Annual report on the Medical Department / Sierra Leone.

SIERRA LEONE.

Annual Report

ON THE

MEDICAL DEPARTMENT

FOR THE

YEAR ENDED 31ST DECEMBER, 1912.

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ANNUAL MEDICAL REPORT FOR THE YEAR ENDING DECEMBER 31ST, 1912.

PRINCIPAL MEDICAL OFFICE,
FREETOWN,
SIERRA LEONE,
July 15th, 1913.

SIR,

I have the honour to submit, for the information of his Excellency the Governor, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the health and sanitary condition of the Colony and Protectorate of Sierra Leone for the year 1912, together with the returns, etc., appended thereto.

I have the honour to be,
Sir,
Your obedient servant,
J. WALLACE COLLETT.

I.—ADMINISTRATIVE.

Staff.—The Medical Staff consisted of :—

The Principal Medical Officer,
The Senior Medical Officer,
Medical Officers, 16,
Native Medical Officers, 3 ;

and a Sanitary Department, comprising :—

The Senior Sanitary Officer, and
The Junior Sanitary Officer, who is also the Medical Officer of Health for Freetown.

Changes of Staff.—The following changes took place in the Staff during the year :—the Principal Medical Officer, Dr. Forde, was on leave from January the 1st to February 25th, during which period Dr. Collett acted. Dr. Forde resumed duty on the 25th of February, when Dr. Collett resumed his substantive appointment as Senior Medical Officer instead of Dr. Burrows, who had been acting.

Transfers.—Dr. A. Bremner, Medical Officer, was transferred from Northern Nigeria to Sierra Leone on the 3rd of January. Dr. D. Burrows was transferred to Southern Nigeria on promotion as Senior Medical Officer on the 4th of September.

New Appointments.—The following new appointments were made on the Staff of Medical Officers during the year:—

Dr. E. J. Powell, on the 17th of January.
Dr. R. Semple, on the 13th of March.
Dr. W. E. C. Bower (originally appointed on the 23rd December, 1905), on the 27th of March.
Dr. E. F. Ward, on the 11th of September.

Mr. H. F. Hardie, Dental Surgeon, was appointed to the West Coast Colonies, and visited Freetown.

Leave.—The following Officers of the Medical Staff went on leave of absence during the year:—

Drs. J. C. Murphy, G. Rollason, D. Burrows, J. Y. Wood, R. H. Kennan, J. W. Collett, J. McConaghy, and R. W. Orpen.
Also Dr. W. Renner, of the Native Medical Staff.

Invalidings.—Dr. A. Bremner was temporarily invalided on leave on the 23rd of October, 1912.

European Nursing Staff.—This Staff consisted, at the Freetown Colonial Hospital, of a Matron and an Assistant Matron; and at the Government European Nursing Home, of a Senior Nursing Sister and two Nursing Sisters.

New Appointment.—Miss L. R. Stevens was appointed Matron and assumed the duties of her office on the 29th of December.

Resignation.—Miss E. Cooke, Assistant Matron at the Freetown Colonial Hospital, resigned her appointment in September.

Deaths in the European Staff.—I regret to have to record the death of Dr. J. F. W. Ward, Medical Officer, at Moyamba, on the 27th of January, 1912. I also have to record, with regret, the death of Miss M. Forrest, Matron at the Colonial Hospital, at Freetown, on the 23rd of November, 1912.

Native Staff.—The following among the Native Staff went on and returned from leave during the year:—

Dispensers.—Messrs. C. H. A. Johnson, J. P. Metzger, J. P. John, W. B. Hughes, M. O. Frazer and O. E. King.

Nurses.—Nurses E. Fyne, J. Johnson, A. Davies, J. Sibthorpe, E. Coker and V. Mason.

Second Class Clerks.—Messrs. A. J. Williams and E. J. Parkinson.

Promotions.—The following first class Nurses were promoted to be third class Dispensers:—

Messrs. J. C. Fewry, H. M. Neville and S. B. Williams.

Appointments.—Mr. A. J. Williams was appointed second class clerk in the Principal Medical Office, *vice* Mr. Garnon transferred, on promotion, to the Public Works Department.

Mr. E. S. Williams was engaged in the same office as a temporary clerical assistant.

Mr. J E. Cole was appointed a Dresser at the Infectious Diseases Hospital at Kissy, *vice* Mr. S. Bailey, retired.

FINANCIAL STATEMENT OF REVENUE AND EXPENDITURE.

Revenue.

	£	s.	d.
Hospital Receipts	149	6	6
Nursing Home Receipts	163	7	0
Sale of Medicines, etc.	164	7	5
Receipts for the maintenance of Lunatics from S. Nigeria and the Gambia	662	1	8
Total	£1,139	2	7

It is necessary to explain here that the amounts shown as "Hospital Receipts" and "Sale of Medicines, etc.," include, in the first item, fees paid by Intern patients in the Colony and Protectorate, and in the second item, "takings" at all the Out-Patients' Dispensaries; receipts from both these sources were tabulated as above by the Treasury Department. The earnings at the Colonial Hospital are shown in the report on that Institution, and such fees as have been collected at the Out-Stations are mentioned in the body of this report.

Expenditure.

	£	s.	d.
Hospital Equipment	171	0	10
Personal Emoluments, etc. ...	15,509	11	4
Provisions and Necessaries ...	3,800	9	3
Medicines, etc.	1,322	4	8
Total ...	£20,803	6	1

Sanitary Sub-Department Expenditure.

	£	s.	d.
Personal Emoluments	2,138	17	2
Other Charges, Transport, etc. ...	310	13	3
Total	£2,449	10	5

	£	s.	d.
The authorised expenditure of the Medical Department for 1912 was	26,048	0	0
The actual expenditure was ...	20,803	6	1
There was a saving of ...	£5,224	13	11

	£	s.	d.
The authorised expenditure of the Sanitary Department for 1912 was	4,729	0	0
The actual expenditure was ...	2,449	10	5
There was a saving of ...	£2,279	9	7

These savings were effected principally on the votes for personal emoluments, hospital equipment, and medicines in the Medical Department, and transport in the Sanitary.

The average of fees collected from dispensary and hospital patients continues still to be very small. Some improvement may be seen, as will be noticed later, in the position in Freetown; but it is still very evident that the practice of gratuitous treatment at the expense of the Colony has been, and is, carried too far, especially at the out-station dispensaries of the Colony: and one conclusion, I think, is that the principle of placing native Dispensers in sole charge of District Dispensaries is not a satisfactory one.

II.—PUBLIC HEALTH.

(a) *General Remarks.*—A statement of the details of Vital Statistics for the Protectorate of Sierra Leone, possessing the completeness that it should, is still impossible, since registration, although permitted, is not compulsory. It is only possible to say that a study of the Yearly Return of Sickness shows that the general health of the Protectorate has been somewhat better during 1912 than it was during the former year. Statistics are more reliable in the Colony and in Freetown; and the Public Health in these places may also be said to have continued to be very satisfactory during 1912.

Freetown itself was free from epidemics. Although Quarantine Regulations were enforced for short periods during the rainy season, when outbreaks of plague and yellow fever were reported from the French possessions and from the Gold Coast, no outbreak of either of these infectious diseases occurred in this Colony, nor was it found necessary to utilise the Sanitary Station, near the Light House, at Cape Sierra Leone.

The Observation Station at Kissy, used for the segregation of cases of small-pox, and "contacts" of this disease, was used once during the year for the isolation of a single Kru native, said to have developed variola on board the mail steamer, after that vessel had left Liverpool. It was, however, ascertained that this man was suffering from chicken-pox.

1. General Diseases.

It is a fact which impresses the mind of the medical observer in West Africa that the persistent negligence of the native to treat himself in time accounts for the existence of a considerable amount of disease of a general nature, as well as illnesses due to local or climatic causes. This is true of the Colony and Protectorate of Sierra Leone, in spite of the fact that here the people of Freetown have continued so long under European influence. To this want of promptness may be added an obstinate and continued disregard of the simple, obvious rules of health, and an inveterate hankering after the futile methods of "native treatment." To this condition of affairs may the fact be attributed that only a small proportion of the diseases of the natives is seen and recorded by Europeans, and treated by their methods, and appears in the official returns.

Rheumatism.—Rheumatic affections of the chronic articular and myalgic varieties are extremely wide-spread throughout the Colony and Protectorate. Acute rheumatism and rheumatic fever are comparatively rare, although they exist.

Digestive and Respiratory Diseases.—Diseases of the digestive and respiratory systems account for a very large number of the returns of illness throughout the country. These figures, in my opinion, are somewhat misleading, because the number of the more serious affections of these

systems is very considerably and unnecessarily swelled by the addition of such cases as "cold" and "constipation." With regard to the latter, I may say that every out-patient asking for and getting a dose of "salts" is returned under the heading of "Digestive Diseases."

Skin Diseases.—Skin diseases constitute a large section of the Sick Returns. They present a great deal of variety, some perhaps little known, and I have no doubt that systematic investigation in this direction would amply repay the trouble of the work.

2. Communicable Diseases.

Malaria.—Malaria still continues to be a wide-spread infection both in the Protectorate and in the Colony, although it may be said with truth that the good effects of anti-malarial measures are beginning to be felt in no uncertain manner in Freetown, and in other places where these have been carried out.

The returns show a total of 2,363 cases treated in Sierra Leone, the majority of which were diagnosed as *tertian* fever; it must be added however that the *sub-tertian* variety is not of infrequent occurrence.

In Freetown, 967 cases of malarial fever were treated. Of these, 872 were registered in the Out-Patients' Department, and 95 admitted into the hospital.

A comparison with previous years shows a continuance of the decrease of these cases, thus:—

Malarial fever cases in	1910	... ...	1,207
" " "	1911	... ...	1,056
" " "	1912	... ...	967

This is a decrease of 89 cases over the previous year, and these results are encouraging, for they may still, in a great measure, be attributed to the careful enforcement of anti-malarial precautions amongst the people, such as the destruction of mosquitoes and their larvæ, and the gratuitous distribution of quinine.

Blackwater Fever.—Blackwater fever was reported in eight cases of the Sick Returns, five from the Protectorate and three in Freetown There were four deaths, which gives a mortality of fifty per cent. from this disease for the year. A special report of these cases has been duly submitted as required.

Trypanosomiasis.—Three cases of this interesting disease were reported from the Protectorate, two men and one woman. The Senior Sanitary Officer in his report mentions the curious fact that no fewer than 101 cases of "African Lethargy" were recorded amongst the freed slaves at Kissy, during a period of four years, about seventy years ago. Fuller investigation may show that the disease is possibly more prevalent to-day than it has hitherto been supposed to be.

Yellow Fever.—I am pleased to be able to report that no case of yellow fever has occurred in Sierra Leone during 1912.

Small Pox.—Twenty cases of this disease were reported. Apparently there was remarkable freedom in this respect during the year. There was no large epidemic outbreak. In 1911, five cases only of this disease were recorded. The number, however, returned from year to year offers, I think, little or no indication of the actual extent of this, or many other local diseases, amongst the natives; it simply records the number of sufferers who happened to have come under the notice of the Government Medical Officer, and were returned. This fact, I think, should be taken into consideration in connection with the returns of diseases commented on below.

Dysentery.—Of this disease 365 cases were reported as against 197 during the previous year, an increase of 168, due, perhaps, to all varieties of the infection. There were small local outbreaks in several parts of the Protectorate, for which the diminution in the rainfall, and in consequence the water supply, last year, may have been responsible.

Yaws.—Of this disease there were 122 cases returned as against 66 the year before. What was remarked concerning the returns of small-pox applies also, in my opinion, to yaws.

Tetanus.—Seventeen cases were returned during the year; there were thirteen cases the year before.

Beri-beri.—No case of beri-beri was returned from the Protectorate, nor was any treated in the Colonial Hospital in Freetown; but an outbreak was reported in the Freetown Gaol during October, details of which are submitted in the report on that Institution herein. The epidemic is still in progress this year, and it will be a matter of interest, when the disease has eventually been checked, to ascertain if the evidence procured tends to show whether or not beri-beri is due to an infective toxin, or is simply what may be termed "a deficiency disease." There were 8 cases of this disease reported from elsewhere than the Freetown Gaol during the previous year, 1911.

Leprosy.—Excluding those cases segregated in the leprosy ward at Kissy, 34 cases were returned during 1912, and only 10 the previous year.

It is possible that a serious attempt at the segregation of lepers on a larger scale than is at present attempted would disclose a much wider distribution of the disease than is apparently suspected in Sierra Leone.

Syphilis.—In 1912, 513 cases were treated as against 286 during the previous year. It may be confidently stated that the disease is much more prevalent than these returns would appear to show, and it may be added that its study is of considerable interest, since it is now more appreciated that the course of certain other tropical affections, such as leprosy and skin diseases, is considerably modified by the co-existence of a syphilitic contamination.

Tuberculosis.—During the year, 86 cases came under notice. The existence of this disease is, I believe, more wide-spread than is thought at present; and in this connection it may be mentioned that I think that "Kru-boys" who visit England on the steamers that employ them, are responsible for the introduction of frequent foci of infection. An inquiry is being made into the alleged increase of tuberculosis amongst natives, and the results will be submitted shortly.

(*b*) EUROPEAN OFFICIALS.

HILL STATION.

During the year the number of residents at Hill Station was 73, made up as follows :—

Government Officials	51
Military	17
Missionaries	1
The African Cable Company	4

The fewer number of residents as compared with 1911 is due to the fact that there were fewer temporary residents, and a greater number of officials. On the 31st December there were 34 official residents, on the same day in 1911 the number was 20. The health was as favourable as in former years, more so in the matter of climatic diseases. The number on the sick list was 23 ; of these cases, 4 were due to climatic diseases and 19 to non-climatic. The former were three cases of malarial fever and one case of dysentery : of the " fever cases " it must be mentioned that they were not contracted on the Hill. Amongst the non-climatic diseases were some cases of influenza, and a small outbreak of ptomaine poisoning which was traced to the use of tainted fish at a luncheon party.

Water Supply.—This was fairly abundant during the dry season owing to a small subsidiary dam being erected near the reservoir, The service reservoir was improved, a layer of bitumen and a lining of cement having been put into it ; it is now said to be perfectly water-tight ; this will be proved during next year's dry season.

Bush-clearing was continued during the year.

New Constructions.—Three new bungalows were built ; and the same number are to be added during the coming year. The question of quarters at Hill Station is at present an acute one ; there are a number of newly made appointments for the holders of which there are no houses available at present.

GENERAL HEALTH OF EUROPEAN OFFICIALS.

The general health of the European Officials throughout the Colony and Protectorate may be said to have been satisfactory during 1912. The total number of European official residents was 230, as compared with 192 in the previous year.

There were 4 deaths during the year, as follows :—

Blackwater Fever	1
Dysentery	1
Hæmorrhage (stomach)	1
Strychnine poisoning	1

There were 4 invalidings during the year, for the following causes :—

Anal fistula	1
Varicose veins...	1
Dysentery	1
Alcoholic neuritis	1

The principal climatic diseases from which European officials suffered during the year were, as usual,

Malarial Fever
Blackwater Fever
Dysentery
and Hepatic Congestion.

TABLE COMPARING THE SICK, INVALIDING AND DEATH RATES OF EUROPEAN OFFICIALS FOR 1911 AND 1912.

	Particulars.	1911.	1912.
1	Total number of European Official Residents	192	230
2	Average number of European Official Residents... ...	120	225
3	Total number of European Official Residents on sick list	90	98
4	Total number of days on sick list	532	561
5	Average daily number on sick list	1·45	1·53
6	Percentage of sick to average number of residents ...	75%	43·55%
7	Average number of days on sick list for each patient ...	5·91	5·72
8	Average number of days on sick list for each resident ...	4·43	2·43
9	Total number invalided	5	4
10	Percentage of invalidings to total number of residents ...	2·60%	1·73%
11	Total number of deaths	1	4
12	Percentage of deaths to average number of residents ...	·83%	1·7%
13	Percentage of deaths to total number of residents ...	·52	1·73
14	Number of cases of sickness contracted away from residence	2	4

NATIVE OFFICIALS.

TABLE COMPARING THE SICK, INVALIDING, AND DEATH RATES OF NATIVE OFFICIALS FOR 1911 AND 1912.

	Particulars.	1911.	1912.
1	Total number of residents	721	655
2	Average number of residents	693	421
3	Total number on sick list	749	527
4	Total number of days on sick list	3,473	3,326
5	Average daily number on sick list	9·51	9·11
6	Percentage of sick to average number of residents ...	108%	125·17%
7	Average number of days on sick list for each patient ...	4·53	6·31
8	Average number of days on sick list for each resident ...	5·01	5·07
9	Total number invalided	3	1
10	Percentage of invalidings to total number of residents ...	·41%	·15%
11	Total number of deaths	2	2
12	Percentage of deaths to average number of residents ...	·28%	·47%
13	Percentage of deaths to total number of residents ...	·27%	·30%
14	Number of cases of sickness contracted away from residence	Nil	Nil

GENERAL EUROPEAN HEALTH.

The health of the general European population in Sierra Leone may be said to have continued to remain fairly good during the year 1912. The total number of European residents during the year was approximately 803, made up as follows:—

Officials	230
Military	389
Non-Officials	184
Total	803

The following is a comparative tabulation of the deaths in the Colony and Protectorate, returned under the headings "climatic" and "non-climatic" diseases, for the past ten years:—

Year.	Landed from Vessels.		Colony and Protectorate.		Military.		Total.
	Climatic.	Non-Climatic.	Climatic.	Non-Climatic.	Climatic.	Non-Climatic.	
1903	2	—	2	2	2	3	11
1904	3	—	2	3	2	2	12
1905	3	—	2	2	1	—	8
1906	3	—	2	1	1	1	8
1907	2	—	3	3	2	3	13
1908	1	—	1	6	3	2	13
1909	3	—	3	—	—	—	6
1910	—	—	9	2	2	2	15
1911	2	—	2	1	—	1	11
1912	—	5	3	3	3	2	11

Classification of Death Returns of Europeans for 1912.

Government Officials, 4:—
- Blackwater fever 1
- Dysentery 1
- Hæmorrhage (stomach) 1
- Strychnine poisoning 1

Military, 5:—
- Cardiac failure 1
- Cardiac failure and heat stroke 1
- Malaria and alcoholism 1
- Cerebral malaria 1
- Malarial fever 1

Non-officials, 2:—
- Blackwater fever 1
- General debility and diarrhœa 1

Classification of Invaliding Returns of Europeans for 1912.

Government Officials, 4:—
- Anal fistula 1
- Varicose veins 1
- Dysentery 1
- Alcoholic neuritis 1

Military, 19:—
- Malaria 10
- Heart disease 1
- Blackwater fever 1
- Tubercle of lungs 1
- Debility 4
- Inflamed lymphatic glands 2

Non-officials, 6:—
- Nervous debility 1
- Dysentery 2
- Appendicitis 1
- Alcoholic neuritis 1
- Congestion of liver 1

European Nursing Home, Freetown.

There were 55 admissions into this Institution during 1912, as compared with 54 during the previous year. The classification of these patients is as follows :—

Government Officials	24
Mercantile	24
Shipping	1

These included 16 cases of malaria ; there was one death from dysentery, and ten patients were invalided who have been included in the classification above.

(*c*) GENERAL NATIVE POPULATION.

The population of the Colony was returned at the last decennial census in 1911 as 75,572, of which 41,001 were said to be males and 34,571, females. The number of deaths registered during the year was 1,343. This gives the proportion of 17·77 deaths per 1,000 of population, which is the same as that for 1911. The total number of births registered during the year was 1,332 as compared with 1,314 last year. This number in comparison with the population gives a birth rate of 17.62 per 1,000 of population ; the proportion for 1911 was 14 per 1,000.

The population of Freetown, according to the 1911 census, was 34,090. The number of births registered was only 587 : the number last year was 501. The deaths registered number 754, as against 747 for 1911. These figures show a birth rate of 17·21 and a death rate of 22·11 per 1,000 respectively, as compared with a birth rate of 14, and a death rate of 21 per 1,000 respectively, for the year 1911.

In 1912, the total number of patients treated at the various Government Hospitals and Dispensaries amounted to 2,716 in-patients, and 83,082 out-patients, making a total of 85,798 sick persons, as compared with 2,570 in-patients, and 83,103 out-patients, or a total of 85,673, for last year. This return indicates a slight increase of 128 souls.

The chief causes of death among the natives of Sierra Leone were, given in the order of their prevalence, as follows :—

1. Diseases of the circulatory system.
2. Diseases of the digestive system.
3. Diseases of the respiratory system.
4. Diseases of the urinary system.
5. Debility.
6. Malarial fever.

It should be stated, however, that only about 25% of the deaths registered are certified to by medical men, and that, in consequence, calculations in vital statistics, on an extensive scale, are not only somewhat previous, but unavoidably unreliable as well.

The number of the yearly infantile Mortality for the past ten years is as follows :—

1903	471
1904	388
1905	461
1906	434
1907	357
1908	351
1909	344
1910	368
1911	310
1912	268

It would appear from these figures that there has been a steady decrease of infant mortality in Freetown. This may be due, in some degree, to the improvements in the sanitary condition of this city in the last few years, but until women can be properly trained as midwives, and encouraged to practice among the masses, and until the people of Sierra Leone are educated sufficiently to appreciate the simple, proper methods of feeding and rearing of infants and young children, I fear the Infant Mortality will continue to remain abnormally high.

III. *Sanitation.*

The Sanitary Report for the year 1912, by the Senior Sanitary Officer, Dr. R. H. Kennan, together with the necessary Tables appended thereto, is attached and forms an important part of this Annual Report.

IV. *Meteorology.*

The usual Meteorological Tables, V., are duly attached to the report.

(*d*) HOSPITALS AND DISPENSARIES.

ANNUAL REPORT FOR THE COLONIAL HOSPITAL, FREETOWN.

(*By* Dr. E. Wood-Mason, Act. S.M.O.)

Charge.—Dr. D. Barrows was in charge of the Hospital from the beginning of the year until the return of the P.M.O. from leave in February. Dr. Collett acted as P.M.O. during his absence.

On the return of the P.M.O., Dr. Collett took over the duties of his appointment as S.M.O., and handed over charge of the hospital to Dr. Wood-Mason on the 7th of October before going on leave.

Staff.—The visiting Staff consisted of:—

The Senior Medical Officer,
The Medical Officer of Cline Town,
The Medical Officer in charge of the Laboratory,
Dr. W. Renner, Native Medical Officer,
The Matron, and
The Assistant Matron.

The following Medical Officers were attached to the Hospital for varying periods during the year, viz.:—Drs. Murphy, Butler, Bower, Wood-Mason and Renner.

The Matron, Miss Forrest, went on leave in June, returning in October. I regret to have to report her death on the 23rd of November.

Miss Cooke, Assistant Matron, acted for the Matron during the absence of the latter from the Colony. Miss Cooke went on leave, resigning her appointment, in October shortly before Miss Forrest's return.

Miss L. R. Stevens was appointed Matron, vice Miss Forrest, and arrived in the Colony for duty on the 29th of December.

The Junior (*Native*) *Staff.*—The Native Staff of the Colonial Hospital consisted of:—

The Resident Dispenser,
The Assistant Resident Dispenser,
18 Male Nurses and Dressers,
8 Female Nurses,
3 Female Probationers,
The Gate-Keeper,
The Store-Keeper,
The Assistant Store-Keeper,
Washerman,
Cook,
Head Labourer, and
8 Labourers.

Resignation.—Second Class Nurse S. W. Taylor and Probationer Newstead resigned their appointments.

Leave of Absence.—The following on the Native Staff went on, and returned from, leave during the year:—

Male Nurses, T. B. Williams, H. M. Neville, J. C. May, J. B. Doherty, E. W. Cole.
Female Nurses, P. E. Metzger, A. Davies, E. Coker, M. L. Pratt, V. Mason.
Gate-Keeper, S. H. Brown.

Assistant Resident Dispenser King also went, and is still on leave. Dispenser M. O. Frazer acted for him.

Promotions.—To First Class Nurse, E. W. Cole, W. Hedd.
To Second Class Nurse, E. Ajax, W. B. Gray, W. R. E. Johnson.

Appointments.—As Male Apprentices, J. E. Lewis, E. A. Cole, K. King, C. T. Cole, S. H. Faulkner.
Female Probationer, Miss Cassandra French.

The Hospital.—The Hospital consists of an Intern and an Extern Department, with a Clinical Laboratory attached. There is also an Obstetrical Department, the King-Harman Ward, to which a small private apartment is provided for paying patients.

The Laboratory, which is proving more useful every year, was under the direction of Dr. Butler until he went on leave in May, when Dr. Semple took over charge. On the 23rd of September, Dr. Semple handed over to Dr. Ward, who remained in charge until the end of the year. The following is a short report of the work done in the Laboratory:—

Number of Blood Examinations	895
Number of Urine Examinations	853
Faeces examined	111
Sputa examined	49
Pus examined	35
Skin scraping	1

A separate detailed report by the Medical Officer in charge at the end of the year is included in this report.

In-Patients.—Seventy beds is the Hospital complement, the daily average number of beds occupied, for the year, being 50. Beds are distributed among the visiting staff, each Medical Officer taking as a rule such cases as are admitted on his out-patients' day. On the 31st of December, 43 patients remained in the Hospital. The number of new cases admitted during the year was 1,646. There were 111 deaths, which gives a percentage of 6·5 of the total number of cases treated, which was 1,689. The death-rate shows a decrease of 2·16 per cent. as compared with that of 1911. This is satisfactory; and a comparison of the last three years shows a steady decrease as under:—

In 1910	the	deaths	were	141	in	1,500	or	9·13	per cent.
„ 1911	„	„	„	133	„	1,535	„	8·66	„ „
„ 1912	„	„	„	111	„	1,689	„	6·5	„ „

It will also be noticed that there were 154 more cases treated as In-patients in 1912 than in the previous year.

Operations.—There were 316 operations performed in the theatre during the year; this is two less than in 1911.

A comparative statement of the operations performed in this hospital for the last eleven years is appended :—

In	1902	44 Operations.
,,	1903	126 ,,
,,	1904	145 ,,
,,	1905	179 ,,
,,	1906	146 ,,
,,	1907	190 ,,
,,	1908	135 ,,
,,	1909	218 ,,
,,	1910	220 ,,
,,	1911	318 ,,
,,	1912	316 ,,

Return showing number of operations performed by the several Surgeons on the Staff of the Hospital :—

Name.	Period.	Number.
Dr. Butler	January to March, October to December ...	68
Dr. Renner	January to July, November to December ...	84
Dr. Collett	February to October	90
Dr. Wood-Mason	March and September to December	23
Dr. Bower	April to August	34
Dr. Semple	May and July	5
Dr. Rollason	June	1
Dr. Murphy	September and November	11
		316

The chief diseases amongst the In-patients were Ulcers, Malaria, Rheumatism, Abscesses, Phimosis, Wounds, Pneumonia, Hernia, Bronchitis, Inflammation of glands, Stricture of urethra, Bright's disease, Broncho-pneumonia, and Tuberculosis.

Isolation Cottage.—The building used formerly as the Matron's cottage is still being used as an Isolation Ward. There was, however, no necessity to use it during the year.

Special Diseases.—The following special diseases were treated in the hospital during the year :—

Malaria,	Tertian	7
	Quartan	0
	Aestivo-Autumnal ...	72
	Chronic Malaria ...	16
Blackwater Fever		3
	Total	98
Yellow Fever		0
Leprosy	Nodular	1
	Anæsthetic	7
	Total	8
Beri-beri		2
Dysentery		28

Out-patients' Department.—During 1912 there were treated as out-patients 26,742 persons; this is a decrease of 3,486 as compared with 1911, and 5,053 compared with 1910. This decrease may possibly be explained by continued increased sanitary activity in the City, but some of it is due no doubt to the fact that some attempt has been made recently to enforce the payment of a small Government fee for medicines, and so to prevent, to some extent at least, wide-spread abuse of free medical treatment amongst people who had no claim to it.

Dental Department.—Mr. Hardie, Dental Surgeon, arrived in the Colony on the 12th of October, and assumed the duties of his appointment. He remained in the Colony for two months and then left for the Gold Coast. The room used as the "Official Out-patients' room" was set apart to accommodate him and a separate room was allotted him for a store room.

Hospital Buildings.—In view of the fact that operations are in hand on an extensive scale for the construction of a new and up-to-date hospital, no large structural alterations were made, much as they are needed. Minor repairs were done as they were needed, the walls were whitewashed when necessary.

Inspections.—His Excellency the Governor inspected the hospital on two occasions.

Laundry-man.—The appointment of a laundry-man towards the end of the year did away with the necessity of sending the hospital washing to the Prison, where the female prisoners formerly laundered the hospital linen. The improvement has been marked, for the number of female convicts was always too small to ensure this work being done well, which for a hospital is always a serious matter.

Hospital Earnings.—Paying In-patients, £136 13s. 0d.; Paying Out-patients, £71 11s. 0d.; total, £208 4s. 0d.

The amount recovered from In-patients shows a decrease of £20 9s. 0d. as compared with the amount (£157 2s. 0d.) received in 1911. The amount however, recovered from Out-patients shows an increase of £49 6s. 4d. compared with the previous year. The total amount shows an increase of £28 17s. 4d. as compared with the total amount received for 1911.

Table of Surgical Operations.

(Under Chloroform and other Anæsthetics.)

Colonial Hospital, 1912.

	Remaining in Hospital, 31-12-11.	Number Admitted.	Total.	Successful.	Not Relieved.	Died.	Remaining in Hospital, 31-12-12.
Abdominal Section...	—	1	1	—	—	—	1
Abscess of Liver, Incision	—	3	3	2	—	—	1
Abscess, Incision	—	60	60	53	1	1	5
Amputation	1	9	10	10	—	—	—
Aneurismal varix, Excision ...	—	1	1	1	—	—	—
Antrum of Highmore, Drainage ...	—	1	1	1	—	—	—
Arthrotomy	—	2	2	2	—	—	—
Avulsion of toenail	—	1	1	1	—	—	—
Bubo, Incision	—	4	4	4	—	—	—
Carbuncle, Incision	—	4	4	3	—	—	1
Cellulitis, Incisions for	—	2	2	2	—	—	—
Circumcisions	—	54	54	52	—	—	2
Dislocation, Reduction of ...	—	3	3	2	1	—	—
Elephantiasis, Breast, Amputation	—	1	1	1	—	—	—
Elephantiasis, Scrotum, Amputation	—	10	10	10	—	—	—
Empyema, Drainage	—	3	3	3	—	—	—
Examinations	—	6	6	6	—	—	—
Excision, Chronic bursæ	—	2	2	2	—	—	—
Exostosis, Removal	—	1	1	1	—	—	—
Extravasation, Blood, Incision ...	—	1	1	1	—	—	—
Extravasation, Urine, Incision ...	1	6	7	6	—	1	—
Foreign body, Removal of	—	3	3	3	—	—	—
Glands, Removal of	1	7	8	7	—	1	—
Gunshot wound, Extraction of ball	—	1	1	1	—	—	—
Hæmatocele, Incisions	—	1	1	1	—	—	—
Hæmorrhoids, Removal of ...	—	2	2	2	—	—	—
Hernia, Radical Cure & Herniotomy	—	45	45	39	—	3	3
Hydrocele, Radical Cure	—	17	17	17	—	—	—
Imperforate Vagina, Incision ...	—	1	1	1	—	—	—
Nephrectomy, Lumbar	—	1	1	1	—	—	—
Oedema of Prepuce, Removal ...	—	1	1	1	—	—	—
Perineum Ruptured, Repair of ...	—	3	3	3	—	—	—
Periostitis, Scraping	—	3	3	2	—	—	1
Placenta, adherent, Removal of ...	—	1	1	1	—	—	—
Sarcocele, Removal of tumour ...	—	1	1	1	—	—	—
Scraping of Ulcer	—	1	1	1	—	—	—
Scraping of Sinus	—	3	3	3	—	—	—
Sequestrotomy	—	7	7	7	—	—	—
Stricture, Dilatation of	1	13	14	13	—	—	1
Tubercular Glands, Removal of ...	—	1	1	1	—	—	—
Tumours, Removal of	—	13	13	12	—	—	1
Urethrotomy, external	—	4	4	4	—	—	—
Uterus, Curetting of	—	3	3	3	—	—	—
Uterus, Dilatation of cervix ...	—	2	2	2	—	—	—
Uterus, Incision of cervix	—	1	1	1	—	—	—
"V.Y." operation for Ectropion ...	—	2	2	2	—	—	—
Varicose Veins, Removal of ...	—	1	1	1	—	—	—
Wounds, Suturing of	—	3	3	3	—	—	—
Total	4	316	320	296	2	6	16

ANNUAL REPORT OF THE KING-HARMAN MATERNITY WARD, COLONIAL HOSPITAL, FREETOWN.

(*By* Dr. Awunor Renner.)

The number of patients admitted during the year was 191 as against 125 admitted in 1911. Of these 156 were delivered ultimately : 11 women on first admission suffered from false pains, and were discharged undelivered : 6 of these returned subsequently for delivery, and are included in the total number of deliveries. The remaining 30 cases consisted of false pains, threatened abortion, pseudo-pregnancy and fibro-myoma. Of the number delivered in hospital, no less than 105 were unmarried women.

The number of infants born was 153, 81 males, and 72 females. There were 9 cases of twins, and 15 still-births, 8 abortions and miscarriages, and 17 premature labours.

Synopsis of Cases :—Presentations (not including miscarriages).

Vertex	134
Footling	7
Breech	7

Instrumental Labours :—

Forceps cases	11

Complications of Mothers after admission :—

Ruptured perineum ...	9
Retained placenta	3
Post partum hæmorrhage	8
Prolapse of cord	1
Eclampsia	3

One case of eclampsia died 8 hours after delivery by forceps. The number of deaths of infants 24 hours after delivery was 8.

A fee varying from 1/- to 2/- was demanded and collected from such cases as could afford the payment. The four senior Native Nurses are still maintained to carry out the work of this Ward.

REPORT BY THE OFFICER IN CHARGE OF THE CLINICAL LABORATORY, COLONIAL HOSPITAL.

EXAMINATIONS.

I. *Blood.*				
(a.) *Malaria.*	Total examinations	... ...		197
	Parasites absent	... ...		118
	Parasites present	... ...		79
	Sub-tertian	... ...	78	
	Quartan ...	... ...	1	
(b.) *Microfilaria.*	Total examinations	... ...		775
	No filaria found	... ...		705
	Microfilaria present	... ...		70
	M. Perstans	... ...	8	
	M. Nocturna	... ...	62	
(c.) *Trypanosomes.*				
	No trypanosomes found	... ...		2
Leucocytic Counts	... ...			11
II. *Urine.*				
(a.) Routine examinations	... ...			853
(b.) Special examinations	... ...			1
	Bilharzia found	... ...		1
III. *Faeces.*	Total Examinations	... ...		111
	Organisms absent	... ...		61
	Organisms present	... ...		50
	Ankylostomes	... ...	18	
	Strongyloides	... ...	1	
	Ascaris ...	... ...	23	
	Amœba Coli	... ...	2	
	Cestode ova	... ...	2	
	Entamœba	... ...	4	
IV. *Sputum.*	Total examinations	... ...		49
	B. Tuberculosis present	... ...		17
	B. Tuberculosis absent	... ...		30
	Liver cells present	... ...		2
V. *Pus.*	Total examinations	... ...		34
	Staphylococci found	... ...		5
	Gonococci found	... ...		6
	No organisms ...	... ...		23
VI. *Skin Scraping.*				
	No Leprosy organism found	... ...		1

(Signed) E. WARD, M.O.

ANNUAL MEDICAL REPORT OF THE FREETOWN GAOL INFIRMARY.

(*By* HANS FLEMING.)

The total number of prisoners treated at the Gaol hospital during 1912 was 149 men and 8 women. Of these, 71 were treated and discharged "cured" before the date of their release from prison, 57 were released from the infirmary, 2 were not relieved, and 14 died. Fourteen still remained in hospital on the 31st of December. Prisoners treated for minor ailments in the Gaol Dispensary numbered 4,501.

Beyond the usual seasonal outbreaks of a few cases of chicken-pox and bowel complaints, nothing of a serious nature occurred, except an outbreak of beri-beri in October. There were 32 cases in all; 4 deaths resulted; 20 cases remained in hospital on the 31st December.

Every precaution was taken to prevent the spread of the disease; the sick were isolated, and their dietary, and especially the rice, carefully examined; "uncured" native rice, it was found, had always been supplied. In the case of chicken-pox, besides isolation, the bedding was destroyed, and the cells disinfected.

During December the male prisoners were removed from the old buildings and the new Gaol occupied; the female prisoners were not removed. The sanitary condition of the Gaol was very satisfactory, and the sanitary measures adopted were of the usual effective standard.

The fourteen deaths in the Gaol, during the year, were as follows:—

Beri-beri	4
Pneumonia	2
Debility	1
Heart Disease	1
Dysentery	3
Stricture	1
Pleurisy	1
Phthisis	1

The seven executions which took place during the year were efficiently and humanely carried out.

GAOL HOSPITAL.

Annual Medical Return.

Table A.

	Males.	Females.	Total.
Patients remaining in Hospital, 1st January, 1912 ...	2	—	2
„ admitted into Hospital during 1912	148	8	156
Total number treated 1912	150	8	158
Of these were—			
Cured	66	5	71
Relieved	57	—	57
Not Relieved	2	—	2
Died	13	1	14
Remaining in Hospital on 31st December, 1912 ...	12	2	14
Total	150	8	158
Number of Out-Patients treated			4,501
Total treated			4,659
Daily average number of Prisoners			236
„ „ „ „ treated			12

GAOL HOSPITAL.

Table B.

Return of Prisoners Seen and Examined by the Medical Officer during the year 1912.

	Quarter ending March.	Quarter ending June.	Quarter ending September.	Quarter ending December.	Total.
Reported Sick daily	289	217	192	212	910
Sick placed under observation... ...	84	57	432	195	768
Sick admitted into Hospital	54	42	40	23	159
Convalescents on Light Labour ...	82	70	51	74	277
Examined for Solitary Confinement ...	125	66	203	142	536
Seen in Solitary Confinement	125	66	203	142	536
Examined for Corporal Punishment ...	1	4	6	11	22
New-comers, including Remands and Trials...	271	215	250	345	1,081
Number of Executions	3	2	1	1	7
Total	1,034	739	1,378	1,145	4,296

Table C.

RETURN SHOWING OUT-PATIENTS TREATED AT GAOL HOSPITAL.

	Diseases.	Male.	Female.	Remarks.
INFECTIVE DISEASES.	Beri Beri	16	—	
	Chicken Pox	—	—	
	Dysentery	30	—	
	Gonorrhœa	45	—	
	Malaria (*a*) Tertian	58	1	
	(*b*) Quartan	—	—	
	(*c*) Æstivo-Autumnal	—	—	
	(*d*) Chronic Malaria	—	—	
	(*e*) Blackwater	—	—	
	Measles	—	—	
	Pneumonia	1	—	
	Trypanosomiasis	—	—	
	Small Pox	—	—	
	Syphilis (*a*) Primary	—	—	
	(*b*) Secondary	—	—	
	(*c*) Inherited	—	—	
	Tetanus	—	—	
	Tuberculosis	4	—	
	Yaws	3	—	
	Yellow Fever	—	—	
	Other Diseases	—	—	
INTOXICATIONS		—	—	
GENERAL DISEASES		—	—	
LOCAL DISEASES.	Diseases of the Nervous System	15	8	
	„ „ Eye	36	—	
	„ „ Ear	43	3	
	„ „ Nose	22	—	
	„ „ Circulatory System	35	—	
	„ „ Respiratory „	235	2	
	„ „ Digestive „	799	26	
	„ „ Lymphatic „	27	—	
	„ „ Urinary „	6	—	
	„ „ Generative System—Male Organs	84	—	
	„ „ „ „ —Female „	—	1	
	„ „ Connective Tissues	26	—	
	„ „ Organs of Locomotion	51	—	
	„ „ Skin	368	—	
Injuries, General		1	—	
„ Local		165	—	
Surgical Operations		—	—	
Malformations		—	—	
Poisons		—	—	
Parasites		—	—	
Unclassified		5	—	
	TOTAL	2,075	41	
	Subsequent Attendances	2,155	66	
	GRAND TOTAL	4,230	107	= 4,337

KISSY INSTITUTIONS.

This station was under the charge of Dr. Taylor, who reports that the usual daily routine of duties was carried out as in former years. Acting Dispenser Williams relieved acting Dispenser Fewry, and Dispenser Frazer relieved the former during the early part of the year.

His Excellency, the Acting Principal Medical Officer, the Principal Medical Officer, and the Senior and Junior Sanitary Officers, visited the station during the year.

Lunatic Asylum.—There were 70 male and 39 female lunatics on the first day of the year; 24 males and 9 females were admitted during the year, making a total of 142 under treatment. Of these 10 persons were relieved and discharged to the care of their friends; 17 recovered, which left a total of 115 patients at the end of the year. The number of deaths for the year were 16; these were due to Chronic Mania, Epilepsy, General Debility, General Paralysis of the Insane, and Melancholia. There was no epidemic.

Those of the lunatics who were sufficiently reasonable and physically fit, were employed in the garden and for doing laundry work; they also assisted in the sanitation of the Asylum.

Kissy Dispensary.—The number of cases treated at the Kissy Dispensary during the year was:—

New Cases	892
Old Cases	1,412
Total ...	2,304

The fees collected from the Out-patients during the year amounted to 5/-; the extreme paucity of the earnings in, it may be said, all the Dispensaries and Hospitals generally points to the abuse of Medical Charities in Sierra Leone.

Garden.—The sum realised from the sale of garden produce amounted during the year, to £2 4s. 2d., most of this money was expended in the payment of extras of diet that were distributed from time to time among the male and female lunatics employed in garden and laundry work.

Female Incurable Hospital.—At the beginning of the year there were 35 patients. During the year 41 patients were admitted, and 27 discharged. There were 25 deaths, due chiefly to Senility, Paralysis, Syphilis, and Exhaustion. On the last day of the year there were remaining in the Hospital 24 patients.

Male Incurable Hospital.—There were 70 patients on the first day of the year. New cases admitted numbered 86. Of these, 48 were discharged, and there were 39 deaths during the year. The chief causes of death were Old Age, Syphilis, Tuberculosis, and Paralysis. On the last day of the year there were 69 remaining.

Infectious Diseases Hospital.—There were 5 cases of Chicken Pox, all natives of the Protectorate. They were discharged cured.

Lazaretto.—There were no admissions during the year.

Vaccination.—The total number vaccinated was 261; of these 242 were successful, 17 unsuccessful, and 2 did not return.

Wellington Dispensary.—The total number treated was 1,485, of which 539 were new cases, and 946 subsequent attendances.

General Observations.—Sanitary work both at Kissy and Wellington continues to be carried out with satisfaction. It may be said that the food, water supply, and general sanitary arrangements of these places are improving yearly.

THE BONTHE DISTRICT.

This District was under the charge of Drs. Orpen, Butler, Allan and Murphy during the year. Dr. Murphy furnished the Report. Dispenser Wright, who took over from Dispenser Metzger on the 20th of January, was on duty for the rest of the year. Nurse Johnson was in charge of the female side of the hospital. Apprentices George, Gray, and King assisted. I regret to have to report the death of Apprentice King.

European Officials.—Two European Officials are permanently stationed at Bonthe, the District Commissioner and the Medical Officer. During 1912, the former was on the sick list once for two days, and the latter twice, once for one day, and on the second occasion for six days with dental caries.

Native Officials.—The health of the Native Officials has been good. There was one death. The total number of attendances was 193. The chief causes of illness were Malaria, Rheumatism, and Bronchial affections.

Non-Official Europeans.—These number 57 approximately, and are chiefly composed of the members of the Mercantile Firms, together with some Missionaries, and four European women. There was one death only, of a Roman Catholic Missioner, caused by Blackwater which was contracted in the Protectorate.

Out-patients.—During the year, 1,687 males and females, exclusive of Government Officials, attended at this department. The subsequent attendances numbered 724, making the total of attendances 2,411. This shows an increase of 374 over the year 1911. The chief causes of illness were Ulcers, Bronchial affections, Rheumatism, Malaria, and Dyspepsia.

In-patients.—There were 128 in-patients, 81 males and 47 females, showing a decrease of 115 from the previous year. There were 15 deaths recorded.

Operations under Chloroform.—There were 9 minor operations including hydrocele cures, and four major operations, as under :—

Amputations	2
Perineal section	1
Colotomy	1

Hospital Fees.—There was a falling off in the amount collected.

	£	s.	d.
1911	35	19	6
1912	18	7	11

This is a decrease of £17 11s. 7d.

The Isolation Hospital.—This was not used during the year.

The Prison.—The Gaol buildings and grounds were kept in a clean and sanitary condition. The prison is visited daily by the Medical Officer and the Dispenser, and all new comers and discharged prisoners were duly examined.

York Island.—This island is visited once a week by a Medical Officer who carries a box of drugs with him. There were over 200 attendances which were included in the general out-patients' returns. In the past the attendance; of the Medical Officer was for the gratuitous distribution of medicines latterly, however, the people of York Island have learnt to pay a small Government fee as in Bonthe. Serious cases come to the Bonthe hospital for treatment.

GBANGBAMA, NORTHERN SHERBRO DISTRICT.

The station was in charge of Drs. Bremner and Pearson since August 1912. It is situated in the Northern Sherbro District. It was necessary to station a Medical Officer here, on account of the large number of prisoners in connection with the "Leopard Society" murders. A company of troops also was stationed here to guard the prisoners.

Epidemics.—In September a mild outbreak of small-pox occurred amongst the prisoners. In September there were 10 cases, during October ten more cases occurred at different intervals, after which no other cases occurred. The outbreak was solely confined to the prisoners.

Vaccinations.—This was carried out very thoroughly; every Soldier, Court Messenger, and Prisoner on the station being vaccinated, as well as all the people in the "native town" adjoining. The number of persons vaccinated was 1,523.

Patrols.—A few patrols were done about the station; all the towns visited were found in a fairly clean condition, almost every hut being white-washed. Very few cattle were seen anywhere.

Flies.—A considerable number of blood sucking flies were caught and handed over to Dr. J. J. Simpson, the Government Entomologist. A classification received showed them to consist as follows:—

1.	Mosquitoes ...	...	*Stegomyia Fasciata.*
			Culex fatigans.
			Anophelines.
2.	Tabanidæ ...	...	Several different kinds.
3.	Glossinæ ...	...	*G. palpalis.*
			G. morsitans.
			G. fusca.

Water Supply.—The water supply for the officials is extremely good, and is pipe borne and brought from a distant hill. That for the men is from a running stream. I am informed that the water for the officials' quarters flows throughout the year.

Sanitation.—For purposes of latrine conservancy the "dry earth bucket" system is used for the officials' quarters. These are removed daily and the contents buried. Amongst the troops, messengers and prisoners, the shallow trench system was instituted, and worked well.

General.—The station of Gbangbama is a fairly healthy one on the whole. Only one European was placed on the sick list during the year, and that for a mild attack of malaria. Two deaths occurred in the station, one being that of a native soldier from tuberculosis of the lungs, and the other of a prisoner from heart failure.

PROTECTORATE DISTRICT REPORTS.

RONIETTA DISTRICT.

HEADQUARTERS—MOYAMBA.

The District was in the charge of Drs. Ward, Bremner, Pearson and Allan, the last of whom writes the report. Mr. T. L. Hook was dispenser in charge from the beginning of the year to the 2nd of July, when he was relieved by Dispenser S. B. Williams who continued to the end of the year.

Health of Europeans.—This has been good, the non-officials having received treatment for minor ailments only. With the exception of the late Dr. Ward, and three Railway officials sent to the Nursing Home, the Health of the Government Officers has been excellent. Two Syrians, however, have died; one from Blackwater fever, and the other, an infant, from malaria with cerebral complications.

Health of Native Officials.—Four Native Officials were placed on the sick list for an average of 5.7 days each.

In-patients.—The number of in-patients was 94 as compared with 34 in the previous year. This increase was not due to a higher sick-rate, but partly to a larger number of remanded prisoners in the gaol, and partly to the greater number of subordinate Railway officials from Boia admitted into the Moyamba hospital. The average stay in hospital works out at 12·9 days as compared with 11·5 days during the previous year. There were six deaths, as under:—

Heart disease	2
Debility (old age)	1
Malaria (infant)	1
Gunshot wound	1
Peritonitis	1

Out-patients.—The number of out-patients was: new cases 1,607, and subsequent attendances 2,819,making a total of 4,426 persons attended; it is the largest on record in that dispensary.

Fees.—The sum of £3 16s. 3d. was collected in small Government fees for drugs and attendance. This is a slight decrease from last year, and is due probably to the removal of the railway centre to Boia.

Operations.—Eight operations necessitating the use of chloroform were performed, three of these for the removal of non-malignant tumours, the others for wounds and one for the relief of a strangulated hernia. One death, previously referred to, was for gunshot wound; the patient died the same day that he was admitted.

Sanitation.—The dry earth system in pails is now used by all officials; the contents being buried in long shallow trenches, which are situated about two hundred yards beyond the northern limit of the station. This is an improvement since the beginning of the year when the pails were emptied into cesspits.

In the Gaol the latrines have recently had large ventilators substituted for the smaller ones recently made; and it may be said that the Gaol now meets all necessary hygienic requirements.

The principal streets in the native town of Moyamba were improved, and the "bottle borders" mentioned in the 1910 report have been abolished.

Vaccination.—There was an increase in the number of vaccinations performed during the year: 806 as against 96 in the previous year. Only 6 were unsuccessful.

Meteorology.—Meteorological observations were recommenced at the end of January this year; the instruments having been destroyed by fire during the previous year. The highest maximum temperature was 101° F. in April, the minimum lowest was 60° F. in February.

General.—The Medical Officers' quarters and the Rest House have been repaired during the year, but these buildings are fast becoming past patching up; it is therefore with some feeling of satisfaction that it is noticed that the ground to the west of the station is being cleared of bush for the commencement of the new hospital and quarters which have been sanctioned for the year 1913.

RAILWAY EXTENSION WORKS, KUMRABAI MANILLA.

The Railway Construction Station was in the charge of Drs. Nicholson and Rollason during the year. Dispenser Buck was attached to Headquarters, and Dispenser Scott was in charge of a dressing station at Yonnibanna and latterly at Makomp Station.

There were 3,361 new cases treated during the year, and there were 2,524 subsequent attendances, making a total of 5,885. The principal diseases were minor casualties, gonorrhœa, bronchial affections, ulcers and constipation. One case of eclampsia occurred which recovered after delivery by version. There were four deaths, as follows:—

Injuries from a fall	1
Septicæmia	1
Injuries from a train accident	2
	4

Health of European Staff.—This has been fair. During, and at the end of the rains, there was a good deal of intermittent fever. The number of Europeans working on the Construction was 26; and the number of days on the Sick List of patients was 93. No case of dysentery occurred.

Health of Native Staff.—This was good; also that of the labourers.

Vaccination.—A hundred were done during the months of August, September and October. The labourers do not care to be vaccinated on account of the discomfort caused by the vesicles.

There was no case of small-pox.

Sanitation.—All compounds have been kept very clean and well drained by virtue of their position. On the Makene extension better accommodation was given for the Dispensary, and a room has been provided for four

in-patients. The water supply is good, and consists at Yonnibanna of a spring, at Kumrabai of a well, cement-lined and thirty feet deep, and at Makomp of a spring.

BO AND KENNEMA.

The stations were in charge of Drs. Wood-Nason and Arbuckle. The latter writes the report.

In Bo Dispensary, Dispenser T. C. Williams was dismissed early in June, and about the middle of July, Dispenser W. A. Macauley filled up the vacancy. In Kennema, Dispenser Betts was relieved by Dispenser Thomas in July.

Population.

Official Europeans.—

Bo	Educational		5
	Railway		6
	W.A.F.F. (Gold Coast)		8
	Medical		1
Mattru	Railway		1
Gerehun	Railway		1
Blama	Railway		1
Kennema	Administrative ...		4
Hangha	Railway		1
Total			28

Native Officials (Civil)—Sierra Leone.—

Educational		2
Railway		72
Post Office		6
Medical		5
Administrative		6
(Military, W.A.F.F.)		262
Natives, Railway		215
Education		148
Medical		13
Administrative		59
Total		785

Unofficial Europeans—

Bo	Males		6
	Females		3
Gerehun	Males		2
Blama	Males		11
Kennema	Males		2
	Females		1
Hangha	Males		1
Total			26

Out-Patients.—The number of out-patients at the Bo Dispensary was 1,760, an increase of 69 over last year. The chief diseases were constipation, dyspepsia, bronchitis, and rheumatism. The amount collected in fees was £7 4s. 9d., an increase of £4 8s. 3d. over last year.

In Kennema the number of out-patients was 2,132. The amount collected was £3 0s. 6d.

In-Patients.—In Bo hospital the number was 56, an increase of 45 on last year. There were 2 deaths, one from an operation for the radical cure for hydrocele and the other from criminal wounding. There were 12 operations under chloroform as follows :—

Double hydrocele (radical cure)	1
Enucleation of eyeball (sarcoma)	1
Trimming of crushed bone	1
Elephantiasis scroti	1
Removal parotid	2
Removal fibroma	1
Removal of foreign body (groin)	1
Incisions (abscesses)	4
Total	12

In Kennema the number of prisoners was 164, with a total of 12,912 days imprisonment, being an average of 28 days per man.

Vaccination.—At Bo, there were 279 cases vaccinated, with 240 successes, 13 failures, and 26 not seen. In Kennema there were 207 vaccinations, with 189 successes. There was no epidemic of small-pox.

General Remarks.—There were 13 Europeans on the Sick List for a total of 146 days, or nearly 12 days a man. The number of Sierra Leone Officials on the Sick List was 22 for a total of 143 days, an average of 7 days per man. There was one death from blackwater fever in a non-official European. Of native employés, 59 were on the Sick List for 379 days, or just over 6 days a man. The health of the pupils at Bo school has been good, there was only one serious case of illness, viz., pneumonia. A "splenic index" of the school boys taken at the end of the year gave 10 per cent. of palpable spleens. In December a detachment of the West African Frontier Force from the Gold Coast was stationed at Bo. A site for their lines was chosen on a rice field opposite to the railway line. The detachment consisted of 8 Europeans and 280 men. The water storage at Bo has been increased by the addition of five 1,000-gallon tanks. The total number of tanks now in Bo is :—

400-gallon tanks	21
400-gallon ,, ...	2
1,800-gallon ,, ...	1
1,000-gallon ,, ...	5

a total of 16,000 gallons.

All these tanks are rendered mosquito proof, but water will still need to be procured from Kennema for the Railway Officials and members of the trading firms. In Kennema there is a pipe-borne system, the water being obtained from a stream in the forest, up in the hills above the town.

Sanitation.—In Bo there is a sanitary gang of 12 men ; the "dry earth" latrine pail system is in use together with trenching grounds.

Early in April the native town of Bo was burnt down to a great extent. In consequence the District Commissioner and the Medical Officer were given a free hand in the reconstruction of the town. In June the first main streets were marked out ; they were about 25 feet wide. Houses were built at least 20 feet apart, and 6 feet from the road. The appearance of the new town is much improved.

Rainfall and Temperature.—

The total rainfall at Bo for the year was 114·77 inches.
The mean annual maximum temperature was 88·7 F.
The mean annual minimum temperature was 69·2 F.

DARU.

This station was under the charge of Drs. Orpen and Powell; the latter writes the report.

Dispenser Thomas was relieved by Dispenser John on the 5th July.

The health of the Officers stationed at Daru, the Headquarters of the West African Frontier Force, was good during 1912. Four Officers in all were on the sick list, for varying periods totalling 31 days; the cause was Malaria.

The number of Native Officials on the sick list was 12, and the total number of days off duty was 136; the chief diseases affecting natives were malaria and bowel troubles.

Out-Patients,—There were 1,450 new cases, and 1,700 subsequent attendances, giving a total of 3,150 cases as compared with 2,786 last year. The principal illnesses were Malaria, Gonorrhœa, Rheumatism and Wounds.

In-Patients.—These numbered 184, an increase of 74 as compared with 1911. There were 3 deaths, 1 caused by Cirrosis of the Liver, and the others by lacerated wounds in two females, stated to have been caused by a leopard and an alligator respectively.

Vaccination.—There were 563 vaccinations done during the year 1911, and 435 during 1912. An outbreak of Small Pox occurred at Panguma early in the year, and was reported on by Dr. Orpen, a single case also occurred at Baiima in September.

Sanitation.—All the Officers' quarters are now concreted, and the roofs thatched. An extensive area of low shrub and bush as well as the smaller trees have been cleared round the mess buildings and offices. Clearing has also been done between the Officers' bungalows and the Moa River on the one side, and between these and the Railway on the other.

The Hospital has now a concrete verandah, and two tanks (total capacity 1,900 gallons) have been supplied. A concrete drain surrounds the Hospital.

The drinking water is obtained from the roof of the Mess and is stored in tanks of a total capacity of 2,850 gallons, while a thousand-gallon tank is used to store water for cooking purposes. All water for drinking is filtered and boiled.

Kanre Lahun Dispensary.—This is an out-station of Daru in charge of Dispenser Nylander, and visited monthly by the Medical Officer at Daru.

The civil staff consisted of three European Officers and a Native clerk. The health was very good. There were 379 new cases treated during the year, and the subsequent attendances numbered 560, making a total of 919. Gonorrhoea was the most frequent complaint in the males, and about 25 per cent. of the number treated was for this affection. Vaccinations were performed on 395 persons, of which 357 were successful.

The Senior Sanitary Officer visited the station during August.

KARENE DISTRICT.

HEADQUARTERS—BATKANU.

The station was under the medical charge of Drs. M'Conaghy and Bower; the latter writes the report.

Health of Europeans.—This was only fair; three officials were placed on the sick list for a total period of 40 days. None were invalided, but there was one death from blackwater fever.

Health of Native Officials.—Amongst the native officials, 98 were placed on the sick list for a period of 625 days in total. Two were invalided. There was no death. The principal illnesses were diseases of the respiratory and digestive systems.

Out-Patients.—There were 1,277 patients treated in the dispensary, a decrease of 222 as compared with last year. There were 2,486 subsequent attendances, the total being 3,763. The chief complaints were rheumatism, constipation, ulcers, syphilis, and general skin diseases.

In-Patients.—There were 47 in-patients as compared with 54 last year. One death occurred. Three operations were performed, two for removal of tumours and the third for the radical cure of hæmatocele: in all these cases a general anæsthetic was used.

Vaccination.—There were 877 persons, mostly children, vaccinated. Of these 646 cases were successful, that is about 72 per cent. A few cases were not inspected.

Patrols.—Ten patrols were undertaken during the year. Splenic Indexes were taken and 60 per cent. of the cases were found enlarged. The amount collected in out-patient fees amounted to 18s. 2d.

Meteorological Observations.—These were taken during the year: the highest temperature recorded was 99·8 F. in March on the 12th, and the lowest 62·8 F. on June the 25th. The rainfall for the year was 108·94 inches.

KOINADUGU DISTRICT.

HEADQUARTERS—KABALLA.

During the year Drs. Nicholson and Wood were in charge: the latter writes the report.

General Health.—The general health of the native officials and subordinate staff was good throughout the year. There was no death nor invaliding. The health of the Europeans was excellent.

In-Patients.—Eight cases were treated, there was no death. Five operations were performed, which consisted of two cases where tumours were removed, two operations for phimosis, and one for hydrocele.

Out-Patients.—The number of new cases treated was 817, together with 326 old cases, giving a total of 1,143, being an increase of 259 over last year.

Diseases.—The most usual disorders met with, in the order of their frequency, were dyspepsia, chronic bronchitis and other respiratory troubles, chronic rheumatism, ulcers, fever, and cardiac diseases. Goitre is extremely common; more than 250 cases were met with in less than six months. In one native town, where "latrine bush" occupied both sides of the stream used for the water supply, almost one quarter of the inhabitants appeared to have enlarged thyroids or suffered from definite goitres. Two cases of madura foot were seen, and two cases of leprosy on patrol. Yaws are fairly common. Three cases of suspicious trypanosomiasis were noticed during patrols and reported on. No serious outbreak of small-pox occurred, although four cases were once seen in a single native town.

Vaccination.—Successes	... ...	651
Failures	... ...	118
Not seen	... ...	98
Total	... ...	867

Patrols.—These were undertaken for 201 days during the year, or an average of 16 days a month. Many of the Chiefs seem to be beginning to realise the value of the advice on sanitation, and not a few of them have taken action in removing their cattle to "warris," looking after a pure water supply, and in accepting help in choosing new and good sites for their towns.

Meteorological.—Observations were taken throughout the year. The highest temperature observed was 104° F. on March 22nd, and the lowest, 52° F., on January 30th. The rainfall was 79·33 inches.

TESANI.

This station was under the charge of Dr. Campbell, who furnishes the report.

Dispenser Neville was relieved by Dispenser P. Q. A. John on the 14th of May.

General Health.—The Frontier Force at Tesani consisted of 100 men with their wives and children, together with three European Officers, a Medical Officer, one Dispenser, and a Company Pay Clerk.

There were 107 cases treated in the hospital. There were also 1,349 new cases seen in the out-patients' department, and 1,382 subsequent attendances, making a total of 2,838 treated during the year. The prevailing diseases were, as usual, malarial fever, rheumatic affections, skin diseases and gonorrhœa. Goitre was noticed to be common at Konnoh.

Operations.—Some minor operations were performed under chloroform; these comprised circumcision, incisions for abscess, extraction of bullet in a case of gunshot wound occurring in Kayima, and others. There were two deaths during the year, one from bronchial complications in a case of asthma, the other from an accidental gunshot wound. Four "Frontier" soldiers were found medically unfit for service during the year. Two European Officers suffered from rectal abscess, one was invalided and the other was placed on the Sick List for 38 days and was much relieved.

Water Supply.—There are three springs in this locality from which water is obtained for drinking purposes. One of these, from which the European Officials obtain their supply, gives an abundant supply all the year round, the water undergoes natural filtration and is of excellent quality.

Vaccination.—During the year 287 persons were vaccinated; 270 cases were successful, and 19 were not seen. One small-pox case was reported in the early part of the year; but prompt and apparently effective measures were adopted, for the disease did not spread and no other case was reported. A few cases of measles occurred amongst the children in barracks and had to be dealt with.

Sanitation.—Household refuse and rubbish is burned, bottles and tins are collected and buried. Latrines are of the dry earth system and are inspected daily.

Pujehun.

A Medical Station was opened at Pujehun about the beginning of October. The town is the proposed new Headquarters of the Northern Sherbro District, this was formerly at Bandajuma.

Pujehun is situated on the Wanje River, which is navigable for launches up to this town from June to November in the year. There are 600 inhabitants in the town, which is clean and very well kept. The bush is also kept clean for 100 yards round the town. The water supply is from the Wanje which runs about 200 yards away.

The average number of European Officials at Pujehun during the last three months has been four. These at present occupy the Rest House and the clerks' quarters which are on the north-east side of the town and 60 yards away from it, the houses are constructed of mud and have mud floors. A mud hut near the Medical Officer's house has been fitted up as a dispensary. The water supply is at present carried from a small stream 300 yards away from the buildings. The health of the European Officials has been fairly good. During October and November about 250 prisoners were detained at Pujehun. There was a moderate amount of sickness amongst them, consisting chiefly of diarrhœa, due doubtless to the drinking water which was taken directly from the river. Cesspits were used for latrines. All the prisoners were vaccinated unless they had had small-pox previously. The new Government quarters are now under construction, they are situated on the highest ground in the neighbourhood.

DISPENSARY DISTRICTS.

Mano Salija.

This station was in the charge of Dispenser J. A. Anderson, who furnishes the report.

The number of new cases treated was ...	830
Subsequent attendances	934
Total	1,764

The most prevalent diseases were gonorrhœa, malarial fever, bronchial affections, rheumatism, skin diseases, and intestinal worms. The health of the officials was good, the total number of days of those placed on the Sick List during the year was 46. One case of leprosy applied for treatment, and the chief of his town was advised to keep him away as much as possible from the public. There was no case of small-pox observed.

The sanitary condition of Mano Salija is much the same as it is in other native towns away from Europeans. Latrines in larger numbers are needed.

The District Commissioner and the Medical Officer of the District visited the Dispensary during the year.

Sumbuya.

The station was under the charge of Dispenser P. J. John, who was relieved by Dispenser C. H. A. Johnson, who writes the report.

The number of out-patients treated during the year was 2,072, which number includes 759 subsequent attendances. The chief diseases were gonorrhœa, rheumatism, bronchial and digestive disorders. The general health of the European and Syrian traders, native agents of mercantile firms, and of the Government officials, including five mail carriers, was good. Vaccination was carried out systematically during the year, and 409 persons were successfully vaccinated. The water supply to the locality is from two sources. The River Sewa or Big Bum is used by the people living in proximity to it, and well water is used by the people of Matakong, a portion of the town half a mile from the river.

Regent.

This station was in the charge of Dispensers W. A. Macauley and D. T. Betts; the latter writes the report. The Medical District of Regent includes the villages of Regent, Gloucester, Leicester, Bathurst and Charlotte. The general health of the inhabitants may be said to have been good: during the year there was an outbreak of measles amongst the children. There was no death. The prevailing diseases are rheumatism, bronchitis, and digestive disorders.

The number of cases treated was:—

New cases	1,335
Subsequent attendances	1,817
Total	3,152

There were three officials and three policemen on the Sick List; the total number of days on the Sick List was 47.

Vaccinations numbered 129, of which 77 were successful. Major Ross, an old European resident of Regent, died from old age. The station was visited by Dr. Wood on the 12th of December.

Waterloo and Hastings.

These stations were under the charge of Dispenser E. G. Luke during the year: he writes the report. The total number of officials, exclusive of the railway, was 52. The total number of official attendances at the Dispensary, inclusive of police constables and Court messengers, was 437. There was no serious illness. The health of the public generally at Waterloo was good; there was no outbreak of any infectious disease. The total number of out-patient attendances was 5,238, of which 2,284 were new cases, and 2.954 subsequent attendances.

Vaccination.—Waterloo, 175 cases, of which 112 were successful, 43 unsuccessful, and 20 not seen.

Hastings, 154 cases, of which 98 were successful, 24 were failures, and 32 not seen.

The total number of attendances of Government officials at Hastings village was 61, which included 25 new cases, and 36 subsequent attendances.

The attendances at the Out-patients numbered 1,425 new cases, and 1,965 subsequent attendances, making a total of 3,390. Drs. Murphy and Wood visited Waterloo station during the year.

York.

This station was under the charge of Dispensers M. O. Fraser and T. L. Hooke: the latter writes the report.

The number of cases treated during the year was 1,094 new cases, and 1,181 subsequent attendances, giving a total of 2,275. The chief ailments were diseases of the digestive and respiratory systems, and malaria; skin diseases and intestinal parasites.

There are no other officials in York than the Police Constable besides the Dispenser; both these officials kept good health during the year. The Police Constable at Kent was placed on the Sick List for lumbago. In the month of December a boy of 14 years of age was drowned in the sea at Hamilton. The number of vaccinations performed were 60; of these 32 were successful, and 8 were unsuccessful; 20 were not seen. There was no outbreak of any infectious disease during the year. The water supply of York is a good one, being derived from springs that are inspected twice a week, and are kept sanitarily clean. During the year the district market was converted into a combined Court and Rest House by Government.

Banana Islands.

The station here was in the charge of Dispenser J. P. Metzger and Dispenser D. M. Thomas. Mr. Metzger writes the report.

The total number of new cases treated during the year was 1,403, including officials and civil police. Subsequent attendances totalled 1,280. The most prevalent diseases were rheumatism, skin affections, digestive troubles, disorders of the respiratory system, and worms in children. There was no outbreak of any infectious disease. The water supply continues to be somewhat inadequate, only wells being available as in past years.

Official visits were paid to the island by His Excellency the Governor and the District Commissioner; also by Drs. Murphy and Wood.

VI. SCIENTIFIC.

Blood-sucking Flies.—Fairly considerable collections of blood-sucking flies were made during the year and forwarded to the Entomological Research Committee (Tropical Africa) of the Natural History Museum; the Scientific Secretary's reports show several new species as follows:—

TABANIDÆ.

Tabanus sp? (not in British Museum), from Yana, Mussaia, and Kamatoto.
T. sp nov. (near *Kingsleyi*) Ric., from Port Lokkoh.
T. sp nov., from Falaba.
T. sp nov., from Serakolia, Sandyallu, Komatendu, Juru, Gendema, Bewana, and Yorke.

Hæmatopota sp (near *cordigera*), Big. from Kamba.
H. sp nov., from Sandyallu, Makump, and Senahu.

The above were contributed by Dr. J. J. Simpson.

Tabanus Rhinomyza sp (near *stimulans*), from Kondembia.
T. sp nov. (near *argenteus*), Surc., from Masamberi.

These two were sent by Dr. J. Y. Wood.

Tabanus sp nov?
T. sp nov? from Kennema.
T. sp nov? from Bo and Kennema.

Contributed by Dr. H. E. Arbuckle.

Identification of the Blood-sucking Diptera collected in Sierra Leone provides the following insects:—

CULICIDÆ.

Anopheles funestus, Giles.
A. costalis, Lw.
A. mauritianus, Gpr.

Stegomyia fasciata, F.
S. sugens, Wied.
S. apicoargentea, Theo.

Toxorhynchites brevipalpis, Theo.

Mansonioides uniformis, Theo.
M. africanus, Theo.

Ochlerotatus cumminsi, Theo.

Culex tigripes, Gpr.
C. pruvia, Theo.
C. incidiosus, Theo.

Culiciomyia nebulosa, Theo.
Eretomopodites chrysogaster, Grah.

CHIRONOMIDÆ.

Ceratopogon sp?

SIMULIIDÆ.

Simulium damnosum, Theo.

TABANIDÆ.

Thaumastocera akwa, Grunb.

Chrysops longicornis, Macq.

Hypocentrum trimaculatum, Newst.
H. murphyi, Aust.

Hæmatopota grahami, Aust.
H. sp near *sanguinaria*, Aust.
H. sp near *cordigera*, Big.

Tabanus quadrisignatus, Ric.
Tabanus fasciatus, F.
T. besti, Surc.
T. besti var. arbucklei, Aust.
T. kingsleyi, Ric.
T. lacerani, Surc.
T. thoracinus, P. de B.
T. secedens, Walk.
T. socialis, Walk.
T. pluto, Walk.
T. ruficrus, P. de B.
T. subangustus, Ric.
T. argenteus, Surc.
T. brumpti, Surc.
T. pertinens, Aust.

Rhinomyza sp. very near *concinna*, Aust.

MUSCIDÆ.

Glossina palpalis, R.D.
G. longipalpis, Wied.
G. fusca, Walk.

Stomoxys calcitrans, L.
S. nigra, Macq.

Amongst the entomological collections sent for identification were also the following:—

Pulicidæ (Siphonaptera)
Centocephalus canis, Curtis.
C. felis, Bouche.

Coccidæ (Rhynchota).
Icerya longisetosa, Newst.

Ixodiæ (Ixodoidæ).
Amblyomma sp?
Hæmaphysalis leachi, Aud.
Dryoscypus turetii, Newton.
Rhipicephalus sanguineus, Latr.

Yellow Fever.—It is a matter for congratulation that this Colony has escaped entirely from this disease during the past few years. But the question of endemicity is still one of considerable interest locally, and one which, in spite of the opinion of those who maintain that the disease is exogenous, is steadily gaining ground in the mind of most medical men who have had the experience of actual service on the West Coast of Africa.

The *degree*, however, of this endemicity of Yellow Fever on the West Coast of Africa, appears to me a question of considerable interest and importance that has hitherto escaped the attention which is due to it on the part of investigators. Upon its periodic variation depends the occurrence

of epidemics such as has been the experience of Freetown in the year 1910.

The intensity of this degree of endemicity depends upon three factors, viz., first, the presence of such mosquitoes as are capable of acting as the carriers of this disease, secondly, the occurrence of the disease amongst the inhabitants, it may be, in atypical and autochthonous cases, and lastly, the number of non-immunes who are exposed from time to time to the bite of infected mosquitoes.

It is with reference to the second factor, viz., the occurrence of autochthonous cases locally, that an attempt may be said to have been made to collect information during the year. A case presumably of this nature was reported by myself, and reprinted, as I understand, in the Colonial Office Journal. Dr. McConaghy, Medical Officer at Batkanu, reported a case from Robanka on July 27th, 1912; and three other cases subsequently from Mankimi, Mabole and Marabong respectively. Dr. McConaghy's notes will be duly forwarded and reported in the proper place, but here it will be necessary to draw attention to the fact of the extreme difficulty in collecting adequate and reliable data from natives, particularly by Medical Officers who are not in a position to devote their attention to these matters alone. The necessity for systematic investigation is apparent; and I may perhaps suggest that, besides the work that is generally expected of commissions, if particular work is included in such programmes, and an officer selected who would be allowed or instructed to "sit down" in a native town in certain populous districts for several months, and there to carry out his investigation in every direction that he can, amongst a people whose confidence he will have had time to gain, I feel sure, from my knowledge of local conditions, most good will result in the shortest period of time.

Blackwater Fever.—The clinical evidence in this disease, of such cases as have come under the scrutiny of Medical Officers, appears to me to indicate, with every aspect of certainty, that the disease is due, as I have already suggested elsewhere, not to any definite, single specific poison, but simply to the establishment of an unstable condition of pressure in the circulation resulting from a variety of causes. Intense or untreated infections of subtertian malaria appear to be one agent which produces this unstable condition of the blood, muscular exertion another, extreme constitutional debility from any cause another, and the administration of quinine in a weakly condition of the body yet another. The theory recently advanced that the cause of blackwater is the poison from the bite of some insect needs the support of further evidence to give it *locus standi* with investigators.

Sun Fever.—The condition of pyrexia induced by the absorption of the chemically active rays of light from the sun, and the resulting deleterious effects on the body protoplasm, is a subject that has received scant attention in the past. Only recently has it been appreciated that a number of the so-called local fevers, low temperatures, feeling of malaise and lassitude, and general indisposition are due to light intoxications. The question is of considerable interest and one which, I think, will repay careful consideration.

J. WALLACE COLLETT.

Principal Medical Officer (Acting).

July 15th, 1913.

Annual Vaccination Return.

Year.	Total Vaccinated.	Successful.	Unsuccessful.	Not seen.
1911	8,432	5,129	1,525	1,708
1912	10,778	8,516	751	1,511

Table I.

Medical Staff.

Appointment.	Name.
Principal Medical Officer	R. M. Forde.
Senior Sanitary Officer	R. H. Kennan.
Senior Medical Officer	J. W. Collett.
Junior Sanitary Officer	D. Alexander.
Medical Officer	A. Bremner.
,, ,,	C. H. Allen.
,, ,,	E. W. Wood-Mason.
,, ,,	H. E. Arbuckle.
,, ,,	R. W. Orpen.
,, ,,	J. C. Murphy.
,, ,,	J. S. Pearson.
,, ,,	J. McConaghy.
,, ,,	W. A. Nicholson.
,, ,,	J. Y. Wood.
,, ,,	G. Rollason.
,, ,,	G. G. Butler.
,, ,,	E. J. Powell.
,, ,,	R. Semple.
,, ,,	W. C. E. Bower.
,, ,,	E. F. Ward.
Local Medical Officer	W. Renner.
,, ,,	W. F. Campbell.
,, ,,	W. A. O. Taylor.
European Nursing Sisters	Misses McLeod, Appleton, Forrest, Cook, Stevens and Mrs. Krüger.
Principal Members of Subordinate Staff.	
Chief Clerk	G. M. Spilsbury.
Storekeeper	C. A. Inniss.
Resident Dispenser	M. N. Lardner.
Assistant Resident Dispenser	O. E King.
Six First Class Dispensers	E. G. Luke, J. P. Metzger, W.A. Macauley, C. H. A. Johnson, D. T. Betts, I. H. Wright.

Table III.

RETURN OF STATISTICS OF POPULATION FOR THE YEAR.

	Europeans and Whites.	Africans.	East Indians.	Syrians.	Mixed and Coloured.
Number of Inhabitants in 1912	803	34,090	24	175	165
„ „ Births during the year 1912	—	587	—	—	—
„ „ Deaths „ „ „ 1912	—	751	—	—	—
„ „ Immigrants „ „ „ 1912	Not recorded.				
„ „ Emigrants in 1912					
„ „ Inhabitants in 1901	345	34,463	Nil.	41	—
Increase	458	—	24	134	—
or					
Decrease	—	373	—	—	—

Table V.

METEOROLOGICAL OBSERVATIONS AT FREETOWN.

Months.	Temperature.						Rainfall.		Winds.		Remarks.
	Solar Maximum.	Maximum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January ...	129·0	—	90·6	72·7	17·9	81·6	Nil.	78·0	W.	2	
February ...	132·2	—	90·7	74·4	16·3	82·5	—	74·0	S.W.	3	
March ...	137·0	—	91·3	76·4	14·9	83·8	—	70·0	S.W.	1	
April	138·6	—	91·3	75·2	16·1	83·2	1·92	68·0	W.	2	
May	139·9	—	91·8	75·3	16·5	83·5	6·47	70·0	Calm	1	
June	139·7	—	89·0	71·6	17·4	80·3	21·44	78·0	Calm	1	
July	134·2	—	84·8	72·3	12·5	78·5	33·71	86·0	S.W.	1	
August ...	132·2	—	82·9	71·6	11·3	77·2	34·32	88·0	S.W.	1	
September ...	135·9	—	85·1	71·9	13·2	78·5	18·08	85·0	W.	2	
October ...	139·8	—	88·6	72·4	16·2	80·5	7·71	80·0	W.	1	
November ...	135·7	—	89·7	73·2	16·5	81·4	5·22	80·0	W.	1	
December ...	128·4	—	90·1	74·5	15·6	82·3	0·57	81·0	W.	2	
Total ...	135·2	—	88·8	73·4	15·3	81·1	129·44	78	W.	1	

METEOROLOGICAL OBSERVATIONS AT OUT-STATIONS.

Station.	Temperature.						Relative Humidity.	Total Rainfall.	Number of Days that Rain fell.	Greatest amount on one Day.	Remarks.
	Mean Maximum.	Mean Minimum.	Average Mean.	Mean Diurnal Variation.	Highest Recorded.	Lowest Recorded.					
										INS.	
Bo	88·08	69·36	78·72	18°	99°	58·8	78	119·16	193	26·41	
Kaballa ...	88·99	57·42	73·2	32°	100°	41°	71	80·13	146	18·86	
Bonthe ...	No	Instruments.		—	—	—	83	149·63	181	33·53	
Batkanu ...	90·77	73·4	81·26	19°	92·8	60°	77	107·73	177	19·99	
Daru	89·28	68·89	79·73	20°	97·8	55°	80	87·20	163	15·65	
Moyamba ...	89.32	72·09	80·71	17°	101°	60°	86	99·50	160	22·59	
Kissy ...	84·23	78·29	81·26	5°	89°	70°	82	86·75	115	32·05	

Table VI.

Return of Diseases and Deaths, Colonial Hospital, Freetown.

IN-PATIENTS.

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Infective Diseases—					
Beri-beri	1	1	2	2	—
Cerebro-Spinal Fever	—	—	—	—	—
Chicken Pox	—	—	—	—	—
Cholera	—	—	—	—	—
Dengue	—	—	—	—	—
Diphtheria	—	—	—	—	—
Dysentery	—	28	8	28	—
Endocarditis (Infective)	—	—	—	—	—
Enteric	—	—	—	—	—
Erysipelas	—	1	—	1	—
Gonorrhœa	—	12	—	12	—
Influenza	1	1	—	2	—
Kala-azar	—	—	—	—	—
Leprosy—					
(*a*) Nodular	—	—	—	—	—
(*b*) Anæsthetic	—	1	—	1	—
Malaria—					
(*a*) Tertian	—	7	—	7	—
(*b*) Quartan	—	—	—	—	—
(*c*) Aestivo-autumnal	—	72	—	72	1
(*d*) Chronic Malaria	1	15	2	16	—
(*e*) Blackwater	—	3	2	3	—
Measles	—	2	—	2	—
Malta Fever	—	—	—	—	—
Plague	—	—	—	—	—
Pneumonia	1	49	14	50	2
Rabies	—	—	—	—	—
Relapsing Fever	—	—	—	—	—
Rheumatic Fever	—	—	—	—	—
Septicæmia	—	2	—	2	—
Small Pox	—	—	—	—	—
Syphilis—					
(*a*) Primary	—	—	—	—	—
(*b*) Secondary	—	2	—	2	—
(*c*) Tertiary	—	23	2	23	1
Tetanus	1	9	5	10	—
Trypanosomiasis (Sleeping Sickness)	—	—	—	—	—
Tuberculosis	—	21	2	21	3
Whooping Cough	—	1	—	1	—
Yaws	—	—	—	—	—
Yellow Fever	—	—	—	—	—
Mumps	—	1	—	1	—
Intoxications—					
Alcoholism	—	1	—	1	—
Morphinism	—	—	—	—	—
Others	—	—	—	—	—
Carried forward ...	5	252	37	257	7

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	5	252	37	257	7
GENERAL DISEASES—					
Anæmia	—	6	—	6	—
Anæmia (Pernicious)	—	1	1	1	—
Diabetes	—	—	—	—	—
Exophthalmic Goitre	—	—	—	—	—
Gout	—	—	—	—	—
Leucocythæmia	—	—	—	—	—
Hodgkin's Disease	—	—	—	—	—
Myxœdema	—	—	—	—	—
Purpura	—	—	—	—	—
Rickets	—	—	—	—	—
Scurvy	—	—	—	—	—
Debility	2	29	3	31	—
Rheumatism	5	93	—	98	4
Malnutrition	—	3	2	3	—
Senility	—	3	—	3	—
Lenkæmia	—	1	—	1	—
Febricula	—	7	—	7	—
Toxæmia	—	1	—	1	—
LOCAL DISEASES.					
DISEASES OF THE NERVOUS SYSTEM—					
Sub-section 1.					
Neuritis	—	3	—	3	—
Meningitis	—	6	4	6	—
Myelitis	—	—	—	—	—
Hydrocephalus	—	—	—	—	—
Encephalitis	—	1	1	1	—
Abscess of Brain	—	—	—	—	—
Congestion of Brain	—	—	—	—	—
Tumour of Brain	1	—	—	1	—
Cerebral Hæmorrhage	—	1	1	1	—
Cerebral Softening	—	1	1	1	—
Cerebro-spinal Meningitis	—	1	1	1	—
Disseminated Sclerosis	—	1	—	1	—
Sub-section 2.					
Apoplexy	—	—	—	—	—
Paralysis	—	7	1	7	1
Chorea	—	—	—	—	—
Epilepsy	—	3	—	3	—
Neuralgia	—	7	—	7	—
Hysteria	—	—	—	—	—
Locomotor Ataxia	—	2	—	2	—
Aphasia	—	1	—	1	—
Sciatica	—	1	—	1	—
Vertigo	—	2	—	2	—
Convulsions	—	2	—	2	—
Sub-section 3.					
MENTAL DISEASES—					
Idiocy	—	—	—	—	—
Mania	—	4	—	4	—
Melancholia	—	—	—	—	—
Dementia	—	—	—	—	—
Delusional Insanity...	—	1	—	1	—
Mental Aberration	—	1	—	1	—
Carried forward ...	13	441	52	454	12

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	13	441	52	454	12
DISEASES OF THE EYE—					
Conjunctivitis	1	9	—	10	—
Keratitis	—	—	—	—	—
Ulceration of Cornea	—	2	—	2	—
Iritis	—	4	—	4	—
Optic Neuritis	—	—	—	—	—
Cataract	—	—	—	—	—
Ectropion	—	1	—	1	—
DISEASES OF THE EAR—					
Inflammation	—	5	—	5	—
Other Diseases	—	—	—	—	—
DISEASES OF THE NOSE—					
Coryza	—	4	—	4	—
Epistaxis	—	2	—	2	—
DISEASES OF THE CIRCULATORY SYSTEM—					
Pericarditis	—	2	2	2	—
Endocarditis...	—	—	—	—	—
Valvular—Mitral	1	12	3	13	1
Aortic	—	3	1	3	—
Tricuspid	—	—	—	—	—
Pulmonary	—	—	—	—	—
Arterial Sclerosis	—	—	—	—	—
Aneurism	—	2	—	2	—
Morbus Cordis (unclassed)	1	5	2	6	—
Thrombosis	—	1	—	1	—
Aneurisimal Varix	—	1	—	1	—
Syncope	—	3	—	3	—
Varicose Veins	—	1	—	1	—
DISEASES OF THE RESPIRATORY SYSTEM—					
Laryngitis	—	1	—	1	—
Bronchitis	—	42	1	42	2
Broncho-Pneumonia	4	24	2	28	—
Abscess of Lung	—	2	—	2	—
Gangrene of Lung	—	1	—	1	—
Pleuro-Pneumonia	—	3	1	3	1
Emphysema	—	—	—	—	—
Pleurisy	1	10	2	11	—
Empyema	—	1	—	1	—
Asthma	—	2	—	2	—
DIGESTIVE SYSTEM—					
Stomatitis	—	3	—	3	—
Caries of Teeth	—	4	—	4	—
Glossitis	—	—	—	—	—
Sore Throat	—	—	—	—	—
Inflammation of Tonsils	—	3	1	3	—
Gastritis	—	5	—	5	—
Ulceration of Stomach	—	—	—	—	—
Hæmatemesis	—	1	—	1	—
Dilatation of Stomach	—	—	—	—	—
Stricture of Stomach	—	—	—	—	—
Dyspepsia	—	12	—	12	1
Enteritis	—	5	3	5	—
Appendicitis	—	3	1	3	—
Carried forward ...	21	620	71	641	17

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	21	620	71	641	17
DIGESTIVE SYSTEM—*continued.*					
Colitis	—	—	—	—	—
Ulceration of Intestines	—	—	—	—	—
Sprue	—	—	—	—	—
Hernia	—	47	4	47	3
Diarrhœa	1	23	4	24	—
Constipation	—	16	—	16	—
Colic	—	14	—	14	—
Hæmorrhoids	1	4	—	5	—
Pancreatitis	—	—	—	—	—
Hepatitis—Acute	—	4	1	4	—
Abscess of Liver	—	4	1	4	—
Cirrhosis	1	17	2	18	1
Jaundice	—	—	—	—	—
Peritonitis	—	5	—	5	—
Ascites	—	5	1	5	—
Intestinal Obstruction	—	2	1	2	—
Ulceration of Rectum	—	2	—	2	—
Prolapse of Rectum...	—	3	—	3	—
Cholecystitis...	—	1	1	1	—
Ischio Rectal Abscess	—	3	1	3	—
Pharyngitis	—	4	—	4	—
Dental Abscess	—	3	—	3	—
Catarrh of Bile Duct	—	1	—	1	—
Ulcer of Palate	—	1	—	1	—
LYMPHATIC SYSTEM—					
Splenitis	—	2	—	2	—
Inflammation of Lymphatic Gland	1	28	1	29	1
Suppuration of Lymphatic Gland ...	—	2	—	2	—
Lymphangitis	—	—	—	—	—
Elephantiasis	—	13	1	13	—
Parotitis	—	1	—	1	—
Sinus...	—	1	—	1	—
URINARY SYSTEM—					
Acute Nephritis	—	—	—	—	—
Bright's Disease	3	25	5	28	2
Pyelitis	—	—	—	—	—
Calculus	—	—	—	—	—
Renal Colic	—	—	—	—	—
Cystitis	—	2	2	2	—
Vesical Calculus	—	1	—	1	—
Suppression	—	—	—	—	—
Hæmaturia	—	2	—	2	—
Chyluria	—	—	—	—	—
Pyonophmosis	—	1	—	1	—
Incontinence of Urine	—	1	—	1	—
Uræmia	—	1	—	1	—
Retention	—	1	—	1	—
MALE ORGANS OF GENERATION—					
Urethritis	—	—	—	—	—
Gleet	—	—	—	—	—
Stricture	1	28	3	29	2
Prostatitis	—	—	—	—	—
Soft Chancre	—	1	—	1	—
Condyloma	—	—	—	—	—
Carried forward ...	29	889	99	918	26

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	29	889	99	918	26
MALE ORGANS OF GENERATION—*continued.*					
Inflammation of Scrotum	—	—	—	—	—
Balanitis	—	2	—	2	—
Hydrocele	—	17	—	17	—
Orchitis	—	—	—	—	—
Epididymitis	—	2	—	2	—
Abscess of Testicle	—	1	—	1	—
Phymosis	—	67	—	67	2
Ulcer of Penis	—	3	—	3	—
Spermatocele	—	1	—	1	—
Varicocele	—	1	—	1	—
Chancroid of Penis	—	1	—	1	—
Paraphymosis	—	3	—	3	—
Granuloma of Penis...	—	1	—	1	—
Sarcocele	—	1	—	1	—
Effusion into Spermatic Cord ...	—	1	—	1	—
Urinary Fistula	—	1	—	1	—
FEMALE ORGANS OF GENERATION—					
Ovaritis	—	1	—	1	—
Ovarian Cyst	—	—	—	—	—
Endometritis	—	6	—	6	—
Displacement of Uterus	—	4	—	4	—
Vaginitis	—	—	—	—	—
Amenorrhœa	—	3	—	3	—
Dysmenorrhœa	—	—	—	—	—
Menorrhagia	—	1	—	1	—
Leucorrhœa	—	2	—	2	—
Abortion	—	11	—	11	—
Delayed Labour	1	139	2	140	—
Post-partum Hæmorrhage	—	1	—	1	—
Retained Placenta	—	3	—	3	—
Premature Birth	—	1	1	1	—
Puerperal Septicæmia	—	1	—	1	—
Mastitis	—	2	—	2	—
Abscess of Breast	1	5	—	6	—
Metrorrhagia	1	2	—	3	—
Salpingitis	—	1	—	1	—
Contraction of Os Uteri	—	2	—	2	—
Ulceration of Vagina	—	3	—	3	—
False Pains	—	30	—	30	—
Ulcer of Vulva	—	1	—	1	—
Vesico Vaginal Fistula	—	1	—	1	—
Abscess of Vulva	—	2	—	2	—
Fissure of Cervix	—	1	—	1	—
Threatened Abortion	—	4	—	4	—
Uterine Sub Involution	—	1	—	1	—
Fallopian Pregnancy	—	1	—	1	—
Rupture of Perineum	—	2	—	2	—
Vaginal Wart	—	1	—	1	—
Inflammation of Vulva	—	1	—	1	—
ORGANS OF LOCOMOTION—					
Osteitis	—	—	—	—	—
Arthritis	—	—	—	—	—
Spondylitis	—	—	—	—	—
Bursitis	1	3	—	4	—
Carried forward ...	33	1228	102	1260	28

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	33	1228	102	1260	28
ORGANS OF LOCOMOTION—*continued.*					
Osteo-arthritis	—	1	—	1	—
Osteo-myelitis	—	1	1	1	—
Necrosis	—	9	—	9	—
Synovitis	—	12	—	12	1
Ankylosis	—	1	—	1	—
Epiphysitis	—	1	—	1	—
Periostitis	—	2	—	2	—
Knee Joint Disease	—	2	—	2	—
Myalgia	—	9	—	9	—
CONNECTIVE TISSUE—					
Cellulitis	—	14	—	14	—
Abscess	2	68	—	70	4
Elephantiasis	—	—	—	—	—
DISEASES OF THE SKIN—					
Urticaria	—	—	—	—	—
Eczema	—	1	—	1	—
Boil	—	1	—	1	—
Carbuncle	—	5	—	5	2
Herpes	—	1	—	1	—
Psoriasis	—	—	—	—	—
Oriental Sore	—	—	—	—	—
Tinea	—	—	—	—	—
Scabies	—	—	—	—	—
Acne	—	—	—	—	—
Prickly Heat	—	—	—	—	—
Ulcer	4	104	—	108	5
Whitlow	—	4	—	4	—
Dematitis	—	1	—	1	—
Pemphigus	—	1	—	1	—
INJURIES—					
General—					
Sunstroke	—	1	—	1	—
Shock	—	1	—	1	—
Local—					
Sprains	1	13	—	14	2
Fractures	—	16	1	16	3
Wounds	—	65	2	65	3
Burns and Scalds	—	7	2	7	—
Contusions	—	21	—	21	—
Dislocation	—	7	—	7	—
Bites (Dog)	—	1	—	1	—
Strain	—	3	—	3	—
Concussion	—	1	—	1	—
Under observation	—	1	—	1	—
SURGICAL OPERATIONS	—	—	—	—	—
TUMOURS—					
Cancer	2	5	—	7	—
Keloid	—	1	—	1	—
Ganglion	—	5	—	5	—
Fibroma	—	7	—	7	—
Cystic	—	3	—	3	—
Sarcoma	—	8	2	8	—
Fibro-myoma	—	2	—	2	—
Carried forward ...	42	1634	110	1675	48

RETURN OF DISEASES AND DEATHS IN 1912 AT THE COLONIAL HOSPITAL—*contd.*

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.
		Admissions.	Deaths.		
Brought forward ...	42	1634	110	1675	47
MALFORMATIONS—					
Ingrowing Toe Nail	—	1	—	1	—
POISONS—					
Santonin	—	1	—	1	—
PARASITES—					
Animal :—					
Protozoa	—	—	—	—	—
Trematoda (Flukes)	—	—	—	—	—
Cestoda :—					
Tænia Solium	—	1	—	1	—
„ Saginata	—	—	—	—	—
Nematoda :—					
Ascaris	—	4	—	4	—
Tricocephalus Dispar	—	—	—	—	—
Trichina	—	—	—	—	—
Dracunculus	—	2	—	2	—
Filariasis	—	—	—	—	—
Strongylus	—	—	—	—	—
Ankylostomiasis	—	1	1	1	—
Oxyuris	—	—	—	—	—
Insecta :—					
Myiasis	1	2	—	3	—
Grand Total ...	43	1,646	111	1,688	48

Table VI.

RETURN SHOWING IN-PATIENTS IN THE VARIOUS DISPENSARIES OF THE COLONY AND PROTECTORATE, EXCEPT THE COLONIAL HOSPITAL.

Diseases.	Remaining in Hospital at end of 1911.	Year's Total.		Total Cases Treated.	Remaining in Hospital at end of 1912.	Remarks.
		Admissions.	Deaths.			
Beri-Beri	—	—	—	—	—	
Chicken Pox...	—	4	—	4	1	
Dysentery	—	26	2	26	1	
Gonorrhœa	2	3	1	5	—	
Leprosy—(*a*) Nodular ...	12	4	5	16	4	
(*b*) Anæsthetic ...	—	—	—	—	—	
Malaria—						
(*a*) Tertian	—	3	—	3	—	
(*b*) Quartan	—	45	1	45	—	
(*c*) Æstivo-Autumnal	—	5	—	5	—	
(*d*) Chronic Malaria	—	21	—	21	1	
(*e*) Blackwater ...	—	2	2	2	—	
Pneumonia	—	7	1	7	—	
Small Pox	—	—	—	—	—	
Syphilis—(*a*) Primary ...	—	—	—	—	—	
(*b*) Secondary ...	17	20	3	37	22	
(*c*) Inherited ...	1	—	—	1	1	
Tuberculosis	—	7	3	7	—	
Yaws	—	—	—	—	—	
Other Diseases	—	3	1	3	—	
General Diseases	18	33	18	51	21	
Rheumatism	—	14	—	14	1	
Debility	—	7	1	7	—	
Nervous System	140	63	33	203	131	
Diseases of the Eye	1	10	1	11	2	
,, ,, Nose... ...	—	—	—	—	—	
,, ,, Circulatory System	—	14	4	14	1	
,, ,, Respiratory do.	—	30	3	30	—	
,, ,, Digestive do.	2	57	8	59	3	
,, ,, Lymphatic do.	1	37	4	38	1	
,, ,, Urinary do.	—	6	—	6	—	
,, ,, Generative do.	—	—	—	—	—	
,, ,, Male organs...	2	40	1	42	2	
,, ,, Female organs	—	6	—	6	—	
,, ,, Organs of Locomotion	8	87	6	95	13	
,, ,, Connective Tissue	4	40	1	44	3	
,, ,, Skin ...	20	92	4	112	15	
Injuries—General	—	5	—	5	—	
,, Local	—	73	5	73	—	
Surgical Operations	—	23	1	23	—	
Tumours	—	4	—	4	2	
Parasites	2	6	—	8	1	
Poisons	—	—	—	—	—	
Intoxications	—	—	—	—	—	
Total	230	797	109	1,027	225	

Table No. VII.

RETURN OF DISEASES, COLONIAL HOSPITAL, FREETOWN.

OUT-PATIENTS.

REGISTERED NUMBER OF NEW CASES.

	TOTALS.			TOTALS.	
	Male.	Female		Male.	Female
			Total brought forward	875	334
INFECTIVE DISEASES—					
Beri-beri	—	—			
Cerebro-Spinal Fever	—	—	GENERAL DISEASES—		
Chicken Pox	1	—	Anæmia	9	59
Cholera	—	—	Anæmia (Pernicious)	—	—
Dengue	—	—	Diabetes	—	—
Diphtheria	—	—	Exophthalmic Goitre	—	—
Dysentery	24	19	Gout	1	—
Endocarditis (Infective) ...	—	—	Leucocythæmia	—	—
Enteric	—	—	Hodgkin's Disease	—	—
Erysipelas	—	2	Myxœdema	—	—
Gonorrhœa	67	2	Pupura	—	—
Influenza	12	1	Rickets	—	—
Kala-azar	—	—	Scurvy	—	—
Leprosy (*a*) Nodular	2	1	Debility	209	194
(*b*) Anæsthetic	1	—	Rheumatism	851	782
Malaria (*a*) Tertian	76	42	Senility	—	1
(*b*) Quartan	—	—			
(*c*) Æstivo-Autumnal ...	553	199			
(*d*) Chronic Malaria ...	—	2			
(*e*) Blackwater	—	—	LOCAL DISEASES—		
Measles	3	2			
Malta Fever	—	—	NERVOUS SYSTEM—		
Plague	—	—	*Sub sec.* 1.		
Pneumonia	35	3	Neuritis	5	5
Rabies	—	—	Meningitis	1	1
Relapsing Fever	—	—	Myelitis	—	—
Rheumatic Fever	—	—	Hydrocephalus	—	—
Septicæmia	3	3	Encephalitis	—	—
Small Pox	—	—	Abscess of Brain	—	—
Syphilis (*a*) Primary	4	7	Congestion of Brain	—	—
(*b*) Secondary ...	6	3	*Sub sec.* 2.		
(*c*) Inherited	3	—	Apoplexy	—	—
(*d*) Tertiary	31	20	Paralysis	16	6
Tetanus	6	1	Chorea	—	—
Trypanosomiasis (Sleeping Sickness)	—	—	Epilepsy	3	—
Tuberculosis	23	6	Neuralgia	68	32
Whooping Cough	12	14	Hysteria	—	1
Yaws	3	1	Vertigo	6	—
Yellow Fever	—	—	Locomotor Ataxia	—	1
			Sub sec. 3.		
			MENTAL DISEASES—		
			Idiocy	—	—
INTOXICATIONS—			Mania	—	—
Alcoholism	10	6	Melancholia	—	—
Morphinism	—	—	Dementia	—	—
Others	—	—	Delusional Insanity	—	—
Total carried forward	875	334	Total carried forward	2044	1416

	TOTALS.	
	Male.	Female
Total brought forward	2044	1416
Eye—		
Conjunctivitis	118	46
Keratitis	5	4
Ulceration of Cornea	7	2
Iritis	5	1
Optic Neuritis	—	—
Cataract	5	2
Glaucoma	2	1
Stye	1	2
Refraction	1	—
Photophobia	—	1
Ear—		
Inflammation	44	33
Other Diseases—		
Otorrhœa	10	13
Wax in Ear	4	8
Carbuncle of Meatus	—	1
Nose—		
Ozema	2	2
Polypus	1	—
Epistaxis	3	2
Coryza	95	24
Circulatory System—		
Pericarditis	2	1
Endocarditis	3	—
Valvular—Mitral	10	3
Aortic	3	2
Tricuspid	—	—
Pulmonary	1	1
Arterial Sclerosis	—	—
Aneurism	3	—
Myocarditis	2	—
Cardiac Thyroid	—	1
Atrophy of Heart	1	—
Morbus Cordis (Unclassed)	10	6
Cardiac Dilatation	4	—
Respiratory System—		
Laryngitis	26	5
Bronchitis	690	478
Broncho-Pneumonia	5	8
Abscess of Lung	—	—
Gangrene of Lung	—	—
Emphysema	—	—
Pleurisy	15	12
Empyema	—	—
Asthma	22	3
Bronchial Catarrh	46	35
Hæmoptysis	6	—
Digestive System—		
Stomatitis	42	27
Caries of Teeth	233	194
Glossitis	—	—
Sore Throat	30	13
Inflammation of Tonsils	22	29
Gastritis	11	7
Ulceration of Stomach	—	—
Hæmatemesis	—	—
Dilatation of Stomach	—	—
Stricture of Stomach	—	—
Total carried forward	3534	2383

	TOTALS.	
	Male.	Female
Total brought forward	3534	2383
Digestive System (*continued*)—		
Dyspepsia	242	337
Enteritis	8	9
Appendicitis	1	1
Colitis	—	—
Ulceration of Intestines	—	—
Sprue	—	—
Hernia	67	1
Diarrhœa	122	62
Constipation	547	236
Colic	26	22
Hæmorrhoids	23	11
Pancreatitis	1	—
Hepatitis (Acute)	10	1
Abscess (Liver)	1	—
Cirrhosis (Liver)	16	6
Jaundice	—	—
Peritonitis	—	3
Ascites	9	3
Pharyngitis	49	24
Gingivitis	1	4
Teething	2	1
Gastro Enteritis	1	2
Prolapse of Rectum	—	1
Atresia of Rectum	—	1
Lymphatic System—		
Splenitis	8	1
Inflammation of Lymphatic Gland	54	21
Suppuration of Lymphatic Gland	3	—
Lymphangitis	2	—
Elephantiasis	9	—
Urinary System—		
Acute Nephritis	—	—
Bright's Disease	18	22
Pyelitis	—	—
Calculus	—	—
Renal Colic	—	—
Cystitis	6	2
Vesical Calculus	—	—
Suppression	—	—
Hæmaturia	2	—
Chyluria	—	—
Uræmia	—	1
Incontinence	3	—
Retention of Urine	2	—
Generative System—		
Male Organs—		
Urethritis	5	—
Gleet	—	—
Stricture	36	—
Prostatitis	—	—
Soft Chancre	12	—
Condyloma	1	—
Inflammation of Scrotum	1	—
Hydrocele	25	—
Orchitis	27	—
Epididymitis	11	—
Abscess of Testicle	—	—
Phimosis	60	—
Paraphimosis	1	—
Varicocele	2	—
Urinary Fistula	3	—
Total carried forward	4951	3155

	TOTALS. Male.	Female
Total brought forward	4951	3155
GENERATIVE SYSTEM (*continued*)—		
Female Organs—		
Ovaritis	—	7
Ovarian Cyst	—	—
Endometritis	—	45
Displacement of Uterus	—	22
Vaginitis	—	9
Amenorrhœa	—	82
Dysmenorrhœa	—	33
Menorrhagia	—	28
Leucorrhœa	—	7
Abortion	—	9
Delayed Labour	—	—
Post-partum Hæmorrhage	—	—
Retained Placenta	—	1
Premature Birth	—	—
Puerperal Septicæmia	—	1
Mastitis	—	20
Abscess of Breast	—	5
Threatened Abortion	—	1
Disorders of Pregnancy	—	77
Fungoid Ulceration of Breast	—	2
Uterine Congestion	—	8
Metrorrhagia	—	7
False Pains	—	6
ORGANS OF LOCOMOTION—		
Osteitis	—	1
Arthritis	1	1
Spondylitis	—	—
Bursitis	1	—
Synovitis	21	5
Periostitis	10	5
Necrosis	5	—
Ankylosis	—	1
CONNECTIVE TISSUE—		
Cellulitis	17	3
Abscess	89	55
Elephantiasis	—	—
SKIN—		
Urticaria	—	1
Eczema	27	3
Boil	31	7
Carbuncle	1	—
Herpes	4	2
Psoriasis	1	1
Oriental Sore	—	—
Tinea	19	8
Scabies	33	5
Acne	—	1
Prickly Heat	5	1
Ulcer	569	206
Whitlow	18	7
Dhobi Itch	4	—
Corns	5	2
Craw Craw	1	1
Albinism	—	1
Pruritus	—	1
INJURIES—		
GENERAL	—	—
Total carried forward	5813	3843

	TOTALS. Male.	Female
Total brought forward	5813	3843
INJURIES (*continued*)—		
LOCAL—		
Wounds	504	158
Contusions	180	53
Dislocations	7	—
Sprains	53	20
Fractures	15	4
Bites (Dogs)	13	1
„ (Human)	7	13
„ (Insect)	4	2
Burns and Scalds	10	18
SURGICAL OPERATIONS	—	—
TUMOURS—		
Ganglion	4	3
Keloid	—	2
Cystic	4	—
Fibroid	1	4
Cancer	1	1
MALFORMATIONS—		
Tongue-tie	7	7
Imperfect descent of Testicle	2	—
Occlusion of Meatus Urinarius	1	—
POISONS—		
Ptomaine	1	—
Santonin	—	1
PARASITES—		
Animal—		
Protozoa	—	—
Trematoda (Flukes)	—	—
Cestoda—		
Tænia Solium	21	10
Tænia Saginata	—	—
Nematoda—		
Ascaris	153	134
Tricocephalus Dispar	—	—
Trichina	—	—
Dracunculus	—	—
Filariasis	1	1
Strongylus	—	—
Ankylostomiasis	1	1
Oxyuris	—	—
Insecta—		
Myasis	1	—
TOTAL	6804	4271
SUBSEQUENT ATTENDANCES	11339	4328
GENERAL TOTAL	18143	8599

Table VII.

RETURN SHOWING OUT-PATIENTS IN THE VARIOUS DISPENSARIES OF THE COLONY AND PROTECTORATE, EXCEPT THE COLONIAL HOSPITAL, DURING THE YEAR 1912.

	Diseases.	Male.	Female.
INFECTIVE DISEASES.	Beri Beri	—	—
	Chicken Pox	20	—
	Dysentery	197	71
	Gonorrhœa	763	13
	Leprosy (*a*) Nodular	2	1
	(*b*) Anæsthetic	5	5
	Malaria (*a*) Tertian	687	329
	(*b*) Quartan	12	9
	(*c*) Æstivo Autumnal	65	6
	(*d*) Chronic Malaria	130	75
	(*e*) Blackwater	3	—
	Measles	33	28
	Pneumonia	14	9
	Influenza	6	1
	Trypanosomiasis	2	1
	Small Pox	20	—
	Syphilis (*a*) Primary	12	9
	(*b*) Secondary	117	108
	(*c*) Inherited	66	63
	Tetanus	3	3
	Tuberculosis	23	9
	Yaws	81	37
	Yellow Fever	—	—
INTOXICATIONS		4	—
GENERAL DISEASES		1,125	487
LOCAL DISEASES.	Diseases of the Nervous System	489	240
	„ „ Eye	266	119
	„ „ Ear	226	116
	„ „ Nose	90	65
	„ „ Circulatory System	103	99
	„ „ Respiratory System	2,109	1,401
	„ „ Digestive System	5,089	2,623
	„ „ Lymphatic System	291	140
	„ „ Urinary System	61	24
	„ „ Generative System—Male Organs	345	—
	„ „ „ „ Female „	—	423
	„ „ Organs of Locomotion	1,151	923
	„ „ Connective Tissues	160	82
	„ „ Skin	2,065	1,017
Injuries—General		95	46
„ Local		1,992	322
Surgical Operations		3	—
Tumours		20	6
Malformations		4	1
Poisons		3	—
Parasites		575	598
Insecta		2	20
Minor Diseases		90	7
Unclassified		46	55
TOTAL		18,665	9,491
Subsequent Attendances		17,251	10,933
GRAND TOTAL		35,916	20,424

VITAL STATISTICS—FREETOWN, 1912.

Table A.

TABLE SHOWING THE INFANTILE MORTALITY.

	24 Hours and under.		1 Day to 1 Week.		1 to 2 Weeks.		2 to 3 Weeks.		3 Weeks to 1 Month.		1 to 2 Months.		2 to 3 Months.		3 to 4 Months.		4 to 5 Months.		5 to 6 Months.		6 to 7 Months.		7 to 8 Months.		8 to 9 Months.		9 to 10 Months.		10 to 11 Months.		11 to 12 Months.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	1	3	3	—	—	—	—	—	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	11
February	1	3	2	2	1	—	—	—	—	—	3	1	1	1	—	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	18
March	3	—	2	1	—	2	—	—	—	—	1	—	2	—	—	1	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	14
April	—	1	—	3	2	—	—	—	—	—	2	—	—	—	—	1	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	11
May	2	1	3	—	1	1	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	11
June	1	1	1	1	—	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	1	—	—	1	—	1	—	1	—	—	11
July	3	4	—	5	—	—	—	—	—	—	—	1	1	1	—	1	1	—	—	1	—	—	—	2	—	—	—	—	1	2	1	—	24
August	1	3	3	2	2	—	—	1	1	—	1	1	1	1	2	4	—	—	1	—	2	—	1	1	1	2	—	—	1	—	1	1	34
September	2	—	3	2	3	—	—	—	2	—	—	—	—	—	2	—	1	1	—	2	—	1	—	1	—	1	2	—	—	—	1	2	26
October	4	1	—	1	2	1	—	1	—	—	1	—	—	1	—	—	—	—	1	—	—	—	—	—	2	—	—	—	—	2	—	17
November	2	—	3	3	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	11
December	1	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	7
TOTAL	21	18	21	22	11	5	1	3	3	—	8	4	6	5	7	9	2	2	2	5	2	2	3	4	4	6	3	2	2	3	6	3	195

Table B.

TABLE SHOWING THE MORTALITY OVER 12 MONTHS.

	1 to 5 Years.		5 to 10 Years.		10 to 15 Years.		15 to 20 Years.		20 to 25 Years.		25 to 35 Years.		35 to 45 Years.		45 to 55 Years.		55 to 65 Years.		65 to 75 Years.		Over 75 Years.		TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	3	3	1	1	—	—	1	—	5	1	6	4	3	3	6	3	2	4	2	2	1	5	56
February	2	2	2	1	2	—	1	—	2	3	—	1	4	3	3	2	4	5	2	—	2	2	43
March	1	2	—	2	1	1	—	—	2	—	8	1	3	4	4	2	2	1	2	3	3	3	45
April	2	1	—	—	1	1	—	—	2	3	3	2	4	2	—	3	3	3	—	2	1	2	35
May...	2	1	—	1	—	—	1	—	1	1	8	2	4	2	3	2	2	2	2	2	2	2	40
June...	1	3	3	—	1	—	2	1	—	—	7	1	1	5	7	2	7	4	2	1	2	2	52
July...	6	4	—	—	—	1	—	—	2	1	15	1	8	5	4	2	2	2	3	2	2	2	62
August	4	7	—	—	—	1	—	1	3	1	8	2	7	2	1	1	9	2	—	—	1	3	53
September	3	4	1	—	—	—	1	1	1	—	3	6	—	5	2	—	2	—	3	3	1	4	40
October	4	4	—	1	—	1	—	—	1	—	6	2	2	3	2	2	1	3	3	—	—	2	37
November	2	7	1	—	—	1	—	—	—	—	4	5	2	2	—	1	2	4	1	1	—	2	35
December	2	1	1	1	—	—	—	—	2	1	9	9	10	5	3	2	—	2	4	3	2	1	58
TOTAL	32	39	9	7	5	6	6	3	21	11	77	36	48	41	35	22	36	32	24	19	17	30	556

Table C.

Table showing the Mortality due to different Diseases up to the age of Five Years.

Diseases.	24 Hours and under.		1 Day to 1 Week.		1 to 2 Weeks.		2 to 3 Weeks.		3 Weeks to 1 Month.		1 to 2 Months.		2 to 3 Months.		3 to 4 Months		4 to 5 Months.		5 to 6 Months.		6 to 7 Months.		7 to 8 Months.		8 to 9 Months.		9 to 10 Months.		10 to 11 Months.		11 to 12 Months.		1 to 5 Years.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	
Fever	—	1	3	—	—	—	—	—	—	—	1	1	1	1	2	—	1	—	1	1	1	—	3	1	1	—	—	2	—	1	—	—	4	5	31
Debility	1	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7
Starvation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exhaustion	—	2	1	2	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7
Nervous System	3	—	8	10	5	4	—	2	3	—	5	1	4	—	3	3	1	2	1	2	—	1	—	2	1	1	1	—	—	—	1	—	11	11	92
Circulatory ,, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	3
Respiratory ,, ...	—	—	—	—	—	—	—	1	—	—	1	1	—	—	—	—	—	—	—	—	—	1	—	—	—	2	—	—	1	—	1	1	2	3	14
Alimentary ,, ...	—	—	—	2	2	—	1	—	—	—	—	—	1	4	2	2	—	—	—	1	1	—	—	1	2	1	2	—	1	—	2	2	9	15	51
Premature Birth	17	9	5	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39
Dropsy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unclassified	—	—	—	—	4	1	—	—	—	—	—	—	—	—	—	4	—	—	—	1	1	—	—	—	—	2	—	—	—	—	2	—	4	4	23
Total	21	18	21	22	11	5	1	3	3	—	8	4	6	5	7	9	2	2	2	5	3	2	3	4	4	6	3	2	2	3	6	3	32	39	267

Table D.

TABLE SHOWING THE MORTALITY DUE TO DIFFERENT DISEASES OVER FIVE YEARS.

DISEASES.	5 to 10 Years.		10 to 15 Years.		15 to 20 Years.		20 to 25 Years.		25 to 35 Years.		35 to 45 Years		45 to 55 Years.		55 to 65 Years.		65 to 75 Years.		Over 75 Years.		TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
General Diseases—																					
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fever, Remittent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ Intermittent	1	2	—	1	1	—	1	1	7	3	7	3	2	2	4	2	2	—	—	—	39
„ Blackwater	—	—	—	—	—	—	1	—	—	1	1	—	—	—	—	—	—	—	—	—	3
„ Yellow	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis	—	—	1	—	—	—	—	—	1	—	—	—	—	1	1	—	—	—	—	—	4
Debility	—	—	—	—	—	—	—	1	1	—	2	—	1	1	2	1	10	10	8	28	65
Rheumatism	—	—	1	1	—	—	4	2	4	2	3	2	—	—	—	5	1	—	—	—	25
Tubercle	—	—	—	1	—	1	1	—	1	2	2	2	2	—	1	—	—	—	—	—	13
Cancer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trypanosomiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leucocythemia	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Ankylostomiasis	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Local Diseases—																					
Nervous System	—	2	3	—	2	1	2	1	7	2	2	3	9	—	4	3	2	2	3	—	48
Circulatory „	2	—	—	—	—	—	1	—	9	1	4	3	8	4	4	2	4	1	2	1	46
Respiratory „	—	2	—	—	1	1	8	2	15	7	11	7	8	5	4	9	4	1	1	—	86
Lymphatic „	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	2
Digestive „	4	2	3	—	1	2	5	4	9	4	8	8	17	7	6	7	2	3	2	2	96
Urinary „	—	—	1	—	—	—	1	—	2	1	4	—	2	—	1	3	—	—	—	—	15
Generative Male	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
„ Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Affections connected with Pregnancy ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ „ „ Parturition ...	—	—	—	—	—	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	3
Organs of Locomotion	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Connective Tissue...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Skin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Poison	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Injuries	—	1	—	—	1	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	4
Unclassified	—	—	—	—	—	—	3	1	2	1	—	5	4	2	4	2	2	1	1	1	29
TOTAL	8	9	9	3	6	7	27	12	62	26	45	33	54	22	32	34	27	19	17	32	484

Table E.

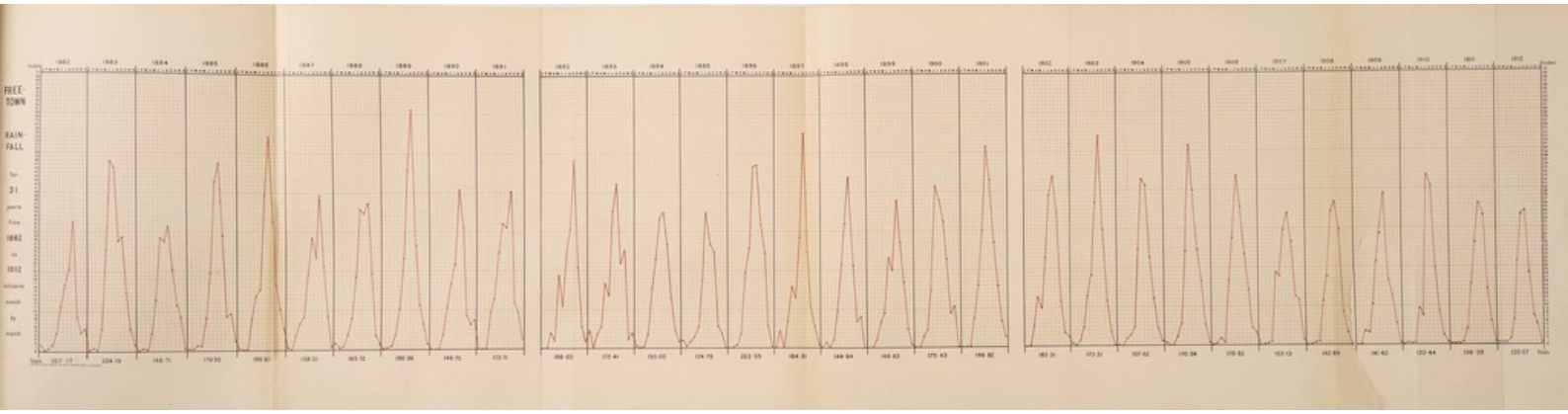
Table Showing the Mortality due to Different Diseases at all Ages.

Diseases.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
General Diseases—																									
Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fever, Remittent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ Intermittent	1	5	3	1	4	1	1	1	4	—	6	2	7	3	6	6	2	4	4	3	2	3	2	1	72
„ Blackwater	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3
„ Yellow	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis	1	—	—	—	—	—	—	—	—	—	1	1	—	—	1	—	—	—	—	—	—	—	—	—	4
Debility...	3	7	7	1	1	3	1	2	1	2	2	3	4	3	2	5	3	3	3	2	2	4	3	5	72
Rheumatism	2	2	1	2	1	1	1	2	2	2	—	1	4	1	—	1	—	1	1	—	—	—	—	—	25
Tubercle	—	2	—	—	—	—	—	—	—	—	1	—	—	1	2	—	—	—	1	—	—	3	3	—	13
Cancer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trypanosomiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ankylostomiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Leucocythemia	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Local Diseases—																									
Nervous System	6	1	5	4	5	4	4	3	5	4	5	8	7	7	17	6	8	6	8	5	4	4	7	7	140
Circulatory „	3	3	2	3	4	3	4	3	4	—	2	—	1	2	3	—	4	—	4	—	—	1	4	5	55
Respiratory „	7	3	4	6	5	3	4	3	5	4	5	3	6	2	5	5	6	4	2	3	4	4	3	4	100
Lymphatic „	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2
Digestive „	5	6	5	4	6	8	3	8	9	2	8	6	13	7	10	8	7	9	1	7	2	5	6	2	147
Urinary „	3	1	1	—	1	—	1	1	—	—	—	—	1	—	1	—	—	—	2	1	—	—	1	1	15
Generative „																									
Male	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	2
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Affections connected with Pregnancy ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ „ „ Parturition ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	1	—	—	3
Organs of Locomotion	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Connective Tissue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Skin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Poison	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Injuries	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	4
Premature Birth	1	1	1	3	5	—	—	—	2	—	1	—	2	8	1	2	1	1	3	—	3	1	1	1	38
Unclassified	2	—	3	3	3	1	—	3	—	4	5	1	3	2	2	2	2	4	—	2	1	3	4	2	52
Total	37	30	34	27	35	24	20	26	33	18	37	26	49	37	50	37	33	33	31	23	18	29	36	29	751

Table F.

TABLE SHOWING THE DISTRIBUTION OF DEATHS ACCORDING TO MONTHS AND SEXES.

MONTH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Male	37	34	35	20	33	37	49	50	33	31	17	36	412
Female	30	27	24	26	18	26	37	37	33	23	29	29	339
TOTAL	67	61	59	46	51	63	86	87	66	54	46	65	751


FREE
TOWN
RAIN-
FALL
for
31
years
from
1882
to
1912
inclusive
each
by
march

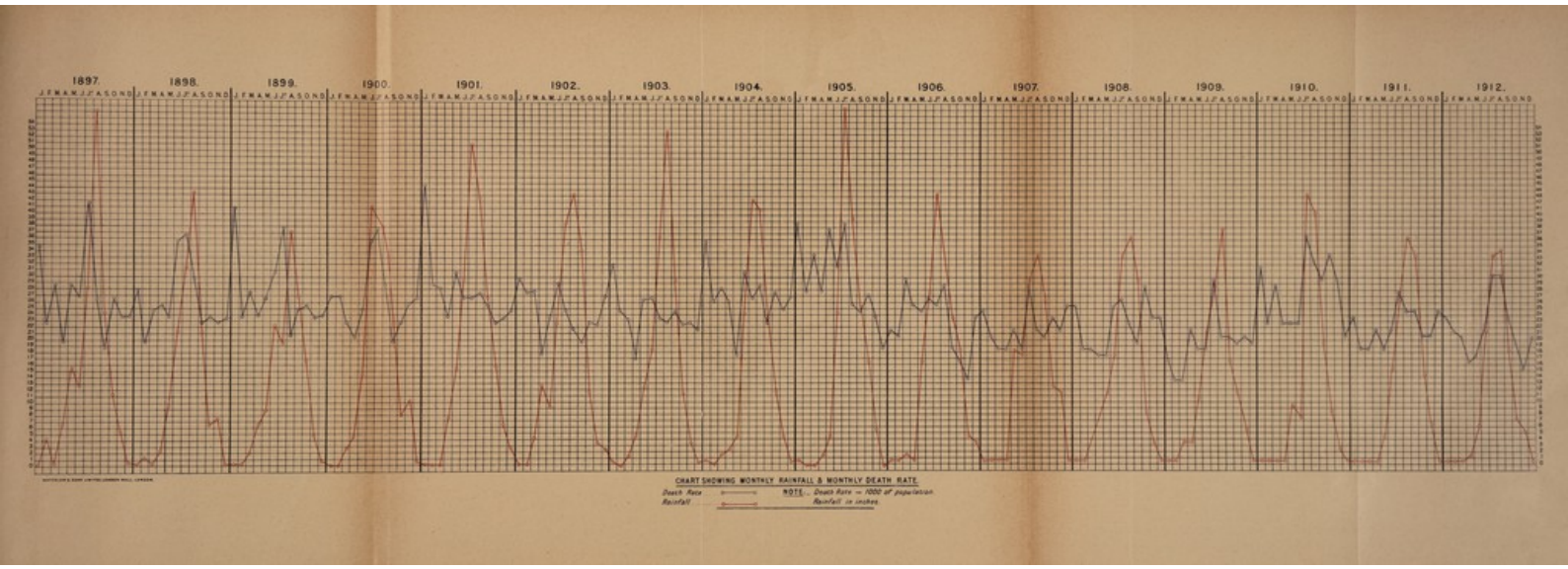


CHART SHOWING MONTHLY RAINFALL & MONTHLY DEATH RATE.

Death Rate

Rainfall

NOTE.- Death Rate = 1000 of population.

Rainfall in inches.

ANNUAL SANITARY REPORT

FOR THE YEAR 1912,

OF THE

COLONY OF SIERRA LEONE,

BY THE

SENIOR SANITARY OFFICER.

INDEX.

ANNUAL SANITARY REPORT FOR THE YEAR 1912 OF THE COLONY OF SIERRA LEONE BY THE SENIOR SANITARY OFFICER.

ADMINISTRATION.

1. The administration of sanitary matters and executive action continued to be controlled by the Corporation with the Principal Medical Officer as the Medical Officer of Health during the year, but it was decided that certain sanitary matters should be transferred from the care of the Corporation to that of the Government, and the Freetown Municipality Amendment Ordinance (1912) was passed. It will be sufficient here to indicate briefly the position which was created at the end of the year by this legislation. In Freetown the Municipality retain the control of markets, slaughter house, cemeteries and waterworks, and revenue derived from them, with responsibility for their upkeep, public lighting, rate collecting and all rates collected, with revenue derived from certain licenses. The Government have the duty of scavenging and sanitary inspection, building inspection and regulation. In Bonthe and York Island (Sherbro) the control of sanitary matters becomes vested in the District Commissioner, and the Sherbro Municipal Board is dissolved. Mr H. Simms (late of the Gold Coast Colony Public Works Department) was appointed Sanitary Engineer in the Sanitary Department.

Re-Construction of Streets, Street Drains, and Regulation of Water Courses in Freetown.

2. The subject of the reconstruction of streets, street drains, and the regulation of stream water courses in Freetown has occupied attention during the year, and a preliminary scheme was prepared. The little spot map in the "Report of the Malaria Expedition," by R. Ross, Annett and Austen, published by the Liverpool School of Tropical Medicine, Memoir II., shews where Anopheles pools were found in 1899, and indicates to a considerable extent the influence of streams and water courses in the production of such pools. Since then something has been done in canalization of the principal streams, and most of the roads which were criticised by the expedition have been top-dressed, and do not now retain water in holes on their surface, but the drains have remained in much the same condition. The scheme proposed by Professor Simpson and followed now for some years, of dumping broken stone in the flat area (much spotted in the Expedition Report) known as Grassfields (between Sanders and Alligator Rivers), to enable occupiers to fill in pools and depressions in their Compounds, has assisted in this matter of mosquito pool obliteration, though it will take many years more to accomplish all that is required, at the present rate of progress. A careful survey of the town was made by Dr. Alexander in March (dry season) to determine the positions of natural mosquito breeding places, and a spotted map was made from his records (copy attached). The expedition spot map shews, I believe, the condition found by it during the rains. Dr. Alexander's map shews more clearly still the malign influence of

the streams in this particular. Progress has been made by the Public Works Department in regulating the course of the stream having outfall near Princess Christian Mission Hospital, commonly known as Moore's Brook.

Sanitary Department Offices and Depôts.

3. At the close of the year a portion of the Old Freetown Prison was converted into offices and a store for the Sanitary Department. The arrangement can be only a temporary one pending the occupation of the site by the proposed new Colonial Hospital. The stable yard used by the Corporation will be used by the Sanitary Department. It will be necessary for the Sanitary Department to have permanent premises of its own, before the present temporary arrangement is concluded. Owing to the extent of the city from east to west much time is lost by scavengers going to and from the central depôt now at the old gaol for roll calls, receipt and return of tools, etc. A suitable site for a sanitary depôt on the east side is already owned by the Government at Easton Street—Kissy Road. Here a store and quarters for a Sanitary Inspector might be made to serve the east side of the city, *i.e.*, east of Nicol Brook. If a site be acquired on the west side, a similar provision could be made for that part of the city west of Sanders Brook. The new central depôt should include offices for the Senior Sanitary Officer, Junior Sanitary Officer, the Medical Officer of Health, the Sanitary Engineer, the Sanitary Inspectors and Building Inspectors, a general sanitary store and a depôt store, with yard and shed accommodation for stables, carts, etc.

Ordnance Survey of Freetown.

4. It was decided during the year to obtain an Ordnance Survey of Freetown, and it is expected that with the completion of this much needed work the Sanitary Department will derive great assistance from the accurate plans which will then be available.

Free Distribution of Quinine.

5. With the opening of a Government Dispensary at Clinetown a third centre for the free distribution of Quinine has been provided.

Vaccination.

6. A census of school children in Freetown was conducted by Dr. Murphy in August, to ascertain the number that had been successfully vaccinated. The following are the totals:—Number of children examined, 1,384; successfully vaccinated, 926; unsuccessful, 123; and unvaccinated, 335; which shows that nearly 67 per cent. had been successfully vaccinated. This record is nothing like so brilliant as that obtained from the census made by teachers some years ago, but it is probably much more accurate. Considering that vaccination is not now compulsory in the Colony, the percentage 67 is fairly satisfactory I think.

Sleeping Sickness.

7. It is interesting to find that about 70 years ago large importations of persons diagnosed as suffering from sleeping sickness "Lethargus" were taking place at Freetown as the following extracts show. Yearly return of cases of diseases treated in the Colonial Hospital at Kissy. From 1st April, 1845, to 31st March, 1846:—Remaining in, 5, admitted, 27, total, 32; recovered, 2, died 29, remained, 1. From 1st April, 1846, to 31st March, 1847:—Remaining in, 1, admitted, 24, total, 25; recovered, 3, died, 17, remained, 5. From 1st April, 1847, to 31st March, 1848:—Remaining in,

5, admitted, 22, total, 27; recovered, 1, died, 24, remained, 2. From 1st April, 1849, to 31st March, 1850:—Remaining in, 5, admitted, 23, total, 28; recovered, 5, died, 21, remained, 2.

"These tables only show the nmmber of cases of diseases amongst the liberated Africans who were taken from the slave ships and forwarded to the Kissy Hospital." (Climate and Meteorology of W. Africa, by Dr. Horton). It appears from these returns that during the four years mentioned there were 101 cases of "Lethargus" at Kissy, about 3 miles from the centre of the city, and of those 96 were immigrants during that time. There are records of *Glossina Palpalis* being caught at Kissy. It is perhaps reasonable to suppose that persons in the early stages of sleeping sickness would be more easy to capture and retain as slaves, and perhaps it may be partly due to this that so many cases appear to have been included amongst the rescued slaves, while the hardships and privations on board the slave ships might well hasten the progress of the disease towards its more easily recognised later stages. The site of the old Kissy Hospital is fairly well isolated, but it is doubtful if the conditions which existed there 70 years ago would satisfy modern requirements for a sleeping sickness camp.

Brookfields Drainage.

8. The drain recommended by Professor Simpson to be made at the base of the hills for the purpose of intercepting surface and sub-soil water, and thus assisting the drainage of the flat area known as Brookfields, was in part cut during the year. The drain is rough, rock cut, graded to outfall on the west into Congo River, and to the east to a small intermittent tributary of the Alligator River as a temporary outfall. At the shallowest part of the drain it is not 12 inches deep, and, except for a very small part of its course, did not and could not be expected to act largely as a subsoil drain. Illustrations are given here to show the situation of the drain, the swampy condition above the drain, and the place where most subsoil water discharged into it. A table is appended showing the results of gaugings taken at the western or chief outfall only, and the daily rainfall in inches as recorded at the Tower Hill Meteorlogical Station. Both observations were taken daily at 9 a.m., but the rainfall records are entered to the previous day, There is no desire to draw exaggerated deductions from this table. It is scarcely necessary to point out that the record of gallons does not mean that this quantity did actually pass, or that a vastly greater quantity may not have passed during the 24 hours. The number of gallons recorded is what the total would have been for 24 hours had the flow observed at 9 a.m. remained constant during that period. During times of actual rainfall the drain discharge rose enormously at once. It will be noted for what a long period after the rains ceased the drain continued to discharge. I consider the result of what work has been done on this drain clearly indicates the desirability that it should be energetically proceeded with.

Readings taken at 9 a.m. and rainfall entered to previous day.

Date.	Rain in inches.	Gallons.	Date.	Rain in inches.	Gallons.
13–8–12.	Nil.	720,921	24–8–12.	0·50	1,350,950
14–8–12.	0·22	615,513	25–8–12.	Nil.	260,259
15–8–12.	2·04	555,033	26–8–12.	0·70	200,470
16–8–12.	5·40	900,633	27–8–12.	4·80	440,467
17–8–12.	1·50	2,000,000	28–8–12.	0·65	5,000,000
18–8–12.	1·70	947,635	29–8–12.	2·00	595,123
19–8–12.	Nil.	809,049	30–8–12.	Nil.	1,194,220
20–8–12.	Nil.	595,123	31–8–12.	Nil.	477,619
21–8–12.	Nil.	515,808	1–9–12.	2·80	404,179
22–8–12.	0·65	458,956	2–9–12.	0·25	5,000,000
23–8–12.	1·80	404,179	3–9–12.	Nil.	404,179

Date.	Rain in inches.	Gallons.
4–9–12.	0·06	301,056
5–9–12.	0·05	239,673
6–9–12.	0·30	200,470
7–9–12.	0·48	900,633
8–9–12.	2·20	764,640
9–9–12.	1·05	809,049
10–9–12.	0·42	555,033
Gauge readings interrupted, weir blocked by Railway Department till		
26–9–12.	0·20	854,496
27–9–12.	Nil.	555,033
28–9–12.	Nil.	301,054
29–9–12.	Nil.	239,673
30–9–12.	0·08	182,304
1–10–12.	0.25	182,304
2–10–12.	0.30	155,710
3–10–12.	0·04	301,054
4–10–12.	0·90	260,259
5–10–12.	Nil.	404,179
6–10–12.	Nil.	130,498
7–10–12.	0·45	84,758
8–10–12.	0·03	106,560
9–10–12.	Nil.	65,975
10–10–12.	0·70	45,097
11–10–12.	Nil.	106,560
12–10–12.	Nil.	45,097
13–10–12.	Nil.	45,097
14–10–12.	Nil.	25,784
15–10–12.	Nil.	25,784
16–10–12.	0·15	36,661
17–10–12.	0·05	25,784
18–10–12.	Nil.	25,784
19–10–12.	Nil.	10,873
20–10–12.	Nil.	10,873
21–10–12.	0·52	10,873
22–10–12.	Nil.	10,873
23–10–12.	1·45	10,873
24–10–12.	0·54	55,036
25–10–12.	0·03	36,661
26–10–12.	0·15	19,945
27–10–12.	Nil.	10,873
28–10–12.	0·84	7,099
29–10–12.	1·20	19,948
30–10–12.	0·04	168,877
31–10–12.	0·07	84,756

Date.	Rain in inches.	Gallons.
1–11–12.	0·60	55,036
2–11–12.	Nil.	45,097
3–11–12.	Nil.	45,097
4–11–12.	Nil.	25,784
5–11–12.	0·65	10,874
6–11–12.	Nil.	19,948
7–11–12.	1·65	10,874
8–11–12.	0·45	182,504
9–11–12.	Nil.	84,758
10–11–12.	Nil.	65,975
11–11–12.	Nil.	45,097
12–11–12.	0·20	19,948
13–11–12.	0·12	65,975
14–11–12.	0·20	45,097
15–11–12.	1·35	65,975
16–11–12.	Nil.	130,498
17–11–12.	Nil.	65,975
18–11–12.	Nil.	45,097
19–11–12.	Nil.	36,661
20–11–12.	Nil.	25,784
21–11–12.	Nil.	25,784
22–11–12.	Nil.	25,784
23–11–12.	Nil.	15,186
24–11–12.	Nil.	10,873
25–11–12.	Nil.	7,099
26–11–12.	Nil.	7,099
27–11–12.	Nil.	7,099
28–11–12.	Nil.	7,099
29–11–12.	Nil.	7,099
30–11–12.	Nil.	7,099
1–12–12.	Nil.	7,099
2–12–12.	Nil.	7,099
3–12–12.	Nil.	7,099
4–12–12.	Nil.	7,099
5–12–12.	0·02	7,099
6–12–12.	Nil.	7,099
7–12–12.	0·25	7,099
8–12–12.	Nil.	10,873
9–12–12.	0·30	7,099
10–12–12.	Nil.	19,948
11–12–12.	Nil.	3,864
12–12–12.	Nil.	3,864
Ditto	Ditto	till
24–12–12.	Nil.	1.384
Ditto	Ditto	till the
28th when the flow ceased to be measureable in tenths.		

Clinetown Railway Reservation.

9. Considerable additions have been made to the area of the Clinetown Railway Reservation during the year to provide space for Officers' Quarters. The scheme of drainage was continued, and the second third of the programme of this work completed. Trouble was experienced from mosquito breeding in rain water retained in railway materials stored at the reservation in the open. Care and the exercise of a little ingenuity in stacking and storing even in the open are all that is ordinarily necessary to prevent the accumulation of rain water in or about most railway materials. But during long periods of drought frequent supervision is necessary to prevent conditions arising which will facilitate mosquito breeding in the rains. It has been recommended and approved that cover should be provided under such articles as will retain water if kept in the open, no matter how arranged, will be stored. The Sanitary Gang consists of 12 men under the supervision of a West Indian Foreman and the control of

the Maintenance Department. There should be a dry earth preparation and store depot from which all latrines at the reservation should be supplied.

Slaughter House.

10. The provision of a new Slaughter house was considered, and building plans were prepared and a site reported on during the year. In the old Slaughter House, 6,743 bullocks, 572 sheep and 49 goats were slaughtered in the year.

Cape Sanitary Station.

11. Some repairs and improvements were effected at the Cape Sanitary Station, which was not put in use during the year.

The Lower Institutions at Kissy.

12. Under the title of the "lower institutions at Kissy" have been included the Small-pox Hospital, the Lazaretto and the Male Incurable Hospital. The question of remodelling this group of buildings in a way which particularly interests the Sanitary Department, was considered during the year.

Freetown "Wind-rose."

13. From the records kept at the Tower Hill Meteorological Station, Dr. Alexander has prepared a "Wind-rose" which shows in graphic form the prevailing breezes in Freetown. It will of course be understood that it indicates only the direction of the breeze at the time of observation, and it will be noticed that there is a marked record of "calm" for the 9 a.m. observations, and it is also noticeable how little record there is of wind from the south, south-east and east at Tower Hill Station; it is, however, most sheltered from these quarters. This "rose" probably indicates fairly well the wind direction conditions in Freetown, though not perhaps so well as those on the adjoining hills.

Rat Destruction.

14. The number of rats brought to the Colonial Hospital, Freetown, destroyed and paid for was 2,400. The number of dog licenses issued by the Police was 592, and the number of stray, unlicensed, unclaimed dogs destroyed, many of them diseased, was 441. It may be pointed out here that the number of dead animals found by Sanitary Inspectors in the streets has become very markedly less in recent years. It is difficult to account satisfactorily for this reduction, but it seems possible that greater freedom from stray, diseased, ownerless dogs may partly account for it, even beyond the lesser number of dead dogs found. The reduction affects chiefly cats, fowls and dogs, which classes formerly supplied most of the animals. The greater number found dead in previous years can scarcely have been due, I think, to epidemic disease. It has been suggested that there is a lessened mortality due to improved health conditions.

Return of Dead Animals found in Freetown for the last five years, year by year:—

Year 1908. Cats, 16. Sheep, 5. Monkeys, 1. Fowls, 23. Dogs, 26. Ducks, 3. Vultures, 1. Total, 75.

„ 1909. Cats, 15. Monkeys, 1. Fowls, 10. Dogs, 11. Goats, 2. Total, 39.

Year 1910. Cats, 10. Sheep, 2. Monkeys, 1. Fowls, 2. Dogs, 18. Ducks, 1. Calves, 1. Goats, 6. Rats, 1. Horses, 1. Total, 43.
„ 1911. Cats, 5. Fowls, 4. Dogs, 3. Goats, 2. Total, 14.
„ 1912. Cats, 8. Monkeys, 1. Dogs, 2. Goats, 1. Total, 12.

Soakaway Pits in Earth Drains at Standpipes.

15. Under Dr. Alexander's direction further work has been done in constructing soakaway pits in earth drains near standpipes as a temporary measure to obviate, in part at least, the nuisance of waste water lodgement, pending the introduction of the comprehensive scheme of street drainage. At five particularly bad places a hole was digged and filled with stones and lightly covered. They have proved especially useful during the dry season and have to a considerable extent mitigated the nuisance.

Splenic Indexes.

16. The following splenic indexes were made in Peninsula villages by Dr. Murphy in June; and in Freetown in July:—

Hastings	...	10	palpable	spleens	in 40	children.
Waterloo	...	25	„	„	„ 125	„
York ...	...	8	„	„	„ 30	„
Freetown	...					

Dr. Murphy prefaces his statistics with the following remarks:—

With three exceptions all the children were over three years and under thirteen, but age classification between these ages was impossible to make at all accurately. A large percentage were affected at and below six years. The same number were examined as in 1911, and the same method adopted. A larger proportion were affected than in 1911, but perhaps fewer escaped detection this time owing to more time being available, and possibly there may be a difference in the seasonal incidence. The classification for size of spleen adopted was:—(1) Spleen non-palpable. (2) Spleen 1 to 2 inches below costal margin. (3) Spleen 2 to 3 inches and (4) "Ague cake."

No. of Schools.	Total examd.	Girls.	Boys.	Affected.		1.		2.		3.		4.	
				Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.
21	1,150	510	640	103	173	407	467	94	140	8	23	1	10

Freetown, Splenic Index, July, 1912, 24·08.

The following splenic indexes were made in Peninsula villages by Dr. Wood in December:—

Waterloo	...	63	palpable	spleens	in 159	children,	or 40	per cent.
York	...	44	„	„	„ 114	„	„ 38·6	„
Kent	...	6	„	„	„ 17	„	„ 35·3	„
Dublin	...	17	„	„	„ 76	„	„ 22·3	„
Tombo	...	10	„	„	„ 41	„	„ 24·4	„
Russell	...	7	„	„	„ 25	„	„ 28	„
Sussex	...	11	„	„	„ 21	„	„ 52·4	„
Regent	...	15	„	„	„ 35	„	„ 42·7	„

(Two small villages where numbers were very small owing to size and holidays are omitted from above.)

Total number of children below the age of 13 examined ... 467
" " " with palpable spleens 180
Percentage " " " ... ... 38·3

The following splenic index for the town of Bonthe was made by Dr. Orpen in September (details omitted).

Total number of children examined (not over 12 years) ... 187
" " " enlarged spleens found 45
Splenic Index for Bonthe, 24·06 per cent.

Dr. Murphy made a splenic index for Bonthe in December, as follows:—

Total number of children over 12 years examined 171
" " " enlarged spleens (palpable) 20
Splenic Index, 12·22 per cent.
(Palpation was checked by percussion).

Mosquito Indexes.

17. Inspections of Compounds in Freetown were made to determine the Mosquito Index. Details are omitted here:—

March 18—27,	6	out of	250	Compounds	were	infected, or	2·4 per cent.
June (end of),	31	"	200	"	"	"	15·5 "
August "	16	"	250	"	"	"	6·4 "
October "	13	"	250	"	"	"	5·2 "

I attach little value to the March record, as it was made almost entirely by Sanitary Inspectors. Dr. Orpen made an inspection of Compounds at Bonthe for the special purpose of determining the Mosquito Index between the 30th July and the 3rd August (inclusive), and found it to be 70 per cent. (100 Compounds). Dr. Murphy also made an examination of Compounds for the same purpose on the 27th December, and found the index to be 5 per cent. (80 Compounds). Many other indexes have been made during the year by Medical Officers in different places while on "patrol," but these are not recorded here.

Freetown Police-court Larvæ Cases.

18. The number of police-court larvae cases in Freetown during the year were 589, and the amount in fines including costs was £120 19s. 1d. Costs at 2s. 1d. each accounts for £60 16s. 8d., and the balance, £60 2s. 5d., represents fines, or just over 2s. 0¼d. each.

Peninsula Villages.

19. The Police Sergeants in charge of the various districts act as Sanitary Inspectors and receive extra remuneration for the work.

Police-court summonses against defaulters who refused to keep their premises, empty lots and closets in a sanitary condition:—Wilberforce 21, Congo Town 4, Murray Town 6, Aberdeen 5, Goderich 8, Lumley 4.

37 were fined 2s. 6d. each, 6 were fined 5s. each, 4 were cautioned, and 1 was not served, being away from home.

(Signed) C. C. DIXON,
Sergeant.
24/7/1912.

The Station Sergeant at Waterloo does not report on this matter to the Commissioner of Police; he has furnished a Report, but has not found it necessary to issue summonses. The Police Sergeant at Kent reported that those who have not complied with instructions of Headmen and Police were summoned, but he gives no details.

Bonthe and York Island.

20. (*a*) A special report on the subject of sanitary works for Bonthe and York Island was made by the Senior Sanitary Officer and the Sanitary Engineer. Schemes were put forward for filling swamp areas, for improving water supplies, and other matters. A plan of Bonthe on a reduced scale with some details of levels omitted, taken from a plan made by the Sanitary Engineer (Mr. H. Simms) for the purpose of the Report, is included here. The old plan, made about 1870, showed not only streets then made, and lots marked and numbered, but also streets which have never been made. In effect it represented town planning of that time. The old plan of York Island shows the same thing to an even more marked degree; about half the town there shown has never been made. A small plan taken from an old map but with lots and numbers omitted, is included here; the streets which exist are indicated by heavy lines. It is not a case of town decay, but of non-development. It will be noticed that only the half nearest to the open river front has developed. The extension of the town of Bonthe has taken place in better directions than if it had followed the old plan, which pre-supposed activity in swamp filling. Quarterly Sanitary Reports were prepared by Drs. C. H. Allan, R. W. Orpen and J. C. Murphy, who also furnished the Annual Sanitary Report. Dr. Butler was also Medical Officer of Health for part of the year. All these reports were full and carefully prepared and reflect much credit on those officers as Medical Officers of Health. Most of what follows is gathered from Dr. Murphy's report for the year.

(*b*) *Opening up of town by roads, etc.*—During the year, amongst other matters, special attention was given to the linking up of the out-lying portions of the town by means of good permanent bridges, and by road improvement, partly new and partly by the filling in and raising of swampy portions over which roads passed. On account of the numerous swamps, streams and tidal estuaries to be found in Bonthe, the town is composed of scattered villages built on what is by courtesy called "high ground." In the rainy season and even at high tides intercommunication was somewhat roundabout. People can now go direct from any one point to another at any time and any season.

(*c*) *The Sanitary Gang.*—The Sanitary Gang consists of a more or less permanent body of 12 men who take holidays when it suits them, there being no others to replace them in Bonthe if dismissed for this or other offences. The Sanitary Police have a bad name for work, but they have difficulties, especially in making the gang work, for dismissal has no terrors for the men who can easily get work elsewhere in Bonthe, and it is difficult to refill vacancies in the gang. A large amount of the time of the rubbish collecting gang is wasted by their having to carry rubbish long distances to the incinerator and dumping holes. They could get through much more work if they had not to travel so far.

(*d*) *Supervision of Sanitary Gangs.*—The town of Bonthe covers quite a large area, and the mere "looking up" of the gangs takes some time, as the two or three parties do not all work together. To effectually supervise them the M.O.H. can rarely sit down, and to use a hammock is to advertise one's arrival. Even when bad work or neglect is seen, as already explained, dismissal is no weapon to work with. Needless to remark there are other than sanitary duties in Bonthe (for the Medical Officer).

(*e*) *Public Works.*—A large portion of the river wall has been built between the premises of the French Company and the Deutsche Gesellschaft. Its completion has unfortunately resulted in the creation of a large hole which is a nuisance to the neighbourhood. This hole is said to be 36,000 cubic feet, and to fill it in is beyond the power of the Sanitary Gang.

(*f*) *Filling up of Roads, etc.*—Altogether nearly 700 feet of road of varying depth have been filled in during the year. By means of a concrete bridge and a raised up road over a tidal swamp a new road into Tangehun has been made to the great convenience of the inhabitants.

(*g*) *Collection of Refuse.*—The new rubbish bins (19) have proved a great success. In some quarters more rubbish is deposited than there is available labour to quickly dispose of, and the bins overflow on to the streets. The bins even then are most useful sanitary aids by centralizing the rubbish.

(*h*) *Sanitary Hammocks.*—The three Sanitary Hammocks are indispensable for the collection and transport of rubbish. The number of loads disposed of during the year was 11,289.

(*i*) *Borrow pits.*—Borrow pits are used for rubbish disposal. It has been found that borrow pits filled with bottles, tins and such like rubbish are never interfered with and by this means these pits are effectually closed.

(*j*) *Incinerator.*—An incinerator has been built on the Freetown model and is working well; giving little or no trouble since it was started working on the 25th May. It is situated at one end of the town and can be made to serve only the half of the town nearest to it. Since it has been made *i.e.*, used, 4,702 hammock loads of rubbish have been burnt in it and the ashes used in swamp filling and road dressing.

(*k*) *Bridges.*—Ten concrete bridges have been erected during the year. They are very useful and are more sanitary than the old wooden ones, as it is easy to keep them free from weeds, etc. The openings between the planks of the wooden ones formed latrines to the annoyance of the legitimate users of the bridges.

(*l*) *Heddle Swamp.*—About an acre of Heddle Swamp was filled in by private enterprise; it was not however packed sufficiently, and various specified requirements have not been carried out. It is not yet fit for building on, but up to a certain point is good work, though incomplete. Unfortunately the filling in and raising of this part of the swamp has interfered with already existing drains of other neighbouring houses. A much smaller portion of the swamp has been filled up in the rear of the Municipal Hall by prison and sanitary gang labour.

(*m*) *New Cemetery.*—A piece of ground has been provided to form a new cemetery. It is on a very good site for one, being almost cut off from the rest of the town, and such fall as there is is away from the town. A portion of this ground has been levelled, stumped and "brushed," and a barbed wire fence with an iron gate and concrete pillars erected; also a tool house, etc. The site was obtained from the United Brethren Mission Authorities, who I understand were very obliging in the matter.

(*n*) *Land Proclaimed Unfit for Building Sites.*—A low lying and swampy area at the north end of the town and known as "King Jimmy" has been proclaimed unfit for building sites. There are some houses on it which were built before the passing of the Order-in-Council.

(*o*) *Building.*—Recently a form of Building permit has been issued. Formerly building was allowed after inspection by the Overseer or Inspector of Works, now before the foundations are laid the ground must be inspected and approved by the M.O.H. Lists are kept of these permits and of houses demolished.

(*p*) *York Island.*—The town of York Island presents on a much smaller scale sanitary problems similar to those in Bonthe. It is possible for the Medical Officer to visit York Island from Bonthe for part of one morning only each week. One of the most urgent minor sanitary defects here is the small swampy area partly in the Dispensary compound. This as well as other minor and major matters are dealt with in the joint report by the S.S.O. and Sanitary Engineer, already referred to.

Sanitation in the Protectorate.

21. The subject of contemplated legislation on behalf of sanitation in the Protectorate continued to receive careful consideration during the year, and some progress was made. All the Medical Officers at Protectorate Stations have furnished Sanitary Reports, and a good deal of "patrolling" was undertaken by them in the interests of Sanitation. These Reports are not produced here. The Medical Officer of Koinadugu District (Dr. J. Y. Wood) sent in particularly good and well arranged "patrol" reports with marginal notes referring to previous reports.

Water Supplies to Towns in the Protectorate.

22. As it was recognised that many towns in the Protectorate were at certain times in the year dependent on deplorably bad sources of water supply, it was decided to inaugurate a scheme for sinking good wells in substitution for shallow water holes in places where the need is greatest and the wells may be expected to prove most valuable as examples. The co-operation of District Commissioners and Medical Officers in collecting detailed information was invited, and it is hoped that the actual work of construction will commence after the rains in 1913.

Bo.

23. Early in April a large part of the native town of Bo was burnt down. Through the help of the District Commissioner (Dr. Maxwell) the Medical Officer (Dr. Arbuckle) was given a fairly free hand by the Chief to advise as to the rebuilding of the burnt area. In June new roads were first laid out; the main ones being about 24 feet wide and in the course of their construction several houses were demolished. Then houses were erected not less than 20 feet apart and 6 feet from the road. Whereas in the old town, the parts Bo and Dodo were indescribably dirty and overcrowded, now the same parts are clean with well built houses, regularly laid out, with fairly straight broad roads. The Medical Officer has supplied a road map of reconstructed Bo. Such maps of important places, though they may not be very accurate, are of great assistance to the Sanitary Department. The rain water storage capacity at the European Reservation was increased by the addition of five 1000 gallon iron tanks. It is considered that even this addition will not obviate the necessity for transport of water by Railway Officials and the trading Firms in the dry season.

DARU (Moa River W.A.F.F. Headquarter Barracks).

24. All the Officers' quarters are now concreted and the roofs re-thatched. Faulty drains have been repaired. Large areas have been cleared of low bush and scrub. The question of substituting the dry earth system for the deep pit latrines at present used by the native troops was investigated and reported on.

PROTECTORATE SPLENIC INDEX REPORTS.

25. The following memorandum was sent to the principal Medical Officer for the information of Medical Officers.

Splenic Index Reports.—1. It is noticeable that in Splenic Index Reports by the same observer marked differences exist in the degree of prevalence of "enlarged" spleens in different towns (villages) at the same time of year. For instance at the time of examination by the M. O. Karene District, at Madaki 14 enlarged spleens were found in 25 children while at Marra only 6 enlarged spleens were found in 25 children, *i.e.*, in one town 56 per cent. of the children examined had enlarged spleens in the other the percentage was 24.

2. It will be of considerable interest and possibly of much practical value if Medical Officers would note in Splenic Index Reports any circumstances which exist in each place which may account for relatively high or low splenic indexes.

3. I suggest that the Medical Officers attention be drawn to this point and they be asked to enter notes of any such circumstances in a "remarks" column in their splenic index reports.

4. I think each Medical Officer should furnish at least one splenic index report each year for consideration when the Annual Report is being drafted. It might be attached to one of the Quarterly Reports.

(Sgd.) R. H. KENNAN,
S.S.O.
16–7–1912.

The Medical Officer Karene District (Dr. McConaghy) furnished a particularly good report on the splenic indexes and noted (as did Dr. Orpen also) that examination by palpation had been checked by percussion, a point to which I attach importance.

The following are extracted from these Splenic Index Reports:—

M. O. Daru ...	Town,	Kai Lahun	...	Total,	27	...	per cent. enlarged	59
(Dr. Powell) ...	„	Dodo ...	...	„	24	...	„ „	54
	„	Baiima	...	„	16	...	„ „	56
	„	Daru ...	...	„	40	...	„ „	42·5
	„	Baiima	...	„	21	...	„ „	38
	„	Pendembu	...	„	82	...	„ „	34
	„	Manawa	...	„	40	...	„ „	40
	„	Mamboma	...	„	53	...	„ „	41·4
M. O. Moyamba	„	Kwelu ...	...	„	21	...	„ „	33
(Dr. C. H. Allan	„	Baga Loko	...	„	60	...	„ „	53
	„	Mafokia	...	„	25	...	„ „	56
M. O. Bo ...	„	Bo ...	...	„	168	...	„ „	35·7
(Dr. Arbuckle)	„	Kennema	...	„	70	...	„ „	71·4

(Dr. Arbuckle notes that the Bo figures include the Government Boys' School were *inter alia* quinine is given.)

M. O. Gbangbama	Town,	Mongheri	...	Total,	40	...	per cent. enlarged	42·5
(Dr. Pearson) ...	,,	Ba Niji	...	,,	20	...	,, ,,	40
M. O. Gbangbama	,,	Gangama	...	,,	15	...	,, ,,	60
(Dr. Pearson) ...	,,	Gbamgbama	...	,,	20	...	,, ,,	55
	,,	Foindu	...	,,	15	...	,, ,,	66
M. O. Karene	,,	Rosos ...	...	,,	12	...	,, ,,	33
(Dr. McConaghy)	,,	Makumri	...	,,	12	...	,, ,,	50
	,,	Kamalo	...	,,	23	...	,, ,,	34
	,,	Myoton	...	,,	11	...	,, ,,	45·5
	,,	Mangai	...	,,	12	...	,, ,,	66
	,,	Kamba	...	,,	12	...	,, ,,	33
	,,	Kambia	...	,,	18	...	,, ,,	50
	,,	Kawulu	...	,,	16	...	,, ,,	67
	,,	Bharmoi	...	,,	19	...	,, ,,	50
	,,	Conteh	...	,,	6	...	,, ,,	50
	,,	Kunsa	...	,,	19	...	,, ,,	26
	,,	Mabole	...	,,	13	...	,, ,,	30·7
	,,	Madaki	...	,,	25	...	,, ,,	56
	,,	Marra ...	...	,,	25	...	,, ,,	24
	,,	Kabararbara	...	,,	10	...	,, ,,	30
	,,	Kagbantama	...	,,	32	...	,, ,,	28·3
	,,	Ramani	...	,,	13	...	,, ,,	53·7
	,,	Yellasanu	...	,,	32	...	,, ,,	50
	,,	Gbalanduga	...	,,	14	...	,, ,,	71·5
	,,	Mankinni	...	,,	14	...	,, ,,	50
	,,	Magbwele	...	,,	11	...	,, ,,	18
	,,	Manyaka	...	,,	7	...	,, ,,	57
	,,	Bybundu	...	,,	14	...	,, ,,	21·4
	,,	Makarri	...	,,	39	...	,, ,,	51·5
	,,	Mankinni	...	,,	14	...	,, ,,	43
	,,	Massaurie	...	,,	22	...	,, ,,	32
	,,	Sendugu	...	,,	14	...	,, ,,	57

The children examined for these indexes were up to about 12 years. Most of the "towns" in the Protectorate are little more than villages.

Railway Construction.

26. The Railway Station Sites at Yonnibannah and Kumrabai Mamilla on the branch railway line under construction to the Rokelle River were inspected and reported on by the Senior Sanitary Officer after they had been laid out.

27. Protectorate Sanitation Prize Winners, 1912.

District.	Chief.	Town.	Prize.
Headquarters	No recommendation.		
Sherbro	Sei Kaindei	Gbongei (Sittia Chiefdom) ...	Sword.
Ronietta	No recommendation.		
Karene	Alikali Namina Modu	Port Lokkoh	Certificate.
	Bai Inga	Mange	Certificate.
	Alfa Momodu ...	Gballandugu	Certificate.
Railway...	Chief Farma	Panguma (Bambarra Chiefdom)	Sword.
	Chief Kutubu ...	Pendembu (Pendembu Chiefdom)	Certificate.
	Madame Humonyaha	Kennema (Nongowa Chiefdom)	Certificate.
	Suluku...	Kayima (Sandoh Chiefdom) ...	Certificate.
	Bayon	Mambona (Bongay Chiefdom) ...	Certificate.
	Boyma Dowee ...	Bunjayma (Wunday Chiefdom)	Certificate.
	Bundu	Lepiama Chiefdom	Sword.
Koinadugu	Kamba Suri	Kamba (Fullasabba Chiefdom)...	Sword.
	Dusi Suri	Mussaiya...	Certificate.

Recommendations.

28. Most of the following recommendations are made in the preceding parts of this Report :—

(1) That permanent Offices and a central depot should be provided for the Sanitary Department in Freetown (Head 3).

(2) That eastern and western sanitary depots should be provided in Freetown.

(3) That the Brookfields Intercepting Drain should be completed in its length and deepened in all its course (Head 8).

(4) That a dry earth depot should be provided at Cline Town Railway Reservation and all latrines supplied with earth from it (Head 9).

(5) That the Medical Officer at Bonthe should receive liberal extra remuneration for the work he is expected to do connected with Public Health.

(6) That a whole time Medical Officer of Health should be appointed for Freetown with no other duties.

Recommendation made in special reports (such as the joint report on Bonthe and York Island by the S.S.O. and S.E.), of which no details are given in this Report, are not included here.

R. H. KENNAN,

Senior Sanitary Officer,

Sierra Leone and Gambia.

Sanitary Department,

Freetown, Sierra Leone,

28*th April*, 1913.

Table IV.

29.—Summary of Routine Sanitary Work done during the Year in the Town.

1. Name of Town: Freetown.

—	Approximate area.	Number of proclaimed open spaces.
1910		
1911		
1912	2¾ square miles.	2 Public Recreation Grounds.

2. Population.

—	No. of Natives.		No. of Europeans.		Total.
	Males.	Females.	Males.	Females.	
1910					
1911					
1912	33,363		558		34,090 { Census 1911.

3. Housing.

Syrians ... 145
Indians ... 21
Other Asiatics ... 3

—	Number occupied by Europeans.	Number occupied by Natives.
Number of Houses:—		
1910		
1911		
1912	92	5,117 (242 unoccupied).

Number of Huts:—
1910 ... ...
1911 ... ...
1912 ... ...

4. Mosquito Protection of Houses.

—	1910.	1911.	1912.
Number of European houses wholly mosquito protected			Nil.
Number of European houses with mosquito room			—
Number rendered during the year wholly mosquito protected ...			—
Number rendered during the year partially mosquito protected ...			—

5. Erection of New Buildings during the Year. (Vide Addendum.)

—	1910.	1911.	1912.
Number of public buildings erected with sanction as to site, construction, and relation to other buildings.			
Number of houses erected with sanction as to site, construction, and relation to other buildings.			
Number of huts erected with sanction as to site, construction, and relation to other buildings.			
Number of houses built without sanction			
Number of huts built without sanction			

Action taken :—

—	Number of Prosecutions.		Number Demolished.	
	Huts.	Houses.	Huts.	Houses.
1910				
1911				
1912				

6. Markets.

—	Total number.	Number paved and drained.	Number unpaved.
1910			
1911			
1912	5	4	1

7. Slaughter-houses.

—	Total number.	Total paved and drained.	Number unpaved.
1910			
1911			
1912	1	1	

8. Latrines.

—	For Males.		For Females.	
	Number.	Number of Seats.	Number.	Number of Seats.
Number of Public Latrines :—				
1910				
1911				
1912	9	23	9	21
Number of New Public Latrines erected during year :—				
1910				
1911				
1912	One (old one rebuilt).			
Number of Public Latrines repaired during year :—				
1910				
1911				
1912				
Number of Public Latrines demolished during year :—				
1910				
1911				
1912				

—	1910.	1911.	1912.
Number of Private Latrines *	—	—	88*
Average number of pails of nightsoil removed daily	—	—	133*
Average number of soiled pails removed and clean pail substituted	—	—	— } Includes
Number of nightsoil men employed to clean latrines and remove excreta	—	—	78* } all labour.
Number of cesspools	—	—	2,606*
Number of cesspools cleansed	—	—	—
Number of new cesspools constructed during the year	—	—	195
Number of old cesspools abolished	—	—	168
Number of cesspools oiled regularly by Department	—	—	—

* Approximate.

9. Removal of refuse.

——	1910.	1911.	1912.
Number of dustbins	—	—	53*
Number of carts at work daily to remove refuse from streets, &c.	—	—	3 (Word intermittently.)
Number of cartloads of refuse removed	—	—	3,528
Number of carts at work daily to remove refuse from yards and premises	—	—	—
Number of cartloads of refuse removed daily from yards and premises	—	—	—
Number of men employed for moving refuse	—	—	75 average.
Number of hammock loads removed	—	—	41,746
Number of head loads (baskets)	—	—	6,672

* Sixty small bins not included.

10. Mode of disposal of excreta, refuse, and offal. (Vide Addendum).

——	Daily average number of pails of excreta.			Daily average number of cartloads of refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1910.	1911.	1912.	1910.	1911.	1912.	1910.	1911.	1912.
Burial or trenched	—	—	—	—	—	—	—	—	—
Burnt	—	—	—	—	—	—	—	—	—
Thrown into Sea	—	—	—	—	—	—	—	—	—
*Otherwise dealt with	—	—	—	—	—	—	—	—	—

* State mode of disposal.

11. Quantity of tin cans, bottles, broken crockery and other incombustible material removed from houses, huts, and compounds.

——	1910.	1911.	1912.
Cart loads			362
Hammock loads			4,499
Head loads (baskets)			2,932

12. Water Supply.

Nature of Water Supply.	1910.	1911.	1912.
Pipe-borne water :—			
Source (river, lake or spring) :—			Stream
Number of linear yards	—	—	—
Number of stand pipes along roads	—	—	185 (Number of taps 556.)
Number of stand pipes in compounds and houses	—	—	210
Wells :—			
Public :—			
Number	—	—	—
Number with pumps protected against surface water and mosquito-protected	—	—	—
Private :—			
Number	—	—	495*
Number protected against surface water and mosquito-protected	—	—	11*

* Approximate—record for 1911 believed to be inaccurate.

Nature of Water Supply.	1910.	1911.	1912.
Tanks :—			
Public :—			
Number underground	—	—	—
Number mosquito-protected and served by pumps ...	—	—	—
Number above ground	—	—	—
Number mosquito-protected	—	—	—
Number of 400 gallons capacity or less	—	—	—
Number above 400 gallons	—	—	—
Tanks :—			
Private :—			
Number underground	—	—	69
Number mosquito-protected	—	—	—
Number above ground	—	—	62
Number mosquito-protected	—	—	—
Number of 400 gallons capacity or less	—	—	—
Number above 400 gallons	—	—	—
Nature of tanks :—			
Wood	—	—	—
Iron	—	—	56
Concrete	—	—	13
Barrels :—			
Number	—	—	609
Number mosquito-protected	—	—	54

13. Drainage.

Nature of Drainage.	Public.	Private.
Masonry Drains :—		
Lineal yards of masonry drains :—		
1910	—	—
1911	—	—
1912	—	—
Lineal yards reconstructed during the year :—		
1910	—	—
1911	—	—
1912	—	—
Lineal yards repaired during the year :—		
1910	—	—
1911	—	—
1912	560	220
Lineal yards of new drains constructed during the year :—		
1910	—	—
1911	—	—
1912	—	400
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1910	—	—
1911	—	—
1912	5,120	—
Number of linear yards of ditches dug and graded :—		
1910	—	—
1911	—	—
1912	7,220	—
Average frequency of clearing ditches of grass :—		
1910	—	—
1911	—	—
1912	12	—

14. Clearance of undergrowth, long grass, and jungle.

——	1910.	1911.	1912.
Number of square yards of weeds, grass, and vegetation cut and removed	—	—	—
Average frequency of clearance of rank vegetation on same area	—	—	—

15. Excavations and low-lying land.

——	1910.	1911.	1912.
Number of pools and excavations	—	—	—
Number of excavations filled up	—	—	—
Amount of low-lying and marsh land raised and drained	—	—	—
Number of pools, marshes, streams, etc., fish-stocked	—	—	—
Number of cubic yards of material used for filing up pools and excavations	—	—	—
Number of persons fined for making new excavations	—	—	—
Average number of men daily employed in filling up pools, etc. ...	—	—	—

16. Oiling.

——	1910.	1911.	1912.
Number of times drains oiled ... ...)	—	—	7397
Number of times pools, cesspools and excavations oiled ...)			
Number of wells oiled	—	—	335
Average number of men daily employed for oiling drains, pools, watertanks or barrels	—	—	5

17. Inspections and Prosecutions.

——	1910.	1911.	1912.
Number of inspectors employed	—	—	18
Number of house inspections	—	—	83,434
Number of inspections when larvæ were found	—	—	577 (including 120 canoes)
Number of notices served to remove conditions causing the breeding of larvæ	—	—	—
Number of persons fined for having mosquito larvæ on premises ...	—	—	584
Number of notices served to remove insanitary conditions on premises	—	—	1451
Number of persons fined for not removing insanitary conditions after notice	—	—	29
Number of soda and aerated water factories inspected	—	—	—

ADDENDUM.

Re 5. Taken from the Corporation records, there were for the year 1912:—

Notices of Intention to build 186
„ „ Commencement to build ... 181
„ „ Completion 59

Re 10. Incinerators... 13
Sanitary Canoes 2

Table IV.

30.—Summary of Routine Sanitary Work Done During the Year in the Town.

1. Name of Town: Bonthe.

—	Approximate area.	Number of proclaimed open spaces.
1910		
1911		
1912	205 acres.	Nil.

2. Population.

—	No. of Natives.		No. of Europeans.		Total.
	Males.	Females.	Males.	Females.	
1910				(2 for short periods)	
1911					
1912	4,457*		53*	5	4,636*

* Approximate. Syrians, 18; Indians, 2.

3. Housing.

—	Number occupied by Europeans.	Number occupied by Natives.	York Island.
Number of Houses:—			
1910			Natives 859
1911			Europeans 5
1912	15	930	Total... 864*

Number of Huts:—
1910 ... ...
1911 ... ...
1912 ... ...

4. Mosquito Protection of Houses.

——	1910.	1911.	1912.
Number of European houses wholly mosquito protected			— (Hospital and D.C. Qrts.)
Number of European houses with mosquito room			— (Hospital and D.C. Qrts.)
Number rendered during the year wholly mosquito protected ...			—
Number rendered during the year partially mosquito protected ...			—

5. Erection of New Buildings during the Year.

——	1910.	1911.	1912.
Number of public buildings erected with sanction as to site, construction, and relation to other buildings			Nil.
Number of houses erected with sanction as to site, construction, and relation to other buildings			Nil.
Number of huts erected with sanction as to site, construction, and relation to other buildings			28
Number of houses built without sanction			Nil.
Number of huts built without sanction			Nil.

Action taken :—

—	Number of Prosecutions.		Number demolished.	
	Huts.	Houses.	Huts.	Houses.
1910				
1911				
1912	Nil.	Nil.	Nil.	Nil.

6. Markets.

——	Total Number.	Number paved and drained.	Number unpaved.
1910			
1911			
1912	2	2	Nil.

7. Slaughter-houses.

——	Total number.	Number paved and drained.	Number unpaved.
1910			
1911			
1912	1	1	Nil.

8. Latrines.

—	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—				
1910			—	
1911			—	
1912			5	
Number of New Public Latrines erected during the year :—				
1910			—	
1911			—	
1912			Nil.	
Number of Public Latrines repaired during the year :—				
1910			—	
1911			—	
1912			2	
Number of Public Latrines demolished during the year :—				
1910			—	
1911			—	
1912			Nil.	

———	1910.	1911.	1912.
Number of Private Latrines			—
Average number of pails of nightsoil removed daily			4
Average number of soiled pails removed and clean pail substituted			4
Number of nightsoil men employed to clean latrines and remove excreta ...			Prisoners
Number of cesspools			Nil.
Number of cesspools cleansed			—
Number of new cesspools constructed during the year			—
Number of old cesspools abolished			—
Number of cesspools oiled regularly by Department			—

9. Removal of refuse.

——	1910.	1911.	1912.
Number of dustbins	—	—	19
Number of carts at work daily to remove refuse from streets ...	—	—	—
Number of cartloads of refuse removed daily...	—	—	—
Number of carts at work daily to remove refuse from yards and premises	—	—	—
Number of cartloads of refuse removed daily from yards and premises	—	—	33·9 Hammock loads
Number of men employed for removing refuse	—	—	—

10. Mode of disposal of excreta, refuse, and offal.

——	Daily average number of pails of excreta.			Daily average number of cartloads of refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1910.	1911.	1912.	1910.	1911.	1912.	1910.	1911.	1912.
Burial or trenched	—	—	—	—	—	—	—	—	—
Burnt	—	—	—	—	—	—	—	—	—
Thrown into Sea	—	—	1	—	—	—	—	—	—
*Otherwise dealt with	—	—	—	—	—	—	—	—	—

* State mode of disposal.

11. Average daily number of hammock-loads of tin cans, bottles, broken crockery, and other incombustible material removed from houses, huts, and compounds.

1910.	1911.	1912.
—	—	1·86

12. Water Supply.

Nature of Water Supply.	1910.	1911.	1912.
Pipe-borne water :—			
Source (river, lake or spring) :—			
Number of linear yards	—	—	Nil.
Number of stand pipes along roads	—	—	—
Number of stand pipes in compounds and houses ...	—	—	—
Wells :—			
Public :—			
Number	—	—	10 (not in use.)
Number with pumps protected against surface water and mosquito-protected	—	—	10 (not in use.)
Private :—			
Number	—	—	136
Number protected against surface water and mosquito-protected	—	—	—
Tanks :—			
Public :—			
Number underground	—	—	—
Number mosquito-protected and served by pumps ...	—	—	—
Number above ground	—	—	3
Number mosquito-protected	—	—	3
Number of 400 gallons capacity or less	—	—	—
Number above 400 gallons	—	—	3*

* Two of 16,000 gallons.

Nature of Water Supply.	1910.	1911.	1912.
Tanks :—			
Private :—			
Number underground			—
Number mosquito-protected			—
Number above ground			—
Number mosquito-protected			—
Number of 400 gallons capacity or less			21
Number above 400 gallons			1
Nature of tanks :—			
Wood			—
Iron			18
Concrete			4
Barrels :—			
Number			—
Number mosquito-protected			—

13. Drainage.

Nature of Drainage.	Public.	Private.
Masonry Drains :—		
Lineal yards of masonry drains :—		
1910	—	
1911	—	
1912	394	
Lineal yards reconstructed during the year :—		
1910	—	
1911	—	
1912	—	
Lineal yards repaired during the year :—		
1910	—	
1911	—	
1912	65	
Lineal yards of new drains constructed during the year :—		
1910	—	
1911	—	
1912	109	
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1910	—	
1911	—	
1912	—	
Number of linear yards of ditches dug and graded :—		
1910	—	
1911	—	
1912	—	
Average frequency of clearing ditches of grass :—		
1910	—	
1911	—	
1912	—	

14. Clearance of undergrowth, long grass, and jungle.

——	1910.	1911.	1912.
Number of square yards of weeds, grass, and vegetation cut and removed			
Average frequency of clearance of rank vegetation on same area ...			

15. Excavations and low lying land.

—	1910.	1911.	1912.
Number of pools and excavations	—	—	—
Number of excavations filled up	—	—	4
Amount of low-lying and marsh land raised and drained	—	—	1 acre*
Number of pools, marshes, streams, &c., fish-stocked	—	—	—
Number of cubic yards of material used for filling up pools and excavations	—	—	—
Number of persons fined for making new excavations	—	—	1
Average number of men daily employed in filling up pools, &c.	—	—	—

* Approximate.

16. Oiling.

—	1910.	1911.	1912.
Number of drains oiled	—	—	—
Number of pools and excavations oiled	—	—	—
Number of tanks and barrels oiled	—	—	—
Average number of men daily employed for oiling drains, pools, water tanks or barrels	—	—	—

17. Inspections and Prosecutions.

—	1910.	1911.	1912.
Number of inspectors employed	—	—	4
Number of houses inspected	—	—	220
Number of houses where larvæ were found	—	—	50
Number of notices served to remove conditions causing the breeding of larvæ	—	—	24
Number of persons fined for having mosquito larvæ on premises	—	—	50
Number of notices served to remove insanitary conditions on premises	—	—	80
Number of persons fined for not removing insanitary conditions after notice	—	—	45
Number of soda and aerated water factories inspected	—	—	—

YORK ISLAND—

Sanitary Constable	1
Labourers, permanent	3
Public pump wells (not in use)	13
„ tank, concrete (16,000 galls.)	1

ADDENDUM.

The following report by the Superintendent of the Freetown Water Works (Mr. Wilfred S. Cole) gives a very interesting account of details of alterations devised and carried out by him to one of the open air laundries in Freetown. It is attached to this report as it is thought it may be of interest and use in other places where pipe born water supplies are likely to be soon completed, and open air laundries in connection with them will probably be under consideration.

MUNICIPAL CORPORATION OF FREETOWN,
WATERWORKS DEPARTMENT,
January 25th, 1912.

DETAILS OF ALTERATIONS TO THE WATER SERVICE TO NICOLS BROOK LAUNDRY.

There were originally 24 washing compartments in the Nicols Brook Laundry of an average capacity of 75 gallons each, arranged in two rows of 12 each. The water was supplied by 1 in. pipe from 4 in. main running along Kissy Street on to the Laundry, where the pipe was laid along the top of the centre wall between the two rows, and $\frac{1}{2}$ in. tees branching from it with $\frac{1}{2}$ in. gunmetal bibvalves supplied each compartment with water.

As these taps were frequently stolen and the cost of replacing them was great, it became necessary to devise some other means of adequately supplying the compartments with water and at the same time reducing the risk of theft to a minimum. Accordingly the first compartment of either row was filled in and a concrete tank 5 ft. 0 in. by 3 ft. 2 in. by 9 in. constructed on top of the two compartments thus filling in, the floor having a fall from all directions towards the outlet pipe and lowest point of the floor level being about 1 in. above the top of the centre wall between the rows of compartments. The 1 in. supply pipe was made to discharge into the tank and the inflow regulated by two $\frac{3}{4}$ in. ballvalves. The portion of the 1 in. pipe running along the centre wall was replaced with a 4 in. cast iron pipe laid with a fall of about 1 in. in 20 ft. and supplied direct from the tank.

Twenty-two $\frac{3}{4}$ in. holes, eleven on either side, were drilled into it, and short pieces of $\frac{3}{4}$ in. pipes screwed on to supply each compartment with water.

No special plugs were provided and none are considered necessary, as the washerwomen plug the pipes when the compartments are full with cloth, wooden plug, or any other suitable material at hand, and these are quite adequate for the purpose as there is a head of only a few inches of water.

Observation shows that there is no more waste of water than with the old system, and the cost of repairs or renewals of taps is entirely obviated.

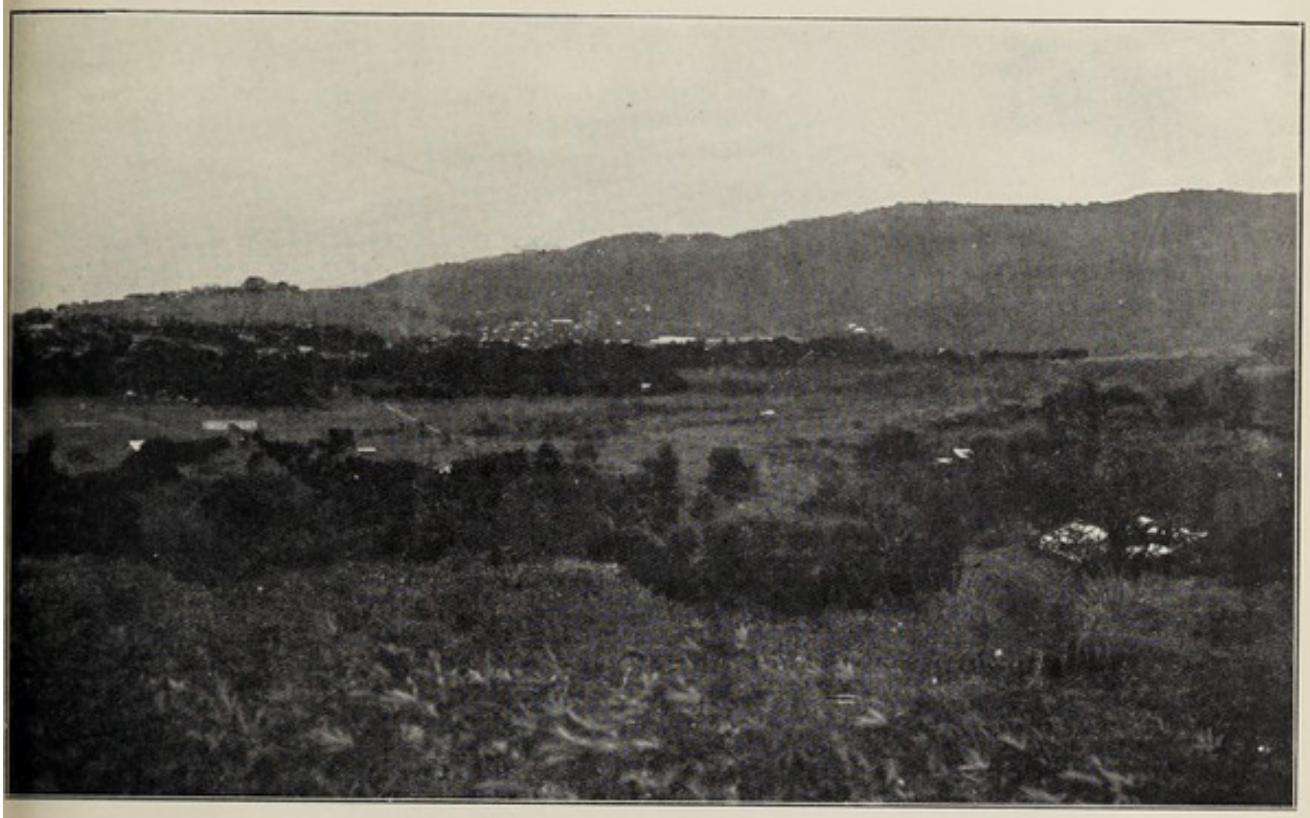
The present system can give a full supply to about six compartments at a time which is quite as much as could be done under the old system, so that there is no loss in efficiency. The average dimensions of each compartment are 3 ft. 0 in. by 2 ft. 0 in. by 2 ft. 0 in. I think however the depth might be reduced to 15 or 18 in. at most as I believe the present depth of 2 ft. 0 in. is unnecessary. There would then be a saving of at least 25 per cent. of the water used and no loss of efficiency or other corresponding disadvantage.

There is no meter fixed on the supply, but I estimate the quantity used for a day of 11 hours (6 a.m. to 5 p.m.) to be on an average between 12,000 and 15,000 gallons.

(Signed) WILFRED S. COLE,

25th January, 1913. *Supt. F. W. Works.*

A

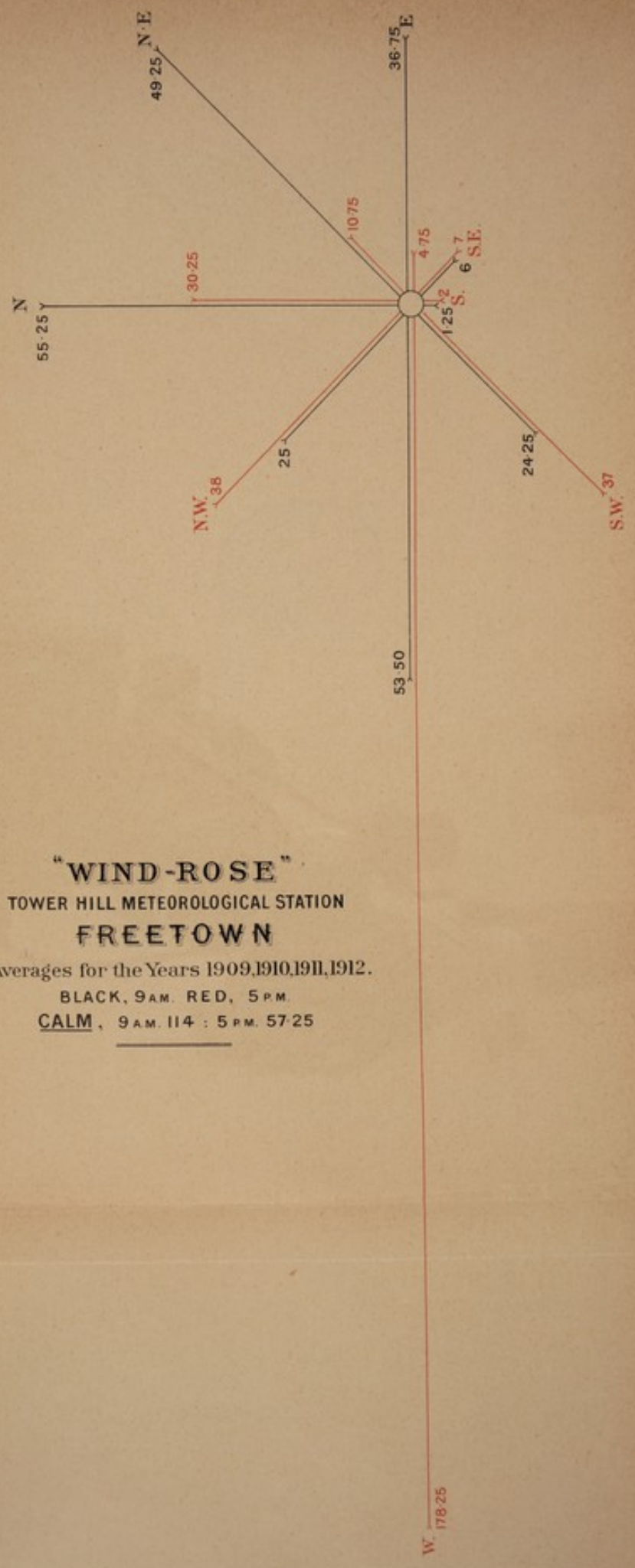


View across "Brookfields" from the west beyond Congo River, on high ground below Wilberforce Barracks. The intercepting drain appears as a white line a little to the left of the middle of the picture.

B

View looking west across "Brookfields" after rain. Water is flowing on the uphill side towards the drain. The part of the drain nearest the camera was hidden by grass at the top edges.

View of the intercepting drain looking west, near the western out-fall. Water is seen discharging through fissures in the rock on up-hill side.



"WIND-ROSE"

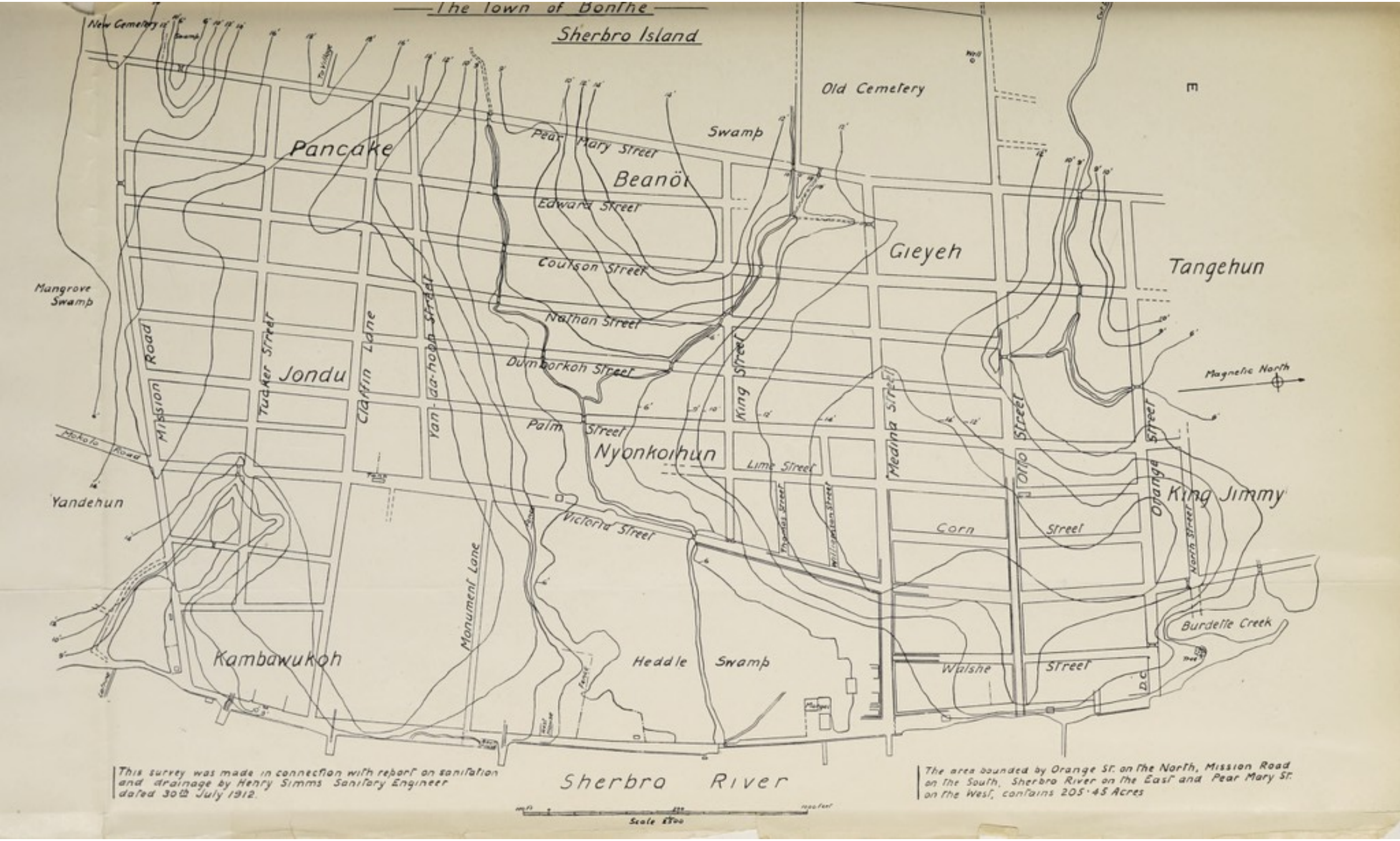
TOWER HILL METEOROLOGICAL STATION

FREETOWN

Averages for the Years 1909,1910,1911,1912.

BLACK, 9 AM. RED, 5 PM.

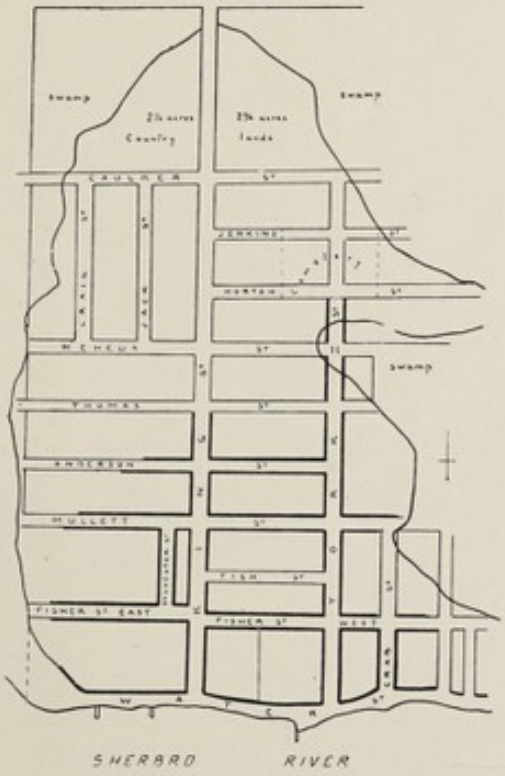
CALM, 9 AM. 114 : 5 PM. 57·25


The Town of Bonthe
Sherbro Island
New Cemetery
Old Cemetery
Swamp
Pancake
Pear Mary Street
Beanöt
Edward Street
Gieyeh
Coulson Street
Tangehun
Mangrove Swamp
Nathan Street
Dumborkoh Street
Jondu
Mission Road
Tucker Street
Claffin Lane
Yan-aa-hoon Street
King Street
Medina Street
Tonto Street
Orange Street
Magnetic North
Palm Street
Nyonkonhun
Lime Street
Mokoto Road
Yandehun
King Jimmy
Victoria Street
Corn Street
Monument Lane
Thomas Street
Williams Street
North Street
Burdette Creek
Kambawukoh
Heddle Swamp
Walshe Street
Sherbro River
Scale 1/500
This survey was made in connection with report on sanitation and drainage by Henry Simms Sanitary Engineer dated 30th July 1912.
The area bounded by Orange St. on the North, Mission Road on the South, Sherbro River on the East and Pear Mary St. on the West, contains 205·45 Acres

F

TOWN OF YORK ISLAND

from plan made in 1872, with streets actually made shewn in heavy lines




RIVER SIERRA LEONE
THE HARBOUR
KROO BAY
SUSANS BAY
OXFORD STREET
WILBERFORCE STREET
BARRACKS
CEMETERY
Plan of
FREETOWN,
SIERRA LEONE,
WEST AFRICA.
Anopheles
Culex
March 1912.
The following were identified by the Entomological Committee.
Pyretophorus costalis. Myzomyia funesta. Culex duttonii.
Culex insidiosus. Culex decens. Culicomyia nebulosa.
Stegomyia fasciata.
Dr D. ALEXANDER, J.S.O.
SCALE OF FEET
SCALE OF 24 A MILE
SPOT MAP OF FREETOWN SHEWING
NATURAL BREEDING PLACES OF MOSQUITOS IN
MARCH 1912.