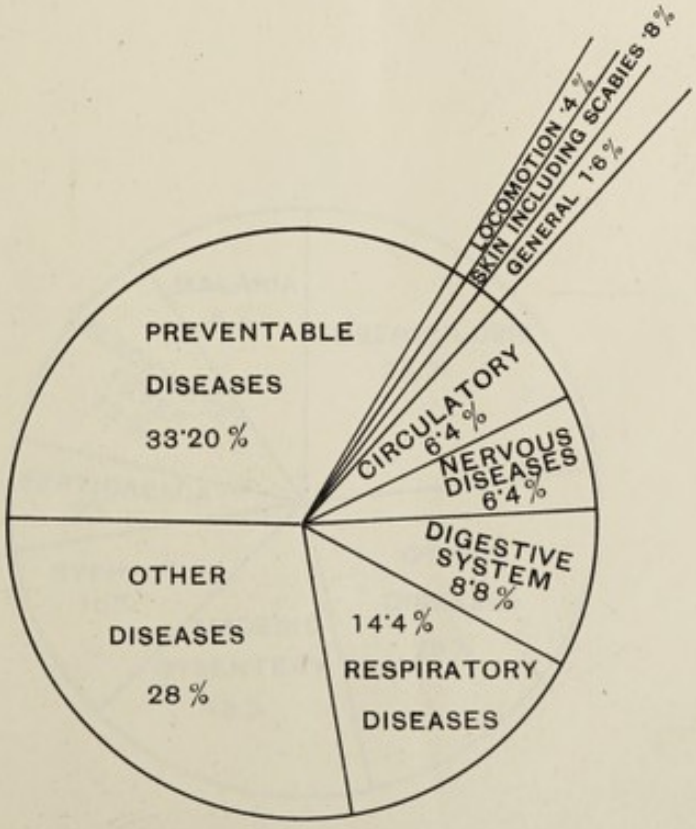
This hospital is assisted by the Government with a financial grant. There is a lady medical officer engaged by the Mission, and antenatal and infant welfare clinics are taken weekly by a Government medical officer. The institution is popular among the natives. and excellent work is being done.

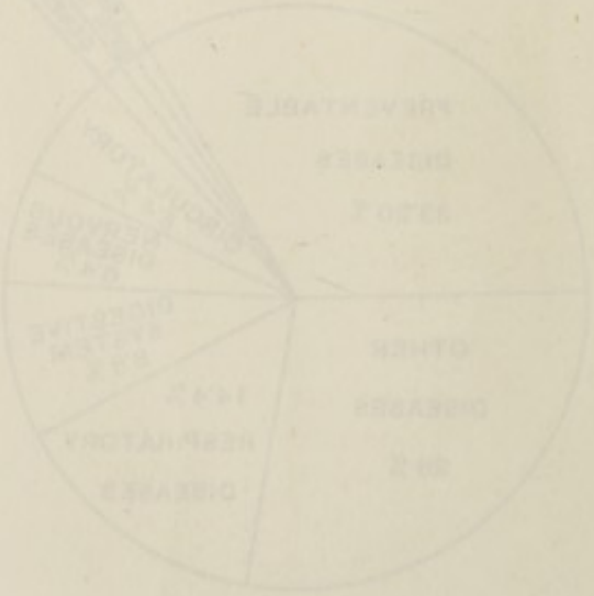
—	1926.	1927.
Total number of out-patients ...	8,429	10,207
Admissions	557	520
Deaths	27	17
Births	66	78
Operations	...	64
Infant welfare clinic ...	3,975	6,459

GENERAL SYSTEMIC & PREVENTABLE DISEASES
TOTAL INCIDENCE 81,135

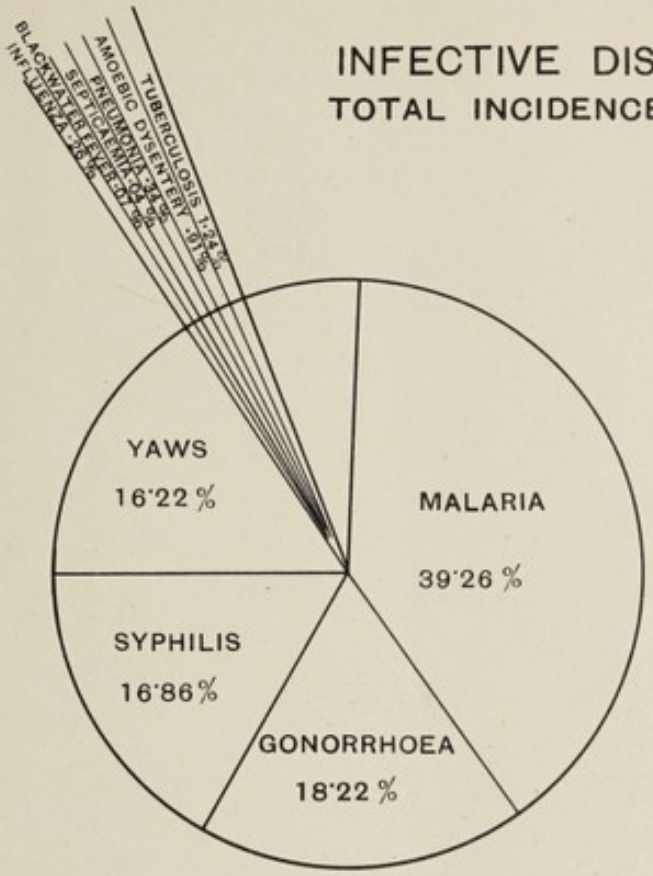


TOTAL DEATHS 250





INFECTIVE DISEASES
TOTAL INCIDENCE 12,544



TOTAL DEATHS 50