

## **Annual medical report / East Africa Protectorate.**

### **Contributors**

East Africa Protectorate. Medical Department.

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EAST AFRICA PROTECTORATE.

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ANNUAL MEDICAL REPORT

FOR THE

YEAR ENDING 31ST DECEMBER, 1915.

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|  |    |
|--|----|
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No. 16/478.

MEDICAL DEPARTMENT,

HEAD OFFICES,

NAIROBI,

21st October, 1916.

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 East Africa Protectorate for the year 1915, together with the Returns, &c., appended thereto.

I have the honour to be,

SIR,

Your obedient servant,

A. D. MILNE,

*Principal Medical Officer,**East Africa Protectorate.*

The Honourable,

The Chief Secretary,

Nairobi.

201 10 1918

MEMORANDUM

MEMORANDUM

MEMORANDUM

HEAD OFFICE

YANON

21st October 1918

17 1918

Sir,

I have the honor to refer for the information of the  
 Honorable the Governor and for transmission to the Right  
 Honorable the Secretary of State the Medical Report on the  
 health and sanitary condition of the New Africa Institute for  
 the year 1918, together with the Report on the appended sheets

I have the honor to be,

Sir,

Yours faithfully,  
A. H. MILNE

Medical Officer, New Africa Institute

Head Office, Yanon

The Honorable

The Chief Secretary

Yanon



# I.—ADMINISTRATION.

## SECTION I.—DEPARTMENTAL.

### 1.—ESTABLISHMENT.

The Medical Staff of the Protectorate as sanctioned for the year 1915-16 was as follows :—

#### ADMINISTRATIVE DIVISION.

|   |    |
|---|----|
| Principal Medical Officer ... ..        | 1  |
| Deputy Principal Medical Officer ... .. | 1  |
| Medical Storekeeper ... ..              | 1  |
| Office Superintendent ... ..            | 1  |
| European Clerks ... ..                  | 2  |
| 3rd Grade Clerks ... ..                 | 2  |
| 4th Grade Clerks ... ..                 | 3  |
| Issuer Medical Stores ... ..            | 1  |
| Messengers and Packers ... ..           | 10 |

#### MEDICAL DIVISION.

|                                       |                |
|---------------------------------------|----------------|
| Senior Medical Officers ... ..        | 2              |
| Medical Officers ... ..               | 20             |
| District Surgeon ... ..               | 1              |
| European Dispensers ... ..            | 4              |
| Matron ... ..                         | 1              |
| Nursing Sisters ... ..                | 9              |
| Superintendent, Lunatic Asylum ... .. | 1              |
| Matron, Lunatic Asylum ... ..         | 1              |
| Assistant Surgeons ... ..             | 6              |
| Sub-Assistant Surgeons ... ..         | 40             |
| Compounders ... ..                    | 15             |
| Menial Attendants ... ..              | (as necessary) |

#### SANITATION DIVISION.

|   |                |
|---|----------------|
| Principal Sanitation Officer ... ..       | 1              |
| Medical Officers of Health ... ..         | 3              |
| Pathologist ... ..                        | 1              |
| Nurse ... ..                              | 1              |
| Sanitary Inspectors ... ..                | 7              |
| Assistant Surgeons... ..                  | 6              |
| Sub-Assistant Surgeons ... ..             | 4              |
| Chief Vaccinator ... ..                   | 1              |
| Vaccinators ... ..                        | 12             |
| European Clerk ... ..                     | 1              |
| 3rd Grade Clerk ... ..                    | 1              |
| 4th Grade Clerks ... ..                   | 5              |
| Compounders ... ..                        | 4              |
| Engineers for Clayton Disinfectors ... .. | 4              |
| Menial Attendants... ..                   | (as necessary) |

The Laboratories Division was organised as a separate department under Dr. P. H. Ross as Director from the 1st April, 1915.

## 2.—APPOINTMENTS.

The following appointments were made during the year :—

### MEDICAL OFFICER.

Dr. N. P. Jewell, to date 28th December, 1914.

### GOVERNMENT DENTAL SURGEON.

Dr. V. G. L. van Someren, antedated to 1st April, 1913.

### NURSING SISTERS.

Miss A. E. Hobson, 13th October, 1915.

„ A. E. Drewe, 24th November, 1915.

„ R. S. Blyth, 24th November, 1915.

### SANITARY INSPECTOR.

Mr. J. P. Cook, 2nd February, 1915.

### EUROPEAN CLERK.

Mr. F. Cribb, 28th April, 1915.

### SUBORDINATE ESTABLISHMENT. MEDICAL.

Assistant Surgeon A. C. L. de Souza, 3rd August, 1915.

Sub-Assistant Surgeon B. B. Goomal, 22nd July, 1915.

„ „ „ Z. K. Durrani, 17th August, 1915.

### CLERICAL.

Mr. N. de Souza, 1st May, 1915.

„ P. N. Pinto, 13th September, 1915.

## 3.—REDUCTIONS IN STAFF.

### RESIGNATIONS.

Dr. A. Mouat, 16th November, 1915.

Dispenser, Mr. G. Gillespie, 27th June, 1915.

Matron, Miss M. A. Atkey, 29th May, 1915.

Nursing Sister, Miss A. M. Marston, 12th April, 1915.

„ „ „ S. E. Lumsden, 16th August, 1915.

### EXPIRATION OF TOUR.

Dr. E. N. Russell, 13th April, 1915.

„ F. Collar, 2nd August, 1915.

Assistant Surgeon H. L. Braganza, 14th April, 1915.

Compounder R. H. Mehta, 9th November, 1915.

### TRANSFERRED TO OTHER DEPARTMENT.

4th Grade Clerk, Mr. M. Hussein, 14th March, 1915.



#### 4.—PROMOTIONS.

Dr. A. D. J. B. Williams, Probationary Medical Officer, was appointed Medical Officer on the permanent establishment on completion of three years' service.

Senior Nursing Sister, Miss E. R. Brown was promoted Matron to fill the vacancy caused by the resignation of Miss M. A. Atkey.

#### 5.—CHANGES.

A Laboratories Department was created, with Dr. P. H. Ross as Director, and the personnel of the Laboratories Division, including Dr. Ross, Dr. J. H. H. Pirie (Pathologist), and Mr. V. H. Kirkham (Analyst), transferred from the Medical Department accordingly.

#### 6.—LEAVE OF ABSENCE.

| Name.                    | Appointment.                     | Period granted.       |                      |
|--------------------------|----------------------------------|-----------------------|----------------------|
|                          |                                  | From                  | To                   |
| Dr. V. C. L. van Someren | Dental Surgeon... ..             | 8th January, 1915 ... | 14th August, 1915.   |
| „ C. L. Chevallier...    | Medical Officer ... ..           | 30th January, 1915    | 1st October, 1915.   |
| „ W. O. Prichard ...     | Senior Medical Officer ...       | 9th June, 1915 ...    | 1st November, 1915.  |
| „ T. F. Lumb ...         | Medical Officer ... ..           | 2nd September, 1915   | 31st December, 1915. |
| „ L. D. Lowsley ...      | Senior Medical Officer ...       | 29th November, 1915   | 31st July, 1916.     |
| „ J. A. Haran, C.M.G.    | Deputy Principal Medical Officer | 18th December, 1915   | 11th August, 1916.   |
| Mr. R. Stanley ...       | Office Superintendent ...        | 8th January, 1915 ... | 21st August, 1915.   |
| „ P. Cairns ...          | Sanitary Inspector ...           | 15th April, 1915 ...  | 1st November, 1915.  |
| „ W. Henfrey ...         | Superintendent Lunatic Asylum    | 7th September, 1915   | 12th March, 1916.    |
| Mrs. L. A. Henfrey ...   | Matron Lunatic Asylum            | 7th September, 1915   | 12th March, 1916.    |
| Mr. T. Preston ...       | Clerk ... ..                     | 28th October, 1915... | 21st March, 1916.    |
| Miss H. M. Whitburn      | Nursing Sister ... ..            | 28th October, 1915... | 14th June, 1916.     |

#### 7.—RESUMPTION OF DUTY.

| Name.                           | Appointment.                  | Date.            |
|---------------------------------|-------------------------------|------------------|
| Dr. V. G. L. van Someren ... .. | Dental Surgeon ... ..         | 14th Aug., 1915. |
| „ C. L. Chevallier... ..        | Medical Officer ... ..        | 1st Oct., 1915.  |
| „ W. O. Prichard... ..          | Senior Medical Officer ... .. | 1st Nov., 1915.  |
| Mr. R. Stanley ... ..           | Office Superintendent ... ..  | 21st Aug., 1915. |
| „ P. Cairns ... ..              | Sanitary Inspector ... ..     | 1st Nov., 1915.  |

## 8.—STAFF POSTINGS THROUGHOUT THE YEAR.

### THE COAST ZONE.

Dr. F. L. Henderson acted as Senior Medical Officer, on the departure of Dr. L. D. Lowsley on leave, from 30th November, 1915, to the 21st December, 1915, and was succeeded by Dr. C. L. Chevallier in this capacity on the latter's return from leave.

Dr. Henderson and Dr. Shircore remained in medical charge of the European and Native Hospitals at Mombasa respectively throughout the year. These hospitals were also the base hospitals at Mombasa for the reception of sick and wounded during military operations.

### THE MOUNTAINOUS ZONE.

The undermentioned charges were held continuously throughout the year by the officers named :—

|                                   |   |                    |
|-----------------------------------|---|--------------------|
| Native Civil Hospital, Nairobi... | } | Dr. J. H. Thomson. |
| Lunatic Asylum, Nairobi ...       |   |                    |
| European Hospital, Nairobi ...    |   | Dr. J. L. Gilks.   |
| Native Civil Hospital, Nakuru     |   | Dr. R. W. Spence.  |

The European Hospital and the Native Civil Hospital at Nairobi were also utilized for the reception of sick and wounded during military operations, the former receiving troops of the Protectorate Forces and the latter, as the African Base Hospital, those of the local natives engaged.

### THE KENIA AND NYANZA PROVINCES.

Dr. N. P. Jewell was Medical Officer in charge at Kisumu from January to November, when he was posted for duty with No. 2 East Africa Field Ambulance, vacated by Dr. J. Pugh, who relieved him at Kisumu as officer in charge of the Native Civil Hospital. This hospital also received the sick and wounded of natives engaged in military operations in the Eastern Lake Area throughout the year.

Dr. P. F. Nunan continued in medical charge at Fort Hall throughout the year.

### THE DESERT ZONE.

Dr. T. F. Lumb and Dr. H. H. V. Welch were doing duty in the Northern Frontier District, the former from January to November, when he proceeded home on sick leave, and the latter from January to May, when he was relieved and posted for duty with the military forces.

Dr. G. R. H. Chell was posted for duty in the Northern Frontier District early in September, where he still remains.

Dr. T. H. Massey continued in medical charge at Kismayu throughout the year.

Assistant Surgeon A. N. Nyss was in medical charge of Serenli until relieved in October by Assistant Surgeon P. C. D'Cruz.

### MILITARY OPERATIONS.

All the Medical Officers of the Protectorate Service were gazetted during the year to military rank, with four exceptions, for active service with the forces operating in East Africa. The exceptions were those at stations not involved in the sphere of active operations.



The East Africa Medical Service and East Africa Nursing Service were organized with fixed military establishments composed of the Protectorate Staffs and others enrolled locally and in South Africa.

The following members of the Protectorate Medical and Nursing Services were absorbed into the above-named units:—

#### EAST AFRICA MEDICAL SERVICE.

|                             |     |  |
|-----------------------------|-----|--|
| Dr. A. D. Milne ...         | ... | Lt.-Colonel, A.D.M.S., Protectorate Forces, and A.D.M.S., Lines of Communications. |
| Dr. J. A. Haran ...         | ... | Major, E.A.M.S., Dy.P.M.O., Protectorate Forces.                                   |
| Dr. W. J. Radford           | ... | Major, Sanitary Adviser to the Forces.   |
| Dr. L. D. Lowsley...        | ... | Major, E.A.M.S.  |
| Dr. W. O. Prichard          | ... | " "  |
| Dr. C. L. Chevallier        | ... | Captain, E.A.M.S.  |
| Dr. F. L. Henderson         | ... | " "  |
| Dr. J. O. Shircore ...      | ... | " "  |
| Dr. G. R. H. Chell          | ... | " "  |
| Dr. J. L. Gilks ...         | ... | " "  |
| Dr. B. W. Cherrett          | ... | " "  |
| Dr. J. Pugh                 | ... | " "  |
| Dr. C. J. Wilson            | ... | " "  |
| Dr. N. P. Jewell ...        | ... | " "  |
| Dr. V. G. L. van Someren    | ... | " "  |
| Dr. A. D. J. B. Williams... | ... | " "  |
| Dr. J. A. Thomson           | ... | " "  |
| Dr. J. H. Pirie ...         | ... | " "  |
| Dr. W. Tudhope ...          | ... | " "  |
| Dr. H. H. V. Welch          | ... | " "  |
| Mr. V. H. Kirkham           | ... | " "  |
| Mr. R. Stanley ...          | ... | Lieutenant, E.A.M.S.   |
| Mr. J. S. Robertson         | ... | " "  |
| Mr. F. Knott ...            | ... | Sergeant-Major, E.A.M.S.   |
| Mr. H. Ogden ...            | ... | " "  |
| Mr. C. A. J. Speller        | ... | " "  |

#### EAST AFRICA NURSING SERVICE.

|                       |     |                        |
|-----------------------|-----|------------------------|
| Miss E. R. Brown ...  | ... | Matron.                |
| Miss H. M. Whitburn   | ... | Senior Nursing Sister. |
| Miss L. Merryweather  | ... | Nursing Sister.        |
| Miss R. Paul          | ... | " "                    |
| Miss I. L. Majendie   | ... | " "                    |
| Miss I. Wilson        | ... | " "                    |
| Mrs. S. J. Harrison   | ... | " "                    |
| Miss A. E. Hobson     | ... | " "                    |
| Miss A. E. Drewe...   | ... | " "                    |
| Miss R. S. Blyth ...  | ... | " "                    |
| Miss M. A. Thomlinson | ... | " "                    |



## SECTION II.—EXTRA DEPARTMENTAL.

### 9.—REGISTRATION OF MEDICAL PRACTITIONERS AND DENTISTS.

This Ordinance came into force on the 24th September, 1910, and between that time and the end of 1915 there have been placed on the Register the following :—

|                                  |     |     |     |    |
|----------------------------------|-----|-----|-----|----|
| Registered Medical Practitioners | ... | ... | ... | 60 |
| Licensed Medical Practitioners   | ... | ... | ... | 6  |
| Dentists                         | ... | ... | ... | 5  |

37 of the Medical practitioners and Dentists were in Government service and 34 were private practitioners.

During the year the following were admitted to the rolls :—

Dias, Edward, L.R.C.P., L.R.C.S. (Edin.), L.F.P.S. (Glas.),  
 Allen, Kenneth Watson, M.D., C.M. (McGill Univ. Canada),  
 Jones, Stanley Ellis, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P.S.,  
 (Glas.).

The Board convened for the purposes of the Ordinance consisted of :—

Dr. W. E. Kelbe,  
 „ W. Owen-Prichard,  
 „ L. D. Lowsley,  
 „ W. J. Radford,  
 „ J. A. Haran, C.M.G.,

with the Principal Medical Officer as President and Registrar.

The Board only held one meeting during the year.

### 10.—THE DRUGS AND POISONS ORDINANCE, 1909.

This Act controls the licensing of chemists and druggists as provided for under the above Ordinance, as well as the sale of poisons throughout the Protectorate.

Thirteen names have been placed on the register from the introduction of the Ordinance to the end of 1915. Three of these were by examination.

The Board appointed under the Act consisted of the following :—

Mr. L. A. Howse,  
 „ A. A. White,  
 „ V. H. Kirkham,  
 Dr. W. Owen-Prichard,  
 „ L. D. Lowsley,  
 „ W. J. Radford,  
 „ J. A. Haran, C.M.G.,

with the Principal Medical Officer as President and Registrar.

The Board held two meetings during the year.

There was an amending Ordinance passed during the year to be read as one with the original Ordinance of 1909. This amending Ordinance provided for companies trading as druggists, and also for the business of a deceased druggist to be carried on by an executor or trustee, provided that the business was managed by a duly registered druggist.

## II.—PUBLIC HEALTH.

---

### (a) GENERAL REMARKS.

#### (i) GENERAL DISEASES.

##### THE PROTECTORATE.

Any report on the general health of the Protectorate and comparison with that obtaining formerly demands, this year, a brief *resumé* of the circumstances under which the Medical Department has been working since the outbreak of war, if any sort of estimate is to be formed of what has fallen to the lot of the staff to overtake.

Last year the annual report followed the statutory lines laid down for its compilation. It embodied, in the absence of specific instructions to the contrary, only those cases of sickness and wounds which occurred amongst the forces locally enrolled, and which appeared in the admission and discharge books of the two European hospitals during the last five months of the year—the first five months of the war in East Africa—otherwise it endeavoured to present the usual picture of routine civil work, so far as it was possible to dissociate it from military happenings.

This year, in view of the welcome curtailment of the report, and the fact that the statistical figures submitted refer, so far as the dual position held by the staff enabled this to be done, solely to the non-military cases of illness which came under review, it may not be considered out of place in these pages to place on record the following narrative of the part played by the Protectorate Medical Department in bearing its share, during the last seventeen months, of the burden imposed on the military authorities in conducting the war in this country.

The outbreak of hostilities in August, 1914, found the Medical Department in no better state of preparedness than the rest of the country to cope with a very emergent crisis.

In past years more than one effort had been made to create a small reserve of mobilization stores to meet unforeseen contingencies and military expeditions. Such a reserve at the outbreak of war would very greatly have eased the pressure on the Department.

It is unnecessary now to recall the inevitable disturbance of accepted conditions into which the whole country was thrown by the declaration of war; the pouring into Nairobi of the manhood of the country, clamorous to be enrolled in one capacity or another, for the conquest of German East Africa; and the embarrassment of a newly constituted Headquarters Staff coping with an unprecedented set of conditions for which no machinery was provided.

Needless to say the pressure was equally felt in the Medical Department, the services of which had been immediately incorporated into the military forces with its Principal Medical Officer as Director of Medical Services; but whose knowledge of military matters, as might be expected, was limited through military inexperience. The medical unit was fortunate in possessing at its inception, with its civilian staff of medical officers, two who had been



Territorial Officers, an office superintendent who was a retired Warrant Officer of the R.A.M.C., and a medical storekeeper, an ex-Non-Commissioned Officer from the same Corps. In addition there were three seconded Sergeants as dispensers, and a reservist dispenser of the R.A.M.C., and 28 assistant surgeons and sub-assistant surgeons seconded from the Indian Subordinate Medical Department.

During the first week of the war I was absent on inspection duty when the Deputy Principal Medical Officer, either under the orders of the Chief Staff Officer, or as the necessity became apparent, had begun the postings of various members of the staff for specific military duties either singly or combined with their civil functions. With the founding of new horse and foot regiments, Transport, Supply, Ordnance, Pioneer, Intelligence, Signal and Veterinary Departments, and all the other infinite details that go towards the organizing of an army in being, coupled with the incessant activities of the enemy, the constant moving of troops and the opening up of new scenes of action, the demands made on the resources of the Medical Department were immediate and unending.

These demands on the personnel meant that all those of the ordinary medical staff that could be withdrawn for posting to special duty were quickly exhausted. It was necessary to supplement these by engaging outside assistance. Almost without exception every single local medical practitioner offered his services to the Government. That all doctors were not enrolled was simply due to the necessity of leaving the necessary few to carry on the general public practice of the country. At the end of 1915, of the total Protectorate Staff of 28 Medical Officers, six had been seconded for purely military duties, 19 were combining their civil obligations with military work, and 12 additional had been locally engaged either here or in South Africa to help in the war.

Coincident with the increase of the medical staff came the necessity for more nurses. This demand was met by the enrolment of qualified local private nurses, and the selection of volunteers who, after a class of training held by the Matron of the European hospital, were enlisted in order to release their qualified sisters for duties in newly-opened centres. On the outbreak of war there were in the Protectorate one Matron, one Senior Nursing Sister, and eight fully qualified Nursing Sisters. By the end of 1915 there had been passed through the ranks of the East Africa Nursing Service one Matron, four Senior Nursing Sisters, 35 Nursing Sisters, 14 Probationers (paid), and seven Honorary Nurses (unpaid).

All the available assistant surgeons, sub-assistant surgeons and hospital compounders who could be spared for duty in the theatre of war were allotted military duties in addition to their routine work, and others were locally engaged. At the beginning of the war the total number of these classes in the country was 56; at the end of December, 1915, the number was 118.

The pressure of work at all the hospitals owing to the war meant a corresponding increase in the number of cooks, dressers, dhobies, bhistis, ward servants, messengers, orderlies, sweepers, etc. The African menial establishments of the various hospitals were increased automatically as the necessity became apparent.

Following the formation of new units came the need of adequate hospital accommodation for sick and wounded in Government hospitals.

At the beginning of August, 1914, there were available for Government employees, both white and black, and also for the indigenous native Indian and other sick in the existing Government hospitals in the war zone, a total of 214 beds. By the end of 1914 the number of these beds had been increased to 440. By the end of 1915 these Protectorate units had been enlarged to a total of 670 beds.



Apart from the increase in the number of beds, it fell to the Protectorate to organise three sections of an East African Field Ambulance of 30 beds each, and to start new hospitals at Voi, Kajiado and Mbuyuni, besides various Carrier Corps hospitals for the native porters.

The ordinary medical and surgical store budget to meet the civil requirements of the Protectorate is £3,500 per annum. It was a fortunate fact that a special grant of £900 had been sanctioned in the early part of the year 1914 to replenish the stock owing to the inroads made on it by the Merchan Patrol 1913-14. The arrival of these goods coincident with the declaration of war just enabled the Protectorate to meet every demand made on it in the first five months of the war.

Between August, 1914, and December, 1915, orders amounting to nearly £28,000 were passed for drugs, instruments and surgical and medical materials, and £14,000 for the purchase of hospital equipment.

The transport of the sick was one of the early difficulties which had to be overcome with the means that the country permitted. This was at first done by ox waggons, wheeled stretchers and rickshaws, which later were superseded very largely by motor transport. On the Uganda Railway there was only one ambulance coach, the property of the Magadi Soda Co., the services of which had been generously placed at the disposal of the Medical Department. This start, with a large number of bogies and carriages converted into ambulance coaches by the Uganda Railway, ended in the formation of the existing ambulance train. What this has meant will be understood when it is realized that in 12 months it has conveyed over 13,000 sick and wounded.

During the first five months of the war the sanitation of the camps was placed in the hands of the Principal Sanitation Officer.

The water supply of all camps occupied by the local forces during their operations was entrusted to the Government Analyst. He devised what proved to be a simple and portable method of rendering water fit for drinking by the chlorination method; sufficiently feasible of application to all those commands in the field who were not overdriven by the exigencies of military operations. That the spread of infectious and contagious disease throughout the Protectorate was not more serious than the record shows can be definitely attributable to the zeal and training of the medical officers of the regular services in their different commands.

The end of 1914 saw the arrival in the country of Force "C" and Force "B" with all their regimental medical officers, Indian Field Ambulances, Clearing Hospitals, Stationary Hospitals, and Combined General Hospital, and, as mentioned before, one advanced depôt of medical stores, to assimilate and take over medical arrangements which the state of warfare in the country had called into being. On December 15th, 1914, the direction of all military medical matters was formally taken over by the Deputy Director of Medical Services of Force "B," the Colonial Medical Service being more properly accorded its place as the East African Medical Service—a locally constituted unit with the Principal Medical Officer as Officer Commanding and Assistant Director of Medical Services of the Protectorate Forces. This service was ultimately absorbed into the temporary commissioned ranks of the regular army on the honorary, local and temporary list.

It will be realized from the increase in the number of beds alone—statistical returns for which do not appear in these pages—that during the year the staff was working at high pressure and has been in the very difficult position of having to serve two masters, i.e., the King's Regulations for the Army and the Code of Regulations for the Colonial Service.



The total number of civil cases which came under review during 1915 very nearly approximated to the number treated during the first year of the war, with a lowered death rate. The comparison is shown as follows:—

|             | Admissions. | Deaths. |
|-------------|-------------|---------|
| 1915 ... .. | 117,573     | 649     |
| 1914 ... .. | 120,056     | 712     |
| 1913 ... .. | 108,520     | 1,052   |

The most marked fact is the increase in the number of admissions for malaria, a reflex of the unrest and constant movement which had to be, in rainy weather or dry season. The incidence of other diseases followed closely the lines of former years. Considering what a morbiferous country this Protectorate is, East Africa can only be regarded as having escaped lightly in the matter of infectious and contagious diseases, and that in a year when more than ever before there was cause for anxiety.

#### THE COAST ZONE.

The Reports of the Medical Officers in the Coast Zone show that the average of health of the two Provinces remained good throughout the year. There was a welcome absence of plague, though cerebro-spinal-meningitis, dengue, and other infectious and contagious diseases manifested their presence no more than was to be expected. The figures shown under malaria and dysentery inevitably cannot be accepted as giving the true incidence of the disease, as the necessities of a large out-patient practice amongst natives speaking many tongues demand the often too hurried inclusion under one or other of these headings of many pyrexias of uncertain origin. The two observers who have devoted most time to this point are Dr Shircore and Dr. Dunderdale. The former, as a result of microscopical examination of over 1,100 fæces, has been enabled to show that many cases of dysentery should more probably be ascribed to helminthic causes. The latter has classified all his diarrhoea cases as "diarrhoea" and "enteritis," reserving the last-mentioned description for the passage of blood and mucus. His experience has been that the majority of these cases depend on errors of diet and entozoa. At Lamu the proportion of malaria and filariasis to all diseases was about the same, viz., 35-40 per cent. Many cases of mild fever diagnosed as malaria reveal, on blood examination, indisputable evidence of filariasis.

The comparative table of admissions and deaths for the past two years is as follows:—

|                                    | Admissions. |       | Deaths. |       |
|------------------------------------|-------------|-------|---------|-------|
|                                    | 1914.       | 1915. | 1914.   | 1915. |
| European officials ... ..          | 159         | 141   | —       | 3     |
| Native officials ... ..            | 1,105       | 946   | —       | 3     |
| European general population ... .. | 128         | 73    | 7       | 4     |
| Native general population ... ..   | 3,371       | 4,240 | 224     | 149   |

#### THE MOUNTAINOUS ZONE.

As might have been expected from its position in the uplands and its relation to all war movements affecting Nairobi as the capital of the country and military headquarters, the general trend of health in these regions has not been towards improved conditions.

This is particularly marked in the great increase in malaria, blackwater, enteric, dysentery, and cases of general ailments.

The total admissions and deaths for the past two years were:—

|                                    | Admissions. |       | Deaths. |       |
|------------------------------------|-------------|-------|---------|-------|
|                                    | 1914.       | 1915. | 1914.   | 1915. |
| European officials ... ..          | 299         | 384   | 2       | —     |
| Native officials ... ..            | 1,567       | 1,322 | 4       | 4     |
| European general population ... .. | 352         | 594   | 13      | 13    |
| Native general population ... ..   | 3,775       | 3,683 | 281     | 332   |



## THE KENIA AND NYANZA PROVINCES.

The labour of these provinces was profoundly affected by the war, and here again it must be said that the conditions obtaining militated against a satisfactory state of matters being produced. While there was a notable increase in admissions for dysentery, malaria and small-pox, there was a distinct drop in the number of entries for enteric and venereal diseases.

The comparison table of admissions and deaths for the past two years is as follows :—

|                                  | Admissions. |       | Deaths. |       |
|----------------------------------|-------------|-------|---------|-------|
|                                  | 1914.       | 1915. | 1914.   | 1915. |
| European officials ... ..        | 57          | 31    | 1       | —     |
| Native officials ... ..          | 316         | 271   | 5       | —     |
| European general population ...  | 40          | 32    | —       | 1     |
| Native general population ... .. | 2,299       | 2,402 | 157     | 125   |

## THE DESERT ZONE.

These two Provinces were the only two untouched by the fringes of war, and show the same standard of health as in past years. The position of dysentery was very distinctly improved, due doubtless to less movement.

The comparison table for admissions and deaths for the past two years is as follows :—

|                                  | Admissions. |       | Deaths. |       |
|----------------------------------|-------------|-------|---------|-------|
|                                  | 1914.       | 1915. | 1914.   | 1915. |
| European officials ... ..        | 24          | 11    | —       | —     |
| Native officials ... ..          | 72          | 100   | —       | 1     |
| European general population ...  | 1           | 1     | —       | —     |
| Native general population ... .. | 722         | 877   | 18      | 15    |

## (ii.) COMMUNICABLE DISEASES.

### MOSQUITO OR INSECT-BORNE.

#### THE COAST ZONE.

*Malaria.*—The most satisfactory feature about the position of this disease was the lower death rate, the fatal cases this year being 14 as against 17 and 22 in the two previous years. Quinine prophylaxis of the police and other African establishments probably accounted for this drop. The admissions for the three years were respectively 7,112, 5,489 and 6,185. *Pyretophorus Costalis* was noted as being the common carrier at Lamu.

*Blackwater fever.*—There were six cases during the year, with one death in a European. Three of the cases were amongst Goans. In 1914 there were seven admissions and three deaths, and in 1913, 11 and three respectively.

*Dengue.*—There were 31 cases recorded at Mombasa and 29 at Malindi.

*Filariasis.*—Five cases came under treatment during the year.

#### THE MOUNTAINOUS ZONE.

*Malaria.*—The comparative table shows a great increase in the number of admissions :—

|      |     |     |     |     |       |
|------|-----|-----|-----|-----|-------|
| 1915 | ... | ... | ... | ... | 5,352 |
| 1914 | ... | ... | ... | ... | 3,851 |
| 1913 | ... | ... | ... | ... | 3,536 |

Of 520 Europeans admitted two died. Nairobi was responsible for the largest number of cases, but every township appeared in the list. The only decrease that can be recorded is in the Guaso-Hgishu plateau, which was very largely depleted by volunteers for the front.

*Blackwater fever.*—A total of nine patients were treated by the medical staff during the year. Two of these were Europeans, and the one death occurred in the only native case. Last year there were eight admissions (five Europeans) and one death (also European). The year before the number was three with no deaths; one case being a Goan.

*Trypanosomiasis.*—Three cases were admitted to the Native Hospital, Nairobi.

#### KENIA AND NYANZA PROVINCES.

*Malaria.*—The yearly rise in the number of individuals who present themselves for medical treatment continued. They were:—

|      |     |     |     |     |       |
|------|-----|-----|-----|-----|-------|
| 1915 | ... | ... | ... | ... | 4,687 |
| 1914 | ... | ... | ... | ... | 4,227 |
| 1913 | ... | ... | ... | ... | 3,267 |

55 of the admissions were Europeans.

*Blackwater fever.*—In 1915 three European cases with one death; in 1914, two non-fatal cases in white men; in 1913, one case only, which recovered.

*Trypanosomiasis.*—Only one case came to light during the year in Nyanza province; four cases and one death occurred the previous year.

#### THE DESERT ZONE.

*Malaria.*—The average of previous years was maintained as regards admissions:—

|      |     |     |     |       |
|------|-----|-----|-----|-------|
| 1915 | ... | ... | ... | 1,666 |
| 1914 | ... | ... | ... | 1,547 |
| 1913 | ... | ... | ... | 2,125 |

16 Europeans suffered from the disease.

*Blackwater fever.*—There was only one case this year, in a European, as against two (natives) last year.

*Dengue.*—Manifested itself in this corner of the Protectorate, 66 cases in all being treated.

#### INFECTIOUS OR EPIDEMIC.

##### THE COAST ZONE.

*Cerebro-spinal Meningitis.*—This menace to the troops manifested its presence this year, though to a slightly less extent than last year. There were 27 cases, with 12 deaths, contrasted with 33 and 12 in 1914, and 13 and 10 respectively in 1913.

*Dysentery.*—The figures for this showed a considerable diminution owing to a more accurate diagnosis as already referred to.

|      |     |                                |
|------|-----|--------------------------------|
| 1915 | ... | 317 admissions with 39 deaths. |
| 1914 | ... | 621 " " 75 "                   |
| 1913 | ... | 475 " " 38 "                   |

26 Europeans were treated for the disease, of whom one died.



*Enteric.*—12 cases were under treatment during the year, of which nine were Europeans; two of the latter had previously undergone preventive inoculation, and both cases recovered. Of the five deaths four were Europeans. In 1914 there were eight cases (three Europeans), with two deaths amongst natives. In 1913 there were three admissions, and all fatal cases, amongst Europeans.

*Leprosy.*—One of the many things that the war and the financial conditions of the Protectorate has relegated to the background of things yet to be taken in hand is the provision of adequate accommodation for the care and maintenance of the lepers of the country. The Leprosy Ordinance of 1913 remains a dead letter. The coast, which is the region chiefly concerned, has three voluntary settlements, one at Mombasa maintained by the Church Missionary Society, which for a small monthly sum takes in Government patients. The other two are at Malindi and on one of the creeks in the Lamu archipelago, both being under the nominal supervision of the Medical Department at these places. Mombasa recorded the existence of 388 sufferers during the year, Malindi 34, and Lamu 14, a total of 436.

*Plague.*—Was not reported on the Coast during the year, one of the very few blessings experienced during the war. In 1914 there were two cases; in 1913, 208. No infected rats were found.

*Small-pox.*—Only six cases were discovered during the year, of whom two died, as against 33 cases and 10 deaths in 1914, and 295 and 63 in 1913; a position of affairs which was as satisfactory to the Military Authorities as to the Sanitation Department.

*Beri Beri.*—Forty-one cases with one death were noted at the Native Civil Hospital at Mombasa.

#### THE MOUNTAINOUS ZONE.

*Cerebro-spinal Meningitis.*—Three cases occurred amongst Europeans and 78 came to light amongst natives, with three deaths, a total of 81 as against 136 in the previous year with 51 deaths. In the 1913 epidemic there were 288 cases, of whom 152 died. The exceptionally lowered death rate points to the virulence of the infection dying down.

*Dysentery.*—This bugbear of African quintessence showed a marked increase over previous years, as was to be expected under the changed conditions produced by war. There were 105 admissions amongst Europeans, fortunately with no deaths. Including these there was a total of 1,647, of whom 89 died. Last year there were 1,471 admissions, with 49 deaths. Considering the continual movements of large bodies of natives which had to go on, rains or no rains, the numbers that were entered on the books of the hospitals cannot be deemed excessive. The great majority of the cases depended on bacillary infection.

*Enteric.*—The rise in the admissions for this disease was very noticeable, and reveals the most serious state of matters affecting the Protectorate. In 1913 there were 21 cases with one death. In 1914 there were 46 with 10 deaths. This year there were 182 admissions and 19 deaths; 35 of this number, with three deaths, occurred amongst Europeans. The menace this legacy bequeaths to the future can be well understood. A small epidemic occurred in the Nairobi jail—47 cases in all. A systematic examination of a lock-up of some 600 cases brought to light the fact that no less than 21 were "carriers."

Of these cases there is unfortunately no information to show how many had been previously protectively inoculated. Further information will be found in the Principal Sanitation Officer's report.



*Plague.*—Another of the fortunate occurrences of the year was that the sole reminder of the existence of plague was the finding of the body of a native who had died of it near the native market in Nairobi. Last year there were 10 cases with six deaths.

*Pneumonia.*—This disease claimed about an average number of victims, 347 (13 Europeans), with 62 deaths (2 Europeans), as against 377 with 52 deaths in the previous year.

*Venereal.*—A slight increase in the number of admissions for syphilis has to be recorded, while the number of cases of gonorrhœa remained the same :—

|                 |     |     |     |     |
|-----------------|-----|-----|-----|-----|
| Syphilis.—1915  | ... | ... | ... | 410 |
| 1914            | ... | ... | ... | 363 |
| 1913            | ... | ... | ... | 471 |
| Gonorrhœa.—1915 | ... | ... | ... | 316 |
| 1914            | ... | ... | ... | 317 |
| 1913            | ... | ... | ... | 320 |

*Scurvy.*—38 cases were admitted to the Native Hospital, Nairobi.

#### THE KENIA AND NYANZA PROVINCES.

*Beri-Beri.*—Last year two cases were recorded ; this year there were nine all told.

*Cerebro-spinal meningitis.*—In 1915, 21 admissions, all natives, and three deaths ; 1914, 45 cases and 28 deaths ; 1913 was the year of the pandemic.

*Dysentery* in these provinces showed a notable increase, and totalled, including two Europeans, 651 admissions, of whom 39 died. The two previous years recorded, respectively, 492 with 18 deaths, and 428 with nine deaths. The increase in the number of cases is not surprising when it is remembered what a reservoir these thickly populated native areas have been for the carrier corps to draw upon.

*Enteric.*—Only one European and one native came under treatment during the year, as against three whites and six blacks the previous year, with one death. This improvement can only be regarded as temporary. If movements of large bodies of men into congested districts adversely affect these areas the depletion of home centres may also sensibly improve local conditions.

*Leprosy.*—Seven cases were treated at the Native Hospital, Kisumu ; a similar number occurred in the province last year.

*Plague.*—In Kisumu cases continued to recrudesce, as the following figures will show :—

|      |           |     |     | Total. | Deaths. |
|------|-----------|-----|-----|--------|---------|
| 1915 | Europeans | ... | ... | —      | —       |
|      | Natives   | ... | ... | 33     | 14      |
| 1914 | Europeans | ... | ... | 1      | —       |
|      | Natives   | ... | ... | 41     | 38      |
| 1913 | Europeans | ... | ... | —      | —       |
|      | Natives   | ... | ... | 31     | 27      |

The Kenia Province was reported free.

*Small-pox.*—In 1915 there were 24 admissions, of whom two died. As during the two previous years there had been only one admission, and that in the Nyeri district, this increase in the number of cases pointed to a recrudesence of the disease in the Nyanza Province, and at a time when it was least wanted.

*Venereal.*—Syphilis showed a distinct decrease, balanced by the number of gonorrhœa cases that presented themselves for treatment. The comparative table for the three years is as follows:—

|                        |     |
|------------------------|-----|
| Syphilis.—1915 ... ..  | 312 |
| 1914 ... ..            | 407 |
| 1913 ... ..            | 413 |
| Gonorrhœa.—1915 ... .. | 197 |
| 1914 ... ..            | 125 |
| 1913 ... ..            | 162 |

*Yaws.*—126 cases were shown on the books during the year, compared with 71 the previous year.

*Tetanus.*—During 1915 there were two fatal cases. Last year there was one.

#### THE DESERT ZONE.

*Beri-Beri.*—The record this year shows that there were only nine non-fatal cases. In 1914 there were 72, and two in 1913. The condition of life, food, water, soil and climate are not dissimilar to those obtaining in the Tsavo district.

*Cerebro-spinal meningitis.*—This disease still continued to manifest its presence in Kismayu. Out of four cases one died, as compared with the two fatal cases last year.

*Dysentery.*—This scourge showed a decrease, 107 admissions as against 373 the previous year.

*Leprosy.*—As in last year's report, one case was noted in the Northern Frontier District.

*Small-pox.*—This disease did not come to light at all in these Provinces. It is probable that this statement represents truly the state of matters, the more so when one realises the sparsely populated areas separated by wide distances of desert sands.

*Tetanus.*—One case was admitted this year—a similar record to 1914.

*Scurvy.*—Thirty-nine cases were treated.

#### HELMINTHIC.

##### THE COAST ZONE.

The diagnostic importance of studying the entozoal causes of disease in East Africa has been indicated in the remarks under section (ii), "Communicable Diseases of the Coast Zone," of this Report, and Appendix I. of last year's report. Of 1,010 examinations of feces made in the Native Hospital, Mombasa, 594 gave positive results, many of them being multiple infections. Of the infections the following were recognized:—

|                               |     |
|-------------------------------|-----|
| Ankylostomiasis ... ..        | 249 |
| Trichocephalus dispar ... ..  | 234 |
| Ascaris lumbricoides ... ..   | 196 |
| Tænia saginata ... ..         | 126 |
| „ H. nana ... ..              | 1   |
| „ H. diminuta ... ..          | 1   |
| Schistosoma mansoni ... ..    | 14  |
| Schistosoma hæmatabium ... .. | 2   |
| Oxyuris vermicularis ... ..   | 1   |

At Lamu, ankylostoma, lumbricoides, tænia, strongyloides intestinalis, and bilharzia were noted.



### THE MOUNTAINOUS ZONE.

The following parasites were diagnosed during the year:—*Tænia solium* 50, *Ascaris lumbricoides* 40, *Tricocephalus dispar* two, and three cases of ankylostomiasis.

### THE KENIA AND NYANZA PROVINCES.

These Provinces provided admissions for the following:—*Tænia solium* six, *Tænia saginata* three, *Ascaris lumbricoides* 656, and *Dracunculus* one.

### THE DESERT ZONE.

Following on the note made in last year's report there is this year recorded by the medical officers, as occurring in these regions, the following intestinal parasites:—*Tænia solium* 30, *Tænia saginata* 10, *Ascaris lumbricoides* 70, *Oxyuris vermicularis* 15, and 6 cases of ankylostomiasis.

### (b) EUROPEAN OFFICIALS.

#### GENERAL REMARKS.

##### THE COAST ZONE.

The standard of health maintained was about the same as last year; 141 cases were admitted to hospital, as against 159 the previous year. In addition, 169 received treatment as out-patients. The outstanding causes of admissions were:—Dysentery (six), enteric (two), malaria (84), blackwater fever (two), and digestive troubles (12).

Three deaths occurred, due to dysentery, blackwater fever and heatstroke.

There were no other deaths last year.

The invalidings that took place were five in number, as against four in 1914, and were occasioned by tuberculosis, iritis, asthma, fistula (urethra), and gunshot wound.

##### THE MOUNTAINOUS ZONE.

In 1915 there were admitted to hospital, or treated in quarters:—

|                 |     |     |     |                    |
|-----------------|-----|-----|-----|--------------------|
| In-patients ... | ... | ... | 384 | } with no deaths.  |
| Out-patients    | ... | ... | 194 |                    |
| In 1914:—       |     |     |     |                    |
| In-patients ... | ... | ... | 299 | } with two deaths. |
| Out-patients    | ... | ... | 146 |                    |

The most common cause of sickness was malaria, 140 admissions, followed by diseases of the digestive system (61), dysentery (24), and enteric (nine).

16 people had to be invalided on account of the following diseases:—Debility and anæmia (five), malaria (two), nervous system (two) and digestive system (two) and dysentery, enteric, blackwater fever, tuberculosis and injuries (one each).

The general health was not satisfactory compared with former years. The complex conditions produced by war—both mental and physical—and delayed leave would be contributory causes. The fact that the number of invalidings this year was exactly double that of last year is significant.

THE KENIA AND NYANZA PROVINCES.

As compared with the 57 cases off duty and treated in quarters last year, the record of the last 12 months was 31 admissions only, with no deaths, as against the solitary fatality of 1914. 58 people received treatment as out-patients.

There were two invalidings on account of malaria and nervous diseases—one more than last year.

THE DESERT ZONE.

The number of patients treated in quarters in these two Provinces also showed a drop—11, as against 24 last year, and again without a death. 20 officials received treatment as out-patients.

Three invalidings were carried out, as against four the previous year:—1 for splenitis, 1 for disease of the urinary tract, and 1 for heatstroke.

TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST EUROPEAN OFFICIALS AT THE COAST ZONE.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 250   | 242   | 238   |
| Average number resident... ..                                     | 133   | 158   | 137   |
| Total number on sick list... ..                                   | 134   | 159   | 141   |
| Total number of days on sick list ... ..                          | 797   | 1,284 | 1,243 |
| Average daily number on sick list ... ..                          | 2.18  | 3.52  | 3.40  |
| Percentage of sick to average number resident ... ..              | 1.64  | 2.24  | 2.48  |
| Average number of days on sick list to each patient ... ..        | 5.95  | 8.08  | 8.81  |
| Average sick time to each resident ... ..                         | 3.18  | 5.31  | 5.22  |
| Total number invalided ... ..                                     | 4     | 4     | 5     |
| Percentage of invaliding to total residents ... ..                | 1.60  | 1.65  | 2.10  |
| Total deaths ... ..   | 3     | —     | 3     |
| Percentage of deaths to total residents ... ..                    | 1.20  | —     | 1.26  |
| Percentage of deaths to average number resident ... ..            | 2.25  | —     | —     |
| Number of cases of sickness contracted away from residence ... .. | 1     | —     | —     |

TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST EUROPEAN OFFICIALS IN THE MOUNTAINOUS  
ZONE.

|   | 1913. | 1914  | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 654   | 776   | 730   |
| Average number resident... ..                                     | 433   | 535   | 518   |
| Total number on sick list ... ..                                  | 295   | 299   | 384   |
| Total number of days on sick list ... ..                          | 2,570 | 3,256 | 4,542 |
| Average daily number on sick list ... ..                          | 7.04  | 8.92  | 12.44 |
| Percentage of sick to average number resident ... ..              | 1.63  | 1.67  | 2.40  |
| Average number of days on sick list to each patient ... ..        | 8.71  | 10.89 | 17.82 |
| Average sick time to each resident ... ..                         | 3.93  | 4.20  | 6.22  |
| Total number invalided ... ..                                     | 5     | 8     | 16    |
| Percentage of invaliding to total residents ... ..                | .76   | 1.03  | 2.19  |
| Total deaths ... ..   | 3     | 2     | —     |
| Percentage of deaths to total residents ... ..                    | .46   | .26   | —     |
| Percentage of deaths to average number resident ... ..            | .69   | .37   | —     |
| Number of cases of sickness contracted away from residence ... .. | —     | —     | —     |



TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST EUROPEAN OFFICIALS IN THE KENIA AND  
NYANZA PROVINCES.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 138   | 157   | 148   |
| Average number resident... ..                                     | 84    | 102   | 109   |
| Total number on sick list ... ..                                  | 71    | 57    | 31    |
| Total number of days on sick list ... ..                          | 614   | 418   | 296   |
| Average daily number on sick list ... ..                          | 1·68  | 1·14  | ·81   |
| Percentage of sick to average number resident ... ..              | 2·00  | 1·12  | ·74   |
| Average number of days on sick list to each patient ... ..        | 8·64  | 7·33  | 9·55  |
| Average sick time to each resident ... ..                         | 4·45  | 2·66  | 2·00  |
| Total number invalided ... ..                                     | 2     | 1     | 2     |
| Percentage of invaliding to total residents ... ..                | 1·45  | ·64   | 1·35  |
| Total deaths ... ..   | —     | 1     | —     |
| Percentage of deaths to total residents ... ..                    | —     | ·64   | —     |
| Percentage of deaths to average number resident ... ..            | —     | ·98   | —     |
| Number of cases of sickness contracted away from residence ... .. | —     | —     | —     |

TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST EUROPEAN OFFICIALS IN THE DESERT ZONE.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 46    | 42    | 27    |
| Average number resident... ..                                     | 32    | 26    | 13    |
| Total number on sick list... ..                                   | 6     | 24    | 11    |
| Total number of days on sick list ... ..                          | 98    | 193   | 215   |
| Average daily number on sick list ... ..                          | ·27   | ·53   | ·59   |
| Percentage of sick to average number resident ... ..              | ·84   | 2·04  | 4·53  |
| Average number of days on sick list to each patient ... ..        | 16·33 | 8·04  | 19·54 |
| Average sick time to each resident ... ..                         | 3·06  | 4·59  | 7·96  |
| Total number invalided ... ..                                     | 2     | 4     | 3     |
| Percentage of invaliding to total residents ... ..                | 4·33  | 9·52  | 11·11 |
| Total deaths ... ..   | 1     | —     | —     |
| Percentage of deaths to total residents ... ..                    | 2·17  | —     | —     |
| Percentage of deaths to average number resident ... ..            | 3·12  | —     | —     |
| Number of cases of sickness contracted away from residence ... .. | —     | —     | —     |

TABLE SHOWING THE SICK, INVALIDING AND DEATH  
RATES AMONGST EUROPEAN OFFICIALS IN THE EAST  
AFRICA PROTECTORATE.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 1,088 | 1,217 | 1,031 |
| Average number resident... ..                                     | 682   | 821   | 777   |
| Total number on sick list... ..                                   | 506   | 539   | 567   |
| Total number of days on sick list ... ..                          | 4,079 | 5,151 | 6,296 |
| Average daily number on sick list ... ..                          | 11·17 | 14·11 | 17·24 |
| Percentage of sick to average number resident ... ..              | 1·64  | 1·72  | 2·22  |
| Average number of days on sick list to each patient ... ..        | 8·06  | 9·56  | 11·10 |
| Average sick time to each resident ... ..                         | 3·74  | 4·23  | 6·10  |
| Total number invalided ... ..                                     | 13    | 17    | 26    |
| Percentage of invaliding to total residents ... ..                | 1·19  | 1·40  | 2·52  |
| Total deaths ... ..   | 7     | 3     | 3     |
| Percentage of deaths to total residents ... ..                    | ·64   | ·25   | ·29   |
| Percentage of deaths to average number resident ... ..            | 1·02  | ·37   | ·38   |
| Number of cases of sickness contracted away from residence ... .. | 1     | —     | —     |

**(c.) NATIVE OFFICIALS.****THE COAST ZONE.**

There were 946 cases treated as in-patients during the year, as against 1,105 the previous year. Three cases died in 1915, the causes being enteric, malaria and respiratory; in 1914 there were no deaths.

The principal disease was, of course, malaria, there being 652 in-patients and 154 out-patients; in 1914 there were 687 cases.

While there were 4 cases invalided in 1914, there were 7 in 1915, for the following causes:—Dysentery (2), debility (2), valvular disease of heart (1), bronchitis (1) and cystitis (1).

**THE MOUNTAINOUS ZONE.**

There were 1,322 admissions, while 907 out-patients were treated. The number of deaths was the same as in the previous year, viz., 4; due to pneumonia (2), dysentery (1) and blackwater fever (1).

The principal diseases were:—Malaria, 573 in-patients and 163 out-patients, and diseases of the digestive organs, 125 in-patients and 212 out-patients.

Nine invalids were sent away, as against 15 the previous year; due to tuberculosis (3), nerves (2), and one each malaria, valvular disease of heart, gastritis and nephritis.

**THE KENIA AND NYANZA PROVINCES.**

There were, this year, 271 in-patients and 156 out-patients; last year the total of those treated in quarters came to 316. Of the admissions this year, malaria was responsible for 196 in-patients and 33 out-patients. There were no deaths.

As against one case invalided last year, there were two this year—one for malaria and one for nerves.

**THE DESERT ZONE.**

The hospital cases totalled 100 as against 72 in 1914, while 954 out-patients were attended to. As in other Provinces, malaria was the chief factor in the admissions, 30 in-patients and 132 out-patients being treated.

There were no invalidings and but one death from malaria, contrasted with the nil return last year.

**TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES AMONGST NATIVE OFFICIALS AT THE COAST ZONE.**

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Total number of officials resident...                      | 600   | 655   | 689   |
| Average number resident...                                 | 424   | 500   | 463   |
| Total number on sick list...                               | 785   | 1,105 | 946   |
| Total number of days on sick list                          | 4,183 | 5,681 | 4,430 |
| Average daily number on sick list                          | 11·46 | 15·56 | 12·13 |
| Percentage of sick to average number resident...           | 2·70  | 3·11  | 2·62  |
| Average number of days on sick list to each patient        | 5·33  | 5·14  | 4·68  |
| Average sick time to each resident                         | 6·97  | 8·67  | 6·43  |
| Total number invalided                                     | 2     | 4     | 7     |
| Percentage of invaliding to total residents                | ·33   | ·61   | 1·01  |
| Total deaths   | 2     | —     | 3     |
| Percentage of deaths to total residents                    | ·33   | —     | ·43   |
| Percentage of deaths to average number resident            | ·47   | —     | ·64   |
| Number of cases of sickness contracted away from residence | —     | —     | —     |



TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST NATIVE OFFICIALS IN THE MOUNTAINOUS  
ZONE.

|   | 1913.  | 1914.  | 1915. |
|---|--------|--------|-------|
| Total number of officials resident ... ..                         | 881    | 1,037  | 1,015 |
| Average number resident... ..                                     | 618    | 736    | 678   |
| Total number on sick list... ..                                   | 1,184  | 1,567  | 1,322 |
| Total number of days on sick list ... ..                          | 14,253 | 12,148 | 7,730 |
| Average daily number on sick list ... ..                          | 39.05  | 33.28  | 21.17 |
| Percentage of sick to average number resident ... ..              | 6.31   | 4.52   | 3.12  |
| Average number of days on sick list to each patient ... ..        | 7.98   | 7.75   | 5.84  |
| Average sick time to each resident ... ..                         | 16.17  | 11.71  | 7.61  |
| Total number invalided ... ..                                     | 6      | 15     | 9     |
| Percentage of invaliding to total residents ... ..                | .68    | 1.44   | .88   |
| Total deaths ... ..   | 4      | 4      | 4     |
| Percentage of deaths to total residents ... ..                    | .45    | .38    | .39   |
| Percentage of deaths to average number resident ... ..            | .64    | .54    | .58   |
| Number of cases of sickness contracted away from residence ... .. | —      | —      | —     |

TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST NATIVE OFFICIALS IN THE KENIA AND  
NYANZA PROVINCES.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident... ..                          | 201   | 240   | 275   |
| Average number resident... ..                                     | 139   | 166   | 198   |
| Total number on sick list... ..                                   | 335   | 316   | 271   |
| Total number of days on sick list ... ..                          | 1,485 | 775   | 1,680 |
| Average daily number on sick list ... ..                          | 4.06  | 2.12  | 4.60  |
| Percentage of sick to average number resident ... ..              | 2.92  | 1.28  | 2.32  |
| Average number of days on sick list to each patient ... ..        | 4.43  | 2.45  | 6.19  |
| Average sick time to each resident ... ..                         | 7.38  | 3.23  | 6.10  |
| Total number invalided ... ..                                     | —     | 1     | 1     |
| Percentage of invaliding to total residents ... ..                | —     | .42   | .36   |
| Total deaths ... ..   | 1     | 5     | —     |
| Percentage of deaths to total residents ... ..                    | .49   | 2.08  | —     |
| Percentage of deaths to average number resident ... ..            | .71   | 3.01  | —     |
| Number of cases of sickness contracted away from residence ... .. | —     | —     | —     |

TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST NATIVE OFFICIALS IN THE DESERT ZONE.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Total number of officials resident ... ..                         | 46    | 34    | 50    |
| Average number resident... ..                                     | 34    | 25    | 40    |
| Total number on sick list... ..                                   | 18    | 72    | 100   |
| Total number of days on sick list ... ..                          | 112   | 184   | 156   |
| Average daily number on sick list ... ..                          | .30   | .50   | .42   |
| Percentage of sick to average number resident ... ..              | .88   | 2.00  | 1.05  |
| Average number of days on sick list to each patient ... ..        | 6.22  | 2.55  | 1.56  |
| Average sick time to each resident ... ..                         | 2.43  | 5.41  | 3.12  |
| Total number invalided ... ..                                     | 2     | —     | —     |
| Percentage of invaliding to total residents ... ..                | 4.34  | —     | —     |
| Total deaths ... ..   | —     | —     | 1     |
| Percentage of deaths to total residents ... ..                    | —     | —     | 2.00  |
| Percentage of deaths to average number resident ... ..            | —     | —     | 2.50  |
| Number of cases of sickness contracted away from residence ... .. | —     | —     | —     |



TABLE SHOWING THE SICK, INVALIDING AND DEATH RATES  
AMONGST NATIVE OFFICIALS IN THE BRITISH  
EAST AFRICA PROTECTORATE.

|   | 1913.  | 1914.  | 1915.  |
|---|--------|--------|--------|
| Total number of officials resident ... ..                         | 1,728  | 1,966  | 1,888  |
| Average number resident... ..                                     | 1,215  | 1,427  | 1,379  |
| Total number on sick list... ..                                   | 2,922  | 3,060  | 2,639  |
| Total number of days on sick list ... ..                          | 20,033 | 18,788 | 13,996 |
| Average daily number on sick list ... ..                          | 54.88  | 51.47  | 38.34  |
| Percentage of sick to average number resident ... ..              | 4.51   | 3.61   | 2.78   |
| Average number of days on sick list to each patient ... ..        | 6.85   | 6.14   | 5.30   |
| Average sick time to each resident ... ..                         | 11.59  | 9.56   | 7.41   |
| Total number invalided ... ..                                     | 10     | 20     | 17     |
| Percentage of invaliding to total residents ... ..                | .57    | 1.02   | .90    |
| Total deaths ... ..   | 7      | 9      | 8      |
| Percentage of deaths to total residents ... ..                    | .40    | .46    | .42    |
| Percentage of deaths to average number resident ... ..            | .57    | .63    | .58    |
| Number of cases of sickness contracted away from residence ... .. | —      | —      | —      |

(d.) **GENERAL EUROPEAN POPULATION.**

**THE COAST ZONE.**

There were 73 admissions to hospital, the chief causes being, malaria (38), enteric (7), and dysentery (4); last year the admissions were 64.

The four deaths recorded were due to enteric, three less than last year.

No estimate of the resident population can be ventured on this year, owing to the upset caused by military operations.

The births registered numbered nine. In 1914 there were seven, and in 1913 the number recorded was 13.

The deaths registered were 23, as compared with 12 in 1914, and eight in 1913.

**THE MOUNTAINOUS ZONE.**

Of the 587 cases admitted for treatment 13 died, the same number of deaths as in 1914, when 352 admissions were recorded. The admissions were chiefly for:—Malaria (222), dysentery (49), enteric (24), blackwater fever (6), digestive (60), and injuries (47).

The deaths were caused by enteric (3), malaria (2), blackwater fever (2), pneumonia (2), and syphilis, endocarditis, abscess of liver, and tumour (1 each).

The number of births registered was 120 and deaths 51, throughout the zone. The figures in 1914 were 137 and 47 respectively.

No estimate of population can be submitted this year.

**KENIA AND NYANZA PROVINCES.**

Thirty-two cases received treatment, as against 40 the previous year. There was 1 death from blackwater fever.

|                          |  |       |       |
|--------------------------|--|-------|-------|
|                          |  | 1915. | 1914. |
| Births registered ... .. |  | 12    | 12    |
| Deaths „ ... ..          |  | 8     | 3     |

No estimate of population can be given.

## THE DESERT ZONE.

One case of blackwater fever, one birth and no deaths are recorded.  
The population may be taken as the same as last year, viz., 60.

*(e)* **GENERAL NATIVE POPULATION.**

## THE COAST ZONE.

4,240 cases were treated as in-patients, as compared with 3,371 last year. The chief causes of admission were:—Malaria (2,079), dysentery (221), respiratory (111), diarrhoea (284), skin (237), and injuries (394).

149 deaths occurred in hospitals, the chief causes being:—Cerebro-spinal meningitis (12), dysentery (38), malaria (13), pneumonia (12), enteritis and diarrhoea (16), ankylostomiasis (12) and injuries (7).

The estimated native population in the coast zone was last year given as 246,736, but military requirements have occasioned large numbers being drafted to and fro throughout the year.

Registration of births and deaths is not compulsory.

## THE MOUNTAINOUS ZONE.

The total number of cases treated as in-patients was 3,683, as compared with 3,775 last year. The deaths recorded were 332, as against 281 in 1914.

The chief causes of admission were:—Cerebro-spinal meningitis (64), dysentery (466), malaria (606), chicken pox (248), enteric (127), pneumonia (213), bronchitis (292), diarrhoea (165) and injuries (324).

The principal causes of mortality were:—Cerebro-spinal meningitis (37), dysentery (88), enteric (16), malaria (22), pneumonia (52), diarrhoea (16) and injuries (14).

The estimated population in the two Provinces may be regarded as that given last year—450,280.

Registration of births and deaths is not compulsory nor practicable at present.

## THE KENIA AND NYANZA PROVINCES.

The total number of in-patients was 2,402, with 125 deaths.

Dysentery, with 230 cases and 39 deaths, and malaria, with 823 admissions, were the principal ailments.

The estimated population is nearly 2,000,000.

Births and deaths are not registered.

## THE DESERT ZONE.

No compiled annual tables or reports have been received from the Northern Frontier District and Serenli, and such figures as are incorporated in the statistical tables have been obtained from monthly returns forwarded.

Included in these figures were 877 admissions and 15 deaths.

The estimated population is probably the same as that recorded last year, viz., 12,000.

No births, deaths or census have been recorded.



### III.—SANITATION.

REPORT BY DR. W. J. RADFORD, PRINCIPAL SANITATION OFFICER, E.A.P.

#### (i.) ADMINISTRATION.

1. The personnel of the Sanitation Division at the commencement of the year 1915 was as follows :—

- 1 Principal Sanitation Officer.
- 1 Plague Officer.
- 3 Medical Officers of Health.
- 1 Nurse.
- 6 Sanitary Inspectors.
- 4 Assistant Surgeons.
- 3 Sub-Assistant Surgeons.
- 1 Compounder.
- 6 Clerks.

2. Appointments during the year :—

- 1 Sanitary Inspector.

3. Reductions during the year :—

- 1 Plague Officer (proceeded on leave to England).
- 1 Medical Officer of Health (resigned the service).

4. Leave during the year :—

- 1 Sanitary Inspector.

#### MILITARY DUTIES.

All the European members of the staff have been engaged in military duties in various capacities, in addition to those in their own department. Dislocation in the routine work has resulted at a time when extra supervision was much needed.

#### (ii.) LEGISLATION DURING 1915 AFFECTING THE MEDICAL DEPARTMENT.

1. *Drugs and Poisons Amendment Ordinance No. 28 of 1915.*

Regulations to be observed in the sale of poisons by companies trading as druggists.

Confers powers to carry on the business of a deceased druggist.

2. *Lunacy Amendment Ordinance No. 17 of 1915.*

Powers of Courts in case of a lunatic residing without the Protectorate, *re* charges and fees.

3. *Regulation of Sale of Native Intoxicating Liquor Ordinance No. 22 of 1915 :—*

In addition to the enactment of these Ordinances, the *Vaccination Ordinance, 1912*, was applied to North Kavirondo and Kisumu districts; and under the *Township Ordinance, 1903*, certain breaches of Sanitary Regulations were made cognizable by Police, Mombasa; Mumps was declared a notifiable disease; and the sale of poultry elsewhere than in markets was declared lawful in Nairobi.





### TRYPANOSOMIASIS.

The number of cases coming under observation in year was :—

|         |     |     |       |
|---------|-----|-----|-------|
| Nairobi | ... | ... | 3     |
| Mumias  | ... | ... | 1     |
|         |     |     | <hr/> |
| Total   | ... | ... | 4     |
|         |     |     | <hr/> |

### FILARIASIS.

The Medical Officer in charge Lamu records his opinion that "roughly some 30-40 % of the population of Lamu and the neighbouring islands are infected with *Filaria Nocturna*. There are also localised centres on the Tana River. General sanitary and antimosquito work is the only way to diminish this infection."

### EPIDEMIC DISEASES.

#### GENERAL.

Fortunately, the occurrence of epidemic diseases in the Protectorate has been limited, both in variety and distribution, to a few centres.

Observed cases of plague have occurred in Nairobi, Kisumu and in North Kavirondo towards the Uganda border. Small-pox was also reported from five districts there; but towards the close of the year evidence was gradually accumulated that an epidemic was threatening in the Nyanza Province, in some districts near Nairobi, and in the Kenia Native Reserve. Measles—a practically new disease—was identified in a few places; and it is interesting to note that the case incidence followed the admission of the disease into Mombasa by sea-borne agency, and successively occurred in that town, Nairobi and district, Kisumu and Kitui, and generally traceable from contacts. A considerable outbreak was notified from Bunyore and Sagam districts in the Nyanza Province during the months of October and November. Chicken-pox was prevalent among the inmates of the Nairobi Jail; and appeared sporadically in other places. No deaths were recorded.

Cerebro-spinal meningitis has also been in evidence, principally in the towns of Nairobi, Kisumu and Mombasa, and sporadically in the Naivasha and Kenia provinces; while a few cases have come under observation in Jubaland.

Efforts were made by segregation in concentration camps, inoculation and vaccination, to protect the many thousands of Natives enrolled for the Carrier Corps from the Nyanza Province, where epidemic disease has long been known to exist and plague and small-pox were reported during the year.

Concentration camps were established at the Yala, Kendu Bay, and Kibos outside and in Kisumu, where these persons were received and treated by the personnel of the Division, the work accomplished being—

|   |             |        |
|---|-------------|--------|
| Number of porters inspected during the year | ...         | 27,993 |
| "    "    "    inoculated                   | "    "    " | 21,988 |
| "    "    "    vaccinated                   | "    "    " | 27,993 |

Two cases of infectious disease occurred in the camps, one small-pox and the other plague.

The working of these camps was a matter of some difficulty, owing to the limitation of staff. Sanitary Inspectors were detailed from the townships for this purpose, and placed in control. The retention of 500-2,000 military porters within the endemic centre of Kisumu has caused considerable anxiety, and nothing but the urgent military situation could have justified such an action.



The facilities afforded for the treatment of actual cases and contacts have been very limited. At Mombasa the properly equipped sanitary station at Kipevu for the reception of sea-borne diseases is not ready for the reception of inmates or the proper disinfection of vessels, and patients are still received at English Point, where the available accommodation is most meagre, or, as usually is the case, must be sent to the Sanitary Station at Zanzibar. The relinquishing of the grant hitherto contributed by the Protectorate to the Zanzibar Government is an additional reason for the establishment of a quarantine station at Mombasa.

No infectious diseases hospital for the reception of European patients suffering from these diseases has as yet been established in the country.

At Nairobi, the segregation camp and buildings have been transferred to another site on the south of the Nairobi River in order to accommodate the new Native location on the original site.

At Kisumu, the quarantine station is represented by some condemned buildings situated in the centre of the town (the Plague Hospital) and a few grass huts on its perimeter.

### PLAGUE.

With the exception of the Nyanza Province, with its chief centre Kisumu, and one case in Nairobi, plague has not been reported in any portion of the Protectorate.

The appended table shows the number of cases that have been identified :—

| Locality.      | Cases. | Deaths. | Percentage of Mortality. |
|----------------|--------|---------|--------------------------|
| Kisumu ... ..  | 33     | 29      | 87·88 %                  |
| Nairobi ... .. | 1      | 1       | 100·00 %                 |
| TOTAL ... ..   | 34     | 30      |                          |

It was stated that towards the end of the year plague had appeared in the districts of Maragoli, Bunyore, Sagam and Seme in the Nyanza Province, but no supervision could be exercised owing to the shortage of staff.

The types observed were bubonic, pneumonic and septicæmic, in the proportions shown.

| Type.             | Cases. | Deaths. | Mortality. |
|-------------------|--------|---------|------------|
| Bubonic ... ..    | 22     | 18      | 81·81 %    |
| Pneumonic ... ..  | 3      | 3       | 100·00 %   |
| Septicæmic ... .. | 9      | 9       | 100·00 %   |
| TOTAL ... ..      | 34     | 30      |            |

Mortality with reference to total number of cases and inoculations :—

|      |  |                        |    |
|------|--|------------------------|----|
| (a). | Number of attacks among the inoculated | ...                    | 7  |
| (b). | "    "    deaths                       | "    "    "            | 5  |
| (c). | "    "    cases                        | "    "    uninoculated | 27 |
| (d). | "    "    deaths                       | "    "    "            | 25 |

## RACES WHO CONTRACTED PLAGUE.

| Race.               |  | Cases.    | Deaths.   |
|---------------------|--|-----------|-----------|
| Asiatics ... ..     |  | 5         | 3         |
| Natives ... ..      |  | 29        | 27        |
| <b>TOTAL ... ..</b> |  | <b>34</b> | <b>30</b> |

Kisumu and district as endemic plague centres constitute a standing menace to the whole Protectorate, as in 15 areas of the town the disease has claimed victims, and this has been the case for the last eight years in succession.

The importance of the town to the whole country needs no insistence; it is a terminus of the Railway, the port of the Uganda Marine, and to it thousands of tons of grain and other country produce are annually brought. This, added to the fact that plague has been reported in the outlying corn producing districts of Maragoli, Bunyore, Sagam and Seme, emphasizes the necessity for the adoption of speedy and thorough measures for the sanitation of the town and district, the erection of rat-proof grain stores and houses, with the installation of a fumigation plant capable of dealing with these materials in bulk.

The measures adopted in townships to anticipate any serious outbreak have consisted of periodical visitations by the staff, voluntary or compulsory inoculation with Haffkin's prophylactic, and a rat destruction campaign. The work accomplished is shown in the following tables:—

## INOCULATION BY HAFKIN'S PROPHYLACTIC.

| Locality.      |  |  | 1913.  | 1914.  | 1915. |                                  |
|----------------|--|--|--------|--------|-------|----------------------------------|
| Mombasa ... .. |  |  | 48,478 | 9,447  | Nil   | } Voluntary<br>inoculation only. |
| Nairobi ... .. |  |  | 576    | 6,839  | 113   |                                  |
| Kisumu ... ..  |  |  | 12,920 | 14,716 | 6,765 |                                  |

## RAT DESTRUCTION.

| Locality.           |  |  | 1913           |                  | 1914.          |                  | 1915.          |                  |
|---------------------|--|--|----------------|------------------|----------------|------------------|----------------|------------------|
|                     |  |  | Number caught. | Number infected. | Number caught. | Number infected. | Number caught. | Number infected. |
| Mombasa ... ..      |  |  | 1,656          | Generally.       | 10,044         | 17               | 19,094         | Nil              |
| Nairobi ... ..      |  |  | 2,882          | 8                | 6,839          | 17               | 10,932         | 1                |
| Kisumu ... ..       |  |  | 10,183         | 12               | 11,084         | 19               | 5,309          | 7                |
| <b>TOTAL ... ..</b> |  |  | <b>14,721</b>  |                  | <b>27,967</b>  |                  | <b>35,335</b>  |                  |

## SMALL POX.

This disease was not recognised in any district in the country until the end of the year, when it became evident that a number of cases were recurring in the Mumias Township, North Kavirondo, and towards the Uganda border, where the disease was reported as being prevalent.

All cases coming under observation at Mombasa were ship-borne, or introduced from outside; no case occurred in the town. Those in Mumias and the Uganda border appeared in October, the disease successively invading Kisumu, October–November; Nairobi, November–December. (At the time of writing, June, 1916, an extensive epidemic has invaded the whole of the Nyanza Province, and is extending to the Kenia and Ukamba Provinces.)



The following cases have been recorded during the year :—

| Locality.           | Cases.    | Deaths.  |
|---------------------|-----------|----------|
| Mombasa ... ..      | 6         | 2        |
| Nairobi ... ..      | 7         | 3        |
| Naivasha ... ..     | 1         | —        |
| Kisumu ... ..       | 4         | —        |
| Mumias ... ..       | 20        | 2        |
| <b>TOTAL ... ..</b> | <b>38</b> | <b>7</b> |

#### VACCINATION.

Twenty-four out of a total of 29 stations have rendered vaccination returns for the year 1915 ; the chief centres of activity being Mombasa (3,583), Nairobi (21,122), Fort Hall (59,352), Kisumu (34,859), and Kitui (21,033).

The following table shows the number of vaccinations performed in the country, with the number of small-pox cases in the last four years :—

|                           | 1912.  | 1913.   | 1914.   | 1915.   |
|---------------------------|--------|---------|---------|---------|
| Cases of small-pox ... .. | 323    | 166     | 8       | 38      |
| Vaccinations ... ..       | 79,252 | 131,757 | 123,245 | 162,184 |

The detailed Vaccination return is added.

#### STATEMENT SHOWING THE PLACES AND NUMBER OF VACCINATIONS PERFORMED AT EACH DURING THE YEAR 1915.

| STATIONS.                 | VACCINATIONS.  |              |               |                |
|---------------------------|----------------|--------------|---------------|----------------|
|                           | Number.        | Failed.      | Perfect.      | Unknown.       |
| Makindu ... ..            | 2              | —            | 1             | 1              |
| Mombasa ... ..            | 3,583          | 126          | 542           | 2,915          |
| Lamu ... ..               | 1,466          | 243          | 264           | 959            |
| Eldoret ... ..            | 37             | 16           | 19            | 2              |
| Machakos ... ..           | 37             | —            | —             | 37             |
| Nairobi Police and Prison | 1,448          | 108          | 1,108         | 232            |
| Nairobi M.O.H. ... ..     | 21,122         | —            | —             | 21,122         |
| Naivasha ... ..           | 119            | 22           | 82            | 15             |
| Kyambu ... ..             | 13             | —            | —             | 13             |
| N'darugu Prison Camp      | 184            | 7            | 172           | 5              |
| Nandi ... ..              | 15             | 8            | 4             | 3              |
| Kisii ... ..              | 196            | 16           | 29            | 151            |
| Embu ... ..               | 5,677          | 813          | 3,884         | 980            |
| Fort Hall ... ..          | 59,352         | —            | 1,113         | 58,239         |
| Nyeri ... ..              | 6,025          | 274          | 1,349         | 4,402          |
| Mumias ... ..             | 5,968          | 616          | 3,486         | 1,866          |
| Kisumu ... ..             | 34,859         | 2,547        | 20,080        | 12,232         |
| Meru ... ..               | 427            | 15           | 111           | 301            |
| Kericho ... ..            | 17             | 5            | 8             | 4              |
| Gobwen ... ..             | 150            | 90           | 60            | —              |
| Kismayu ... ..            | 164            | 143          | 8             | 13             |
| Serenli ... ..            | 148            | 49           | 59            | 40             |
| Kitui ... ..              | 21,033         | 39           | 142           | 20,852         |
| Alexandra ... ..          | 142            | 80           | 43            | 19             |
| <b>TOTAL ... ..</b>       | <b>162,184</b> | <b>5,217</b> | <b>32,564</b> | <b>124,403</b> |

A note of explanation is necessary regarding the number of "unknown" results, viz., 124,403 in a total of 162,184. During the year it has been possible to send trained Native vaccinators into districts where small-pox had been previously reported, or was threatening. These persons worked under the supervision of the Administrative and Medical Staff, and during their itinerary they are unable to estimate the number of successes. Another equation of error has been produced by the exigencies of the service, as thousands of porters had been requisitioned by the Military, when, after vaccination and medical inspection, they were hurriedly passed down country.

It is a well recognised fact that the effects of vaccination are generally delayed, the average time being 8-17 days, before a negative or positive result can, with any degree of certainty, be determined; a period much too lengthy to retain porters in one place, or for the vaccinator to wait for obvious results of his labours. The number of official vaccinators in the country is 13.

#### ENTERIC FEVER.

A considerable increase in the number of reported cases in comparison with last year is observed, viz., 216 cases, with 33 deaths.

This return does not include admissions into the various Military Hospitals.

TABLE OF REPORTED CASES.

| LOCALITY.           | EUROPEANS. |          | OTHER NATIONALITIES. |           |
|---------------------|------------|----------|----------------------|-----------|
|                     | Cases.     | Deaths.  | Cases.               | Deaths.   |
| Mombasa ... ..      | 9          | 4        | 10                   | 3         |
| Nairobi ... ..      | 32         | 3        | 146                  | 16        |
| Kacheliba ... ..    | —          | —        | 1                    | —         |
| Kisumu ... ..       | 1          | —        | 1                    | —         |
| Eldoret ... ..      | 3          | —        | —                    | —         |
| Kericho ... ..      | 1          | —        | —                    | —         |
| Magadi ... ..       | —          | —        | 12                   | 7         |
| <b>TOTAL ... ..</b> | <b>46</b>  | <b>7</b> | <b>170</b>           | <b>26</b> |

From available returns statistics show that 161 cases occurred among those who had not been previously inoculated; of the remaining 55 cases no observations are made.

An outbreak of enteric in the Nairobi Prison was notified early in the year, when 47 cases were reported, the overcrowding due to the retention of both civil and military prisoners being a contributory cause to the dissemination of the disease.

Steps were taken to exclude the possibility of the inclusion of "carriers" within the jail, and all were subjected to Widal's tests; any positive reactions were placed in strict quarantine; 11 war prisoners and nine convicts were subsequently interned as "suspects." As none of these cases had been previously inoculated double inoculations were performed on all prisoners in Nairobi main jail and Kaserine prison, and monthly on all the new convicts confined there.

Total number of prisoners inoculated, 965.

Total number of inoculations during the year, 1,021.

There has been no notification of this disease in the prisons since the inoculation against it was established.

The public was circularised calling attention to the spread of the disease, and the advisability for preventive inoculation; centres were established in



many places, where the personnel of the division attended and performed the operation gratuitously. Some 1,320 persons were inoculated in various parts of the Protectorate. The vaccine used was prepared in the Government Laboratory, Nairobi.

#### CEREBRO-SPINAL MENINGITIS.

A decrease in the number of observed cases has been recorded during the year :—

|  | 1914.  |         | 1915.  |         |
|--|--------|---------|--------|---------|
|  | Cases. | Deaths. | Cases. | Deaths. |
|  | 225    | 103     | 170    | 105     |

Case incidence was most marked during the cold weather, May-August, and a higher degree of fatal termination calls for comment.

#### CHICKEN-POX.

429 cases were notified, the chief centre of infection being Nairobi. No deaths were recorded.

#### MEASLES.

The introduction of this disease was traced to a sea-borne origin; two European children being landed at Mombasa. The family at once proceeded to Kisumu, where a localised epidemic was soon in evidence, the Catholic Mission, Sailors' Lines, and two of H.M. ships in the Uganda Marine becoming successively infected. Shortly after a considerable epidemic was observed in Bunyore and Sagam in the Kisumu district; and later it appeared in the Kitui district. Only one death has been reported.

#### DYSENTERY.

This disease has increased to a large extent in all parts of the country—the type generally observed being bacillary. The case incidence among porters enrolled for military service has caused some anxiety. Active service conditions, inappropriate feeding, inattention to cooking, dust, flies and contaminated water have all played their part in disseminating the disease.

The total number of cases reported in the civil Hospitals and Dispensaries is here shown :—

|                            | 1914.  |         | 1915.  |         |
|----------------------------|--------|---------|--------|---------|
|                            | Cases. | Deaths. | Cases. | Deaths. |
| Europeans ... ..           | 96     | 1       | 134    | 1       |
| Other Nationalities ... .. | 2,717  | 144     | 2,588  | 167     |
| TOTAL ... ..               | 2,813  | 145     | 2,722  | 168     |

In addition to these, the Health Officer at Mombasa reports 350 deaths, Nairobi 89 deaths, and Kisumu 420 cases with 31 deaths.

During the year, the Principal Sanitation Officer, at the request of the military authorities, assisted on three occasions on the Lines of Communication and at the front, in investigating outbreaks of dysentery and beri-beri.

Dr. Shircore has been enabled to continue his investigations at the African Base Hospital on the ova of intestinal parasites; the following précis of results is of great interest.

“ TABLE SHOWING RESULTS OF EXAMINATION OF FÆCES FOR OVA OF  
“ INTESTINAL PARASITES (MARCH TO DECEMBER, 1915.)

“ A total number of 1,010 examinations were performed during the  
“ period mentioned. These figures include African and Indian (including  
“ military) in-patients and out-patients :—

|                    |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|
| “ Positive results | ... | ... | ... | ... | 549 |
| “ Negative results | ... | ... | ... | ... | 461 |

“ 54·36 per cent. of the total examinations were therefore positive.

“ The following show the numbers of individual infections :—

|   |     |     |     |     |       |
|---|-----|-----|-----|-----|-------|
| “ <i>A. duodenale</i>                       | ... | ... | ... | ... | 249   |
| “ <i>T. dispar</i>                          | ... | ... | ... | ... | 234   |
| “ <i>A. lumbricoides</i>                    | ... | ... | ... | ... | 1,966 |
| “ <i>teniae</i> (majority <i>Saginata</i> ) | ... | ... | ... | ... | 126   |
| “ <i>H. nana</i>                            | ... | ... | ... | ... | 1     |
| “ <i>H. diminuta</i>                        | ... | ... | ... | ... | 1     |
| “ <i>S. mansoni</i>                         | ... | ... | ... | ... | 14    |
| “ <i>S. haematobium</i>                     | ... | ... | ... | ... | 2     |
| “ <i>S. subtilis</i>                        | ... | ... | ... | ... | 1     |
| “ <i>O. vermicularis</i>                    | ... | ... | ... | ... | 1     |

“ there were many multiple infections.”

“ Signed J. SHIRCORE,  
“ *Medical Officer,*  
“ Native Hospital.”

#### MUMPS.

This disease has been observed in Nairobi, the Prison and Warders' lines being chiefly affected; 81 cases, with one death, were reported. On one case of bubonic plague being diagnosed as mumps it was deemed desirable to include “mumps” as a notifiable disease.

#### ANTHRAX.

12 cases, with four deaths, came under observation. At Nairobi, where 10 cases were treated in the Quarantine Camp, anthrax serum was used, which proved very successful.

#### TETANUS.

Kisumu reports two cases, which terminated fatally.

#### QUARANTINE CAMPS.

At Mombasa, the chief port in the Protectorate, the accommodation afforded is inadequate. The new Sanitary Station at Kipevu, when completed, will remove many of the disabilities now experienced in dealing with infectious diseases.

The Camp at Nairobi was shifted to a new site near the Prison during the month of July, 1915, in order that facilities may be given for the formation of a native location on the old site.

The Infectious Diseases Hospital at Kisumu is retained in the centre of the town, and is lacking in the essentials for the proper treatment and housing of the sick.

Here, as in other localities in the country where epidemic disease has appeared, temporary grass huts have been erected for the accommodation of patients and contacts.



The attached table shows the number of patients treated in these camps :—

| Disease.                  | Nairobi |         | Ki.umu. |         | Mombasa. |         | TOTAL. |         |
|---------------------------|---------|---------|---------|---------|----------|---------|--------|---------|
|                           | Cases.  | Deaths. | Cases.  | Deaths. | Cases.   | Deaths. | CASES. | DEATHS. |
| Cerebro-spinal meningitis | 33      | 24      | 27      | 21      | 44       | 32      | 104    | 77      |
| Chicken-pox ... ..        | 135     | —       | —       | —       | 6        | —       | 141    | —       |
| Dysentery ... ..          | 3       | —       | —       | —       | —        | —       | 3      | —       |
| Enteric ... ..            | 84      | 11      | —       | —       | 19       | 7       | 103    | 18      |
| Leprosy ... ..            | 1       | —       | —       | —       | —        | —       | 1      | —       |
| Measles ... ..            | 18      | —       | 39      | —       | —        | —       | 57     | —       |
| Pneumonia ... ..          | 1       | —       | —       | —       | —        | —       | 1      | —       |
| Small-pox ... ..          | 7       | 3       | 4       | —       | 6        | 2       | 17     | 5       |
| Whooping Cough ... ..     | 1       | —       | —       | —       | —        | —       | 1      | —       |
| Anthrax... ..             | 10      | 2       | 2       | 2       | —        | —       | 12     | 4       |
| Mumps ... ..              | 81      | 1       | —       | —       | —        | —       | 81     | 1       |
| Lymphangitis ... ..       | 1       | —       | —       | —       | —        | —       | 1      | —       |
| Herpes ... ..             | 1       | —       | —       | —       | —        | —       | 1      | —       |
| Plague ... ..             | —       | —       | 18      | 14      | —        | —       | 18     | 14      |
| <b>TOTAL</b> ... ..       | ...     | ...     | ...     | ...     | ...      | ...     | 541    | 119     |

In addition to these, 1,151 contacts were interned : Nairobi, 14 ; Kisumu, 1,137 ; Mombasa, nil—total, 1,151.

Accommodation for Europeans had to be found in bungalows.

## HELMINTHIC DISEASES.

### ANKYLOSTOMIASIS.

An increase in the number of reported cases on those in previous years is observed, viz., 116, as against 92 in 1914. The condition has been observed chiefly in the Coast Belt ; but it is of interest to record that three Europeans were reported to be infected in the highlands.

### LEPROSY.

The question of the segregation of lepers was a subject that could not be seriously discussed, owing to the general dislocation of civil work and the financial restrictions due to war conditions.

The materialization of the scheme for the establishment of a station on the Coast to be used wholly or in conjunction with the Zanzibar authorities has not been achieved, but in order to meet the increasing needs for accommodation and supervision at Malindi and other places on the littoral, a temporary lazaretto has been opened at Mkunumbi, where some 50 cases are granted quarters on alienated land, and also a contribution is made to the Church Missionary Establishment at Mzizima, Mombasa. In neither place, or indeed in any of the other provinces whence the disease is reported, can the existing arrangements be considered satisfactory. The whole question is one that must be thoroughly considered in all its aspects later.

## (iv.) GENERAL MEASURES.

### SEWAGE DISPOSAL.

Works for the treatment of sewage have not been constructed in any part of the Protectorate ; the disposal of night soil has continued, as heretofore, by dumping into the sea, trenching, by means of cesspools, or distribution on the ground



It is only necessary to allude to the unsatisfactory methods of disposal. The nuisance caused by the floating of matter up Mombasa harbour on the incoming tide, the increase of the mass in evidence due to the concentration of thousands of persons on the Island necessitated by the war, has resulted in an increase in the observed cases of enteric and dysentery. Flies have at times abounded, though every effort has been made to check them, not only here but in other places. It is interesting to note that the fly larvæ or maggots were observed to penetrate to a depth of 12 inches from the surface in the black cotton soil, in places where removal of excreta or refuse had been ineffectually performed, and in scratching the surface of the superficial earth covering pits some months old, generally a fly hatching could be discovered. Though every effort has been made in townships to destroy by incineration human and animal excreta, the accumulation resulting from these camps by force of circumstances retained within inhabited areas has produced a result inimical to the public health.

Towards the end of 1915, after lengthy negotiations, instructions from Government were received that a septic tank should be constructed beneath the main thoroughfare of Nairobi; this proposal neither has or had received the approval of the Health Authorities.

The drainage scheme in its present state is not intended for the carriage of sewage; no outfall works have been initiated, and the bucket system of removal is in vogue; this should be replaced as soon as possible by a water-borne sewage scheme, with appropriate outfall works where the effluent can be treated prior to discharge into the Nairobi River.

It was possible during the year to lay on water obtained from the Nairobi River, and to utilise it for the purpose of continuous flushing in some of the open drains in the town. Many complaints had been received, prior to this, of the smell arising from the manholes in the main thoroughfares; the experiment has proved successful and the nuisance has now been obviated.

Eleven new public latrines were erected in Nairobi, four at Kisumu, and 14 at Mombasa.

At Kisumu, latrines for ships' officers, ratings, Indian and African complements were erected at the pier during the year, thus permitting of ships' latrines being generally closed when the vessels are alongside the wharves.

#### SCAVENGING.

Street and house refuse is either burned, buried, or dumped in suitable places. The Horsfall incinerator at Mombasa has been out of action during the period under review. With the exception of Kisumu, where for some months the work was undertaken by the Health Office, the removal of the material and general scavenging is in the hands of the Municipality or Conservancy Departments, and the executive control of the division is practically nil. An advance has been achieved in Mombasa, Nairobi and Kisumu by the installation of dustbins of an approved pattern, and in Nairobi by the promulgation of rules relating to dustbins and nuisances arising from rubbish; the powers to enforce compliance are vested in the Town Clerk.

#### WATER SUPPLY.

At Mombasa the new water supply from the Shimba Hills was available at the Kilindini end of the island in March, but its distribution was restricted to that area; the town generally still relying on tank and well water.

In the same month the new water supply at Nakuru was laid on to the existing mains in the township, but in an untreated state, as the erection of the sedimentation tanks in the present year was outside financial possibilities; also the funds for the new distributing mains were withdrawn on account of the expenditure in connection with the War. A series of bacteriological and



analytical examinations were made, which confirmed the opinion previously expressed that a process of filtration and storage prior to distribution was essential.

On the 6th May a Board composed of military and civil officers assembled at Kisumu and submitted recommendations affecting the water supply and its distribution to ships of the Uganda Marine. These included the erection of a 10,000-gallon sterilising plant on shore. The recurrence of enteric cases on board the vessels has been surprisingly small since then; the permanent water supply to Kisumu has not as yet been initiated.

There is increasing evidence to show that the Nairobi water supply is deficient in quantity, and no undertaking can be given by the railway authorities, who control it, that the present supply can be guaranteed to essential points such as the Native Location, New Quarantine Camp, or other areas where development is in evidence.

At Kismayu, where the greatest difficulty has long been experienced in supplying the resident European population with potable water, hitherto in the dry season entirely dependent on camel transport for a distance of some ten miles from the origin of supply, a small distillation plant has been erected; and some of the more seriously infected wells have been closed. Others have been covered to prevent the breeding of mosquitoes.

The well water, on which the native population entirely depends, is contaminated and quite unsatisfactory.

On the Northern Frontier, where an outbreak of cholera was reported in the beginning of the year, investigations showed that this was in fact dysentery, traceable to contaminated water. Attention was directed to the safeguarding of the water supplies, periodic cleansing of wells, and the erection of sand filters. Reports received in November state that no further spread of the disease had occurred.

#### DRAINAGE.

In Nairobi some advance has been made in the drainage scheme, 1,141 yards of new masonry drains having been constructed. A new scheme mentioned last year for the drainage of those areas where such were deficient has been prepared and sanction obtained; the question of connecting premises with the main drains now completed has aroused considerable local attention, as the utilization of this aid to sanitation appears to have evoked widely divergent views.

As areas become settled, and what were a few years ago grazing lands are being rapidly converted into building estates, the need for a comprehensive drainage scheme, both for the removal of storm water and the carriage of sewage, becomes more insistent.

The main drainage scheme for the whole town should be defined, and when the main channels are constructed it will be possible for private owners to properly adjust the details of similar undertakings on their own properties to the general plan.

In other townships in the Protectorate the drainage is represented by open channels, with the earth drain predominating, and in the maintenance and care of these the work of the sanitary gangs under the control of the Health Officers has been of the greatest utility. The work in Nairobi, Kisumu and Mombasa has been well organised and sustained. A detailed statement is contained in Table IV. The gangs are daily employed in cleansing open drains, oiling stagnant water, keeping surface drains in a good state of repair, and levelling ground.

Drains have been kept cleansed and repaired to the following extent:—

|         |     |     |     |        |       |
|---------|-----|-----|-----|--------|-------|
| Mombasa | ... | ... | ... | 20,917 | yards |
| Nairobi | ... | ... | ... | 60,950 | „     |
| Kisumu  | ... | ... | ... | 98,587 | „     |



## BUSH CLEARING.

This important duty is directly undertaken by the Health Office gangs in the three chief towns; and financial aid, where possible, for the prosecution of similar work is given by the division to other centres.

The acreage kept clear in the towns is as follows:—

|                |        |       |
|----------------|--------|-------|
| Nairobi ... .. | 817    | Acres |
| Kisumu ... ..  | 205    | „     |
| Mombasa ... .. | 1,766½ | „     |

## HOUSING.

No amelioration in the conditions producing overcrowding call for notice during the year.

A Special Committee convened by Government to report on the Native Location at Nairobi has submitted its recommendations, which have been approved; but, owing to the financial considerations involved, it has been found impossible to establish this greatly needed centre either in Nairobi or elsewhere.

The overcrowding in certain areas in townships, and verandah trading and residence, so inimical to public health, could not be satisfactorily dealt with, and the registration and inspection of “licensed trading premises” has been curtailed. This temporary withdrawal of supervision will be reinforced as soon as a normal condition of affairs is re-established.

Representations have been made to allow of the adoption in the future of the “one man one plot” system; this entails in the future alienation of land, the provision of a variety of sized plots, in order to give opportunities to persons for developing their holdings, and to trade legitimately according to the extent of their means, and so minimise the present necessity that exists for sub-leasing and sub-letting their premises.

These are details of town planning, on which important measure much consideration has been bestowed during the year.

Departmentally, a great advance has been made in the housing of employees, the number of sanitary huts at Kisumu for the accommodation of the Marine, Port and Railway Staff has been increased; and attention has been directed to the permanent huts for Police, Public Works and other subordinates; while every effort has been made to standardize the type of dwelling utilised.

## (iv.) CONDITION OF TRADES AND FACTORIES.

## PUBLIC MARKETS.

There are at—

|                |   |
|----------------|---|
| Mombasa ... .. | 2 |
| Nairobi ... .. | 2 |
| Kisumu ... ..  | 1 |

Considerable advance has been made in the erection of the public market at Mombasa; at Nairobi the greater portion of the Jeevanjee Market still remains unoccupied; and at Kisumu the control remains in private hands.

Small traders with their stores of heterogeneous collection of articles for sale should be definitely excluded from the precincts of markets where fresh commodities are sold; efforts to achieve this end have been made. In the smaller towns, markets are usually provided with a roof and open sides, and are generally well supervised and cleansed; but considerable improvement in this direction is needed in the larger centres, where the almost universal absence of adequate drainage renders it practically impossible to maintain the buildings in a sanitary condition.



## SLAUGHTER HOUSES.

|         |     |     |     |     |   |
|---------|-----|-----|-----|-----|---|
| Kisumu  | ... | ... | ... | ... | 2 |
| Nairobi | ... | ... | ... | ... | 2 |
| Mombasa | ... | ... | ... | ... | 2 |

Water is laid on the abattoir in Nairobi, but not in any other town; improvements have been effected in the drainage of these premises, which have been used by both the military and civil communities.

The Health Office Staff in the towns has been unable to undertake the complete inspection of meat.

## AERATED WATER FACTORIES.

At Mombasa all aerated water factories have been installed with new germ-proof filters of the Berkefeld type, and in two cases the factories were closed for a period and all prepared stock destroyed, as the filters had been found to have been tampered with. One hundred and fifty-three inspections were made at the five factories. The ice factory has also been provided with a large Berkefeld germ-proof filter.

Twenty-two inspections were made of two factories at Nairobi, where unfiltered water is used; seven samples were taken and analysed during the year.

The chief soda-water factory at Kisumu is under the control of the Railway administration; it is supplied with a sterilized water supply, and this distribution has been extended to bottle washing, thus obviating the use of untreated lake water.

## LAUNDRIES.

Piped water from the town supply is used at Nairobi, but elsewhere no safeguard can be afforded that the water used is above suspicion. The establishment of approved dhobi quarters is under consideration in other towns.

## DAIRIES AND MILK SUPPLY.

No improvement has been effected in the regulation of the supply of milk; this must remain in abeyance until the necessary powers have been assumed by legislation.

The Government Analyst's report for 1915 is attached, which speaks for itself:—

“Twenty-six samples of milk were submitted by the Police, Sanitary Inspector, and residents in the town. Of these 19 were adulterated with water, representing 73 % of the total samples. The extent of the adulteration was very serious, 13 of the 19 adulterated samples consisting of between one third and half added water. I have been unable to find any record of milk adulteration in any town, where facilities for analysis exist, which can compare with that of Nairobi.

“The record for the past three years is as follows:—

| Year.  | Samples submitted. | Percentage adulterated. |
|--------|--------------------|-------------------------|
| “ 1913 | 88                 | 34 %                    |
| “ 1914 | 50                 | 70 %                    |
| “ 1915 | 26                 | 73 %                    |

“As fewer samples were submitted during the past year, it would appear that no importance was attached to the condition of affairs revealed by the report of the year 1914.

(Sgd.) “V. H. KIRKHAM,

“26th January, 1916.”

“Government Analyst.

In Nairobi the offence of adulteration of food or drink is non-cognisable to the police, *i.e.*, action can only be taken by the police on instructions from a Magistrate after complaint in a specific case. The sale of milk in the township is however cognisable, and action can be taken. As however it is necessary to prove that the milk was either sold or offered for sale, and as when milk is delivered by arrangement from dairies or persons outside the township boundaries it has been held not to constitute a sale, it will be seen that successful results in these cases are difficult to obtain.

There is no official standard of fat and milk solids. The watering of milk is practically universal, and though the butter supplied from certain farms is excellent, this commodity, largely adulterated with water, is often sold in the town.

Eight successful prosecutions were conducted in Mombasa in respect of adulteration of milk.

### FOOD INSPECTION.

Nairobi— $5\frac{1}{2}$  tons of foodstuffs were seized and condemned, and 11 samples submitted for analysis.

At Mombasa a careful scrutiny has been maintained; the results are appended.

|                       |     |     |          | Examined. | Condemned. |
|-----------------------|-----|-----|----------|-----------|------------|
| Tins of provision     | ... | ... | 23,184   | 23,184    |            |
| Bags of provision     | ... | ... | 11,825   | 1,046     |            |
| Cases of provision    | ... | ... | 7        | 6         |            |
| Meat                  | ... | ... | 130 lbs. | 130 lbs.  |            |
| Aerated Water Bottles | ... | ... | 152      | 152       |            |

### SHIPPING.

Bills of Health issued :—

| Port.   | 1913.     |        | 1914.     |        | 1915.     |        |
|---------|-----------|--------|-----------|--------|-----------|--------|
|         | Steamers. | Dhows. | Steamers. | Dhows. | Steamers. | Dhows. |
| Mombasa | 427       | 146    | 426       | 115    | 189       | 84     |
| Lamu    | 22        | —      | 17        | 378    | 13        | —      |
| Kismayu | 69        | 4      | 55        | 46     | 38        | 51     |

These numbers do not include war vessels, transports and colliers.

No ships were sent to the Zanzibar Quarantine Station. Four cases of small-pox were removed from ships (in one case a Hospital Ship), all derived from India. Considerable delay in giving pratique, and inconvenience has been caused by the sudden alterations in the destination of ships from one harbour to another without warning, and the provision of a motor launch for the use of the Health Office is essential.

### RECOMMENDATIONS.

The promulgation of a Public Health Act in the Protectorate is a measure that is greatly needed. A great amelioration in the insanitary conditions due to overcrowding will be achieved if financial assistance can be obtained for the formation of Native and Asiatic Locations within townships.



## IV.—METEOROLOGY.

There is no Bureau of Meteorology in the Protectorate, and the Department which makes itself responsible for collating such statistical information as is available is the Agricultural.

Only at the Laboratory, Nairobi, are hygrometrical observations taken; nowhere are solar temperatures or notes as to the force and direction of the wind recorded.

TABLES SHOWING MEAN ANNUAL RAINFALL AT VARIOUS  
POINTS IN THE DIFFERENT AREAS FOR THE THREE YEARS.

### COAST AREA.

| STATION.              | 1915. | 1914.   | 1913. |
|-----------------------|-------|---------|-------|
| Malindi... ..         | 46·16 | 35·40   | 46·74 |
| Mombasa ... ..        | 57·45 | 33·27   | 42·88 |
| Mazeras ... ..        | 67·30 | * 31·14 | 43·35 |
| Mackinnon Road ... .. | 32·05 | 26·38   | 24·72 |
| Voi ... ..            | 22·38 | 18·62   | 22·27 |
| Taveta ... ..         | —     | —       | 28·31 |

### MOUNTAINOUS AREA.

|                                  |       |       |       |
|----------------------------------|-------|-------|-------|
| Masongaleni ... ..               | 18·79 | 19·26 | 20·11 |
| Makindu ... ..                   | 18·90 | 18·03 | 17·72 |
| Kiu ... ..                       | 30·27 | 14·43 | 42·77 |
| Athi River ... ..                | 18·07 | 31·68 | 30·01 |
| Nairobi Laboratory ... ..        | 24·01 | 33·07 | 30·71 |
| Kabete Farm, near Nairobi ... .. | 37·21 | 45·27 | 34·24 |
| Naivasha ... ..                  | 20·20 | 21·61 | 26·57 |
| Nakuru... ..                     | 35·61 | 38·16 | 35·03 |
| Molo ... ..                      | 48·95 | 56·76 | 52·98 |
| Eldama Ravine ... ..             | 43·49 | 51·75 | 40·12 |

### NYANZA AND KENIA PROVINCES.

|                              |       |         |         |
|------------------------------|-------|---------|---------|
| Lumbwa ... ..                | 43·10 | 49·31   | 52·10   |
| Muhoroni ... ..              | 97·24 | * 73·29 | * 39·80 |
| Kisumu... ..                 | 46·87 | 48·86   | 43·15   |
| Mumias... ..                 | 76·26 | 79·89   | 61·53   |
| Karungu ... ..               | —     | —       | —       |
| Kericho... ..                | 80·00 | 74·91   | 64·85   |
| Nandi ... ..                 | 54·25 | 72·18   | 66·77   |
| Fort Hall ... ..             | 51·56 | 48·76   | 44·33   |
| Nyeri ... ..                 | 30·16 | 26·88   | 43·12   |
| West Kenia (9 months) ... .. | 33·06 | 40·93   | 48·91   |

### DESERT AREA.

|                        |       |       |       |
|------------------------|-------|-------|-------|
| Kismayu ... ..         | 16·65 | 14·64 | 13·71 |
| Gosha Alexandra ... .. | 17·97 | 21·24 | 29·47 |

\* Broken periods.

Temperature and rainfall tables for Mombasa, Nairobi, Kisumu and Fort Hall are inserted in Table V. of the returns.

## V.—HOSPITALS, DISPENSARIES AND INSTITUTIONS.

### 1.—EUROPEAN HOSPITALS AT NAIROBI AND MOMBASA.

Only statistical figures can be submitted this year, owing to the steady pressure of work in the hospitals. Last year's returns included the naval and military cases treated; amending these so as only to show the civilian sick, the comparison table of admission and death rates is as follows:—

TABLE SHOWING ADMISSION AND DEATH RATES.

|                                   | 1915. | 1914. | 1913. |
|-----------------------------------|-------|-------|-------|
| Total number of beds ... ..       | 156   | 92    | 29    |
| Total number of admissions ... .. | 340   | 431   | 347   |
| Total number of discharged ... .. | 338   | 426   | 328   |
| Total number of deaths ... ..     | 10    | 22    | 14    |

Of the 340 admissions, 106 were officials and 234 were general population.

The actual accommodation at the two hospitals, both civil and military, was:—Nairobi 50 beds, Mombasa 106; that is to say, the total number of civil beds was 29 and military 127.

*Administration.*—The staff at the Nairobi hospital consisted of the medical officer in charge, with a military medical officer as an assistant for a few months of the year. The nursing staff was one matron, three nursing sisters, and a war staff of five probationers.

At Mombasa the staff was one medical officer, two senior nursing sisters, two nursing sisters (later augmented to four), and a war staff of three probationers.

At both hospitals the menial establishments were augmented to meet the military requirements.

*Mortality.*—Of the admissions to Mombasa hospital, 64 were officials, of whom two died, the cause of death being dysentery and blackwater fever; 42 admissions came from the general population. There were four deaths amongst the latter, and all from enteric.

At Nairobi 187 officials were admitted, fortunately with no deaths, and 47 from the general population, with four deaths from malaria, pneumonia, syphilis, and carcinoma of the bowel.

The prevailing diseases were:—

*Malaria.*—There were 65 admissions to the Nairobi hospital as against 101 last year with, this year, one death.

Mombasa hospital showed 54 admissions as against 107, with one death, in 1914.

*Blackwater fever.*—There were four admissions and one death, compared with five and three respectively last year. Both hospitals received two admissions each.



*Enteric fever.*—Nairobi gave the same number of admissions this year as last, viz. : 11, all recoveries, as against three deaths in 1914. Mombasa had nine admissions and four deaths, while in 1914 there were six admissions with two deaths. Two of the admissions to Mombasa had been previously inoculated and both recovered.

*Dysentery.*—Nineteen cases came into Nairobi hospital, all of whom recovered, while in Mombasa hospital eight cases were admitted, of whom one died.

*Operations.*— } No reports have been submitted by the officers in charge  
*Sanitation.*— } of either hospital.

## 2.—THE CIVIL HOSPITALS AND DISPENSARIES.

A summary only of the cases treated in the various hospitals can be submitted this year, as there has been no relaxation in the endless stream of military cases.

|                          | 1915.  |        | 1914.  |         | 1913.  |        |
|--------------------------|--------|--------|--------|---------|--------|--------|
|                          | In.    | Out.   | In.    | Out.    | In.    | Out.   |
| Admissions ... ..        | 11,202 | 85,987 | 14,287 | 120,056 | 11,012 | 95,778 |
| Deaths ... ..            | 621    | —      | 712    | —       | 764    | —      |
| Death-rate per 1,000 ... | 55.43  | —      | 49.88  | —       | 69.37  | —      |

The death rate of course includes all those moribund cases which die in hospital during the first 24 hours after admission, which should properly be excluded in order to obtain a truer index.

No new stations were opened up during the year. On the other hand, medical assistance was withdrawn from the following :—

SERENLI.—One assistant surgeon, murdered by Somalis.

MOYALE.—One medical officer and one sub-assistant surgeon for active service.

MARAKWET.—One sub-assistant surgeon for active service.

The African staffs at the various hospitals were augmented and consolidated coincident with their expansion for military reasons.

## 3.—LUNATIC ASYLUM.

The following table gives the number of admissions and deaths during the past three years.

|                | 1915.       |         | 1914.       |         | 1913.       |         |
|----------------|-------------|---------|-------------|---------|-------------|---------|
|                | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. |
| Males ... ..   | 52          | 19      | 67          | 18      | 62          | 14      |
| Females ... .. | 5           | 1       | 11          | —       | 6           | 2       |
| TOTAL ... ..   | 57          | 20      | 78          | 18      | 68          | 16      |



Dr. Thomson, the Medical Officer in charge, submits the following report:—

*Staff.*—Assistant Surgeon Holmes and Mrs. Holmes relieved Mr. and Mrs. Henfrey, who proceeded on leave in September. The work of all these officers has been done to my entire satisfaction.

The menial staff are also worthy of praise, especially the head warder, who is most excellent.

*Admissions.*—On the 1st January, 1915, there were 37 patients in the Asylum; there were 33 on the 31st December.

The daily average during the year was 40. 57 cases were admitted, 42 discharged, and 20 died.

Of the number admitted 10 were Europeans, eight Asiatics and 39 Africans. The admissions were 13 more than last year, and 25 more than the year before. In fact the number of admissions are equivalent in England to an asylum population of about 500. Every year will add its residue of chronic cases, and the population of the asylum will get automatically larger. In this country there are two factors which counterbalance the increase. One is the extremely large number of discharges, and the other, I am sorry to say, the large death rate. Re-admissions, none during the year.

The mean age of the patients admitted appeared to me about 25 years, though it is very difficult to say. The mean age of the English asylum is about 42. With regard to the nature of the insanity one can only diagnose on broad lines. It is practically impossible to subdivide into the finer classes. One must live among the patients and see them at any time, study each one in fact, before one is certain of the particular form. Here, when I see them two or three times a week at most, I can only seize on the most prominent features, such as would be evident to any intelligent layman. The admissions were classified as follows:—

Idiocy, 2; mania, 17; melancholia, 3; dementia, 8; delusional insanity, 1; dementia precox, 2; mania depressive, 2; acute amentia, 1; general paralysis of the insane, 1; delirium tremens, 1; observation, 18. The general health of the admissions was distinctly unsatisfactory.

With regard to the causation of the attacks, it is practically impossible to get anything approaching a reason. I make a practice of questioning all the admissions. The most popular belief is that "Mungu" (*i.e.* the Almighty) caused them to go insane. Other favourite reasons are poison and witchcraft. Many trivial reasons are given; for example, "I let my father's goats stray and he beat me. This caused me to go insane."

I am inclined to think, judging from the age, acute symptoms and rapid subsidence, that most of the cases are caused by an anæmia of the brain or some disturbance of the cortical cells due to an exhaustion of some sort. I hold the opinion that undue sexual indulgence may play a part in those cases. As I pointed out last year, the admissions as yet are only from the most populous parts of the country, and the natives at least are sent in only when they come under the eye of the police or of some European on his farm.

*Discharges.*—Cases discharged during year, 42, which included 39 recovered and three improved. The recoveries were at the rate of 68·4 per cent. of the admissions. This includes observation cases, all of whom showed signs of mental trouble which cleared up quickly. The recovery rate is enormous. In Britain in 1913 the mean recovery rate according to the report of the Commissioners in Lunacy was 32·7. The average duration of recoveries in the asylum was 334·9 days.



*Deaths.*—The number of deaths was 20, being a percentage of 48·8 of the daily average number resident. The corresponding rate in England in 1913 was 9·4; of course many obvious factors must be taken into consideration in this country. To take one, the ordinary death rate outside must be very much larger than it is in England. The causes of deaths called for little comment. They were mostly from exhaustion, the vital processes just going slower until they stopped altogether. One Indian died within 24 hours from acute amentia. It is a pity that there are no facilities for pathological work at the asylum.

*General History.*—The percentage of workers to inmates was 72·23, which is excellent. This is far better than in England.

*Structural Changes.*—A partition was put up and several minor improvements were made in the female block to accommodate a female European. Part of the corrugated iron fence was taken down behind the Superintendent's house, and re-erected behind the main buildings to form a walled-in exercise ground for unruly patients. The last was done by asylum labour. Drainage and sanitation remain the same. I am sorry to say that the dangerous scheme of lighting by ordinary kerosene lamp remains.

*Escapes.*—There have been two escapes. Both were recovered, one, a European, returning himself.

*Restraint.*—There were 42 cases restrained for a total number of 162 hours. I should like to see this reduced to a minimum, but under present conditions it is hardly fair to expect it.

*Expenditure.*—The allowance for upkeep is well in hand, and is enough with the help of the shamba.

*Shamba.*—About 14 acres were under cultivation. The crop after the long rains was very good, but a failure after the short rains, and a visitation of locusts completed the failure.

#### 4.—GOVERNMENT DENTAL SURGERY.

The record of work carried out during the period from September to December is recorded in Table IX.

Dr. Van Someren was absent on leave from January to August.

#### 5.—GAOLS.

The overcrowding of the gaols noted in last year's report has not been improved by the country being under martial law and the addition to the prisons of numbers of military criminals. The unavoidable conditions produced by a state of war were not conducive to the maintenance of a satisfactory state of health. The epidemic of enteric in the Nairobi gaol has already been alluded to, and while small-pox and plague did not manifest their presence, the prison authorities have been considerably hampered by the occurrence of cerebro-spinal meningitis, and epidemics of chicken-pox and mumps. Nearly half the deaths which occurred in Nairobi were amongst transfers from the N'darugu prison.

TABLE SHOWING SICK AND DEATH RATES AMONGST PRISONERS AT THE MOMBASA, NAIROBI AND N'DARUGU BOMA GAOLS.

|   | Mombasa. |       | Nairobi. |       | N'darugu. |       |
|---|----------|-------|----------|-------|-----------|-------|
|   | 1915.    | 1914. | 1915.    | 1914. | 1915.     | 1914. |
| Total number of prisoners on 1st January ... ..       | 240      | 241   | 560      | 454   | 300       | 300   |
| Number admitted during year ..                        | 1,099    | 742   | 2,074    | 1,979 | 290       | 222   |
| Average daily number in gaol... ..                    | 254      | 249   | 508      | 440   | 300       | 298   |
| Total number placed on sick list ...                  | 355      | 434   | 582      | 361   | 160       | 159   |
| Total number of days on sick list ...                 | 5,318    | 4,319 | 4,497    | 3,327 | 1,779     | 1,433 |
| Average number daily sick ... ..                      | 14.57    | 11.84 | 12.32    | 9.11  | 4.57      | 3.92  |
| Total number of deaths ... ..                         | 11       | 8     | 50       | 22    | 1         | 2     |
| Percentage of deaths to average daily strength ... .. | 4.33     | 3.21  | 9.84     | 5     | .33       | .67   |

The causes of death were as follows :—

|                                      |    |
|--------------------------------------|----|
| Cerebro-spinal meningitis ... ..     | 1  |
| Dysentery ... ..                     | 6  |
| Enteric fever ... ..                 | 5  |
| Malaria ... ..                       | 5  |
| Pneumonia ... ..                     | 13 |
| Syphilis... ..                       | 1  |
| Tubercle ... ..                      | 2  |
| Valvular Disease of the Heart ... .. | 3  |
| Aneurism ... ..                      | 1  |
| Bronchitis ... ..                    | 2  |
| Broncho-pneumonia ... ..             | 3  |
| Diarrhoea ... ..                     | 8  |
| Ascites ... ..                       | 1  |
| Bright's disease ... ..              | 1  |
| Injuries ... ..                      | 1  |
| Other diseases ... ..                | 5  |
| Total... ..                          | 58 |

The medical staff of the three prisons is as follows :—

*Mombasa.*—One resident hospital compounder, with the Senior Medical Officer as visiting Medical Officer.

*Nairobi.*—One visiting Sub-Assistant Surgeon (also in charge of the Police Department and Uganda Railway Locomotive Department Dispensary) and one visiting Medical Officer, who is also the Medical Officer of the Native Hospital and Lunatic Asylum.

*N'Darugu Boma.*—One resident hospital compounder, placed under the Medical Officer of the Nairobi Prison.

Kisumu, Nairobi and Mombasa prisons are gazetted asylums for the reception of lunatics, though, as soon as circumstances permit, such admissions are received into the Nairobi Lunatic Asylum. During the year Mombasa had to entertain two mentally afflicted.

As a routine measure all prisoners are vaccinated on admission.



## RETURNS.

TABLE I.

## ADMINISTRATIVE DIVISION.

|                         |     |     |                                   |
|-------------------------|-----|-----|-----------------------------------|
| Dr. A. D. Milne         | ... | ... | Principal Medical Officer.        |
| Dr. J. A. Haran, C.M.G. | ... | ... | Deputy Principal Medical Officer. |
| Mr. R. Stanley          | ... | ... | Office Superintendent.            |
| Mr. T. Preston          | ... | ... | Clerk.                            |
| Mr. F. Cribb            | ... | ... | "                                 |
| Mr. J. S. Robertson     | ... | ... | Medical Storekeeper.              |

## MEDICAL DIVISION.

|                          |     |     |                                |
|--------------------------|-----|-----|--------------------------------|
| Dr. L. D. Lowsley        | ... | ... | Senior Medical Officer.        |
| Dr. W. Owen-Prichard     | ... | ... | " " "                          |
| Dr. C. L. Chevallier     | ... | ... | Medical Officer.               |
| Dr. F. L. Henderson      | ... | ... | " "                            |
| Dr. J. O. Shircore       | ... | ... | " "                            |
| Dr. G. R. H. Chell       | ... | ... | " "                            |
| Dr. T. F. Lumb           | ... | ... | " "                            |
| Dr. J. L. Gilks...       | ... | ... | " "                            |
| Dr. J. Pugh              | ... | ... | " "                            |
| Dr. C. J. Wilson         | ... | ... | " "                            |
| Dr. V. G. L. van Someren | ... | ... | Dental Surgeon.                |
| Dr. N. P. Jewell         | ... | ... | Medical Officer.               |
| Dr. A. D. J. B. Williams | ... | ... | " "                            |
| Dr. T. H. Massey         | ... | ... | Temporary Medical Officer.     |
| Dr. G. Dunderdale        | ... | ... | " " "                          |
| Dr. P. F. Nunan          | ... | ... | " " "                          |
| Dr. J. H. Thomson        | ... | ... | " " "                          |
| Dr. W. Tudhope           | ... | ... | " " "                          |
| Dr. H. H. V. Welch       | ... | ... | " " "                          |
| Dr. R. W. Spence         | ... | ... | " " "                          |
| Dr. H. R. A. Philp       | ... | ... | District Surgeon.              |
| Mr. F. Knott             | ... | ... | Dispenser.                     |
| Mr. H. Ogden             | ... | ... | "                              |
| Mr. C. A. J. Speller     | ... | ... | "                              |
| Miss E. R. Brown         | ... | ... | Matron.                        |
| Miss H. M. Whitburn      | ... | ... | Nursing Sister.                |
| Miss L. Merryweather     | ... | ... | " "                            |
| Miss R. Paul             | ... | ... | " "                            |
| Miss I. L. Majendie      | ... | ... | " "                            |
| Miss I. Wilson           | ... | ... | " "                            |
| Miss S. J. Harrison      | ... | ... | " "                            |
| Miss A. E. Hobson        | ... | ... | " "                            |
| Miss A. E. Drewe         | ... | ... | " "                            |
| Miss R. S. Blyth         | ... | ... | " "                            |
| Mr. W. Henfrey           | ... | ... | Superintendent Lunatic Asylum. |
| Mrs. L. A. Henfrey       | ... | ... | Matron Lunatic Asylum.         |

## SANITATION DIVISION.

|                    |     |     |                                     |
|--------------------|-----|-----|-------------------------------------|
| Dr. W. J. Radford  | ... | ... | Principal Sanitation Officer.       |
| Dr. R. Small       | ... | ... | Medical Officer of Health, Mombasa. |
| Dr. A. Mouat       | ... | ... | " " " " Kisumu.                     |
| Dr. B. W. Cherrett | ... | ... | " " " " Nairobi.                    |

TABLE I.—*continued.*SANITATION DIVISION—*continued.*

|                       |     |     |   |
|-----------------------|-----|-----|---|
| Mr. A. F. Dennett     | ... | ... | Sanitary Inspector.                       |
| Mr. B. E. F. Wetkin   | ... | ... | " "                                       |
| Mr. W. H. Wood        | ... | ... | " "                                       |
| Mr. E. E. Williams    | ... | ... | " "                                       |
| Mr. F. Strawbridge    | ... | ... | " "                                       |
| Mr. P. Cairns         | ... | ... | " "                                       |
| Mr. J. P. Cook        | ... | ... | " "                                       |
| Miss M. A. Thomlinson | ... | ... | Nurse attached to Health Office, Mombasa. |

TABLE II.

## FINANCIAL.

The sanctioned Medical Budget for the year 1915-16 was a total of £51,797, as compared with £56,886 for the preceding year.

Of the 1915-16 grand total, £40,279 were expended, leaving an unexpended sum of £11,518 as savings.

The Laboratories Division was separated from the Medical Department from the 1st April, 1915, under the Director of Laboratories.

## EXPENDITURE.

The headings under which the vote was arranged were as follows:—

## SCHEDULE XIV.—MEDICAL DEPARTMENTS.

|   | Estimate. | Actual Expenditure. |
|---|-----------|---------------------|
|   | £         | £                   |
| ADMINISTRATIVE DIVISION.  |           |                     |
| Personal emoluments ... ..  | 3,275     | 3,103               |
| (Under this heading are included the salaries and any duty allowances granted, of the Principal Medical Officer, Deputy Principal Medical Officer, Office Superintendent, Medical Storekeeper, Clerical establishment, messengers and packers.)   |           |                     |
| Other charges ... ..  | 603       | 376                 |
| (Under this heading are included Conservancy rates, contingencies, transport:—passages, local travelling, travelling allowances, and carriage of goods; typewriters and uniforms.)  |           |                     |
| MEDICAL DIVISION.   |           |                     |
| Personal emoluments ... ..  | 22,210    | 19,623              |
| (Under this heading are included the salaries, and any duty allowances granted, of the Senior Medical Officers, Medical Officers, Dispensers, Nurses, Superintendent and Matron Lunatic Asylum, Female Lunatic Asylum Attendants, Assistant Surgeons, Sub-Assistant Surgeons, Hospital Compounders, Native Hospital Attendants, Lunatic Asylum Attendants, Leper Lazaretto Attendants, and uniform allowances.) |           |                     |



TABLE II.—*continued.*SCHEDULE XIV.—MEDICAL DEPARTMENTS—*continued.*

|                      | Estimate | Actual<br>Expenditure |
|----------------------|----------|-----------------------|
|                      | £        | £                     |
| Other charges ... .. | 9,003    | 7,927                 |

(Under this heading are included contingencies, upkeep of European and Native Hospitals, Lunatic Asylum and Leper Establishments, medical and surgical stores, including books; transport:—passages, local travelling, travelling allowances and carriage of goods; ration allowances to Medical Subordinates in Northern Frontier District and Serenli, uniforms for Medical Staff, furniture and equipment for hospitals, typewriters, conservancy rates, and fees and expenses of Medical Officers attending courses of instruction in England.)

## SANITATION DIVISION.

|                            |       |       |
|----------------------------|-------|-------|
| Personal emoluments ... .. | 9,608 | 6,607 |
|----------------------------|-------|-------|

(Under this heading are included the salaries and any duty allowances granted, of the Principal Sanitation Officer, Medical Officers of Health, Sanitary Inspectors, Nurse, Assistant and Sub-Assistant Surgeons, Hospital Compounders, Vaccinators, Native Attendants for Infectious Diseases Hospitals, clerical establishment, Engineers for Clayton disinfectors, office, gharry and boat boys.)

|                      |       |       |
|----------------------|-------|-------|
| Other charges ... .. | 7,098 | 2,643 |
|----------------------|-------|-------|

(Under this heading are included epidemics, Sanitary station, Zanzibar; transport:—passages, local travelling, travelling allowances and carriage of goods; typewriters, maintenance of Infectious Diseases Hospitals, disinfectants, bush clearing, mosquito and sleeping sickness preventive measures, contingencies, furniture and equipment for Infectious Diseases Hospitals and Quarantine Stations, ambulance services, upkeep of disinfectors, and uniforms.)

## REVENUE.

The total amount of revenue collected as hospital fees, sales of medicines and surgical stores, bills of health, and registration fees, was as follows:—

|  |               |
|--|---------------|
|  | £             |
| Hospital fees and sales of medicine ... .. | 1,045         |
| Bills of health... ..                      | 158           |
| Registration fees ... ..                   | 22            |
| Total ... ..                               | <u>£1,225</u> |

Last year the total revenue collected amounted to £2,085.

The decreases in revenue for 1915-16 are chiefly due to hospital accommodation being used for military purposes, less shipping entering ports, and also to the item "Laboratory Fees" being dropped from the Medical Budget and included in the Laboratories Department.

TABLE III.

RETURN OF STATISTICS OF POPULATION FOR THE YEAR, 1915.

| EAST AFRICA.                        |     |     |     | Europeans<br>and Whites. | Africans.  | Asiatics. |
|-------------------------------------|-----|-----|-----|--------------------------|------------|-----------|
| 1. Number of Inhabitants in 1915    | ... | ... | ... | 7,769*                   | 3,000,000* | 20,896*   |
| 2. Number of Births during 1915     | ... | ... | ... | 142                      | †          | †         |
| 3. Number of Deaths during 1915     | ... | ... | ... | 82                       | †          | †         |
| 4. Number of Immigrants during 1915 | ... | ... | ... | 2,054                    | ...        | 4,577     |
| 5. Number of Emigrants during 1915  | ... | ... | ... | 1,377                    | ...        | 4,681     |
| 6. Number of Inhabitants in 1914    | ... | ... | ... | 7,032*                   | 3,000,000* | 21,000*   |
| Increase ...                        | ... | ... | ... | 737                      | ...        | ...       |
| Decrease ...                        | ... | ... | ... | ...                      | ...        | 104       |

\* Approximately.

† Not registered.

TABLE IV.

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

|      |     |     |     | Approximate Area. | Number of proclaimed<br>Open Spaces. |
|------|-----|-----|-----|-------------------|--------------------------------------|
| 1913 | ... | ... | ... | 7 sq. miles       | 1 Public Park.                       |
| 1914 | ... | ... | ... | 7 " "             | 1 " "                                |
| 1915 | ... | ... | ... | 7 " "             | 1 " "<br>1 Municipal Forest.         |

2.—POPULATION.

|      |     |     |     | Number of Natives.    |          | Number of Europeans.  |          | Total.                |
|------|-----|-----|-----|-----------------------|----------|-----------------------|----------|-----------------------|
|      |     |     |     | Males.                | Females. | Males.                | Females. |                       |
| 1913 | ... | ... | ... | 23,000                |          | 1,600                 |          | 24,600                |
| 1914 | ... | ... | ... | 18,000                |          | 2,000                 |          | 20,000                |
| 1915 | ... | ... | ... | No estimate possible. |          | No estimate possible. |          | No estimate possible. |

3.—HOUSING.

|                     |     |     |     | Number occupied by Europeans. | Number occupied by Natives<br>and Asiatics. |
|---------------------|-----|-----|-----|-------------------------------|---|
| Number of Houses :— |     |     |     |                               |   |
| 1913                | ... | ... | ... | 377                           | 519   |
| 1914                | ... | ... | ... | 401                           | 551   |
| 1915                | ... | ... | ... | 418                           | 565   |

\*Number of Huts :—

|      |     |     |     |       |
|------|-----|-----|-----|-------|
| 1913 | ... | ... | ... | 1,583 |
| 1914 | ... | ... | ... | 1,556 |
| 1915 | ... | ... | ... | 1,598 |

\* This includes tin shanties, native servants' quarters, mud huts, etc.



TABLE IV.—*continued.*

## 4.—MOSQUITO PROTECTION OF HOUSES.

|  | 1913.      | 1914.      | 1915.      |
|--|------------|------------|------------|
| Number of European houses wholly mosquito-protected ...      | <i>Nil</i> | <i>Nil</i> | <i>Nil</i> |
| 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.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of public buildings erected with sanction as to site, construction, and relation to other buildings ... | 2     | 2     | 1     |
| Number of houses erected with sanction as to site, construction, and relation to other buildings ...           | 116   | 56    | 31    |
| Number of huts erected with sanction as to site, construction, and relation to other buildings ...             | 75    | 62    | 81    |
| Number of houses built without sanction ...  | 13    | 2     | 2     |
| Number of huts built without sanction ...  | ...   | 12    | ...   |

## ACTION TAKEN.

|          | Number of Prosecutions. |         | Number Demolished. |         |
|----------|-------------------------|---------|--------------------|---------|
|          | Huts.                   | Houses. | Huts.              | Houses. |
| 1913 ... | ...                     | 51      | 41                 | 2       |
| 1914 ... | 1                       | 8       | 73                 | 1       |
| 1915 ... | 8                       | 6       | 39                 | 4       |

## 6.—MARKETS.

|          | Total number. | Number paved and drained. | Number unpaved. |
|----------|---------------|---------------------------|-----------------|
| 1913 ... | 2             | 1                         | 1               |
| 1914 ... | 2             | 1                         | 1               |
| 1915 ... | 2             | 1                         | 1               |

## 7.—SLAUGHTER-HOUSES.

|          | Total number. | Number paved and drained. | Number unpaved. |
|----------|---------------|---------------------------|-----------------|
| 1913 ... | 1             | 1                         | <i>Nil</i>      |
| 1914 ... | 1             | 1                         | "               |
| 1915 ... | 1             | 1                         | "               |

TABLE IV.—*continued.*

## 8.—LATRINES.

|  | For Males. |                  | For Females.  |                  |  |
|--|------------|------------------|---|------------------|--|
|  | Number.    | Number of Seats. | Number.   | Number of Seats. |  |
| Number of public latrines :—                             |            |                  |   |                  |  |
| 1913 ... ..  | 10         | 62               | ...   | ...              |  |
| 1914 ... ..  | 12         | 80               | ...   | ...              |  |
| 1915 ... ..  | 23         | 202              | 1*  | 2*               |  |
| Number of new public latrines erected during the year :— |            |                  |   |                  |  |
| 1913 ... ..  | 3          | 24               | Public latrines provided for Asiatics and Africans and are used in common by males and females. | ...              |  |
| 1914 ... ..  | 2          | 16               |   | ...              |  |
| 1915 ... ..  | 11         | 104              |   | ...              |  |
| Number of public latrines repaired during the year :—    |            |                  |   |                  |  |
| 1913 ... ..  | 2          | 16               |   | ...              |  |
| 1914 ... ..  | 2          | 16               |   | ...              |  |
| 1915 ... ..  | 1          | 8                |   | ...              |  |
| Number of public latrines demolished during the year :—  |            |                  |   |                  |  |
| 1913 ... ..  | 3          | ...              |   | ...              |  |
| 1914 ... ..  | ...        | ...              |   | ...              |  |
| 1915 ... ..  | 1          | 4                |   | ...              |  |

\* European.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of private latrines ... ..  | 1,433 | 1,529 | 2,283 |
| Average number of pails of night-soil removed daily... ..                        | 1,433 | 1,529 | 2,283 |
| Average number of soiled pails removed and clean pails substituted ... ..        | ...   | ...   | ...   |
| Number of night-soil men employed to clean latrines and to remove excreta ... .. | 60    | 75    | 92    |
| Number of cesspools ... ..   | 101   | 86    | 55    |
| Number of cesspools cleaned ... ..   | 101   | 86    | 55    |
| Number of new cesspools constructed during the year ... ..                       | 7     | 1     | ...   |
| Number of old cesspools abolished ... ..   | 13    | 16    | 31    |
| Number of cesspools oiled regularly by Department ... ..                         | ...   | ...   | ...   |

## 9.—REMOVAL OF REFUSE.

|   | 1913.         | 1914.          | 1915.                                       |
|---|---------------|----------------|---|
| Number of dustbins ... ..   | 550           | 602            | 1,307                                       |
| Number of carts at work daily to remove refuse from streets                   | 4             | 4              | 10<br>(includes 6 sludge carts)             |
| Amount of refuse removed daily ... ..   | 4 cart-loads  | 8 cartloads    | 20 cartloads<br>(includes 12 loads sludge.) |
| Number of carts at work daily to remove refuse from yards and premises ... .. | 16            | 16             | 19  |
| Amount of refuse removed daily from yards and premises ... ..                 | 33 cart-loads | 32 cart-loads. | 36 cart loads                               |
| Number of men employed for removing refuse ... ..                             | 88            | 88             | 83  |



TABLE IV.—continued.

## 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. |       |       |
|-----------------------------|---|-------|-------|--|-------|-------|--|-------|-------|
|                             | 1913.                                     | 1914. | 1915. | 1913.  | 1914. | 1915. | 1913.  | 1914. | 1915. |
| Buried or trenched ... ..   | 1,433                                     | 1,529 | 2,487 | 20   | ...   | ...   | 3  | 4     | 3     |
| Burnt ... ..                | ...                                       | ...   | ...   | 17   | 40    | 44    | ...  | ...   | 1     |
| Thrown into sea ... ..      | ...                                       | ...   | ...   | ...  | ...   | ...   | ...  | ...   | ...   |
| Otherwise dealt with ... .. | ...                                       | ...   | ...   | ...  | ...   | ...   | ...  | ...   | ...   |

## 11.—AVERAGE DAILY NUMBER OF (CARTLOADS OF CANS, BOTTLES, BROKEN CROCKERY AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
|  | 20    | 20    | 20    |

## 12.—WATER SUPPLY.

| Nature of Water Supply.   | 1913.             | 1914.             | 1915.             |
|---|-------------------|-------------------|-------------------|
| Pipe-borne water :—   |                   |                   |                   |
| Source (river, lake or spring)—   | River and Spring. | River and Spring. | River and Spring. |
| Number of linear yards ... ..   | 481,930           | 495,234           | 503,118           |
| Number of standpipes along roads ... ..   | 57                | 53                | 53                |
| Number of standpipes in compounds and houses ... ..                             | 610               | 769               | 889               |
| Wells :—  |                   |                   |                   |
| Public—   |                   |                   |                   |
| Number ... ..   | <i>Nil</i>        | <i>Nil</i>        | <i>Nil</i>        |
| Number with pumps protected against surface water and mosquito-protected ... .. | "                 | "                 | "                 |
| Private—  |                   |                   |                   |
| Number ... ..   | 2                 | 2                 | 1                 |
| Number protected against surface water and mosquito-protected ... ..            | ...               | ...               | ...               |
| Tanks :—  |                   |                   |                   |
| Public—   |                   |                   |                   |
| Number underground ... ..   | <i>Nil</i>        | <i>Nil</i>        | <i>Nil</i>        |
| Number mosquito-protected and served by pumps ... ..                            | "                 | "                 | "                 |
| Number above ground ... ..  | "                 | "                 | "                 |
| Number mosquito-protected ... ..  | "                 | "                 | "                 |
| Number of 400-gallons capacity or less ... ..                                   | "                 | "                 | "                 |
| Number above 400 gallons ... ..   | "                 | "                 | "                 |
| Private—  |                   |                   |                   |
| Number underground ... ..   | <i>Nil</i>        | <i>Nil</i>        | <i>Nil</i>        |
| Number mosquito-protected ... ..  | "                 | "                 | "                 |
| Number above ground... ..   | 270               | 252               | 163               |
| Number mosquito-protected ... ..  | 270               | 252               | 163               |
| Number of 400-gallons capacity or less ... ..                                   | 102               | 92                | 43 approx.        |
| Number above 400 gallons ... ..   | 168               | 160               | 120 "             |
| Nature of tanks :—  |                   |                   |                   |
| Wood ... ..   | <i>Nil</i>        | <i>Nil</i>        | <i>Nil</i>        |
| Iron ... ..   | 270               | 252               | 163               |
| Concrete ... ..   | <i>Nil</i>        | <i>Nil</i>        | <i>Nil</i>        |
| Barrels :—  |                   |                   |                   |
| Number ... ..   | 170               | 170               | 150 approx.       |
| Number mosquito-protected ... ..  | <i>Nil</i>        | 70                | 140 "             |

TABLE IV.—*continued.*

## 13.—DRAINAGE.

|   | Public.        | Private. |
|---|----------------|----------|
| Masonry Drains—   |                |          |
| Linear yards of masonry drains—                         |                |          |
| 1913 ... ..   | 9,493          | ...      |
| 1914 ... ..   | 24,712         | ...      |
| 1915 ... ..   | 25,853         | ...      |
| Linear yards reconstructed during the year—             |                |          |
| 1913 ... ..   | <i>Nil</i>     | ...      |
| 1914 ... ..   | "              | ...      |
| 1915 ... ..   | "              | ...      |
| Linear yards repaired during the year—                  |                |          |
| 1913 ... ..   | <i>Nil</i>     | ...      |
| 1914 ... ..   | 2,200          | ...      |
| 1915 ... ..   | 400            | ...      |
| Linear yards of new drains constructed during the year— |                |          |
| 1913 ... ..   | 3,689          | ...      |
| 1914 ... ..   | 15,219         | ...      |
| 1915 ... ..   | 1,141          | ...      |
| Earth Drains or Ditches cleansed—                       |                |          |
| Number of linear yards of ditches cleansed—             |                |          |
| 1913 ... ..   | No information | ...      |
| 1914 ... ..   | "              | ...      |
| 1915 ... ..   | 60,176         | ...      |
| Number of linear yards of ditches dug and graded—       |                |          |
| 1913 ... ..   | 4,400          | ...      |
| 1914 ... ..   | 12,893         | ...      |
| 1915 ... ..   | 9,520          | ...      |
| Average frequency of clearing ditches of grass—         |                |          |
| 1913 ... ..   | When necessary | ...      |
| 1914 ... ..   | "              | ...      |
| 1915 ... ..   | "              | ...      |

14.—CLEARANCE OF UNDERGROWTH, LONG GRASS  
AND JUNGLE.

|  | 1913.          | 1914.          | 1915.          |
|--|----------------|----------------|----------------|
| Number of square yards of weeds, grass and vegetation cut and removed ... .. | 5,481,340      | 6,016,120      | 5,575,680      |
| Average frequency of clearance of rank vegetation on same area ... ..        | When necessary | When necessary | When necessary |

## 15.—EXCAVATIONS OF LOW-LYING LAND.

|  | 1913.          | 1914.           | 1915.           |
|--|----------------|-----------------|-----------------|
| Number of pools and excavations ... ..   | 138            | 43              | 20              |
| Number of excavations filled up ... ..   | 108            | 65              | 34              |
| Amount of low-lying and marsh land raised and drained ... ..                       | 5 acres        | approx. 3 acres | approx. 5 acres |
| Number of pools, marshes, etc., fish-stocked ... ..                                | <i>Nil</i>     | <i>Nil</i>      | <i>Nil</i>      |
| Number of cubic yards of material used for filling up pools and excavations ... .. | No information | No information  | No information  |
| Number of persons fined for making new excavations ... ..                          | <i>Nil</i>     | <i>Nil</i>      | 1               |
| Average number of men daily employed in filling up pools, etc. ... ..              | 90             | 10              | 2               |



TABLE IV.—*continued.*

## 16.—OILING.

|   | 1913. | 1914.   | 1915. |
|---|-------|---|-------|
| Number of drains oiled ... ..   | ...   | All mosquito breeding places are either removed or disinfected. |       |
| Number of pools and excavations oiled ... ..  | 79    |   |       |
| Number of tanks and barrels oiled ... ..  | ...   |   |       |
| Average number of men daily employed for oiling drains, pools and water-tanks or barrels ... .. | 7     | 2   | 4     |

## 17.—INSPECTIONS AND PROSECUTIONS.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of Inspectors employed ... ..   | 1     | 2     | 2     |
| Number of houses inspected ... ..  | 898   | 1,552 | 8,196 |
| Number of houses where larvæ were found ... ..                                     | 54    | 42    | 122   |
| Number of notices served to remove conditions causing the breeding of larvæ ... .. | ...   | 286   | 376   |
| Number of persons fined for having mosquito larvæ on premises ... ..               | ...   | 1     | ...   |
| Number of notices served to remove insanitary conditions on premises ... ..        | 906   | 1,080 | 891   |
| Number of persons fined for not removing insanitary conditions after notice ... .. | 44    | 94    | 36    |
| Number of soda and aerated water factories inspected                               | 3     | 2     | 2     |

TABLE IV.

## 1.—SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR IN THE TOWN OF MOMBASA.

|             | Approximate Area.  | Number of proclaimed Open Spaces.      |
|-------------|--|--|
| 1913 ... .. | Native town, 270 acres...<br>Island, 3,360 acres ...   | } 1 public garden, area,<br>1·8 acres. |
| 1914 ... .. | European Town, 194 ac.<br>Native Town, 275 acres<br>Railway Town, 314 „<br>Island, 3,360 acres ... |  |
| 1915 ... .. | Do. do. ...  | } 1 public garden, area,<br>1·8 acres. |

## 2.—POPULATION.

|             | Number of Natives. |          | Number of Europeans. |          | Total.         |
|-------------|--------------------|----------|----------------------|----------|----------------|
|             | Males.             | Females. | Males.               | Females. |                |
| 1913 ... .. | 26,724             |          | 231                  | 42       | Approx. 26,997 |
| 1914 ... .. | 9,500              | 14,800   | 200                  | 45       | „ 24,545       |
| 1915 ... .. | 7,914              | 12,510   | 200                  | 45       | „ 20,669       |

TABLE IV.—*continued.*

## 3.—HOUSING.

|                     | Number occupied by Europeans. | Number occupied by Natives and Asiatics. |
|---------------------|-------------------------------|--|
| Number of Houses :— |                               |  |
| 1913 ... ..         | 100                           | 930                                      |
| 1914 ... ..         | 105                           | 890                                      |
| 1915 ... ..         | 108                           | 900                                      |

## Number of huts :—

|             |       |
|-------------|-------|
| 1913 ... .. | 3,369 |
| 1914 ... .. | 3,423 |
| 1915 ... .. | 3,200 |

## 4.—MOSQUITO PROTECTION OF HOUSES.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of European houses wholly mosquito-protected ...      | } Nil | } Nil | } 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.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Number of public buildings erected with sanction as to site, construction, and relation to other buildings ... .. | ...   | 10    | ...   |
| Number of houses erected with sanction as to site, construction, and relation to other buildings ... ..           | 14    | 34    | 2     |
| Number of huts erected with sanction as to site, construction, and relation to other buildings ... ..             | 125   | 78    | 139   |
| Number of houses built without sanction ... ..  | ...   | 1     | ...   |
| Number of huts built without sanction ... ..  | ...   | ...   | ...   |

## ACTION TAKEN.

|             | Number of Prosecutions. |         | Number Demolished. |         |
|-------------|-------------------------|---------|--------------------|---------|
|             | Huts.                   | Houses. | Huts.              | Houses. |
| 1913 ... .. | ...                     | 2       | 29                 | 1       |
| 1914 ... .. | 4                       | 2       | 135                | ...     |
| 1915 ... .. | ...                     | 10      | 145                | 12      |



TABLE IV.—*continued.*

## 6.—MARKETS.

|             | Total number. | Number paved and drained. | Number unpaved. |
|-------------|---------------|---------------------------|-----------------|
| 1913 ... .. | 3             | 2                         | 1               |
| 1914 ... .. | 3             | 2                         | 1               |
| 1915 ... .. | 3             | 2                         | 1               |

## 7.—SLAUGHTER-HOUSES.

|             | Total number. | Number paved and drained. | Number unpaved. |
|-------------|---------------|---------------------------|-----------------|
| 1913 ... .. | 2             | 2                         | ...             |
| 1914 ... .. | 2             | 2                         | ...             |
| 1915 ... .. | 2             | 2                         | ...             |

## 8.—LATRINES.

|  | For Males. |                  | For Females. |                  |
|--|------------|------------------|--------------|------------------|
|  | Number.    | Number of Seats. | Number.      | Number of Seats. |
| Number of public latrines :—                             |            |                  |              |                  |
| 1913... ..   | 4          | 5                | ...          | 3                |
| 1914... ..   | 7          | 16               | ...          | ...              |
| 1915... ..   | 23         | 89               | 4            | 12               |
| Number of new public latrines erected during the year :— |            |                  |              |                  |
| 1913... ..   | ...        | ...              | ...          | ...              |
| 1914... ..   | ...        | ...              | ...          | ...              |
| 1915... ..   | 5          | 26               | ...          | ...              |
| Number of public latrines repaired during the year :—    |            |                  |              |                  |
| 1913... ..   | ...        | ...              | ...          | ...              |
| 1914... ..   | 2          | ...              | ...          | ...              |
| 1915... ..   | ...        | ...              | ...          | ...              |
| Number of public latrines demolished during the year :—  |            |                  |              |                  |
| 1913... ..   | ...        | ...              | ...          | ...              |
| 1914... ..   | 2          | 10               | ...          | ...              |
| 1915... ..   | 3          | 6                | ...          | ...              |

|  | 1913.       | 1914.    | 1915.    |
|--|-------------|----------|----------|
| Number of private latrines ... ..  | 70          | 194      | 194      |
| Average number of pails of nightsoil removed daily ... ..                    | 173         | 180      | 180      |
| Average number of soiled pails removed and clean pails substituted ... ..    | ...         | ...      | ...      |
| Number of nightsoil men employed to clean latrines and remove excreta ... .. | 15          | 15       | 39       |
| Number of cesspools ... ..   | About 2,000 | Unknown. | Unknown. |
| Number of cesspools cleansed ... ..  | 102         | 63       | 72       |
| Number of new cesspools constructed during the year ... ..                   | About 167   | 82       | 63       |
| Number of old cesspools abolished ... ..                                     | About 6     | 18       | 29       |
| Number of cesspools oiled regularly by Department ... ..                     | ...         | ...      | ...      |

TABLE IV.—*continued.*

## 9.—REMOVAL OF REFUSE.

|   | 1913.   | 1914.   | 1915.   |
|---|---------|---------|---------|
| Number of dustbins ... ..   | 112     | 220     | 347     |
| Number of carts at work daily to remove refuse from streets                   | 20      | 17      | 17      |
| Amount of refuse removed daily ... ..   | 20 tons | 20 tons | 25 tons |
| Number of carts at work daily to remove refuse from yards and premises ... .. | 1       | 1       | 1       |
| Amount of refuse removed daily from yards and premises ...                    | 1 ton   | 1 ton   | 1 ton   |
| Number of men employed for moving refuse ... ..                               | 200     | 152     | 173     |

## 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. |  |       |
|-----------------------------|---|-------|-------|--|-------|-------|--|--|-------|
|                             | 1913.                                     | 1914. | 1915. | 1913.  | 1914. | 1915. | 1913.  | 1914.                                  | 1915. |
| Buried or trenched ... ..   | ...                                       | ...   | ...   | ...  | ...   | ...   | ...  | ...                                    | ...   |
| Burnt .. ... ..             | ...                                       | ...   | 175   | 34   | ...   | ...   | ...  | ...                                    | ...   |
| Thrown into sea ... ..      | 173                                       | 180   | 180   | 3  | ...   | ...   | 10 lbs.  | Discharged direct into sea unmeasured. |       |
| Otherwise dealt with ... .. | ...                                       | ...   | ...   | ...  | 42    | 54    | ...  | ...                                    | ...   |

## 11.—AVERAGE DAILY NUMBER OF CARTLOADS OF CANS, BOTTLES, BROKEN CROCKERY AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

|                        | 1913. | 1914. | 1915. |
|------------------------|-------|-------|-------|
| Thrown into sea ... .. | 2     | 3     | 4     |



TABLE IV.—*continued.*

## 12.—WATER SUPPLY.

| Nature of Water Supply.  | 1913.   | 1914. | 1915.                              |
|--|---------|-------|------------------------------------|
| Pipe-borne water :—  |         |       | Pipe-borne water<br>Killedam only. |
| Source (river, lake or spring)—  | Well.   | Well. | River.                             |
| Number of linear yards ... ..  | ...     | 7,352 | 10,278                             |
| Number of stand-pipes along roads ... ..   | ...     | 12    | 12                                 |
| Number of stand-pipes in compounds and houses ... ..                               | ...     | 10    | 12                                 |
| Wells :—   |         |       |                                    |
| Public—  |         |       |                                    |
| Number ... ..  | 28      | 28    | 28                                 |
| Number with pumps protected against surface water<br>and mosquito-protected ... .. | ...     | ...   | ...                                |
| Private—   |         |       |                                    |
| Number ... ..  | 96      | 96    | 96                                 |
| Number with pumps protected against surface water<br>and mosquito-protected ... .. | ...     | ...   | ...                                |
| Tanks :—   |         |       |                                    |
| Public—  |         |       |                                    |
| Number underground ... ..  | ...     | ...   | ...                                |
| Number mosquito-protected and served by pumps ... ..                               | ...     | ...   | ...                                |
| Number above ground ... ..   | 2       | ...   | ...                                |
| Number mosquito-protected ... ..   | ...     | ...   | ...                                |
| Number of 400 gallons capacity or less ... ..                                      | 2       | ...   | ...                                |
| Number above 400 gallons ... ..  | ...     | ...   | ...                                |
| Private—   |         |       |                                    |
| Number underground... ..   | 66      | 72    | 77                                 |
| Number mosquito-protected ... ..   | Unknown | 72    | 77                                 |
| Number above ground... ..  | 20      | 36    | 155                                |
| Number mosquito-protected ... ..   | Unknown | 36    | 155                                |
| Number of 400 gallons capacity or less ... ..                                      | ...     | ...   | 111                                |
| Number above 400 gallons ... ..  | 66      | 108   | 121                                |
| Nature of tanks :—   |         |       |                                    |
| Wood ... ..  | ...     | ...   | ...                                |
| Iron ... ..  | 8       | 36    | 155                                |
| Concrete ... ..  | 66      | 72    | 77                                 |
| Barrels :—   |         |       |                                    |
| Number ... ..  | 100     |       |                                    |
| Number mosquito-protected ... ..   | ...     | 50%   | 50%.                               |

Many hundreds.  
Impossible to estimate them.

TABLE IV.—*continued.*

## 13.—DRAINAGE.

| Nature of Drainage.  | Public.   | Private. |
|--|---|----------|
| Masonry Drains :—  |   |          |
| Linear yards of masonry drains :—  |   |          |
| 1913 ... ..  | 2,600   | ...      |
| 1914 ... ..  | 3,032   | 1,493    |
| 1915 ... ..  | 4,937   | 1,493    |
| Linear yards reconstructed during the year :—                                  |   |          |
| 1913 ... ..  | 250   | ...      |
| 1914 ... ..  | 50  | 32       |
| 1915 ... ..  | 50  | Unknown  |
| Linear yards repaired during the year :—                                       |   |          |
| 1913 ... ..  | 30  | ...      |
| 1914 ... ..  | ...   | 47       |
| 1915 ... ..  | 101   | Unknown  |
| Linear yards of new drains constructed during the year :—                      |   |          |
| 1913 ... ..  | 250   | ...      |
| 1914 ... ..  | 432   | 493      |
| 1915 ... ..  | 286   | Unknown  |
| Earth drains or ditches cleansed—Number of linear yards of ditches cleansed :— |   |          |
| 1913 ... ..  | ...   | ...      |
| 1914 ... ..  | 1,100   | ...      |
| 1915 ... ..  | 15,690  | ...      |
| Number of linear yards of ditches dug and graded :—                            |   |          |
| 1913 ... ..  | 30  | ...      |
| 1914 ... ..  | 1,359   | ...      |
| 1915 ... ..  | 4,354   | Unknown  |
| Average frequency of clearing ditches of grass :—                              |   |          |
| 1913 ... ..  | Twice yearly  | ...      |
| 1914 ... ..  | Twice in the dry season and fortnightly in the rains. | ...      |
| 1915 ... ..  | do.   | do.      |

## 14.—CLEARANCE OF UNDERGROWTH, LONG GRASS AND JUNGLE.

|  | 1913.             | 1914.                                   | 1915.       |
|--|-------------------|---|-------------|
| Number of square yards of weeds, grass and vegetation cut and removed ... .. | Approx. 150 acres | 111½ acres                              | 1,744½ ac's |
| Average frequency of clearance of rank vegetation on same area ... ..        | 6 months          | Maintained clear at least twice a year. |             |



TABLE IV.—*continued.*  
15.—EXCAVATIONS OF LOW-LYING LAND.

|   | 1913.               | 1914.                                  | 1915.                |
|---|---------------------|--|----------------------|
| Number of pools and excavations ... ..  | 2                   | 27                                     | 27                   |
| Number of excavations filled up ... ..  | 2                   | 43                                     | 30                   |
| Amount of low-lying and marsh land raised and drained ...                             | 2                   | 393,659 ft.<br>raised and<br>levelled. | 3,479                |
| Number of pools, marshes, etc., fish-stocked ... ..                                   | ...                 |  |                      |
| Number of cubic yards of material used for filling up pools<br>and excavations ... .. | 10                  | 800                                    | 1,319                |
| Number of persons fined for making new excavations ... ..                             | ...                 | ...                                    | ...                  |
| Average number of men daily employed in filling up pools, etc.                        | Casual<br>labourers | Casual<br>labourers                    | Casual<br>labourers. |

## 16.—OILING.

|   | 1913.                             | 1914.               | 1915. |
|---|-----------------------------------|---------------------|-------|
| Number of drains oiled ... ..   | A few<br>hundreds<br>Many barrels | 1                   | 1     |
| Number of pools and excavations oiled ... ..  |                                   | 2                   | 2     |
| Number of tanks and barrels oiled ... ..  |                                   | 130                 | 150   |
| Average number of men daily employed for oiling<br>drains, pools, and water tanks or barrels ... .. | 8                                 | Casual labour only. |       |

## 17.—INSPECTIONS AND PROSECUTIONS.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Number of Inspectors employed ... ..  | 2     | 2     | 2     |
| Number of houses inspected ... ..   | 1,186 | 4,097 | 7,359 |
| Number of houses where larvæ were found ... ..  | 10    | 523   | 1,153 |
| Number of notices served to remove conditions causing<br>the breeding of larvæ ... .. | 55    | 132   | 402   |
| Number of persons fined for having mosquito larvæ<br>on premises ... ..               | ...   | 4     | 26    |
| Number of notices served to remove insanitary con-<br>ditions on premises ... ..      | 1,049 | 649   | 634   |
| Number of persons fined for not removing insanitary<br>conditions after notice ... .. | 38    | 42    | 95    |
| Number of soda and aerated water factories inspected                                  | 3     | 5     | 5     |

## TABLE IV.

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

|             | Approximate Area. | Number of proclaimed<br>Open Spaces. |
|-------------|-------------------|--------------------------------------|
| 1913 ... .. | 2½ miles radius.  | 1                                    |
| 1914 ... .. | Do.               | 1                                    |
| 1915 ... .. | Do.               | 1                                    |

## 2.—POPULATION.

|             | Number of Natives. |          | Number of Europeans. |          | Total approx. |
|-------------|--------------------|----------|----------------------|----------|---------------|
|             | Males.             | Females. | Males.               | Females. |               |
| 1913 ... .. | 6,310              | 182      | 66                   | 24       | 6,582         |
| 1914 ... .. | 4,778              | 219      | 75                   | 25       | 5,097         |
| 1915 ... .. | 4,000              | 1,000    | 85                   | 26       | 5,111         |

TABLE IV.—*continued.*

## 3.—HOUSING.

|                     | Number occupied by Europeans. | Number occupied by Natives and Asiatics. |
|---------------------|-------------------------------|--|
| Number of Houses :— |                               |  |
| 1913 ... ..         | 43                            | ...                                      |
| 1914 ... ..         | 51                            | 1  |
| 1915 ... ..         | 55                            | ...                                      |
| Number of Huts :—   |                               |  |
| 1913 ... ..         | ...                           | 768                                      |
| 1914 ... ..         | ...                           | 1,083                                    |
| 1915 ... ..         | ...                           | 1,161                                    |

## 4.—MOSQUITO PROTECTION OF HOUSES.

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of European houses wholly mosquito-protected ...      | 4     | 6     | 11    |
| Number of European houses with mosquito room ... ..          | 1     | 1     | 1     |
| Number rendered during the year wholly mosquito-protected... | ...   | 2     | 5     |
| Number rendered during the year partially mosquito-protected | 5     | 5     | 1     |

## 5.—ERECTION OF NEW BUILDINGS DURING THE YEAR.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Number of public buildings erected with sanction as to site, construction, and relation to other buildings ... .. | 1     | 1     | ...   |
| Number of houses erected with sanction as to site, construction, and relation to other buildings ... ..           | 6     | 12    | 10    |
| Number of huts erected with sanction as to site, construction, and relation to other buildings ... ..             | 173   | 315   | 53    |
| Number of houses built without sanction ... ..  | ...   | ...   | ...   |
| Number of huts built without sanction ... ..  | 15    | ...   | 25    |

## ACTION TAKEN.

|             | Number of Prosecutions. |         | Number Demolished. |         |
|-------------|-------------------------|---------|--------------------|---------|
|             | Huts.                   | Houses. | Huts.              | Houses. |
| 1913 ... .. | ...                     | ...     | 20                 | ...     |
| 1914 ... .. | ...                     | ...     | 67                 | ...     |
| 1915 ... .. | ...                     | ...     | 80                 | ...     |

## 6.—MARKETS.

|             | Total number. | Number paved and drained. | Number unpaved. |
|-------------|---------------|---------------------------|-----------------|
| 1913 ... .. | 1             | 1 drained and unpaved.    | ...             |
| 1914 ... .. | 1             | 1 do.                     | ...             |
| 1915 ... .. | 1             | 1 do.                     | ...             |



TABLE IV.—*continued.*  
7.—SLAUGHTER-HOUSES.

|             | Total number. | Number paved and drained. | Number unpaved. |
|-------------|---------------|---------------------------|-----------------|
| 1913 ... .. | 2             | 2                         | ...             |
| 1914 ... .. | 2             | 2                         | ...             |
| 1915 ... .. | 2             | 2                         | ...             |

## 8.—LATRINES.

|  | For Males. |                  | For Females.  |                  |  |
|--|------------|------------------|---|------------------|--|
|  | Number.    | Number of Seats. | Number.   | Number of Seats. |  |
| Number of public latrines :—                             |            |                  |   |                  |  |
| 1913... ..   | 11         | 97               | Public latrines are only provided for Asiatics and Africans, and are used in common by males and females. | ...              |  |
| 1914... ..   | 14         | 115              |   | ...              |  |
| 1915... ..   | 15         | 136              |   | ...              |  |
| Number of new public latrines erected during the year :— |            |                  |   |                  |  |
| 1913... ..   | 2          | 14               |   | ...              |  |
| 1914... ..   | 3          | 18               |   | ...              |  |
| 1915... ..   | 4          | 45               |   | ...              |  |
| Number of public latrines repaired during the year :—    |            |                  |   |                  |  |
| 1913... ..   | 6          | Not recorded     |   | ...              |  |
| 1914... ..   | 7          | 72               |   | ...              |  |
| 1915... ..   | ...        | ...              |   | ...              |  |
| Number of public latrines demolished during the year :—  |            |                  |   |                  |  |
| 1913... ..   | ...        | ...              |   | ...              |  |
| 1914... ..   | ...        | ...              |   | ...              |  |
| 1915... ..   | 2          | 12               |   | ...              |  |

LATRINES—*continued.*

|  | 1913. | 1914. | 1915. |
|--|-------|-------|-------|
| Number of private latrines ... ..  | 232   | 240   | 295   |
| Average number of pails of nightsoil removed daily ... ..                    | 520   | 589   | 700   |
| Average number of soiled pails removed and clean pails substituted... ..     | ...   | ...   | ...   |
| Number of nightsoil men employed to clean latrines and remove excreta ... .. | 33    | 41    | 42    |
| Number of cesspools ... ..   | 113   | 119   | 119   |
| Number of cesspools cleaned ... ..   | 113   | 119   | 119   |
| Number of new cesspools constructed during the year ... ..                   | 7     | 6     | ...   |
| Number of old cesspools abolished ... ..                                     | 8     | 7     | ...   |
| Number of cesspools oiled regularly by Department ... ..                     | 10    | 10    | ...   |

## 9.—REMOVAL OF REFUSE.

|   | 1913. | 1914. | 1915. |
|---|-------|-------|-------|
| Number of dustbins ... ..   | 169   | 612   | 840   |
| Number of carts at work daily to remove refuse from streets ... ..            | 6     | 7     | 6     |
| Amount of refuse removed daily ... ..   | 12    | 40    | 36    |
| Number of carts at work daily to remove refuse from yards and premises ... .. | 6     | 7     | 6     |
| Amount of refuse removed daily from yards and premises ... ..                 | 12    | 20    | 18    |
| Number of men employed for removing refuse ... ..                             | 31    | 29    | 36    |

TABLE IV.—*continued.*

## 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. |       |       |
|-----------------------------|---|-------|-------|--|-------|-------|--|-------|-------|
|                             | 1913.                                     | 1914. | 1915. | 1913.  | 1914. | 1915. | 1913.  | 1914. | 1915. |
| Buried and trenched ... ..  | 520                                       | 589   | 700   | ...  | 25    | ...   | ...  | 1     | 1     |
| Burnt ... ..                | ...                                       | ...   | ...   | ...  | 15    | ...   | ...  | ...   | ...   |
| Thrown into sea ... ..      | ...                                       | ...   | ...   | ...  | ...   | ...   | ...  | ...   | ...   |
| Otherwise dealt with ... .. | ...                                       | ...   | ...   | 12   | ...   | ...   | 1  | 1     | 1     |

## 11.—AVERAGE DAILY NUMBER OF CARTLOADS OF CANS, BOTTLES, BROKEN CROCKERY, AND OTHER INCOMBUSTIBLE MATERIAL REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

|  | 1913.       | 1914. | 1915. |
|--|-------------|-------|-------|
|  | Unrecorded. | 2     | 2     |

## 12.—WATER SUPPLY.

| Nature of Water Supply.   | 1913.  | 1914.  | 1915.  |
|---|--------|--------|--------|
| Pipe-borne water:—  |        |        |        |
| Source (river, lake or spring)—   | Lake   | Lake   | Lake   |
| Number of linear yards ... ..   | 10,162 | 10,636 | 11,506 |
| Number of standpipes along roads ... ..   | 8      | 11     | 11     |
| Number of standpipes in compounds and houses ... ..                             | 62     | 65     | 67     |
| Wells:—   |        |        |        |
| Public—   |        |        |        |
| Number ... ..   | ...    | ...    | ...    |
| Number with pumps protected against surface water and mosquito-protected ... .. | ...    | ...    | ...    |
| Private—  |        |        |        |
| Number ... ..   | ...    | ...    | ...    |
| Number with pumps protected against surface water and mosquito-protected ... .. | ...    | ...    | ...    |
| Tanks:—   |        |        |        |
| Public—   |        |        |        |
| Number underground ... ..   | ...    | ...    | ...    |
| Number mosquito-protected and served by pumps ... ..                            | ...    | ...    | ...    |
| Number above ground ... ..  | ...    | ...    | ...    |
| Number mosquito-protected ... ..  | ...    | ...    | ...    |
| Number of 400 gallon, capacity or less ... ..                                   | ...    | ...    | ...    |
| Number above 400 gallons ... ..   | ...    | ...    | ...    |
| Private—  |        |        |        |
| Number underground ... ..   | 2      | ...    | ...    |
| Number mosquito-protected ... ..  | ...    | ...    | ...    |
| Number above ground ... ..  | 127    | 184    | 192    |
| Number mosquito-protected ... ..  | 129    | 130    | 130    |
| Number of 400 gallons capacity or less ... ..                                   | ...    | 60     | 62     |
| Number above 400 gallons ... ..   | 129    | 124    | 130    |
| Nature of Tanks:—   |        |        |        |
| Wood ... ..   | ...    | ...    | ...    |
| Iron ... ..   | 95     | 124    | 78     |
| Concrete ... ..   | 34     | 60     | 114    |
| Barrels:—   |        |        |        |
| Number ... ..   | ...    | ...    | ...    |
| Number mosquito-protected ... ..  | ...    | ...    | ...    |



TABLE IV.—*continued.*

## 13.—DRAINAGE.

|   | Public.        | Private. |
|---|----------------|----------|
| <b>Masonry Drains :—</b>                                |                |          |
| Linear yards of masonry drains—                         |                |          |
| 1913 ... ..   | 930            | ...      |
| 1914 ... ..   | 930            | 60       |
| 1915 ... ..   | 930            | 60       |
| Linear yards reconstructed during the year—             |                |          |
| 1913 ... ..   | ...            | ...      |
| 1914 ... ..   | ...            | ...      |
| 1915 ... ..   | ...            | ...      |
| Linear yards repaired during the year—                  |                |          |
| 1913 ... ..   | ...            | ...      |
| 1914 ... ..   | ...            | ...      |
| 1915 ... ..   | ...            | ...      |
| Linear yards of new drains constructed during the year— |                |          |
| 1913 ... ..   | ...            | ...      |
| 1914 ... ..   | ...            | 60       |
| 1915 ... ..   | ...            | ...      |
| <b>Earth drains or ditches cleansed :—</b>              |                |          |
| Number of linear yards of ditches cleansed—             |                |          |
| 1913 ... ..   | 700 yds. daily | ...      |
| 1914 ... ..   | ...            | ...      |
| 1915 ... ..   | 274,950 yds.   | ...      |
| Number of linear yards of ditches dug and graded—       |                |          |
| 1913 ... ..   | 400            | ...      |
| 1914 ... ..   | 108,365        | ...      |
| 1915 ... ..   | 98,887         | ...      |
| Average frequency of clearing ditches of grass—         |                |          |
| 1913 ... ..   | daily          | ...      |
| 1914 ... ..   | monthly        | ...      |
| 1915 ... ..   | fortnightly    | ...      |

14.—CLEARANCE OF UNDERGROWTH, LONG GRASS  
AND JUNGLE.

|  | 1913.        | 1914.        | 1915.         |
|--|--------------|--------------|---------------|
| Number of square yards of weeds, grass and vegetation cut and removed ... .. | 2 sq. miles  | 2 sq. miles  | 988,683       |
| Average frequency of clearance of rank vegetation on same area ... ..        | twice a year | twice a year | thrice yearly |

## 15.—EXCAVATIONS OF LOW-LYING LAND.

|  | 1913.      | 1914.      | 1915.      |
|--|------------|------------|------------|
| Number of pools and excavations ... ..   | ...        | ...        | ...        |
| Number of excavations filled up... ..  | 20         | 25         | ...        |
| Amount of low-lying and marsh land raised and drained ... ..                       | ...        | ...        | ...        |
| Number of pools, marshes, etc., fish-stocked ... ..                                | ...        | ...        | ...        |
| Number of cubic yards of material used for filling up pools and excavations ... .. | No record. | No record. | No record. |
| Number of persons fined for making new excavations... ..                           | ...        | ...        | ...        |
| Average number of men daily employed in filling up pools, etc.                     | No record. | No record. | ---        |

TABLE IV.—*continued.*

## 16.—OILING.

|  | 1913. | 1914.             | 1915. |
|--|-------|-------------------|-------|
| Number of drains oiled . . . . .   | 66    | 228               | 30    |
| Number of pools and excavations oiled . . . . .  | 130   | 319               | 20    |
| Number of tanks and barrels oiled . . . . .  | 24    | 12                | ...   |
| Average number of men daily employed for oiling drains, pools and water-tanks or barrels . . . . . | 1     | occasionally<br>6 | 5     |

## 17.—INSPECTIONS AND PROSECUTIONS.

|   | 1913.   | 1914.   | 1915. |
|---|---------|---------|-------|
| Number of Inspectors employed... . . . .  | 2       | 2       | 1     |
| Number of houses inspected . . . . .  | 5 daily | 5 daily | 1,074 |
| Number of houses where larvæ were found . . . . .                                     | 6       | 4       | ...   |
| Number of notices served to remove conditions causing the breeding of larvæ . . . . . | 3       | 4       | ...   |
| Number of persons fined for having mosquito larvæ on premises . . . . .               | ...     | 2       | ...   |
| Number of notices served to remove insanitary conditions on premises . . . . .        | 236     | 264     | 103   |
| Number of persons fined for not removing insanitary conditions after notice . . . . . | ...     | 2       | 4     |
| Number of soda and aerated water factories inspected... . .                           | 1       | 1       | 1     |

TABLE V.

## METEOROLOGICAL RETURN FOR THE YEAR 1915.

## GOVERNMENT LABORATORY—NAIROBI.

| MONTH.       | TEMPERATURE.   |                   |                |                |             |        | RAINFALL.         |                     |        | WINDS.             |                | Remarks. |
|--------------|----------------|-------------------|----------------|----------------|-------------|--------|-------------------|---------------------|--------|--------------------|----------------|----------|
|              | Solar Maximum. | Minimum on grass. | Shade Maximum. | Shade Minimum. | Mean Range. | Mean.  | Amount in inches. | Degree of Humidity. |        | General Direction. | Average Force. |          |
|              |                |                   |                |                |             |        |                   | 9 a.m.              | 4 p.m. |                    |                |          |
| January      | ...            | ...               | 77·8           | 52·68          | 25·12       | 65·24  | 0·01              | 70·08               | 56·15  | ...                | ...            |          |
| February     | ...            | ...               | 81·4           | 53·91          | 27·49       | 67·65  | 0·44              | 68·54               | 49·87  | ...                | ...            |          |
| March        | ...            | ...               | 82·21          | 61·66          | 20·55       | 71·9   | 2·43              | 76·7                | 52·26  | ...                | ...            |          |
| April        | ...            | ...               | 76·3           | 62·16          | 14·14       | 69·23  | 9·41              | 83·39               | 70·37  | ...                | ...            |          |
| May          | ...            | ...               | 76·18          | 60·01          | 16·17       | 68·09  | 3·20              | 81·5                | 70·00  | ...                | ...            |          |
| June         | ...            | ...               | 74·4           | 58·95          | 15·46       | 66·67  | 1·50              | 84·3                | 72·339 | EAST.              | ...            |          |
| July         | ...            | ...               | 74·92          | 54·79          | 20·13       | 64·85  | 0·01              | 82·43               | 66·32  | ...                | ...            |          |
| August       | ...            | ...               | 73·39          | 55·58          | 17·81       | 64·48  | 0·05              | 83·39               | 68·39  | ...                | ...            |          |
| September    | ...            | ...               | 76·68          | 58·0           | 18·68       | 67·34  | 1·11              | 80·605              | 59·95  | ...                | ...            |          |
| October      | ...            | ...               | 78·58          | 58·5           | 20·08       | 68·54  | 0·61              | 76·81               | 56·44  | ...                | ...            |          |
| November     | ...            | ...               | 72·52          | 57·88          | 14·64       | 65·2   | 4·74              | 84·926              | 71·505 | ...                | ...            |          |
| December     | ...            | ...               | 73·9           | 56·82          | 17·08       | 65·36  | 0·50              | 80·69               | 73·05  | ...                | ...            |          |
| Year Average | ...            | ...               | 76·523         | 57·575         | 18·945      | 67·049 | Total.<br>24·01   | 79·446              | 63·887 | ...                | ...            |          |



TABLE V.—*continued.*  
 METEOROLOGICAL RETURN FOR THE YEAR 1915—*continued.*  
 KABETE FARM, NAIROBI.

| MONTH.           | TEMPERATURE.   |                   |                |                |        |                              | RAINFALL.         |                     | WINDS.             |                | Remarks. |
|------------------|----------------|-------------------|----------------|----------------|--------|------------------------------|-------------------|---------------------|--------------------|----------------|----------|
|                  | Solar Maximum. | Minimum on grass. | Shade Maximum. | Shade Minimum. | Range. | Max. and Min. Mean combined. | Amount in inches. | Degree of Humidity. | General Direction. | Average Force. |          |
| January ...      | ...            | ...               | 82.0           | 44.0           | ...    | 63.0                         | 0.05              | ...                 | ...                | ...            |          |
| February ...     | ...            | ...               | 85.5           | 46.0           | ...    | 65.7                         | 2.23              | ...                 | ...                | ...            |          |
| March ...        | ...            | ...               | 85.0           | 47.0           | ...    | 66.0                         | 3.54              | ...                 | ...                | ...            |          |
| April ...        | ...            | ...               | 80.0           | 55.0           | ...    | 67.5                         | 8.85              | ...                 | ...                | ...            |          |
| May ...          | ...            | ...               | 76.0           | 46.0           | ...    | 61.0                         | 6.46              | ...                 | ...                | ...            |          |
| June ...         | ...            | ...               | 75.0           | 47.0           | ...    | 61.0                         | 5.28              | ...                 | ...                | ...            |          |
| July ...         | ...            | ...               | 77.0           | 39.5           | ...    | 58.2                         | 0.14              | ...                 | ...                | ...            |          |
| August ...       | ...            | ...               | 80.0           | 40.0           | ...    | 60.0                         | 0.04              | ...                 | ...                | ...            |          |
| September ...    | ...            | ...               | 82.0           | 43.0           | ...    | 62.2                         | 2.03              | ...                 | ...                | ...            |          |
| October ...      | ...            | ...               | 84.0           | 44.0           | ...    | 64.0                         | 0.31              | ...                 | ...                | ...            |          |
| November ...     | ...            | ...               | 77.0           | 45.0           | ...    | 61.0                         | 7.90              | ...                 | ...                | ...            |          |
| December ...     | ...            | ...               | 77.5           | 46.5           | ...    | 62.0                         | 0.38              | ...                 | ...                | ...            |          |
| Year Average ... | ...            | ...               | 80.08          | 45.2           | ...    | 62.6                         | Total 37.21       | ...                 | ...                | ...            |          |

## MOMBASA.

| MONTH.           | TEMPERATURE.   |                   |                |                |        |                              | RAINFALL.         |                     | WINDS.             |                | Remarks. |
|------------------|----------------|-------------------|----------------|----------------|--------|------------------------------|-------------------|---------------------|--------------------|----------------|----------|
|                  | Solar Maximum. | Minimum on grass. | Shade Maximum. | Shade Minimum. | Range. | Max. and Min. Mean combined. | Amount in inches. | Degree of Humidity. | General Direction. | Average Force. |          |
| January ...      | ...            | ...               | 87.4           | 72.4           | ...    | 79.9                         | 0.02              | ...                 | ...                | ...            |          |
| February ...     | ...            | ...               | 87.0           | 72.4           | ...    | 79.7                         | ...               | ...                 | ...                | ...            |          |
| March ...        | ...            | ...               | 88.2           | 73.2           | ...    | 80.7                         | 3.51              | ...                 | ...                | ...            |          |
| April ...        | ...            | ...               | 88.2           | 69.9           | ...    | 79.0                         | 6.56              | ...                 | ...                | ...            |          |
| May ...          | ...            | ...               | 86.0           | 70.5           | ...    | 78.2                         | 18.57             | ...                 | ...                | ...            |          |
| June ...         | ...            | ...               | 83.0           | 77.0           | ...    | 80.0                         | 15.30             | ...                 | ...                | ...            |          |
| July ...         | ...            | ...               | 81.6           | 66.9           | ...    | 74.2                         | 3.71              | ...                 | ...                | ...            |          |
| August ...       | ...            | ...               | 83.4           | 67.7           | ...    | 75.5                         | 1.14              | ...                 | ...                | ...            |          |
| September ...    | ...            | ...               | 82.4           | 66.9           | ...    | 74.6                         | 3.89              | ...                 | ...                | ...            |          |
| October ...      | ...            | ...               | 85.9           | 64.0           | ...    | 74.9                         | 2.69              | ...                 | ...                | ...            |          |
| November ...     | ...            | ...               | 88.0           | 71.0           | ...    | 79.5                         | 1.41              | ...                 | ...                | ...            |          |
| December ...     | ...            | ...               | 88.9           | 71.6           | ...    | 80.2                         | 0.65              | ...                 | ...                | ...            |          |
| Year Average ... | ...            | ...               | 85.8           | 70.2           | ...    | 78.0                         | Total 57.45       | ...                 | ...                | ...            |          |

TABLE V.—*continued.*  
 METEOROLOGICAL RETURN FOR THE YEAR 1915—*continued.*

## KISUMU.

| MONTH.           | TEMPERATURE.   |                   |                |                |        |                              | RAINFALL.         |                     | WINDS.             |                | Remarks. |
|------------------|----------------|-------------------|----------------|----------------|--------|------------------------------|-------------------|---------------------|--------------------|----------------|----------|
|                  | Solar Maximum. | Minimum on grass. | Shade Maximum. | Shade Minimum. | Range. | Max. and Min. Mean combined. | Amount in inches. | Degree of Humidity. | General Direction. | Average Force. |          |
| January ...      | ...            | ...               | 97.0           | 64.0           | ...    | 80.5                         | 2.46              | ...                 | ...                | ...            | ...      |
| February ...     | ...            | ...               | 92.0           | 63.0           | ...    | 77.7                         | 0.68              | ...                 | ...                | ...            | ...      |
| March ...        | ...            | ...               | 96.0           | 63.0           | ...    | 79.5                         | 6.79              | ...                 | ...                | ...            | ...      |
| April... ..      | ...            | ...               | 88.0           | 63.0           | ...    | 75.5                         | 7.28              | ...                 | ...                | ...            | ...      |
| May ...          | ...            | ...               | 93.0           | 65.0           | ...    | 79.0                         | 6.47              | ...                 | ...                | ...            | ...      |
| June ...         | ...            | ...               | 85.0           | 64.0           | ...    | 74.5                         | 8.14              | ...                 | ...                | ...            | ...      |
| July ...         | ...            | ...               | 91.0           | 63.0           | ...    | 77.0                         | 0.18              | ...                 | ...                | ...            | ...      |
| August ...       | ...            | ...               | 89.0           | 63.0           | ...    | 76.0                         | 1.94              | ...                 | ...                | ...            | ...      |
| September ...    | ...            | ...               | 91.0           | 61.0           | ...    | 76.0                         | 3.13              | ...                 | ...                | ...            | ...      |
| October ...      | ...            | ...               | 91.0           | 64.0           | ...    | 77.5                         | 3.34              | ...                 | ...                | ...            | ...      |
| November ...     | ...            | ...               | 95.0           | 63.0           | ...    | 79.0                         | 3.07              | ...                 | ...                | ...            | ...      |
| December ...     | ...            | ...               | 91.0           | 64.0           | ...    | 77.5                         | 3.39              | ...                 | ...                | ...            | ...      |
| Year Average ... | ...            | ...               | 91.5           | 63.3           | ...    | 77.4                         | Total. 46.87      | ...                 | ...                | ...            | ...      |

## FORT HALL.

| MONTH.           | TEMPERATURE.   |                   |                |                |        |                              | RAINFALL.         |                     | WINDS.             |                | Remarks. |
|------------------|----------------|-------------------|----------------|----------------|--------|------------------------------|-------------------|---------------------|--------------------|----------------|----------|
|                  | Solar Maximum. | Minimum on grass. | Shade Maximum. | Shade Minimum. | Range. | Max. and Min. Mean combined. | Amount in inches. | Degree of Humidity. | General Direction. | Average Force. |          |
| January ...      | ...            | ...               | 90.0           | ...            | ...    | ...                          | 0.07              | ...                 | ...                | ...            | ...      |
| February ...     | ...            | ...               | 90.0           | 58.0           | ...    | 74.0                         | 0.00              | ...                 | ...                | ...            | ...      |
| March ...        | ...            | ...               | 92.0           | 59.0           | ...    | 75.5                         | 8.86              | ...                 | ...                | ...            | ...      |
| April... ..      | ...            | ...               | 85.0           | 60.0           | ...    | 72.5                         | 11.35             | ...                 | ...                | ...            | ...      |
| May ...          | ...            | ...               | 80.0           | 55.0           | ...    | 67.5                         | 9.77              | ...                 | ...                | ...            | ...      |
| June ...         | ...            | ...               | 78.0           | 52.0           | ...    | 65.0                         | 1.52              | ...                 | ...                | ...            | ...      |
| July ...         | ...            | ...               | 78.0           | 55.0           | ...    | 66.5                         | 0.72              | ...                 | ...                | ...            | ...      |
| August ...       | ...            | ...               | 80.0           | 56.0           | ...    | 65.0                         | 0.00              | ...                 | ...                | ...            | ...      |
| September ...    | ...            | ...               | 88.0           | 56.0           | ...    | 72.0                         | 1.53              | ...                 | ...                | ...            | ...      |
| October ...      | ...            | ...               | 89.0           | 55.0           | ...    | 72.0                         | 6.71              | ...                 | ...                | ...            | ...      |
| November ...     | ...            | ...               | 84.0           | 53.0           | ...    | 68.5                         | 8.70              | ...                 | ...                | ...            | ...      |
| December ...     | ...            | ...               | 82.0           | 56.0           | ...    | 69.0                         | 2.33              | ...                 | ...                | ...            | ...      |
| Year Average ... | ...            | ...               | 84.6           | 50.7           | ...    | 69.7                         | Total. 51.56      | ...                 | ...                | ...            | ...      |



TABLE VI.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1915.

| DISEASES.                                  | EUROPEAN OFFICIALS.                   |   |                      | NATIVE OFFICIALS.                     |                                       |   | GENERAL EUROPEAN POPULATION. |                                       |                                       | GENERAL NATIVE POPULATION.              |                      |                                       |
|--|---------------------------------------|---|----------------------|---------------------------------------|---------------------------------------|---|------------------------------|---------------------------------------|---------------------------------------|---|----------------------|---------------------------------------|
|  | Remaining in Hospital at end of 1914. | YEARLY TOTAL.<br>Admissions.<br>Deaths. | Total cases treated. | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL.<br>Admissions.<br>Deaths. | Total cases treated.         | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL.<br>Admissions.<br>Deaths. | Total cases treated. | Remaining in Hospital at end of 1915. |
| <b>INFECTIVE DISEASES:—</b>                |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Beri-beri ... ..                           | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Cerebro-spinal fever ... ..                | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 1                                       | 1                            | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Chicken-pox ... ..                         | ...                                   | 1                                       | 1                    | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Cholera ... ..                             | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Dengue ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 13                                      | 13                           | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Diphtheria ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Dysentery ... ..                           | 4                                     | 31                                      | 1                    | 35                                    | 2                                     | 4                                       | 112                          | 1                                     | 116                                   | 1                                       | 6                    | 53                                    |
| Endocarditis—Infective ... ..              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Enteric ... ..                             | ...                                   | 11                                      | ...                  | 11                                    | ...                                   | 3                                       | 1                            | 3                                     | ...                                   | 31                                      | 7                    | 31                                    |
| Erysipelas ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | 1                                     | 1                                       | ...                          | 2                                     | ...                                   | ...                                     | ...                  | ...                                   |
| Gonorrhoea ... ..                          | 2                                     | 4                                       | ...                  | 6                                     | ...                                   | 15                                      | ...                          | 15                                    | 1                                     | 4                                       | ...                  | 14                                    |
| Influenza ... ..                           | ...                                   | 8                                       | ...                  | 8                                     | ...                                   | 15                                      | ...                          | 15                                    | 1                                     | ...                                     | ...                  | 3                                     |
| Kala Azar ... ..                           | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Leprosy (a) Nodular ... ..                 | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | 2                                     |
| (b) Anæsthetic ... ..                      | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | 4                                     |
| Malaria (a) Tertian ... ..                 | 1                                     | 90                                      | ...                  | 91                                    | 4                                     | 564                                     | ...                          | 564                                   | 17                                    | 12                                      | ...                  | 12                                    |
| (b) Quartan ... ..                         | ...                                   | 2                                       | ...                  | 2                                     | ...                                   | 5                                       | ...                          | 5                                     | ...                                   | 1                                       | ...                  | 4                                     |
| (c) Estivo-autumnal ... ..                 | 2                                     | 152                                     | ...                  | 154                                   | 3                                     | 11                                      | 866                          | 1                                     | 877                                   | 12                                      | 15                   | 238                                   |
| (d) Chronic malaria ... ..                 | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 16                                      | 1                            | 16                                    | ...                                   | ...                                     | ...                  | 273                                   |
| (e) Blackwater ... ..                      | 3                                     | 1                                       | 3                    | ...                                   | ...                                   | 2                                       | 1                            | 2                                     | ...                                   | 9                                       | 3                    | 9                                     |
| Measles ... ..                             | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Malta fever ... ..                         | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Plague ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Pneumonia ... ..                           | 1                                     | ...                                     | 1                    | ...                                   | 1                                     | 12                                      | 2                            | 13                                    | 1                                     | 2                                       | 7                    | 2                                     |
| Rabies ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Relapsing fever ... ..                     | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 18                                      | ...                  | 18                                    |
| Rheumatic fever ... ..                     | 2                                     | ...                                     | 2                    | ...                                   | 1                                     | 32                                      | ...                          | 33                                    | 3                                     | 1                                       | 5                    | 6                                     |
| Septicæmia ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Trypanosomiasis (Sleeping sickness) ... .. | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Small-pox ... ..                           | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Syphilis (a) Primary ... ..                | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 2                                       | ...                          | 2                                     | ...                                   | 1                                       | 1                    | 1                                     |
| (b) Secondary ... ..                       | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 2                                       | ...                          | 2                                     | ...                                   | 1                                       | 1                    | 1                                     |
| (c) Inherited ... ..                       | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Tetanus ... ..                             | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Tuberculosis ... ..                        | 1                                     | ...                                     | 1                    | ...                                   | 1                                     | ...                                     | ...                          | 1                                     | ...                                   | 6                                       | ...                  | 6                                     |
| Whooping cough ... ..                      | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Yaws ... ..                                | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Yellow fever ... ..                        | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Mumps ... ..                               | 1                                     | ...                                     | 1                    | ...                                   | 5                                     | ...                                     | 5                            | ...                                   | ...                                   | ...                                     | ...                  | 216                                   |
| Other Infectious Diseases ... ..           | 4                                     | ...                                     | 4                    | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | 8                                     |
| <b>INTOXICATIONS:—</b>                     |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Alcoholism ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 4                                       | ...                  | 4                                     |
| Morphinism ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Others ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| <b>GENERAL DISEASES:—</b>                  |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Anæmia ... ..                              | 5                                     | ...                                     | 5                    | ...                                   | 1                                     | 15                                      | ...                          | 16                                    | ...                                   | 3                                       | ...                  | 3                                     |
| Anæmia—Pernicious ... ..                   | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Diabetes ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | 2                                     | ...                                     | 2                            | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Exophthalmic goitre ... ..                 | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Gout ... ..                                | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 1                                       | ...                  | 1                                     |
| Leucocythæmia ... ..                       | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Hodgkin's disease ... ..                   | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Myxœdema ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Purpura ... ..                             | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 1                                       | ...                  | 1                                     |
| Rickets ... ..                             | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Scurvy ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Other General Diseases ... ..              | 1                                     | 20                                      | ...                  | 21                                    | ...                                   | 23                                      | ...                          | 23                                    | 2                                     | 1                                       | 16                   | ...                                   |
| <b>LOCAL DISEASES:—</b>                    |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| <b>Diseases of the Nervous System:—</b>    |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| <b>Sub-section 1.</b>                      |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Neuritis ... ..                            | 1                                     | 6                                       | ...                  | 7                                     | ...                                   | 1                                       | 2                            | ...                                   | 3                                     | ...                                     | 2                    | ...                                   |
| Meningitis ... ..                          | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 2                    | ...                                   |
| Myelitis ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| Hydrocephalus ... ..                       | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| Encephalitis ... ..                        | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Abscess of brain ... ..                    | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | ...                  | ...                                   |
| Congestion of brain ... ..                 | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| <b>Sub-section 2.</b>                      |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Apoplexy ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| Paralysis ... ..                           | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 1                                       | ...                          | 1                                     | ...                                   | 1                                       | ...                  | 1                                     |
| Chorea ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| Epilepsy ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | 1                                       | ...                          | 1                                     | ...                                   | 3                                       | ...                  | 3                                     |
| Neuralgia ... ..                           | 5                                     | ...                                     | 5                    | ...                                   | 33                                    | ...                                     | 33                           | ...                                   | 1                                     | 2                                       | ...                  | 3                                     |
| Hysteria ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 1                    | ...                                   |
| Other Nervous Diseases ... ..              | 1                                     | 4                                       | ...                  | 5                                     | ...                                   | 5                                       | ...                          | 5                                     | 2                                     | 6                                       | ...                  | 8                                     |
| <b>Sub-section 3.</b>                      |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| <b>Mental Diseases—</b>                    |                                       |   |                      |                                       |                                       |   |                              |                                       |                                       |   |                      |                                       |
| Idiocy ... ..                              | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | ...                                     | 2                    | ...                                   |
| Mania ... ..                               | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | 1                                     | 1                                       | ...                  | 2                                     |
| Melancholia ... ..                         | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 1                                       | ...                  | 1                                     |
| Dementia ... ..                            | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 1                                       | ...                  | 1                                     |
| Delusional insanity ... ..                 | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 1                                       | ...                  | 1                                     |
| Other Mental Diseases ... ..               | ...                                   | ...                                     | ...                  | ...                                   | ...                                   | ...                                     | ...                          | ...                                   | ...                                   | 3                                       | ...                  | 3                                     |



TABLE VI.—RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1915—(contd.)

| DISEASES.                                   | EUROPEAN OFFICIALS.                   |               |         | NATIVE OFFICIALS.                     |                                       |               | GENERAL EUROPEAN POPULATION. |                                       |                                       | GENERAL NATIVE POPULATION. |         |                                       |
|---|---------------------------------------|---------------|---------|---------------------------------------|---------------------------------------|---------------|------------------------------|---------------------------------------|---------------------------------------|----------------------------|---------|---------------------------------------|
|   | Remaining in Hospital at end of 1914. | YEARLY TOTAL. |         | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL. |                              | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL.              |         | Remaining in Hospital at end of 1915. |
|   |                                       | Admissions.   | Deaths. |                                       |                                       | Admissions.   | Deaths.                      |                                       |                                       | Admissions.                | Deaths. |                                       |
| <b>LOCAL DISEASES—continued:—</b>           |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| <b>Diseases of the Eye—</b>                 |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Conjunctivitis ... ..                       | 1                                     | 1             | ...     | 31                                    | 31                                    | ...           | 1                            | 1                                     | ...                                   | 104                        | 106     | 1                                     |
| Keratitis ... ..                            | ...                                   | ...           | ...     | 5                                     | 5                                     | ...           | ...                          | ...                                   | ...                                   | 9                          | 10      | 3                                     |
| Ulceration of cornea ... ..                 | ...                                   | ...           | ...     | 9                                     | 9                                     | ...           | ...                          | ...                                   | ...                                   | 10                         | 10      | ...                                   |
| Iritis ... ..                               | 2                                     | 2             | ...     | ...                                   | ...                                   | ...           | 2                            | 2                                     | ...                                   | 9                          | 9       | ...                                   |
| Optic neuritis ... ..                       | ...                                   | ...           | ...     | 1                                     | 1                                     | ...           | ...                          | ...                                   | ...                                   | ...                        | 5       | 1                                     |
| Cataract... ..                              | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 5                          | 5       | ...                                   |
| Other Diseases ... ..                       | 1                                     | 1             | ...     | 4                                     | 4                                     | ...           | 3                            | 3                                     | ...                                   | 38                         | 39      | ...                                   |
| <b>Diseases of the Ear:—</b>                |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Inflammation ... ..                         | 1                                     | 1             | ...     | 8                                     | 8                                     | ...           | 1                            | 1                                     | ...                                   | 16                         | 16      | ...                                   |
| Other Diseases ... ..                       | ...                                   | ...           | 2       | 1                                     | 3                                     | ...           | 1                            | 1                                     | 1                                     | 4                          | 4       | ...                                   |
| <b>Diseases of the Nose ... ..</b>          |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| ...   | 6                                     | 6             | ...     | 45                                    | 45                                    | ...           | 1                            | 1                                     | ...                                   | 68                         | 68      | ...                                   |
| <b>Diseases of the Circulatory System:—</b> |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Pericarditis ... ..                         | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Endocarditis ... ..                         | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | 1                                     | ...                                   | ...                        | ...     | ...                                   |
| Valvular Mitral ... ..                      | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 2                            | 2                                     | ...                                   | 12                         | 11      | 12                                    |
| Aortic ... ..                               | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Tricuspid ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Pulmonary ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Arterial sclerosis ... ..                   | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | ...                                   | 2                          | 1       | 2                                     |
| Aneurism ... ..                             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Other Diseases ... ..                       | ...                                   | ...           | ...     | 3                                     | 1                                     | 3             | ...                          | 7                                     | ...                                   | 8                          | 8       | ...                                   |
| <b>Diseases of the Respiratory System:—</b> |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Laryngitis ... ..                           | 1                                     | 1             | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | ...                                   | 1                          | 1       | ...                                   |
| Bronchitis ... ..                           | 14                                    | 14            | 1       | 107                                   | 108                                   | 2             | 2                            | 5                                     | 7                                     | 1                          | 9       | 4                                     |
| Broncho-pneumonia ... ..                    | 1                                     | 1             | ...     | ...                                   | ...                                   | ...           | 2                            | 2                                     | 1                                     | 2                          | 128     | 17                                    |
| Abscess of lung ... ..                      | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | 1                                     |
| Gangrene of lung ... ..                     | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Emphysema ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | ...                                   | ...                        | ...     | ...                                   |
| Pleurisy ... ..                             | 6                                     | 6             | 1       | 5                                     | 5                                     | 2             | ...                          | ...                                   | 1                                     | 35                         | 2       | 37                                    |
| Empyema ... ..                              | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 2                          | 2       | ...                                   |
| Other Diseases... ..                        | 1                                     | 9             | 10      | 1                                     | 98                                    | 99            | ...                          | 7                                     | 7                                     | 1                          | 1       | 37                                    |
| <b>Diseases of the Digestive System:—</b>   |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Stomatitis ... ..                           | ...                                   | ...           | ...     | 1                                     | 1                                     | ...           | 1                            | 1                                     | ...                                   | 1                          | 5       | 6                                     |
| Caries of teeth... ..                       | 1                                     | 3             | 4       | 9                                     | 9                                     | ...           | 9                            | 9                                     | 3                                     | 15                         | 15      | 1                                     |
| Glossitis ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 4                          | 4       | ...                                   |
| Sore throat ... ..                          | 6                                     | 6             | ...     | 5                                     | 5                                     | ...           | 2                            | 2                                     | ...                                   | 18                         | 18      | ...                                   |
| Inflammation of tonsils ... ..              | 1                                     | 23            | 24      | 15                                    | 15                                    | ...           | 11                           | 11                                    | ...                                   | 19                         | 19      | ...                                   |
| Gastritis ... ..                            | 9                                     | 9             | ...     | 18                                    | 18                                    | 1             | 2                            | 2                                     | ...                                   | 23                         | 23      | 1                                     |
| Ulceration of stomach ... ..                | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Hæmatemesis ... ..                          | 1                                     | 1             | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Dilatation of stomach ... ..                | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Stricture of stomach ... ..                 | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Dyspepsia ... ..                            | 4                                     | 4             | ...     | 15                                    | 15                                    | 1             | 6                            | 6                                     | 1                                     | 19                         | 20      | ...                                   |
| Enteritis ... ..                            | 4                                     | 4             | ...     | 1                                     | 1                                     | ...           | 2                            | 2                                     | 1                                     | 18                         | 8       | 19                                    |
| Appendicitis ... ..                         | 1                                     | 1             | ...     | 4                                     | 4                                     | ...           | 1                            | 1                                     | ...                                   | 4                          | 1       | 4                                     |
| Colitis ... ..                              | 1                                     | 1             | ...     | 2                                     | 2                                     | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Ulceration of intestines ... ..             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Sprue ... ..                                | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Hernia ... ..                               | 2                                     | 2             | ...     | 13                                    | 13                                    | ...           | 9                            | 9                                     | 3                                     | 16                         | 1       | 16                                    |
| Diarrhoea ... ..                            | 7                                     | 7             | 1       | 55                                    | 56                                    | 1             | 12                           | 13                                    | 10                                    | 546                        | 28      | 556                                   |
| Constipation ... ..                         | 1                                     | 1             | ...     | 12                                    | 12                                    | ...           | 2                            | 2                                     | 1                                     | 39                         | 40      | ...                                   |
| Colic ... ..                                | 3                                     | 3             | ...     | 47                                    | 47                                    | 1             | ...                          | ...                                   | ...                                   | 81                         | 81      | ...                                   |
| Hæmorrhoids ... ..                          | 3                                     | 3             | ...     | 11                                    | 11                                    | ...           | 8                            | 8                                     | 2                                     | 7                          | 7       | 1                                     |
| Pancreatitis ... ..                         | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Hepatitis (Acute) ... ..                    | 2                                     | 2             | ...     | 15                                    | 15                                    | ...           | 4                            | 4                                     | 1                                     | 13                         | 1       | 14                                    |
| Abscess ... ..                              | 1                                     | 1             | ...     | ...                                   | ...                                   | ...           | 2                            | 1                                     | 2                                     | 6                          | 3       | 6                                     |
| Cirrhosis ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 2                          | 2       | ...                                   |
| Jaundice ... ..                             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 2                          | 2       | ...                                   |
| Peritonitis ... ..                          | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 3                          | 2       | 3                                     |
| Ascitis ... ..                              | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | 2                                     | 9                          | 1       | 11                                    |
| Other Diseases ... ..                       | 8                                     | 8             | ...     | 14                                    | 14                                    | ...           | 7                            | 7                                     | 1                                     | 26                         | 3       | 26                                    |
| <b>Diseases of the Lymphatic System:—</b>   |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Splenitis ... ..                            | ...                                   | ...           | ...     | 10                                    | 10                                    | ...           | 5                            | 5                                     | ...                                   | 52                         | 52      | 1                                     |
| Inflammation of lymphatic gland ... ..      | 5                                     | 5             | 1       | 5                                     | 5                                     | 1             | ...                          | ...                                   | 1                                     | 52                         | 53      | 1                                     |
| Suppuration of lymphatic gland ... ..       | 2                                     | 2             | ...     | 1                                     | 1                                     | 1             | 1                            | 1                                     | ...                                   | 17                         | 1       | 17                                    |
| Lymphangitis ... ..                         | 1                                     | 1             | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 5                          | 1       | 5                                     |
| Elephantiasis ... ..                        | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Other Diseases ... ..                       | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | 1                                     | 2                          | 3       | ...                                   |
| <b>Diseases of the Urinary System:—</b>     |                                       |               |         |                                       |                                       |               |                              |                                       |                                       |                            |         |                                       |
| Acute nephritis ... ..                      | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | 2                          | 2       | ...                                   |
| Bright's disease ... ..                     | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | 2                                     | 9                          | 6       | 9                                     |
| Pyelitis ... ..                             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | ...                                   | ...                        | ...     | ...                                   |
| Calculus ... ..                             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Renal colic ... ..                          | ...                                   | ...           | ...     | 3                                     | 3                                     | ...           | 2                            | 2                                     | 1                                     | ...                        | ...     | ...                                   |
| Cystitis ... ..                             | ...                                   | ...           | ...     | 1                                     | 1                                     | ...           | ...                          | ...                                   | ...                                   | 1                          | 1       | ...                                   |
| Vesical calculus ... ..                     | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Suppression ... ..                          | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Hæmaturia ... ..                            | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | 1                            | 1                                     | ...                                   | 4                          | 4       | ...                                   |
| Chyluria ... ..                             | ...                                   | ...           | ...     | ...                                   | ...                                   | ...           | ...                          | ...                                   | ...                                   | ...                        | ...     | ...                                   |
| Other Diseases... ..                        | 1                                     | 1             | ...     | 1                                     | 1                                     | ...           | ...                          | ...                                   | 1                                     | 1                          | ...     | 2                                     |



TABLE VI.—RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1915—(contd.)

| DISEASES.                                     | EUROPEAN OFFICIALS.                   |               |          | NATIVE OFFICIALS.                     |                                       |               | GENERAL EUROPEAN POPULATION. |                                       |                                       | GENERAL NATIVE POPULATION. |           |                                       |
|---|---------------------------------------|---------------|----------|---------------------------------------|---------------------------------------|---------------|------------------------------|---------------------------------------|---------------------------------------|----------------------------|-----------|---------------------------------------|
|   | Remaining in Hospital at end of 1914. | YEARLY TOTAL. |          | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL. |                              | Remaining in Hospital at end of 1915. | Remaining in Hospital at end of 1914. | YEARLY TOTAL.              |           | Remaining in Hospital at end of 1915. |
|   |                                       | Admissions.   | Deaths.  |                                       |                                       | Admissions.   | Deaths.                      |                                       |                                       | Admissions.                | Deaths.   |                                       |
| <b>LOCAL DISEASES—continued—</b>              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| <b>Diseases of the Generative System:—</b>    |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| <b>Male Organs:—</b>                          |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Urethritis ...                                |                                       |               |          |                                       | 2                                     |               | 2                            |                                       |                                       |                            |           | 2                                     |
| Gleet ...                                     |                                       |               |          |                                       |                                       |               |                              |                                       | 2                                     |                            |           | 2                                     |
| Stricture ...                                 |                                       |               |          |                                       |                                       |               |                              |                                       |                                       | 2                          |           | 2                                     |
| Prostatitis ...                               |                                       |               |          |                                       | 1                                     |               | 1                            |                                       | 3                                     |                            | 3         | 1                                     |
| Soft chancre ...                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 15                                    |
| Condyloma ...                                 |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            | 1         | 1                                     |
| Inflammation of scrotum ...                   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Hydrocele ...                                 |                                       |               |          |                                       | 1                                     |               | 1                            |                                       | 1                                     |                            | 1         | 14                                    |
| Orchitis ...                                  |                                       | 3             |          | 3                                     | 12                                    |               | 12                           |                                       |                                       |                            | 2         | 61                                    |
| Epididymitis ...                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 7                                     |
| Abscess of testicle ...                       |                                       |               |          |                                       | 3                                     |               | 3                            |                                       | 1                                     | 2                          | 3         | 1                                     |
| Other Diseases ...                            |                                       |               |          |                                       | 3                                     |               | 3                            |                                       | 1                                     | 2                          | 3         | 17                                    |
| <b>Female Organs:—</b>                        |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Ovaritis ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         | 1                                     |
| Ovarian cyst ...                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Endometritis ...                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            | 1         | 1                                     |
| Displacement of uterus ...                    |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Vaginitis ...                                 |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Amenorrhoea ...                               |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Dysmenorrhoea ...                             |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Menorrhagia ...                               |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Leucorrhoea ...                               |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Abortion ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Delayed labour ...                            |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            | 2         | 2                                     |
| Post-partum hæmorrhage ...                    |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            | 3         | 1                                     |
| Retained placenta ...                         |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 3                                     |
| Premature birth ...                           |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            | 3         | 2                                     |
| Puerperal septicæmia ...                      |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Mastitis ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Abscess of breast ...                         |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Other Diseases ...                            |                                       |               |          |                                       | 2                                     |               | 2                            |                                       | 1                                     |                            | 1         | 1                                     |
| <b>Diseases of the Organs of Locomotion:—</b> |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Osteitis ...                                  |                                       |               |          |                                       | 2                                     |               | 2                            | 1                                     | 1                                     |                            | 1         | 6                                     |
| Arthritis ...                                 |                                       |               |          |                                       | 1                                     |               | 1                            |                                       |                                       |                            |           | 24                                    |
| Spondylitis ...                               |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Bursitis ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 1                                     |
| Other Diseases ...                            | 1                                     | 5             |          | 6                                     | 44                                    |               | 44                           | 1                                     | 10                                    |                            | 11        | 5                                     |
| <b>Diseases of the Connective Tissue:—</b>    |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Cellulitis ...                                |                                       | 4             |          | 4                                     | 14                                    |               | 14                           | 1                                     | 9                                     |                            | 10        | 2                                     |
| Abscess ...                                   | 1                                     | 6             |          | 7                                     | 23                                    |               | 23                           |                                       | 12                                    |                            | 12        | 2                                     |
| Elephantiasis ...                             |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 9                                     |
| Other Diseases ...                            |                                       | 4             |          | 4                                     | 1                                     |               | 1                            |                                       | 3                                     |                            | 3         | 9                                     |
| <b>Diseases of the Skin:—</b>                 |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Urticaria ...                                 |                                       | 3             |          | 3                                     | 8                                     |               | 8                            |                                       |                                       |                            |           | 4                                     |
| Eczema ...                                    |                                       | 1             |          | 1                                     | 2                                     |               | 2                            |                                       | 2                                     |                            | 2         | 10                                    |
| Boll ...                                      |                                       | 2             |          | 2                                     | 22                                    |               | 22                           | 1                                     | 2                                     |                            | 2         | 33                                    |
| Carbuncle ...                                 |                                       | 1             |          | 1                                     |                                       |               |                              |                                       |                                       |                            |           | 5                                     |
| Herpes ...                                    |                                       |               |          |                                       | 5                                     |               | 5                            |                                       |                                       |                            |           | 2                                     |
| Psoriasis ...                                 |                                       |               |          |                                       | 1                                     |               | 1                            |                                       |                                       |                            |           | 1                                     |
| Oriental sore ...                             |                                       |               |          |                                       | 1                                     |               | 1                            |                                       |                                       |                            | 5         | 47                                    |
| Tinea ...                                     |                                       |               |          |                                       | 5                                     |               | 5                            |                                       |                                       |                            |           |                                       |
| Scabies ...                                   |                                       |               |          |                                       | 6                                     |               | 6                            |                                       |                                       |                            |           | 68                                    |
| Acne ...                                      |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Prickly heat ...                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 1                                     |
| Other Diseases ...                            |                                       | 5             |          | 5                                     | 7                                     |               | 7                            |                                       | 5                                     |                            | 5         | 12                                    |
| <b>Injuries—General</b>                       |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Local ...                                     | 1                                     | 2             |          | 3                                     | 1                                     |               | 1                            |                                       |                                       |                            | 1         | 18                                    |
| Gun-shot Wounds ...                           | 3                                     | 34            |          | 37                                    | 144                                   |               | 151                          | 2                                     | 11                                    |                            | 49        | 69                                    |
| Surgical Operations ...                       |                                       | 7             |          | 7                                     | 5                                     |               | 5                            |                                       | 2                                     |                            | 2         | 2                                     |
| Tumours ...                                   |                                       |               |          |                                       | 1                                     |               | 1                            |                                       | 3                                     |                            | 3         | 15                                    |
| Malformations ...                             |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Poisons ...                                   |                                       | 5             |          | 5                                     |                                       |               |                              |                                       |                                       |                            |           | 11                                    |
| <b>Parasites—Animal—</b>                      |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Protozoa ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 2                                     |
| Trematoda (Flukes) ...                        |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 3                                     |
| <b>Cestoda—</b>                               |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Tenia solium ...                              |                                       | 3             |          | 3                                     |                                       |               |                              |                                       | 3                                     |                            | 3         | 10                                    |
| Tenia saginata ...                            | 1                                     |               |          | 1                                     |                                       |               |                              |                                       |                                       |                            |           | 4                                     |
| <b>Nematoda—</b>                              |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Ascaris ...                                   |                                       |               |          |                                       | 1                                     |               | 1                            |                                       |                                       |                            |           | 3                                     |
| Tricocephalus dispar ...                      |                                       |               |          |                                       |                                       |               |                              |                                       | 1                                     |                            | 1         |                                       |
| Trichina ...                                  |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Dracunculus ...                               |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Filariasis ...                                |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 1                                     |
| Strongylus ...                                |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Ankylostomiasis ...                           |                                       |               |          |                                       | 1                                     |               | 1                            | 1                                     | 3                                     |                            | 3         | 9                                     |
| Oxyuris ...                                   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | 1                                     |
| <b>Insecta—</b>                               |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           |                                       |
| Myiasis ...                                   |                                       | 1             |          | 1                                     | 3                                     |               | 3                            |                                       |                                       |                            |           |                                       |
| Other Diseases ...                            |                                       | 6             |          | 6                                     |                                       |               |                              |                                       | 5                                     |                            | 5         | 14                                    |
| <b>TOTAL</b> ...                              | <b>22</b>                             | <b>567</b>    | <b>2</b> | <b>589</b>                            | <b>12</b>                             | <b>32</b>     | <b>2639</b>                  | <b>8</b>                              | <b>2671</b>                           | <b>53</b>                  | <b>50</b> | <b>700</b>                            |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>18</b>                             |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>750</b>                            |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>39</b>                             |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>409</b>                            |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>11202</b>                          |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>621</b>                            |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>11611</b>                          |
|   |                                       |               |          |                                       |                                       |               |                              |                                       |                                       |                            |           | <b>331</b>                            |

\* Recorded under respective Diseases.



TABLE VII.  
RETURN OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1915.

| DISEASES.                                  | EUROPEAN OFFICIALS. |          | NATIVE OFFICIALS (including Asiatics). |            | GENERAL EUROPEAN POPULATION (NON-OFFICIALS). |            | GENERAL NATIVE POPULATION. |               |
|--|---------------------|----------|--|------------|--|------------|----------------------------|---------------|
|  | Male.               | Female.  | Male.                                  | Female.    | Male.  | Female.    | Male.                      | Female.       |
| <b>Infective Diseases:—</b>                |                     |          |  |            |  |            |                            |               |
| Beri-beri ... ..                           | ...                 | ...      | ...                                    | ...        | ...  | ...        | 10                         | ...           |
| Cerebro-spinal fever ... ..                | ...                 | ...      | ...                                    | ...        | ...  | ...        | 12                         | 1             |
| Chicken-pox ... ..                         | ...                 | ...      | ...                                    | ...        | ...  | ...        | 123                        | 1             |
| Cholera ... ..                             | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Dengue ... ..                              | ...                 | ...      | ...                                    | ...        | ...  | ...        | 37                         | 15            |
| Diphtheria ... ..                          | 7                   | ...      | ...                                    | ...        | ...  | 1          | ...                        | ...           |
| Dysentery ... ..                           | 4                   | ...      | 18                                     | ...        | 33   | 13         | 1,436                      | 73            |
| Endocarditis—Infective ... ..              | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Enteric fever ... ..                       | ...                 | ...      | ...                                    | ...        | 1  | 2          | 18                         | 2             |
| Erysipelas ... ..                          | ...                 | ...      | 1                                      | ...        | 1  | 1          | ...                        | ...           |
| Gonorrhoea ... ..                          | 7                   | ...      | 12                                     | ...        | 19   | ...        | 860                        | 28            |
| Influenza ... ..                           | 1                   | ...      | 8                                      | ...        | ...  | ...        | 189                        | 4             |
| Kala Azar ... ..                           | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Leprosy (a) Nodular ... ..                 | ...                 | ...      | 1                                      | ...        | ...  | ...        | 2                          | ...           |
| (b) Anæsthetic ... ..                      | ...                 | ...      | ...                                    | ...        | ...  | ...        | 378                        | 10            |
| Malaria (a) Tertian ... ..                 | 37                  | ...      | 232                                    | ...        | 101  | 49         | 7,524                      | 886           |
| (b) Quartan ... ..                         | ...                 | ...      | 11                                     | ...        | ...  | 1          | 36                         | 4             |
| (c) Estivo-autumnal ... ..                 | 38                  | ...      | 225                                    | ...        | 41   | 2          | 3,119                      | 706           |
| (d) Chronic malaria ... ..                 | 2                   | ...      | 14                                     | ...        | 1  | ...        | 42                         | 8             |
| (e) Blackwater ... ..                      | ...                 | ...      | ...                                    | ...        | 3  | ...        | ...                        | ...           |
| Measles ... ..                             | ...                 | ...      | ...                                    | ...        | 3  | 2          | 15                         | ...           |
| Undulant fever ... ..                      | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Plague ... ..                              | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Pneumonia ... ..                           | ...                 | ...      | 1                                      | ...        | 5  | ...        | 122                        | 23            |
| Rabies ... ..                              | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Relapsing fever ... ..                     | ...                 | ...      | ...                                    | ...        | ...  | ...        | 13                         | ...           |
| Rheumatic fever ... ..                     | ...                 | ...      | 79                                     | ...        | 5  | 1          | 754                        | 99            |
| Septicæmia ... ..                          | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Trypanosomiasis (Sleeping Sickness) ... .. | ...                 | ...      | ...                                    | ...        | ...  | ...        | 2                          | ...           |
| Small-pox ... ..                           | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | 1             |
| Syphilis (a) Primary ... ..                | ...                 | ...      | ...                                    | ...        | ...  | ...        | 229                        | 21            |
| (b) Secondary ... ..                       | 1                   | ...      | 7                                      | ...        | ...  | 1          | 307                        | 102           |
| (c) Inherited ... ..                       | ...                 | ...      | ...                                    | ...        | ...  | ...        | 34                         | 24            |
| Tetanus ... ..                             | ...                 | ...      | ...                                    | ...        | ...  | ...        | 1                          | ...           |
| Tuberculosis ... ..                        | ...                 | ...      | 4                                      | ...        | 2  | ...        | 78                         | 10            |
| Whooping cough ... ..                      | ...                 | ...      | ...                                    | ...        | ...  | ...        | 24                         | 14            |
| Yaws ... ..                                | ...                 | ...      | ...                                    | ...        | ...  | ...        | 119                        | 38            |
| Yellow fever ... ..                        | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Mumps ... ..                               | ...                 | ...      | ...                                    | ...        | ...  | ...        | 44                         | 3             |
| Other Infective Diseases ... ..            | ...                 | ...      | ...                                    | ...        | ...  | ...        | 10                         | 3             |
| <b>Intoxications:—</b>                     |                     |          |  |            |  |            |                            |               |
| Alcoholism ... ..                          | ...                 | ...      | ...                                    | ...        | ...  | ...        | 4                          | ...           |
| Morphinism ... ..                          | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Others ... ..                              | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| <b>General Diseases:—</b>                  |                     |          |  |            |  |            |                            |               |
| Anæmia ... ..                              | 2                   | ...      | 38                                     | ...        | 9  | 21         | 253                        | 109           |
| Anæmia—Pernicious ... ..                   | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Diabetes ... ..                            | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Exophthalmic Goitre ... ..                 | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Gout ... ..                                | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Leucocythæmia ... ..                       | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Hodgkin's Disease ... ..                   | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Myxœdema ... ..                            | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Purpura ... ..                             | ...                 | ...      | ...                                    | ...        | ...  | ...        | 2                          | ...           |
| Rickets ... ..                             | ...                 | ...      | ...                                    | ...        | ...  | ...        | 2                          | 1             |
| Scurvy ... ..                              | ...                 | ...      | 2                                      | ...        | ...  | ...        | 74                         | 2             |
| Other General Diseases ... ..              | 19                  | ...      | 30                                     | ...        | 26   | 18         | 295                        | 8             |
| <b>Local Diseases:—</b>                    |                     |          |  |            |  |            |                            |               |
| Diseases of the Nervous System ... ..      | 8                   | ...      | 130                                    | ...        | 26   | 27         | 3,000                      | 166           |
| Mental Diseases ... ..                     | 1                   | ...      | 1                                      | ...        | ...  | ...        | 49                         | 1             |
| Diseases of the Eye ... ..                 | 12                  | ...      | 95                                     | ...        | 13   | 7          | 2,469                      | 728           |
| "  "  Ear ... ..                           | 15                  | ...      | 53                                     | ...        | 13   | 3          | 1,090                      | 183           |
| "  "  Nose ... ..                          | 15                  | ...      | 87                                     | ...        | 6  | 3          | 882                        | 42            |
| "  "  Circulatory System ... ..            | 2                   | ...      | 4                                      | ...        | 1  | ...        | 54                         | 3             |
| "  "  Respiratory System ... ..            | 38                  | 1        | 347                                    | ...        | 57   | 24         | 11,551                     | 943           |
| "  "  Digestive System ... ..              | 114                 | 1        | 563                                    | ...        | 102  | 116        | 14,117                     | 1,818         |
| "  "  Lymphatic System ... ..              | 5                   | ...      | 30                                     | ...        | 3  | 4          | 864                        | 95            |
| "  "  Urinary System ... ..                | 1                   | ...      | 7                                      | ...        | ...  | 2          | 79                         | 8             |
| "  "  Generative System ... ..             | 4                   | ...      | 26                                     | ...        | 5  | 47         | 458                        | 152           |
| "  "  Organs of Locomotion ... ..          | 7                   | ...      | 61                                     | ...        | 18   | 3          | 2,485                      | 165           |
| "  "  Connective Tissue ... ..             | 14                  | ...      | 65                                     | ...        | 16   | 2          | 1,383                      | 163           |
| "  "  Skin ... ..                          | 26                  | ...      | 212                                    | ...        | 50   | 18         | 5,651                      | 858           |
| <b>Injuries:—</b>                          |                     |          |  |            |  |            |                            |               |
| General ... ..                             | ...                 | ...      | ...                                    | ...        | 3  | ...        | 2,159                      | 207           |
| Local ... ..                               | 45                  | ...      | 398                                    | ...        | 39   | 16         | 22,225                     | 3,282         |
| Gun-shot wound ... ..                      | ...                 | ...      | ...                                    | ...        | ...  | ...        | 2                          | ...           |
| Surgical Operations ... ..                 | 2*                  | ...      | 4*                                     | ...        | 2*   | ...        | 333*                       | 71            |
| Tumours ... ..                             | ...                 | ...      | 5                                      | ...        | ...  | ...        | 21                         | 3             |
| Malformations ... ..                       | ...                 | ...      | ...                                    | ...        | ...  | ...        | ...                        | ...           |
| Poisons ... ..                             | ...                 | ...      | ...                                    | ...        | 1  | ...        | 27                         | 1             |
| Parasites—Animal ... ..                    | 14                  | ...      | 34                                     | ...        | 2  | 6          | 1,203                      | 714           |
| <b>TOTAL ... ..</b>                        | <b>439</b>          | <b>2</b> | <b>2,801</b>                           | <b>...</b> | <b>665</b>                                   | <b>390</b> | <b>85,987</b>              | <b>11,668</b> |

\* Recorded under respective Diseases.



TABLE VIII.

## EUROPEANS.

RETURN OF INFECTIVE DISEASES TREATED AT THE VARIOUS HOSPITALS AND DISPENSARIES IN THE PROTECTORATE DURING 1915.

| DISEASES.  | Mombasa. | Malindi. | Lamu. | Girama Patrol. | Nairobi. | Machakos. | Makindu. | Kyambu. | Naiyasha. | Eldoret. | Ridiana Ravine. | Nakuru. | Kacheliba. | Marakwet. | Kisumu. | Mombasa. | Kericho. | Kimaya. | Gobwen. | Alexandra. | Port Hall. | Rambu. | Mern. | Nyori. | Kitul. | Total. |
|--|----------|----------|-------|----------------|----------|-----------|----------|---------|-----------|----------|-----------------|---------|------------|-----------|---------|----------|----------|---------|---------|------------|------------|--------|-------|--------|--------|--------|
| Cerebro-Spinal Meningitis... { Cases ...<br>... { Deaths ... | ...      | ...      | ...   | ...            | 3        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...        | ...       | ...     | ...      | ...      | ...     | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 3      |
| Chicken-pox ... { Cases ...<br>... { Deaths ...              | ...      | ...      | ...   | ...            | 1        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...        | ...       | ...     | ...      | ...      | ...     | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 1      |
| Dysentery ... { Cases ...<br>... { Deaths ...                | 25       | 1        | ...   | ...            | 72       | ...       | 2        | ...     | ...       | 1        | ...             | 24      | ...        | 1         | ...     | ...      | 1        | 1       | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 134    |
| Euteric Fever ... { Cases ...<br>... { Deaths ...            | 9        | ...      | ...   | ...            | 32       | ...       | ...      | ...     | ...       | 3        | ...             | ...     | ...        | ...       | ...     | ...      | 1        | ...     | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 45     |
| Malaria ... { Cases ...<br>... { Deaths ...                  | 154      | 24       | 10    | 8              | 399      | 4         | 18       | 6       | 6         | 101      | 5               | 26      | 3          | 1         | 32      | ...      | 2        | 6       | 6       | 4          | 5          | 1      | 1     | 6      | ...    | 787    |
| Blackwater Fever ... { Cases ...<br>... { Deaths ...         | 3        | ...      | ...   | ...            | 7        | ...       | ...      | ...     | ...       | 1        | ...             | ...     | ...        | ...       | 1       | ...      | ...      | 1       | ...     | ...        | 1          | ...    | ...   | ...    | ...    | 15     |
| Mecasis ... { Cases ...<br>... { Deaths ...                  | ...      | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | 5        | ...             | ...     | ...        | ...       | ...     | ...      | ...      | ...     | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 5      |
| Tuberculosis ... { Cases ...<br>... { Deaths ...             | 1        | ...      | ...   | ...            | 7        | ...       | ...      | ...     | ...       | ...      | ...             | 1       | ...        | ...       | ...     | ...      | ...      | ...     | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 9      |

N.B.—This Table only gives the numbers *actually* treated at Government Institutions.

**TABLE VIII.**  
**NATIVES (INCLUDING ASIATICS).**  
**RETURN OF INFECTIVE DISEASES TREATED AT THE VARIOUS HOSPITALS AND DISPENSARIES IN THE PROTECTORATE DURING 1915.**

| DISEASES.                 | MOMBASA. |       |                |          |           |          |         |           |          |                 |         |           |           |         |         |        |          | Total. |         |        |       |         |            |            |        |       |        |        |     |        |
|---------------------------|----------|-------|----------------|----------|-----------|----------|---------|-----------|----------|-----------------|---------|-----------|-----------|---------|---------|--------|----------|--------|---------|--------|-------|---------|------------|------------|--------|-------|--------|--------|-----|--------|
|                           | Malindi. | Lamu. | Girama Patrol. | Nairobi. | Machakos. | Makindu. | Kyamba. | Natyasha. | Eldoret. | Elisara Kavine. | Nakuru. | Marikwet. | Kaheliba. | Kisumu. | Mumias. | Nandi. | Kericho. |        | Kisumu. | Goven. | Yote. | Moyale. | Alexandra. | Fort Hall. | Rambu. | Meru. | Nyeri. | Kitul. |     |        |
| Beri-beri                 | ...      | ...   | ...            | 41       | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | 9       | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 50     |
| Cerebro-spinal meningitis | ...      | ...   | ...            | 59       | ...       | ...      | ...     | ...       | 1        | ...             | 6       | ...       | ...       | ...     | 16      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 130    |
|                           | ...      | ...   | ...            | 29       | ...       | ...      | ...     | ...       | 1        | ...             | 3       | ...       | ...       | ...     | 12      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 65  |        |
| Chicken-pox               | ...      | ...   | ...            | 350      | ...       | ...      | ...     | ...       | 1        | ...             | 5       | ...       | ...       | ...     | 9       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 429    |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | ...    |
| Dengue                    | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 126    |
| Dysentery                 | ...      | ...   | ...            | 767      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 419     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 2,688  |
|                           | ...      | ...   | ...            | 24       | ...       | ...      | ...     | ...       | ...      | ...             | 42      | ...       | ...       | ...     | 31      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 167 |        |
| Enteric fever             | ...      | ...   | ...            | 146      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 1       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 151    |
|                           | ...      | ...   | ...            | 16       | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 17  |        |
| Leprosy                   | ...      | ...   | ...            | 387      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 7       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 397    |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | ...    |
| Malaria                   | ...      | ...   | ...            | 2,553    | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 2,096   | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 18,030 |
|                           | ...      | ...   | ...            | 15       | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | 43  |        |
| Blackwater fever          | ...      | ...   | ...            | 1        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 4      |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 1      |
| Measles                   | ...      | ...   | ...            | 29       | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 28      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 102    |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 1      |
| Mumps                     | ...      | ...   | ...            | 219      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 3       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 268    |
|                           | ...      | ...   | ...            | 1        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 1      |
| Plague                    | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 18      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 18     |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 14      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 14     |
| Sleeping sickness         | ...      | ...   | ...            | 3        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 4      |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | ...    |
| Small-pox                 | ...      | ...   | ...            | 7        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 4       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 28     |
|                           | ...      | ...   | ...            | 3        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 7      |
| Tuberculosis              | ...      | ...   | ...            | 9        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 9       | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 93     |
|                           | ...      | ...   | ...            | 4        | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 19     |
| Yaws                      | ...      | ...   | ...            | 10       | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | 57      | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | 189    |
|                           | ...      | ...   | ...            | ...      | ...       | ...      | ...     | ...       | ...      | ...             | ...     | ...       | ...       | ...     | ...     | ...    | ...      | ...    | ...     | ...    | ...   | ...     | ...        | ...        | ...    | ...   | ...    | ...    | ... | ...    |

N.B.—This Table only gives the numbers *actually* treated at Government Institutions.



TABLE IX.

## TABLES SHOWING DENTAL TREATMENT DURING 1915.

|                                |            |
|--------------------------------|------------|
| Appointments ... ..            | 503        |
| Officials ... ..               | 201        |
| Officials' families ... ..     | 55         |
| Asiatics, etc. ... ..          | 3          |
| Total Official Patients ... .. | <u>259</u> |

The following conditions were treated :—

|  |                  |            |
|--|------------------|------------|
| Caries simplex ... ..  | (Extractions 54) | 330        |
| Pulpitis ... ..  |                  | 50         |
| Abscess ... ..   |                  | 42         |
| Odontalgia ... ..  |                  | 2          |
| Periostitis ... ..   |                  | 4          |
| Pyorrhœa ... ..  |                  | 32         |
| Erosion ... ..   |                  | 7          |
| Polypus of Pulp ... ..   |                  | 6          |
| Polypus of Mucosa ... ..   |                  | 6          |
| Exostosis ... ..   |                  | 1          |
| Stomatitis ... ..  |                  | 1          |
| Gingivitis—  |                  |            |
| Acute ... ..   |                  | 4          |
| Chronic with no visible pus ... ..   |                  | 10         |
| Necrosis ... ..  |                  | 1          |
| Fractures—   |                  |            |
| Dents ... ..   |                  | 1          |
| Jaw ... ..   |                  | 2          |
| Gangrene of pulp, following acute pulpitis, but with no abscess formation ... .. |                  | 4          |
| Total ... ..   |                  | <u>503</u> |

Conservative work, fillings, etc. :—

|                                  |            |
|----------------------------------|------------|
| Synthetic porcelain ... ..       | 16         |
| Cement ... ..                    | 52         |
| Ag. Amalgam ... ..               | 188        |
| Cu. Amalgam ... ..               | 4          |
| Ag. Amalgam + Cement ... ..      | 70         |
| Oxyphos Cu. ... ..               | 2          |
| Inlays :—                        |            |
| Gold ... ..                      | 4          |
| Porcelain ... ..                 | 6          |
| P. Gutta Percha ... ..           | 3          |
| T. Gutta Percha ... ..           | 22         |
| T. Gutta Percha + arsenic ... .. | 29         |
| Root Fillings ... ..             | 40         |
| Cleaning and Scaling ... ..      | 28         |
| Agno, 3 Applications ... ..      | 4          |
| Total ... ..                     | <u>468</u> |

TABLE IX.—*continued.*TABLES SHOWING DENTAL TREATMENT DURING 1915—*continued.*

## Prosthetic work :—

## Crowns :—

|                             |     |     |     |     |     |     |     |    |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|----|
| Gold                        | ... | ... | ... | ... | ... | ... | ... | 2  |
| Porcelain                   | ... | ... | ... | ... | ... | ... | ... | 14 |
| Pivots                      | ... | ... | ... | ... | ... | ... | ... | 1  |
| Bridges                     | ... | ... | ... | ... | ... | ... | ... | 4  |
| Metal splints for fractures | ... | ... | ... | ... | ... | ... | ... | 2  |

## Dentures :—

|                     |     |     |     |     |     |       |           |
|---------------------|-----|-----|-----|-----|-----|-------|-----------|
| Gold or vulcanite   | ... | ... | ... | ..  | ... | ...   | 20        |
| Repairs to Dentures | ... | ... | ... | ... | ... | ...   | 12        |
|                     |     |     |     |     |     | Total | <u>55</u> |

The Dental Surgeon was absent on home leave from January to the end of August and the above work represents that done from September to December.



TABLE IX—continued

TABLE SHOWING DENTAL TREATMENT DURING 1932—continued

Prosthodontic work—continued

| Country         | Gold | Platinum | Ni-Cr alloys | Other alloys | Total |
|-----------------|------|----------|--------------|--------------|-------|
| Canada          | 11   | 1        | 1            | 1            | 14    |
| United States   | 11   | 1        | 1            | 1            | 14    |
| Other countries | 1    | 1        | 1            | 1            | 4     |
| Total           | 23   | 3        | 3            | 3            | 32    |

The dental program was about 60 per cent of the total dental work reported during 1932. The dental program was about 60 per cent of the total dental work reported during 1932.

| Country         | Gold | Platinum | Ni-Cr alloys | Other alloys | Total |
|-----------------|------|----------|--------------|--------------|-------|
| Canada          | 11   | 1        | 1            | 1            | 14    |
| United States   | 11   | 1        | 1            | 1            | 14    |
| Other countries | 1    | 1        | 1            | 1            | 4     |
| Total           | 23   | 3        | 3            | 3            | 32    |

| Country         | Gold | Platinum | Ni-Cr alloys | Other alloys | Total |
|-----------------|------|----------|--------------|--------------|-------|
| Canada          | 11   | 1        | 1            | 1            | 14    |
| United States   | 11   | 1        | 1            | 1            | 14    |
| Other countries | 1    | 1        | 1            | 1            | 4     |
| Total           | 23   | 3        | 3            | 3            | 32    |