AFRICAN No 984 COLONIAL OFFICE

C.O. 13641 Recd 4 MAY 12

EAST AFR. PROT.

13641

	249
Date.	
1912	
April	

BLACKWATER FEVER 1911

Trs Report and Map.

PRINTED FOR PARLIAMENT

H.J.R.

Read

Mr Ellis
I shd await arrival of similar reports from E & W. A. Colonies

A.R.H. 10/4

at once

H.J.R.
10/5

This report does not entirely conform to the scheme suggested. ... map ... together with the clinical notes of the cases ... theoretical consideration of the aetiology of the disease ... the report ... of value.

... 3 vi. 12

Print with map ... attached

The ... no doubt supply

Subsequent Paper
10224/13

T.

paper copy of G. S. G. S. No. 2562

which is practically the same map

up the one & the deeps & to which

the map shown on the present map can be

transferred at once

H. J. R.

12/VIII

Circulated in print to TAMS Committee
(with other replies) 12 Sept 1912

[illegible]

Dr Fiddes

This report is rather a model that
future reports [illegible]
should be closely followed in the present portion
[illegible] but not case-by-case heading the
[illegible] the individual cases of the disease
[illegible] information asked for under that heading
[illegible] in the order laid down. The
[illegible] given in the I & II will naturally
information under ~~[illegible]~~ I & II will supplement
come into the PMO's office & will supplement by the
the case histories ~~from~~ by supplied by the
individual MOs under III. The maps be
valuable.

[illegible]

18. 1. 13

EAST AFRICA PROTECTORATE.

GOVERNMENT HOUSE,
NAIROBI,
BRITISH EAST AFRICA.

April 12th, 1912.

No.249.

Sir,

In obedience to the instructions contained in paragraph 4 of your despatch No.30 of the 24th January 1911, I have the honour to transmit herewith a report, together with a map, on Black-water fever in this Protectorate for the year 1911.

I have the honour to be,

Sir,

Your humble, obedient servant,

ACTING GOVERNOR.

THE RIGHT HONOURABLE
LEWIS HARCOURT, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET, LONDON, S.W.

INCLOSURE

in Despatch No. Sept 12 4 1912

Report on Blackwater Fever in British East Africa for the year 1911.

[illegible]

[illegible]tion.	Jan	Feb.	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec.
[illegible]ind												1
[illegible]bage				1								
[illegible] hall ([illegible]ko river)						1						
[illegible]bi						1	1		1			
[illegible]otok					1							
[illegible]mu ([illegible]la)			1									
[illegible]as								1				

The above table sets forth the distribution of Blackwater fever in regard to time and place for the year 1911. In all cases, except one, the patients were either Europeans or of European origin and, of the total, eight were males.

The majority of the cases came from either swampy or bush country, or had been travelling through country of the kind prior to their being attacked by the disease. Altitude, apparently, had no influence as such wide apart places as Uganda, Molo, Kabako and Takaungu are mentioned as having been [illegible] or resided in previous to its manifestations.

None of the units of the above table form part of a series. In some stations, however, such as Mumias and [illegible]ola, previous cases of the disease have been recorded. The former is a district headquarters, some three days north of Kisumu, and is situated in the midst of a large native population. The latter is a mission not far from Kisumu, situated on hilly ground covered with bush and undergrowth, and in touch with the local natives.

Anopheline mosquitoes are known to be present in practically all the places from which cases of Blackwater Fever have been reported. Recent enquiry has shown these insects to be more widely distributed than some had previously imagined. Even at Molo, Nairobi and Nandi they are present.

Eight of the nine cases occurred during the [illegible] season, i.e. between the months of March and September. This [illegible]

[illegible]

constitutes the season of the principal rains and is associated, in its latter part, with a lowering of the daily temperature.

In six of the nine, malaria had previously declared itself, while the remaining three were most probably exposed to infection, although one patient affirmed that he never had the disease and the examination of his blood did not, apparently, disprove his statement by the discovery in it of parasites or pigment.

Two of the total were second attacks. In the one case, the prior manifestation had taken place in Uganda and, in the other, in Nairobi.

The ages of the patients ranged between twenty four and sixty.

In three, the administration of a large dose of quinine was noted as having preceded the attack.

The majority of the patients gave histories of travel prior to the onset of the illness. Some of these journeys were of an extensive character, one man indeed having completed a trading tour some eleven and a half months a little prior to his illness and another a member of the staff of a museum having been constantly on the move since his arrival in the Protectorate.

In but one case could there seem to have been any systematic attempt at prophylaxis by means of quinine and even here, the measure had apparently been only adopted two months prior to the onset of the illness- which by the way was fatal. Attempts in this direction had been made by two of the remaining whilst, in another, the drug had been apparently refused even during the antecedent malarial manifestations.

In two of the cases subtertian parasites were noted as having been observed, in the one at the time of the attack and, in the other, at the end of the disease.

While mindful of the small number of cases which have come under notice during the year and of the consequent paucity of material, yet, their consideration tends to a confirmation of views expressed elsewhere to the effect that sufferers from 'Blackwater Fever'

ver" have been, as a rule, previously exposed to the danger of malar-
l infection, and that quinine, even in uninfected persons, has been
own before now to give rise to haemoglobinuria. Further than this
e cannot well go at the moment although, perhaps, it may be permitted
imagine that the functions of the leucocytes and blood-forming
gans are not entirely known at present, that they exercise some
nfluence on the wellbeing of the red cells, and that, when such influ-
nce has been interfered with in certain cases, whether owing to
alarial or to quinine poisoning alone or uncombined, the tendency for
he red cells is to break up.

Dr Johnson draws the conclusion (paragraph 15) that the
aemolysis occurring in Blackwater Fever and Paroxysmal haemoglobin-
ria are essentially one and the same though caused by different
actors. Donath and Landsteiner, quoted by Barrett and York (vol. iii
o 1 Annals of Tropical Medicine and Parasitology page 97), record
heir opinion "that the mechanism of production of Blackwater stands
n an altogether different category from that of Paroxysmal Haemoglobi-
nuria. The presence of haemolysin or of defect of antilysin in the
lasma, which is present in the latter case, is absent in Blackwater
ever, where, therefore, search must be made for other factors"

When I was in the Uganda service, I had under my care,
during the years 1898 - 1904, between fifty and sixty cases of this
disease. The majority of these cases occurred in the two Indian
Contingents then stationed in the country. During all this time I saw
no cases of Paroxysmal Haemoglobinuria except those manifestations
occurring in Blackwater Fever. What was strongly impressed on my mind
was the close affinity these attacks of Blackwater Fever had to prev-
ious repeated attacks of Malarial Fever, that, infact, they depended on
a malarial factor. So much so that, on the arrival of the second India
Contingent to relieve the first, I prophesied to the Commanding Office
that I would expect to see, towards the end of their second year of
service, a certain number of his men go down with Blackwater Fever.
As a matter of fact the first case occurred at the end of the eightee
enth month. Between that time and the twenty fifth month there were
some

over thirteen cases.

The theory that presents itself to my mind, with regard to the factor producing Blackwater Fever, is that it depends on the liberation into the plasma of a sufficient accumulation of some toxin produced by the malarial parasite.

In conclusion, I enclose herewith the reports and observations of those Medical Officers who have either had cases of Blackwater Fever under observation during the year 1911 or had previous experience of the disease.

A.D.M.S.

Principal Medical Officer.

Nairobi,
28th March 1912.

No apology seems requisite for returning to this subject after the remarks which were made in last year's report, for not only is the disease one of serious importance, but it is one which no clear ideas up to the present exist, and therefore it is still a question upon which one may be permitted to hold opinions.

The main theories put forward as to the causation of "Blackwater" fever are :-

(1). That it is a symptom of an acute attack of malaria

(2). That it is a condition which is the result of chronic malarial poisoning.

(3). That it is due to poisoning by quinine.

(4). That it is a specific disease, owning a specific organism.

But in all that has been written upon this subject it is strange that a condition which presents, at any rate, superficially, such a great resemblance to paroxysmal haemoglobinuria has not been differentiated from it. In all that has been said about "blackwater" fever it has been taken for granted from the day of its christening by a convenient term that the condition is a distinct entity, altogether from paroxysmal haemoglobinuria. Paroxysmal haemoglobinuria although a well known condition in Europe may, it is conceivable, not have been familiar to those who first noticed it amid tropical surroundings. It is not inaccurate to say that every unfamiliar disease or manifestation of disease when met with in the tropics was apt to be regarded as a specially "tropical" disease, and, not only so, but as being in some way one of the innumerable results with which malaria was credited. In saying this the exact aetiology of neither disease is cleared up, but at all events something would be gained by the ascertaining of whether the two states of blood destruction do differ from each other, and, if so, in what particulars.

The position seems to be capable of being stated [illegible] in the

in the following terms: (1). That there is a disease known to occur in various parts of the world which is named paroxysmal haemoglobinuria. (2). That whereas a number of drugs and of disease states are said to be in etiological relationship with this disease, it is not known what the actual cause of the disease is.

(3). That such a disease when first met with in tropical parts of the world was named "Blackwater" fever, a term which in itself shows that no attempt at investigating its peculiarities had been made, but that the most superficial of its characteristics had given it its name.

(4). That as too much connected with disease in tropical work was apt to be referred to malaria in the olden days so was this "Blackwater"

(5). But that although malaria cannot be held to be the sole and only agent in the causation of "Blackwater", it is likely that it is one of the factors which is capable of giving rise to [illegible], and that accounts for the frequency with which the two diseases "Blackwater" and malaria are met with in cases which seem to point to some definite relationship.

(6). Even so, there are other factors in the production of "Blackwater" fever than malaria, but that what these other factors are, remain unexplained.

(7). Similarly, there seems in certain cases a definite relationship between secondary syphilis and paroxysmal haemoglobinuria, but there must also be other unexplained factors in such a case; or,again, in cases of haemoglobinuria which arise in connection with Raynaud's disease.

(8). Then again many drugs are known to be capable of giving rise to paroxysmal haemoglobinuria,and here also all of the factors concerned are not explained or known. Otherwise, why should chlorate of potassium or phosphorous be capable of giving rise to it in one instance and not in another.

(9). Then,why is the condition which so many of us have seen, that is when quinine gives rise to haemoglobinuria, termed "Blackwater" fever

fever when it is observed in Africa - but the cases referred to in (4) are called paroxysmal haemoglobinuria? There is the same result in each case; the same destruction of blood corpuscles with the result that methaemoglobin is found in the urine, there is the same yellow pigmentation of the skin, the same depression, and the same symptoms and pathological anatomy even, but yet the diseases are kept separate.

(10). There is a personal predisposition in certain individuals to blackwater fever, and this predisposition is enhanced by repeated attacks of malaria.

(11). Under certain conditions the toxins of malaria produce haemolysis: "Blackwater" fever.

(12). Under certain conditions other substances e.g. potassium chlorate, quinine, produce haemolysis or "Blackwater fever or paroxysmal haemoglobinuria.

(13) Why some persons react in this way to these toxins - malarial, chemical &c. while others with an equal quantity of malarial toxin, for example, do not, is the crux of the whole question.

(14). There are many factors to bring or about this corpuscular fragility, this tendency under certain conditions for haemolysis to occur, and for the conditions described as "Blackwater fever - "paroxysmal haemoglobinuria" - to result. Malaria is one of them- and it may be that it is a specially potent factor, but it is only a factor; it is not the causa causans.

(15). The conditions "Blackwater fever, and paroxysmal haemoglobinuria are essentially the same; except that the factor which caused the explosion (haemolysis) in the case of "Blackwater" fever is usually malaria, and in the case of paroxysmal haemoglobinuria the factor which causes the explosion is usually not malaria.

(Sd) J.I.W.Johnsen.

Blackwater Fever.

E.A.P.C. Act 28. Survey Department - Admitted to Hospital on 18/2/11 suffering from haemoglobinuria fever. Patient arrived at Mombasa from Europe on 2nd November 1910. He came up to Nairobi for a few days and then was stationed at the coast. He went to Takaungu district on survey work; moving his camp about once every ten days. He lived in a tent and a grass banda, sleeping in the tent and working in the banda. He remained in the district of M'tanganyika for the longest time. The surrounding country is densely covered with bush, and baobab trees. There are no swamps. M'tanganyika is at the head of an arm of the sea- a creek- and is said to be unhealthy.

Atta Mahomed, an Indian, who was doing survey work in this district was taken ill in December 1910, and was moved to Mombasa where he died. The disease is said to have been blackwater fever. Mr G. succeeded him in Takaungu district.

There are a lot of small mosquitoes in the bush, they are not as frequently found in the tent or banda. So far as Mr G. recollects this is the only kind of mosquito he saw.

There are a lot of tsetse fly, at any rate, he saw many large flies with crossed wings which bit him and at times drew blood from him. There are a very few ticks. Bugs, lice and fleas he has no recollection of.

In February 1911 he was severely bitten by a scorpion

Seasonal Variation.

The rainy season commenced in April in 1911, which is about the usual time, otherwise he does not know of any facts which would fall under this head.

Personal History.

He has had mumps and he thinks he has had measles. Dysentrie he had a severe attack of when quite a child. Has had comparative little illness.

He went to Uganda in March 1907 in the Survey Dept. Worked in and around Kampala, and suffered from malaria during this period, but only had one severe attack.

After his

After his arrival in Takaungu in November 1910 he suffered from malaria, having an attack every three weeks. He took quinine during these attacks, ten to twenty grains in tabloids in the twenty hours, but after the fever left him he did not take any more quinine.

On the afternoon of the day on which he first passed black-water he had taken twenty grains of quinine. He was not then being treated by a medical man. He had been feeling out of sorts and trying to do his work at the same time; and had taken quinine at various times during the week. Finally, on the evening of the 17th June he took this dose of twenty grains and three hours afterwards he was passing blackwater.

Examination of blood. revealed that the red cells were anaemic in the centre; in the greater number of them; many of them were small in size and there was a lack of uniformity in their size. No malarial parasites were seen at any of the examinations.

Patient was admitted to hospital on 18th of June and was discharged on 8th July having made a most satisfactory amount of progress, and having regained much of his strength as well as his appetite. He was given two weeks leave to go to [illegible] health station, in order to recuperate still more, but on 12th July, four days after he had left hospital, he returned saying that he had not felt well since leaving and that he has had a slight rise of temperature 100°. On admission the temperature was 98° and in the evening it had risen to 102°. There were subtertian parasites present in the blood. And he was given three grains of quinine hydrochlorate in solution three times a day. (During the attack of blackwater fever and afterwards he had not received any quinine after his admission to hospital.)

He made an uninterrupted recovery, the quinine in three grain doses having been continued, and he was able to be discharged on 27th July, since when he has been in good health.

H.A.S., Aet 24, Post Office Clerk. Admitted 10th September 1911, Discharged 25th September 1911.

Patient was living at the time of this attack in the building known as the Norfolk Stores in Nairobi. He had lived there since 10th August, and was taken ill on 7th September.

[illegible]...

...lity.

(a). He arrived in Mombasa from Johannesburg on 17/?/08. Two ... later he went up country to Molo where he remained until January ... when he was in Nairobi for three months, and after this went to Uganda ... for a stay of three weeks, after which he went to Jinja for two ... half months. He left Jinja on 11th July 1910 to go to Karamoja, ... he remained shooting elephants for eleven and a half months. Next ... returned to Molo for a fortnight, then on to Nairobi for ten days and ... back to Molo, after which he came to Nairobi and got employment in ... post office. One week after this he was taken ill. He had been living in Molo for about a week before he came down here. He got back to ... in Uganda from Karamoja on 4th July 1911. Karamoja is full of ..., there is a ... amount of bush and forest.

(b). He did not meet with a case of fever or other illness in Karamoja - one man has been up there for six years. There has been no other case in the building in which the patient was living.

(c). There was nothing to attract his attention in the insects in the house he lived in in Nairobi. He was bitten much in Uganda by the "little black fly" which draws blood with its bite, called the "... fly" but so, also, were many other people. It is a "..." pest ... side Jinja. He slept every night under a mosquito curtain, wherever he might be. There are practically no ticks in the countries in which he was.

Seasonal Variation. Nothing unusual has been noticed in this respect.

Personal History. He has not had an attack of malaria. After going up to Uganda and Karamoja he took ten grains of quinine every ten days, and a dose of laxative vegetable tabloids every two weeks. The bowels moved fairly regularly. In his earlier days he suffered attacks of ..., measles, and scarlet fever. He has lived in South Africa all of his life except for two years spent in Switzerland and four years in East Africa and Uganda.

Examination of Blood. No malarial parasites seen. The red cells were ... and some are larger than usual others small. Many red cells move ... with the basic stain. There are both macrocytes and normoblasts.

The white cells

[illegible] white cells [illegible] Polymorphonuclear and lymphocyte and [illegible] which look nearer to ~~[illegible]~~ myelocytes than to anything else.

[illegible] aet 47, admitted 20th July 1911. Discharged 31st XXXXX July 1911.

[illegible] is attached to museum in America and has been [illegible] Africa [illegible] several occasions collecting specimens for the museum. In the course of [illegible] work he has been in every variety of climate to be found in [illegible] Africa and Uganda, and in swamps and forests in the [illegible] [illegible] had only returned from Uganda to Nairobi a day or two when he was [illegible] with an attack of malaria for which he had been treated with quinine [illegible] quantity which XXXXXXXXXXX never exceeded 22 grains a day, and was [illegible] much as this for only two or three days. He seemed to have shaken off the fever and was very anxious indeed to get up and see about his work, [illegible] he wanted to go to Europe by the first boat. In spite of all recommendations that he should be cautious and stay at home for a few days [illegible] he went out at the earliest moment after the fever had subsided. He [illegible] was [illegible] and pulled down after he was up. The quinine was [illegible] continued in seven and a half grain doses once a day [illegible] [illegible] getting out of bed and going about his work [illegible] with an attack of blackwater fever. It proved to be a very severe attack but he eventually recovered.

Previous History. He had had another attack of blackwater [illegible] months ago. He had also had spirillum fever. [illegible] the details of his past history [illegible] of the places he had [illegible] their characteristics [illegible] the patient [illegible] restless person to deal with that no sooner was he beginning to be convalescent than he thought he might have a chance, and so went out.

Examination of blood. There are a few subtertian parasites to be seen inside red cells. The majority, if not all, of the red cells are pale in the centre. Many cells are larger than usual, and some smaller. They present the appearance seen in secondary anaemia. Schuffner's dots were seen in a few corpuscles. One or two red cells have taken up the blue [illegible] and the protoplasm seems in a condition of fragmentation. A few [illegible] bodies are seen. There are no nucleated red cells. There is an increase in the large mononuclears and there are numerous white cells with a nucleus that is not polymorphic nor mononuclear, but is not far removed

reserved from the mononuclear variety, while in the protoplasm are numerous granules which have taken up the acid stain. They almost look like myelocytes, although not typical ones.

Sd. J.T.C.Johnson.

ble showing distribution of Blackwater Fever treated in Hospital during
he last five years.

	1907	1908	1909	1910	1911	Total	Deaths
ary	-	-	-			-	-
ary	-	-	-			-	-
h	-	-	-			-	-
l	-	-	-			-	-
	-	-	-	-		-	-
	-	-	1	-		-	-
	-	-	-	1	2	3	-
	1	-	-	-	-	1	-
	-	-	-	-	1	1	-
	-	-	1	-	-	1	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	1	-	1	1	3	6	-

Appendix.

With reference to the Report on blackwater Fever Cases asked for in the P.M.O.'s letter No 28/436/1 dated February 23rd 1911, the following details may be recorded. :-

(1). Locality.

(a). The patient had until 2 days before the onset of the symptoms lived for nearly 3 years on the edge of a swamp, on the Kabuko River, Kenya Province, East Africa Protectorate.

(b). One case resembling Blackwater Fever is reported by the dwellers of the district some months previously.

(c). The locality to which the patient, an old lady of 60 years of age was moved previous to her attack, was swarming with a tiny red tick, quite common where there is game. Mosquitoes abound in her own home, but she has always used a mosquito net at night. As there is a farmyard, and rats abound, there are undoubtedly fleas in abundance.

(ii). Seasonal Variation.

(a). The case occurred during the latter part of the heavy rains.

(iii). Personal History.

(a). The patient had never been ill in her life before coming to East Africa. She was an Africander, and had lived in Johannesburg. She had several attacks of malaria during her 3 xxx years in East Africa, but disliked quinine, and refused to take it. On being taken ill with shivering and collapse, a large dose of quinine, unmeasured (probably 30 grains) was administered by her daughter-in-law, whereon haemoglobinuria set in.

(b). The patient had been for 3 years at the farm on the swamp until two days before her illness, when she was driven in an ox-wagon some miles to another farm. On arrival she became ill. She was accustomed to a very hard life, and plain diet.

(c). A microscopic examination of the blood was not taken.

(Sd) F. Owen Prichard,

M.O. i/c Kenya Province.

Health Office,

Nairobi,

1st February 1911.

Sir,

With reference to your Circular No 85 dated 23rd February 1911 I have the honour to submit to you the views which I formed during and after the treatment of 11 cases of Blackwater Fever which were in Mombasa Hospital during the years 1907, 1908, 1909, 1910.

In the year 1907 there was one case an Asiatic employed by the Uganda Railway on the section of the line between Mombasa and Mazeras. He had lived in the same house at the latter place for about 4 years and had suffered from repeated attacks of Malaria. He developed his attack of Blackwater in November 1907.

The blood was examined on day of admission to hospital which was the second day of his illness. There were numerous malarial parasites chiefly the tertian variety, and of the crescentic, no other bacteria. By the fourth day the parasites had nearly all gone and his [illegible] which was at first like [illegible] porter began to clear up. By the tenth day of the illness he had practically recovered. He was treated with Quinine hypodermically 10 grains four times a day. Patient before he developed his attack of Blackwater had been in the habit of taking 5 grains of Quinine about twice a week. The District between Mombasa and Mazeras is very much overgrown with vegetation of all kinds, there are numerous marshy places and Malaria is very common amongst Europeans, Asiatics and Africans.

During 1908 there were 5 cases in hospital all Asiatics. Two of the cases came from Voi and the third was resident in Mombasa. With regard to the Voi cases both were admitted on the third day of the illness and both showed malarial parasites in their blood.

16

their blood of the tertian variety. Both patients had suffered a lot from Malaria and had been in the habit of taking small doses of quinine occasionally. One of the patients had been resident at Voi for two years and the other about a year. They occupied separate quarters. Both were treated with quinine hypodermically 10 gr four times a day, the parasites in one case had disappeared from the blood on the [illegible] day and on the [illegible] day the patient had recovered, in the other case the parasites persisted in the blood and the patient died on the [illegible]th day of the illness.

One case occurred in April, the other in July.

The country in and around [illegible] is much overgrown with bush and there are numerous [illegible] [illegible] being quite close to the town. Mosquitoes are [illegible] prevalent at all seasons and Malaria is very common amongst the residents.

The third case occurred in an Asiatic who had been resident at Mombasa for over four years but being employed by the railway had often to travel between Mombasa and Voi. He had suffered occasional attacks of Malaria which however [illegible] very mild. He took quinine very regularly. He developed his [illegible] Blackwater in the month of October, and was admitted into hospital on the first day of his illness. Blood examination showed a few malarial parasites of the tertian variety. These had disappeared from the blood by the third day of the illness. The attack of Blackwater was a mild one and he recovered in about 10 days.

During 1909 there were 6 cases in Hospital, and of this number two were Eurasians resident in Kilindini and four were Asiatics two of whom were resident in Kilindini and two in Mombasa. Four were employed by the Uganda Railway and two were employed by private firms in Mombasa. Four had been resident on the island for over two years while two of them had only resided a few months. Of the 6 the four who resided at Kilindini had suffered more or less from periodical attacks of Malaria while the other two had only had one attack each. [illegible] of them were in the

habitual

exhibit of taking quinine regularly while the other four did not take quinine unless during an attack. Two developed Blackwater fever in July, one in September and one in December. Two cases were admitted into hospital on the first day of the illness, three were admitted on the third day of the illness and one on the fourth day of the illness. The two admitted on the first day, one admitted on the third day and one on the fourth day all showed parasites in their blood, while the remaining two did not though there was some pigment. Four of the patients recovered and the other two died. All were treated with quinine hypodermically. The four employed on the railway all lived in separate houses, though when travelling on the railway they lived in the same quarters at Voi. The other two resided in separate houses in Mombasa near to the native quarters where there was always a considerable amount of Malaria at certain times of the year notably in November, December, January and February, also during June and July.

The case in 1909 was a European employed by the East Africa Estates on their plantation at Gazi about 20 miles down the coast south of Mombasa. He had suffered a lot from Malaria prior to his going on leave to England early in 1910. He returned from England in June 1910 and had three bad attacks of Malaria between this time and the date of his attack of Blackwater which occurred in the end of July. He was admitted into hospital on the fourth day of his illness and the blood examination showed tertian parasites in large numbers. About the tenth day the parasites had nearly all disappeared and the urine was free from blood but about the 15th day he had a recurrence of Blackwater with parasites again in the blood which continued for several days. He was treated throughout with quinine hypodermically. At Gazi he resided in a house which was very badly infested and near to a large population of natives who suffered greatly from Malaria. He took 10 grs of quinine daily for months but this did not appear to prevent their attacks of Malaria. He recovered from his attack of Blackwater.

From the clinical history of the 11 cases it appears that

Malaria

[illegible] during the [illegible] prominent [illegible] nearly all the cases of Blackwater Malaria parasites were present and the disease seemed to yield readily with treatment by hypodermic injections of quinine throughout. I am therefore at the present time inclined to the belief that Blackwater is a bad form of Malaria and that the bad form of Malaria is present only in certain districts. I have not seen any cases since 1910 so that on the whole my experience is limited.

491

I have the [illegible],

Sir,

Your obedient [illegible],

(Sd) Alexander Robertson

Medical Officer of Health.

Principal Medical Officer,

Nairobi.

Civil Hospital,
Kisumu,
6th September 1911.

Sir,

In accordance with Circular No 85, No 23/436/1.3.M.P. 321/11, I have the honour to supply the following information, concerning two cases of Blackwater I have attended.

Case No 1.

European Missionary, Male, 28 years- 2nd year in Africa.

Locality:- Mission Station, Ajola, near Kisumu.

(a). Hilly ground, 500 feet above the level of Lake Victoria Nyanza. Covered with bush and undergrowth, insufficient clearing around house, many streams and deep watercourses within half a mi

(b). One case in same station previously; not in the same building.

I do not know which.

Many natives close by, much intercourse with natives.

(c). Insect Fauna. Anopheles, Pyretopherus Costalis.

(ii). Seasonal variation. Case occurred in the middle of the rainy season.

(iii). Personal History.
(a). Previous diseases. Slight attacks of Sub-tertian Malari Not in the habit of taking quinine.

(b). Patient had travelled in the region of the lake shore.

(c). Microscopic examination of blood :-

At beginning of disease - no parasites.

At end of disease- Non pigmented sub-tertian.

Case No 2.

Englishman, Age 27, African 2 years.

Locality: Kumias: 1000 feet above lake.

(a). On a small hill surrounded by swamps and rivers, much undergrowth around station.

(b). Four cases have occurred there all fatal, in the months of June, July, August and September at the end of the rainy season.

(c). Insect Fauna. Pyretopherus Costalis.

[illegible] Funesta.

Tabanidae (Tabanus of several species)

(Chrysops)

(Haematopota)

(Pangonia)

Ticks (Rhipicephalus).

(ii). Seasonal variations. All the cases in the month of June, July, August and September.

(iii). Personal History :- Chronic Sub-tertian Malaria. Quinine Bi-Sulph grains five daily for 2 months. Grains fifteen taken on day previous to onset of Blackwater.

(b). Had travelled extensively over North Kavirondo, from the hills to the Lake shore.

(c). Not taken.

I have the honour to be,

Sir,

Your obedient servant,

(Sd) T. A. [illegible]

Medical Officer,

Kisumu.

[illegible]cipal Medical Officer,

[illegible]t Africa Protectorate,

Nairobi.

21

Extract from Annual Medical Report Sub Assistant Surgeon [illegible] Baksh, Malindi.

Blackwater Fever or Febris Haemoglobinuria.

This appeared on a Non-~~European~~ official European. This was his second attack since his staying here in East Africa Protectorate. First attack occurred at Nairobi and second one in Malindi Shamba which was about 1½ hours walk from the town. He had full symptoms of the disease. Temperature maximum 105, pulse 100, respiration 20, commencing with rigour. Urine Portwine colour, specific gravity 1010 and 1015, reaction highly acid. On admission into hospital he was placed on a cotton mattress bed and had hot water bottles round him. Prescribed Mist. Diaphoretic during the hot stage of fever. When temperature was down prescribed Lithia Citras Effervescens with Syrup Aurantii three times a day. No quinine was given in this case.

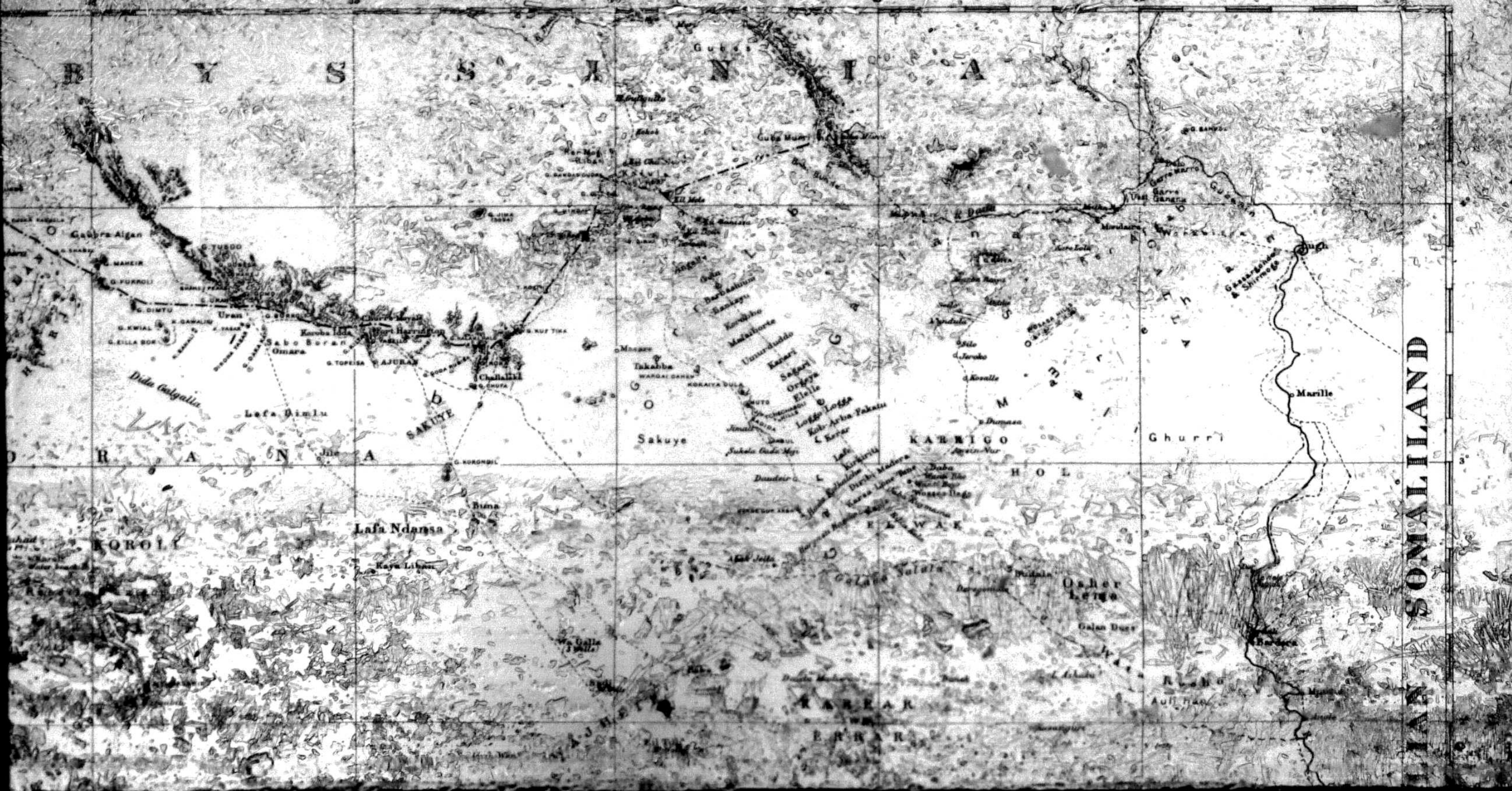
(Sd) [illegible] Baksh,

S.A.S.

Map

(enclosure in despatch
and G.S.G.S. N° 2542)

Adas Arbore
A B Y S S I N
Gabbra Algan
Didi Dukkabora
Uran
Sabo Boran
Omara
Didi Galgalla
Lafa Dimiu
B O R A N A
KOROLI
Sakuye


B Y S S I N I A
SOMALILAND
Gabra Algan
Uran
Sabo Boran
Omara
AJURAN
Challalaka
Dida Galgalla
Lafa Dimlu
SAKUYE
Sakuye
KARRIGO
Ghurri
HOL
Marille
Buna
Lafa Ndansa
KOROLI

UASIN
GISHU
DISTRICT
NORTH
KAVIRONDO
DISTRICT
BARINGO
DISTRICT
RAVINE
DISTRICT
LAIKIPIA
DISTRICT
NYERI
DISTRICT
MERU
DISTRICT
KISUMU
DISTRICT
NAIVASHA
FORT HALL
DISTRICT
SOUTH
KAVIRONDO
DISTRICT
LUMBWA
DISTRICT
KIKUYU
DISTRICT
NAIROBI
KITUI DISTRICT
TANA RIVER
DISTRICT
SOUTH
MASAILAND
DISTRICT
JARAKA
INDUDA
WASOL NAKUDA
KOKANI
HIRAMAN
SOGNA
GUDAS
Samburu Wandorobo
Randile & Samburu
Guaso Nyiro
Lorian Swamp
Kirimar Plain
Masai & Wandorobo
ELGON
VICTORIA
PROVISIONAL MAP


ITALIAN
SOGNA OR GUDAS
Wardeida Hau
Haldayan Hau
Kirimar Plain
Lorian Swamp
Lafa Rig
MAANTHINLE
Chanler Falls
NYERI
DISTRICT
LAIKIPIA
MERU
DISTRICT
INDUDA
MANDOGU
KAMA GUDI
AROWA
WASOL NAKUDA
TANA
DISTRICT
EMBU
FORT HALL
DISTRICT
Kismayu
Port Kwayama
Port Durnford
Dicks Head
Shakani
Fair P.
Songole
LAMU
DISTRICT
Marumbini
Rigu Galla
KOKANI
KITUI DISTRICT
HIRAMAN
WITU
MALINDI
DISTRICT
FORMOSA BAY

MT KILIMANJARO
TAITA AND TAVETA
DISTRICT
MALINDI
DISTRICT
FORMOSA BAY
Landing Place
Malindi
Kilifi
Takaungu
MOMBASA
MOMBASA DISTRICT
Shimba
VANGA
DISTRICT
I N D I A N
O
ZANZIBAR ISLAND


PROVISIONAL MAP
OF
EAST AFRICA
PROTECTORATE
REFERENCE
Boundaries International
Province
District
Railways & Stations
Telegraphs
KILIMANJARO
TAITA AND TAVETA
DISTRICT
MALINDI
MOMBASA DISTRICT
VANGA
DISTRICT
MOMBASA
Sabaki

J

16

501

Communications on this subject should be addressed to—
The Under Secretary of State,
Colonial Office,
London, S.W.,
and the following number quoted.

Downing Street,

19

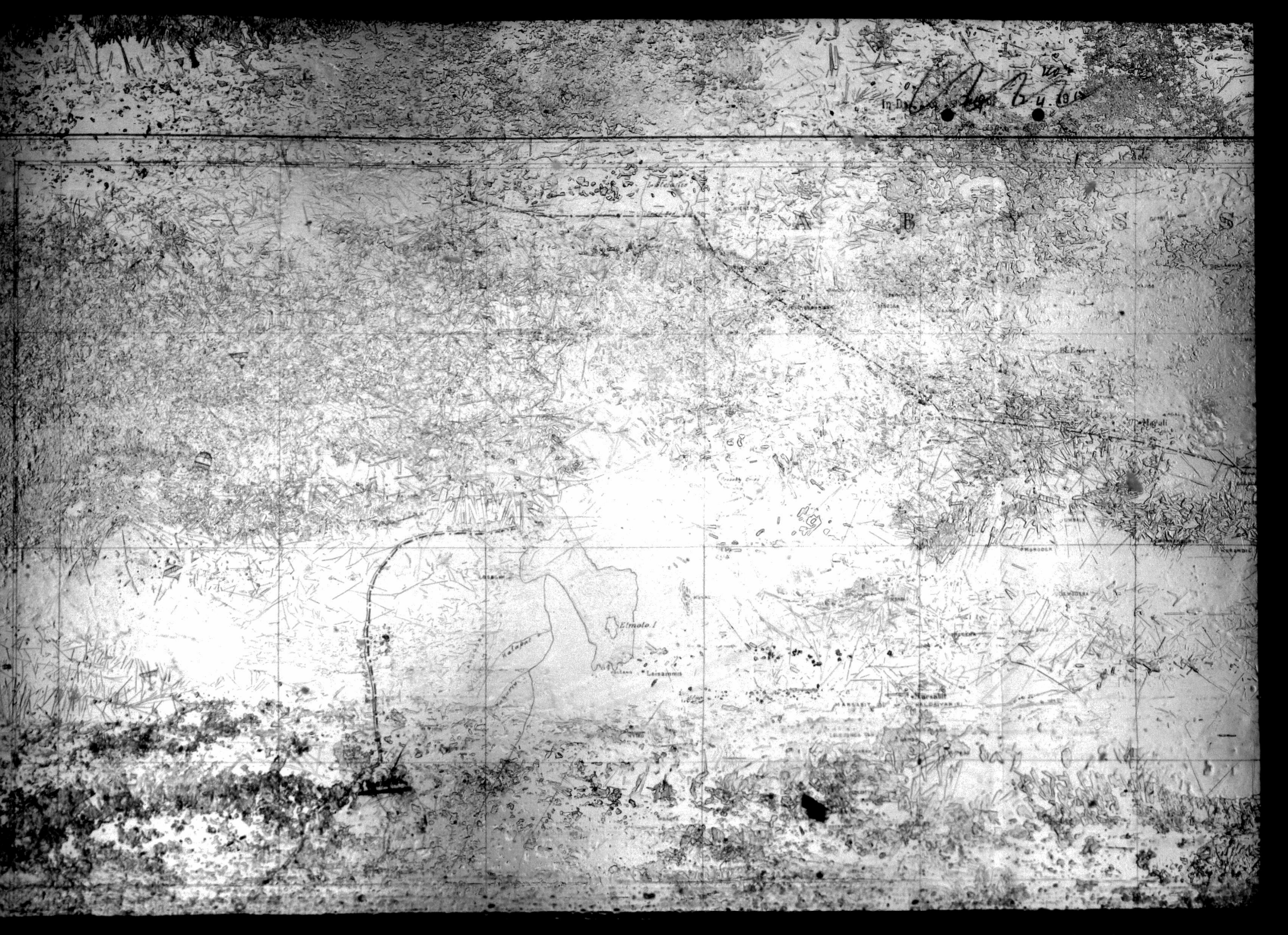
Sir,

I am directed by the Secretary of State for the Colonies to inform you that Mr. *whose address is*

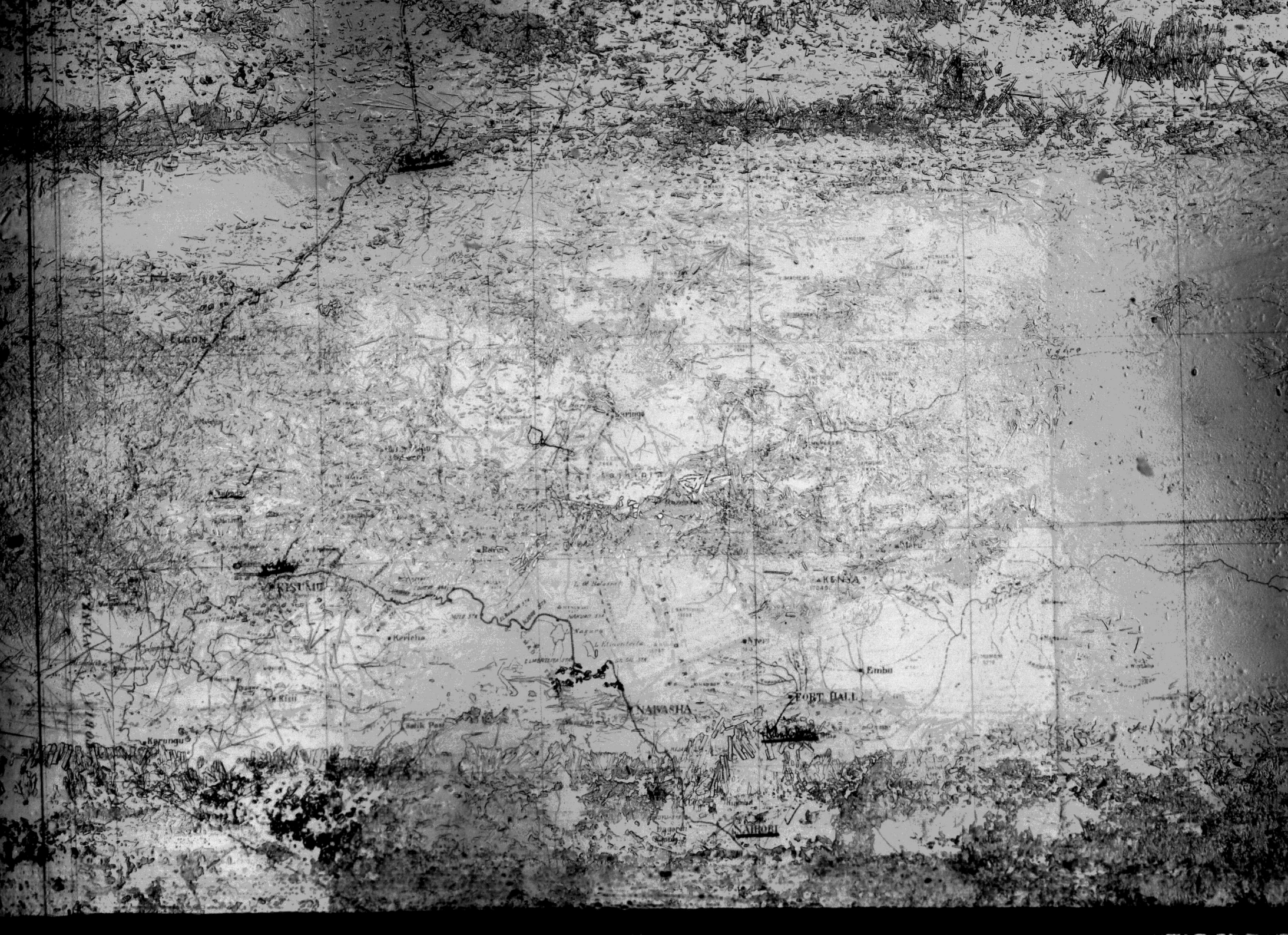
has been selected for appointment as *in* *, and has been instructed to attend the School of Tropical Medicine for a course of instruction from the* *of* *to the* *of* *next.*

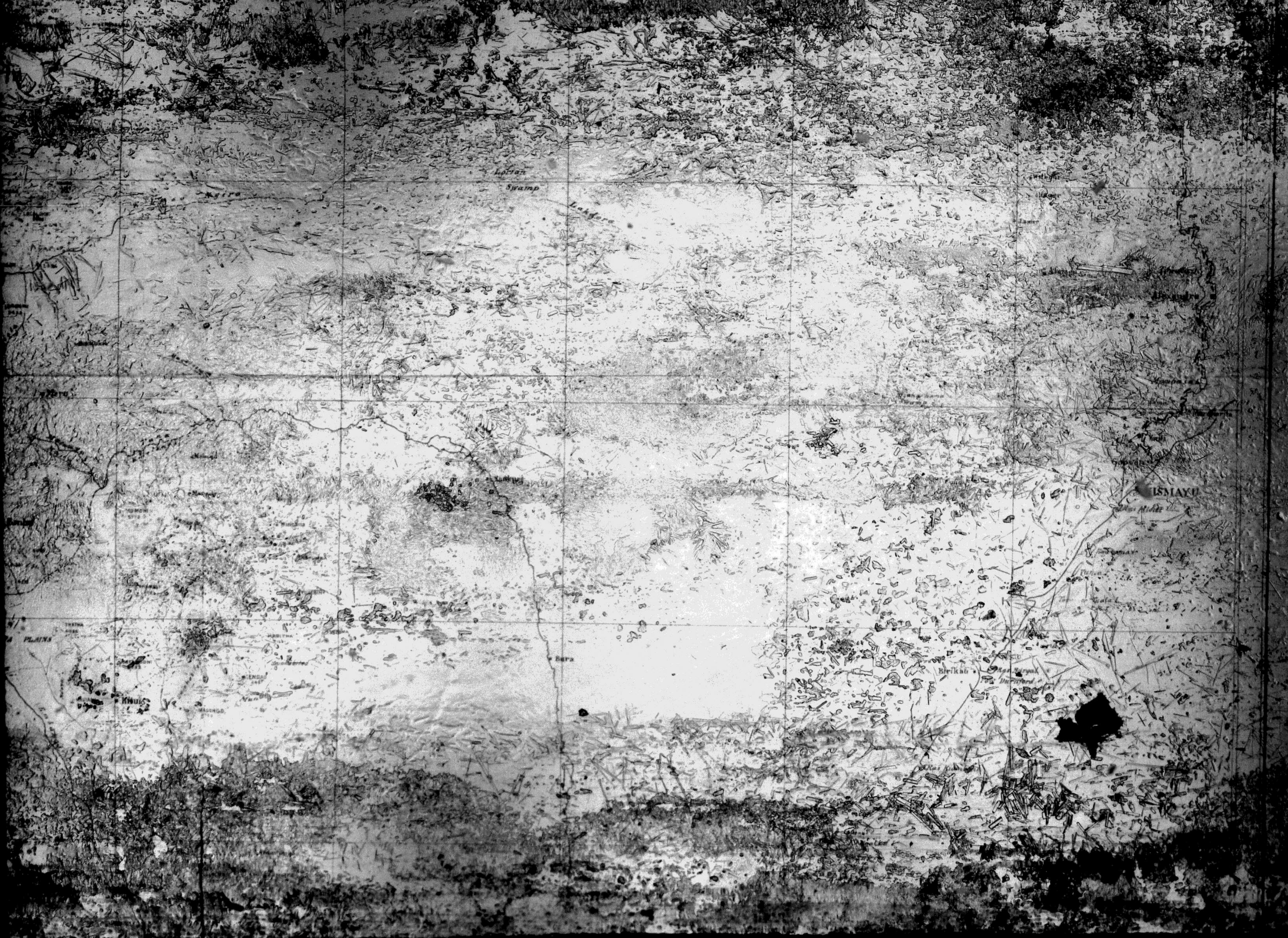
2. *I am to request that arrangements may be made for his accommodation, if he should so desire, at or near the School. He has been instructed to com-*

S.R.1 (E.A.)
Please attach to
13644/12 E.A.
E.D.R.
18-10-12


Etmoto I
Leisammis

502


ELGON
KISUMU
Kericho
Kisii
Karungu
NAIVASHA
KENYA
Embu
FORT HALL
NAIROBI


Lorian
Swamp
ISMAYU
PLAINS


EAST AFRICA PROTECTORATE.
GENERAL PLAN (Provisional.)
Scale 1 in 1,500,000 or 1 Inch to 23.7 Miles
SURVEY DEPARTMENT
CADASTRAL BRANCH
January 1912
KILIMANJARO
Taveta
Kitui
BOUNDARY
RECORD OFFICE
C.O. 533 103
COPYRIGHT PHOTOGRAPH NOT TO BE REPRODUCED


MOMBASA
Shimoni
Vanga