

EAST AFR. PROT.

21152

159

No. 21152

14 FEB 07

(Subject)

Kilimay Report
Annual Report

File with annual by Com. of High. Suggest Report
to be printed & copies supplied for use of Govt.

(Minister)

PRINTED FOR PARLIAMENT
Ed. 1907

This Report deals with such a multitude of
different subjects that it has taken me much longer than
I expected to go carefully into the matter, moreover, I
hoped to have an opportunity of discussing it with Mr.
Sturdy since I knew he was to be in England. This op-
portunity has not availed myself of.

With regard to the portion of the report by Mr. Sturdy
concerning the K. M. A. & the K. M. A. there are
portions which are unsuitable for a report of this kind
and with Mr. Sturdy's concurrence I have suggested deletion
by drawing a stroke through them.

With

With regard to the illustrations there are only a few
the printing of which might be considered of benefit since
they provide information of general interest in the Colonial
Sudan and present the characters of stock. Those which I
think a few of the general interest I have marked with a
cross. As the summarized versions of this section might
be published with advantage.

With regard to the laboratory report furnished to
Mr. Storey I cannot find much of value. It seems to me
to be little more than a record of routine diagnoses which
is very desirable of course but is usually, in such reports
given in a short tabular form, the body of the report being
occupied by the work of actual investigation.

An attempt has been made to divide the wall report into
two parts the first of which concerns itself with diseases
of human beings and the second with diseases of animals.
There is nothing of scientific interest reported in the first
part and the second of animal and human disease is in fact
mostly routine diagnosis and as far as I can see
of great interest in the Sudan. The trypanosome infections
of animals and of man which are possibly very important
diseases are dealt with and the parasites to human workers

margin may not
be written on.

engaged in certain industries as discussed in the
treatment of the human malaria parasite also occupies a
little space. The same remarks apply to the mites and
lice which are dealt with in this section. Other
portions of the report are taken up with enteric fever
of man water analysis in relation to this disease
human beings, malaria, tuberculosis and plague in
human beings.

Why a medical bacteriologist should report to the
Principal Veterinary Surgeon on these subjects it is
difficult to understand. One would think that the
reports on human diseases would have been furnished to
the Principal Medical Officer whose Department it
concerns and the work in connection with the diseases
of animals which is routine in nature should have been
left to the veterinary bacteriologist.

With regard to the veterinary section of the
laboratory report a great portion of this is also occupied
with routine diagnosis and it certainly contains sug-
gestions and a programme of work of investigation
which is hopeful. It also appears in the report that
little advance has been made in the carrying out of the

margin may not
be written on.

let the best work out of the veterinary and medical officers
 is to lay down the rule that each must confine himself to
 the investigation of the subjects ~~on~~ which he has been
 specially trained to carry out, that is to say, the medical
 pathologist should confine himself to problems of human
 beings, and the veterinary pathologist to those relating
 to the health of animals. If a question arises which
 concerns both they should collaborate, but for no other
 purpose should the one spend his time dealing with the
 affairs of the other.

My view with regard to departmental laboratories is
 that they can never be institutions for the prosecution
 of academic science, and that their existence can only be,
 and is all justified, for the investigation of practical
 problems of interest ^{which} to a department of the State has
 been created to deal with ^{the tendency to} ~~send~~ the general workers in
 these laboratories to wander off into problems of little
 or only very indirect interest convinces me that it is
 highly necessary that a programme of work pertinent to its
 affairs should be periodically laid down by the Department
 after consultation with its experts, just as commissions
 of inquiry are furnished with lists of references.

After reading the laboratory reports I cannot say that

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Government of India
31st May 1907

Calcutta,

May 10th 1907.

No. 157
(Incl. 4)

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The Government Press, Calcutta

My Lord,

I enclose the Annual Report of the Veterinary
Department, together with a minute by the Comptroller
of Public Accounts, in advance of the General Annual Report of
the Department, which cannot be prepared for some time
ago as it is of special interest at a time when
such attention is being directed to animal diseases in
Africa and elsewhere.

The report is well illustrated by photographs
and is most interesting. It is the work of the staff of the
Department for the past year and
forms a valuable addition to the literature of the
subject with which it deals.

Ministerial Secretary of State

for the Colonies

11, White Street,

Calcutta.

3. I will suggest that the report be printed, that copies may be provided for the use of the Protectorate.

SR

4. I enclose the map showing the five affected areas alluded to in the report, and a plan of the quarantine area at Malindi.

I have the honor to be,
With the highest respect,
Your Lordship's most obedient,

humble servant,

Frederick Muller

Frederick Muller

EAST AFRICA PROTECTORATE.

NOTICE.

OBSERVATION CAMP REGULATIONS.

A quarantine observation camp has been erected on the Ngumbi Road at the boundary fence of the Nairobi quarantine area for the purpose of receiving cattle whose owners desire to remove them out of the Nairobi area.

1. This camp can receive 100 head at a time.
2. Cattle will be required to remain in this camp for a period of 4 weeks, at the end of which time if they have proved to be healthy they will be allowed to leave the Nairobi quarantine area after being branded with a special mark by the Veterinary Department.
3. During the time they are in this camp they will be at the sole risk of their respective owners.
4. Water in troughs will be provided by the Veterinary Department, but forage must be provided by the owners of the cattle and the camp thoroughly cleaned daily by their boys. All grass brought into the camp for feeding the cattle must be cut outside Nairobi quarantine area.
5. Applications to place cattle in this observation camp will be received up to 15th. Oct. '08 after which date no further applications will be received.
6. Under no circumstances will any cattle that have thus been passed out of the Nairobi quarantine area, be allowed to re-enter this area.
7. In the event of cases of East Coast Fever occurring among cattle in the camp during the period of observation, all cattle in the camp will be subjected to an extended period of quarantine.
8. From the time of entering this observation camp until released the cattle will be entirely under the orders of the Chief Veterinary Officer and will be subjected to such treatment and management as he may direct.
9. No cattle will be received into this observation camp unless the owners previously signify in writing that they agree to conform to these conditions in ~~the~~ their entirety.

Nairobi,
15/10/08

sd/ HENRY J. STONEY
CHIEF VETERINARY OFFICER.

FORM.

I hereby agree that in the event of my..... head of cattle being permitted to enter the quarantine observation camp I will strictly conform to the above regulations.

During the past six months there has been a considerable increase in the work of the Laboratory. In all 469 examinations were made most of the blood smears. The arrival of the Veterinary Bacteriologist during the month of December made it possible to keep pace with the work and there will probably be a much larger increase in the work during the next half year. Up till now the accommodation has been cramped and experimental animals difficult - often impossible - to obtain. Work has therefore been very largely confined to microscopical examinations but, as the results of these have determined to a great extent what diseases are present in the country we should now be able to make the best use of the increased facilities offered by the provision of the new Laboratory. Apart from the routine examinations, the number of which varies as material is sent in, there will be considerable work attached to the preparation of Vaccines (Lymph and Fleure Pneumonia virus). Further experiments with the various tsetse flies are urgently required to determine whether or no they are able to transmit the Trypanosoma gambiense, the one successful experiment with Glossina Fuscipes being sufficient to make one extremely anxious on this point. A glance at the accompanying "Fly map" will show to what a large extent the

During the past six months there has been a considerable increase in the work of the Laboratory. In all 449 examinations were made, most of the blood smears. The arrival of the Veterinary Bacteriologist during the month of December made it possible to keep pace with the work and there will probably be a much larger increase in the work during the next half year. Up till now the accommodation has been cramped and experimental animals difficult - often impossible - to obtain. Work has therefore been very largely confined to microscopical examinations but, as the results of these have determined to a great extent what diseases are present in the country, we should now be able to make the best use of the increased facilities afforded by the provision of the new Laboratory. Apart from the routine examinations, the number of which varied as material is sent in, there will be considerable work attached to the propagation of Vaccinia lymph and Sheep Pox virus. Further experiments with the various tsetse flies are urgently required to determine whether or no they are able to transmit the Trypanosome parasites. We are successful experiment with Glossina fuscipes being sufficient to make me extremely anxious on this point. A glance at the accompanying "fly map" will show to what a large extent the

Protectorate would suffer (should these flies be capable of conveying the disease) if mosquitoes were to find their way into the various fly belts. For example, Voi is the centre of the promising Fibra industry, and Fort Hall, five miles from which *Glossina Fuscus Longipennis* and *Pallidipes* have all been found, is the centre of the most densely populated Kikuyu country. The danger is probably greatest along the Railway zone and may be said to extend from Mombasa to Athi-river, a mile from which latter station *Glossina Pallidipes* have been caught.

The discovery of Bacteric fever in the country has made it possible to get stock cultures of the bacillus and so carry out Vidal's reaction. On the Veterinary side the whole question of the Russian fever of cattle of Dushanbousky requires to be settled if possible and there are probably two new diseases to be worked out, that referred to in previous reports as M'KESB among calves, and a disease in the dog referred to elsewhere.

Recently quite a number of tumours have been sent in for examination; but the work on these is not yet complete. It may be mentioned here however that so far several Sarcomata have been met with.

The discovery of minerals in the Protectorate has brought to the Laboratory a good deal of work which cannot be called bacteriological, for the lack of a chemist has resulted in many mineral samples being sent to the Laboratory for analysis. Work which to a professional chemist would be simple and straight

straightforward, becomes difficult and tedious for anyone unaccustomed to it.

Our best thanks are due to Professor Nuttall for his kindness in classifying the various ticks and flies sent to him. The results ^{are} still too incomplete for inclusion in this report.

MALARIA

Fifteen blood smears have been sent for examination. Of these five showed pigment and relative increase of the large mononuclear leucocytes, and of the others, one showed Benign Tertian, three Quartan, and six Subtertian parasites.

TUBERCLE

Material from sputa was sent for examination and the tubercle bacilli were found. In two cases the material was sputum and in the third it came from a case of acute general tuberculosis.

TRYPANOSOMA AND FILARIA IN A BIRD

Recently, in a blood smear taken from a bird at Elwood both Trypanosoma and Filaria were found. Measurements of sections of these are given below and it is hoped that drawings and microphotographs will be available for the next half annual report.

FILARIA

78 r	I	4 r
80 r	I	4 r
78 r	I	8 r

TRYPANOSOMA

85 r	I	5 r
87 r	I	5 r
88 r	I	8 r
86 r	I	9 r
88 r	I	6 r
88 r	I	4 r
88 r	I	9 r
88 r	I	8 r

Ward (? *Dysentaria cristatus*)

TRYPANOSOMIASIS.

Trypanosomiasis houlais. Two cases of Trypanosomiasis have come under observation - one is a Seaman who had contracted the disease at Finja, and the other is an Indian who had been working at Kiguma. In neither case has the disease followed a typical course. If ever there was a case where the prognosis was one of early death, it was that of the Seaman but under Dr. Harns's treatment first with arsenic and then, when it became available, with steryl the glandular swelling which was enormous has practically disappeared and with it the other symptoms both subjective and objective. An interesting point in connection with this case is the behaviour of the disease in the monkey which was inoculated from the patient's blood. The temperature chart of this animal (p. 9, V) shows the extraordinary long incubation period before parasites could be found or the temperature rose, and the rapid course of the disease to death when once the parasites had appeared in the blood. The latter point is set as remarkable on the former for the only monkey available for the experiment was a *Sykes' Cercopithecus* a monkey which but here seldom lives long in captivity. The second case - that of the Indian - was chiefly of interest as emphasizing the danger which may exist in the movement of labour from sleeping sickness areas to other fly belts. There are already legal restrictions

on such movement, but in spite of this, Kavirondo and Uganda can be found working at practically any place between the lake and Numbani. West of the Athi-river along the Railway some the matter is one of little or no importance, but in such a place as Voi introduction of the disease would mean the ruin of the fibre industry.

Experiments in transmitting the disease with the various tsetse flies are still at a standstill from lack of suitable animals, but the one positive result with the interrupted feeding of Glossina Fuscipes, is exceedingly disquieting.

The annexed map shows as far as is now known the distribution of the various tsetse flies throughout the Protectorate., Where a fly is definitely stated to occur, specimens of fly from that place have been examined. Where a locality is marked with a + mark, it means that tsetse fly have been reported by good observers but specimens have not been examined.

TRYPANOSOMIASIS OF ANIMALS.

Blood smears showing Trypanosomata have been received from Taveta and Fort Hall. In the former case the smears came from donkeys and cattle and there seems to have been a heavy mortality among the animals from the disease on the road between Voi and Taveta. The case at Fort Hall was in a mule and the disease was probably contracted on the Thiba or Yana-river. Two cases were also seen in imported Indian cattle on

a farm inside the Nairobi Quarantine area. In these cases the disease had probably been contracted either at Mombasa or on the Uganda Railway. At Mombasa there would seem to have been some recent extinction of the fly belt, for *Glossina Pallidipes* had been found quite close to the local quarantine station at Mombasa. Knowing this the local Veterinary Officer, in the case in question, had kept the two cows and their calves in pound. This is well in the middle of the island and should be quite free from fly. But the animals were sent to Nairobi in a covered goods wagon with the top of one door open for ventilation; I have myself caught all three tsetse flies (*Glossina Pallidipes*, *Glossina Fuscus* and *Glossina Longipennis*) in a carriage on the Railway between Mombasa and Mombasa, so that one can by no means exclude the possibility of the animals having been infected while in the truck. The fact that the calves escaped infection rather supports this supposition as an odd fly or two coming into the truck would certainly meet the large animals first, whereas in Mombasa probably all would have been infected. In the two infected animals, the disease ran a very rapid course and a rather unusual condition noticed was haemorrhage into the anterior chamber of the eye. These two animals suffered from a complication in that they contracted East Coast Fever, but death ensued before the infection of erythrocytes with *Parvulus* had reached a high percentage.

SPIRILLICIDIA

Spirillidia hominis. One imported case of tick fever - contracted in Uganda - has been seen. There has also been an exceedingly puzzling case in a native brought meridown to the Civil Hospital. Dr. Harns carried out a post-mortem examination and smears of liver spleen and heart's blood showed masses of spirochaetes. The man had been in Uganda 6 years before, but had spent four years in the Kenya district and the last two years in the Nairobi district. So far the disease has never been met with in these highlands, nor has the Ornithodoros been found. Did the disease exist here one would certainly expect to have met with it in some European or Indian, in whom the symptoms are severe and the parasites usually easily found, even though there had been failure to diagnose it in the native. But this case places us between the two alternatives (1) that the disease exists here, ~~and (2) that the disease exists here~~ and (2) that ^{the} dead man had contracted the disease in Uganda 6 years ago. But although it is well known that the spirochaetes may persist in the body and give rise to some symptom such as iritis many months after the patient thinks the disease has been shaken off, one can hardly believe that the parasite could persist in the body for 6 years and then cause the death of the patient from acute Spirillidia.

Spirillidia bovis

Spirochaetes have been found in 2 cattle.

The first case was a cow at Limuru, which, in spite of a raised temperature, seemed in the best of health. The second case was one of the imported inoculated Devons referred to elsewhere and the third case was a cow bought locally with a view to infecting it with both Spirillosis and Piroplasmiasis from the imported Devons.

The spirochaeta is rather small - 14 μ to 20 μ - and as far as seen does not seem to bring about any ill results. In this it resembles the Sp. bovis of South Africa and differs from the Sp. equi, a fatal case of infection with which was recently described by Mr. Sterdy. No further cases of Spirillosis in the horse have been met with.

Note:- Since the above was written Mr. Percival the Game Ranger has found the Ornithodoros Mushi in the Kundu Valley. The case of Spirillosis hantala is therefore explained, but this discovery makes it more difficult to understand why cases of the disease have not been met with in Indians and Europeans.

TYPHOID FEVER.

Post mortem examinations were made by Dr. Harms on two cases at the native Hospital and typical typhoid lesions were found. From the spleen of each case an organism was isolated in pure culture, which organism had all the morphological and staining characteristics of the bacillus typhosus. Growth on agar, gelatine, milk, neutral red and litmus media the growth resembled in every particular the growth of the bacillus typhosus. It can hardly be doubted that Typhoid Fever is now present in the country if it were not here before - and reports as to its presence or absence are exceedingly contradictory. It has presumably been imported by the many South Africans who have come here in the last three years. So far no case has been reported among Europeans. Fortunately the Hairsbi water supply is above suspicion but the knowledge that the disease is here should make people in out districts if possible additionally careful as to the boiling and filtering of their drinking water.

PLAGUE REPORT.

NO CASE had occurred in Nairobi, but a death was reported on one of the Lake Steamers. It was also reported that dead rats had been found in the stern room of this Steamer some days before the illness was reported, and the man who died was the one who had to go most often to the store.

When the steamer returned to Kisumu she was anchored out in the bay and cargo, all in sacks, discharged into a lighter. The whole ship was then thoroughly cleaned, bilge cleaned out, holds washed out, lime washed, and finally disinfected with Glaxton gas. No dead rats were found but between two and three hundred live ones were caught and killed. Over 50 of these were sent ashore and examined, but no infected ones were found. The measures taken seem to have been sufficient, as no further cases have occurred on the ships nor has any case been discovered at Kisumu, although cases are reported from German territory.

On vessels trading on the Victoria Nyman, some regular system of dealing with rats would probably help greatly in preventing the spread of the disease. Thus, rat traps should be carried on all ships including dhows and should be set every night; if the rats become too punning for the traps, poison could be laid with proper precautions. Thorough cleaning out and lime washing of the holds at frequent intervals would result in two benefits; in the first

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When the steamer returned to Kisumu she was anchored out in the bay and cargo, all in sacks, discharged into a lighter. The whole ship was then thoroughly cleaned, bilges cleaned out, holds washed out, lime washed, and finally disinfected with Glysten gas. No dead rats were found but between two and three hundred live ones were caught and killed. Over 50 of these were sent ashore and examined, but no infected ones were found. The measures taken seem to have been sufficient, as no further cases have occurred on the ships nor has any one been discovered at Kisumu, although cases are reported from German territory.

On vessels trading on the Victoria Nyman, round whose shores plague would seem to be endemic, some regular system of dealing with rats would probably help greatly in preventing the spread of the disease. Thus, rat traps should be carried on all ships including dhows and should be set every night; if the rats become too numerous for the traps, poison could be laid with proper precautions. Thorough cleaning out and lime washing of the holds at frequent intervals would result in two benefits; in the first place

place rats which had escaped traps or poisons would be killed and they would be unable any more to nest among old tinnage; and in the second place the bilge would be cleaned out and oil spread. As pointed out by Dr. Andrew Halfour, the bilge water is a favourite breeding place for various mosquitoes, whose larvae hatch out in the bilge, while the resulting imagines soon find their way over the ship. Still another benefit would result, which though perhaps not epidemiologically important, would be much appreciated by the passengers, namely a considerable diminution in the number of cockroaches.

From Kibale (Uganda) one slide was received for examination. This slide was a smear made from a specimen which was found to contain a pure culture of a bi-polar staining bacterium. As I know of no condition in man except Plague in which such organisms would be found in a gland, I am of opinion that this slide must have been taken from a case of plague. Under these circumstances the disease must exist in the Uganda Protectorate and can no longer be regarded as confined to the east and south shores of the Victoria Nyanza.

WATER ANALYSIS

During the last six months chemical analyses have been carried out on seventeen samples of water forwarded from various parts of the Protectorate. The results of these analysis taken with results of previous examinations, give sufficient data from which conclusion being correct. In a few cases where the water has been drawn direct from a spring the sample has shown a good potable water which should remain up to sample provided that the necessary precautions be taken to prevent pollution of the source. At the opposite extreme from these waters are the waters samples of which have shown evident signs of sewage pollution: These samples have come from rivers and lakes and the very nature of the local conditions would make it surprising if the samples did not show signs of pollution. One sample for example was labelled as having been taken from the Njoro stream south of and immediately below the Syndicate Farm buildings. In such a case the sample might almost be considered as tainted by its label and hardly worth the time and trouble necessary for the chemical analysis which ultimately proved the extreme accuracy of that label. In another case - that of the Kisumu water supply - similar demonstration has since confirmed the conclusions arrived at by the analysis. For when S. S. Winifred was quarantined off the Kisumu pier and old

sewage, ship's refuse and various other forms of
 filth were thrown overboard, they could directly be
 seen to be blown by the morning lake immediat
 over the intake pipe of the town supply. But apart
 from such extreme cases, every river and lake in the
 Protectorate must be liable to fouling by the gun,
 and where there is any native population pollution
 with the excreta of these natives is almost certain
 to occur. A given sample of such water may happen to
 be pure enough to pass the tests imposed on it, but a
 such purity can only be regarded as an accident and
 an accident which cannot be expected to recur.
 Any water, therefore, except these spring waters men-
 tioned above, must be regarded with the greatest sus-
 picion and should not be used as a source of private
 supply without boiling or filtering, nor of public
 supply without proper filtration. These people, and
 they are not few in this country, who regard boiling
 and filtering as a useless refinement may possibly be
 encouraged to adopt one if not both of these measures
 by the knowledge that enteric fever is present in the
 country.

In the Veterinary section of the Laboratory during the 4 months ending March 31st 1906 specimens have been reported upon both macroscopically and microscopically but chiefly the latter: Of these 187 have been diagnosed as negative and the remainder have been classified under the heads of the following described conditions:--

(a) Spines. 17 Spines contained the Virus-plasma fluids to a more or less marked degree. The duration and course of the disease in those cases in which it was possible to follow them showed the period of illness in cases of recovery to be from 1 to 3 months, and in fatal cases death usually took place within a week, the period varying according to the severity of the attack, and the constitution of the animal affected. Freshly imported dogs were the chief sufferers, and the mongrel and stray dog of the country showed the highest percentage of recoveries. In the case of imported animals consciousness and recovery is protracted, the disease leaving the animal in a state of emaciation and weakness. In those dogs raised in country and usually fed and as often complicated with spinal lesions. Drugs appear to be useless and

even the most carefully nursed cases, seldom recover.

The Bacteriology of this affection has been discussed in previous reports from the Laboratory and at present there is nothing further to add to it.

The post mortem symptoms are not always constant, in many cases the characteristic enteric conditions were present in the mucous membranes, liver and kidneys, but in others this was replaced by an anæmia and pallid condition. The enlargement of the spleen was an almost constant symptom. The constant presence of the *H. Leishii* in the various districts of the Intestine acting as the medium of infection at present precludes the possibility of a probable decrease in outbreaks and so far no effective method of establishing an immunity against this disease has been devised.

(b) 5 Blood smears contained the *Fireplasma* type, all of which were from one case in Nairobi, the duration of illness was 3 weeks and complete recovery took place. The *Fireplasma* were numerous, and the liver showed the typical enteric mucous membranes with patchy spots and prostration, with the passage of red and later coffee colored urine. The accompanying infection was a high one and several infected mosquitoes showed characteristic changes. Other blood smears from Nairobi, the history of which suggested *Fireplasma*, have been examined with negative results. At the present time experiments are being carried out on a large scale in the Transvaal Bacteriological Laboratory

with a view to the production of an immunity against Equine Piroplasmiasis, so far the immunity thus produced has been a mild one, but hopes are entertained that at a later date an effective use may be made of it, in which case no doubt more circumstances warrant it, the possibility of its use in this Protectorate might be entertained, but so far only a few cases have been met with.

(a) ~~RESULTS~~

(a) *Piroplasma Buxtoni* & smears of simple Red-water have been examined which showed no complications they were in pure and half bred stock. One is an imported Shorthorn Bull that had been in the country and the Nyanga district 2 years before becoming infected - this Bull had a very high % of infected corpuscles but recovered from the attack in about 10 days. An experiment with previously immunized imported animals is being conducted at present, the results of which will be communicated later.

(b) *Piroplasma Buxtoni*. 25 slides were examined showing the Piroplasm of East Coast Fever without complications. These specimens were received from native half bred and pure bred animals.

The progress of disease in the Shirehi area has been slow, this might be accounted for by the comparatively small number of Bovines in the area and the large number of other animals on which infected ticks might choose themselves.

Until within a few weeks, the cases that

with a view to the production of an immunity against *Equine Piroplasmic*, so far the immunity thus produced has been a mild one, but hopes are entertained that at a later date an effective use may be made of it, in which case no doubt more circumstances pertain to it, the possibility of its use in this Protectorate might be entertained, but so far only a few cases have been met with.

(a) RESULTS

(a) Piroplasma Digninum 6 specims of simple Red-water have been examined which showed no complications they were all pure and half bred stock. One is an imported Shorthorn Bull that had been in the country and the Nyumbu district 2 years before becoming infected - this Bull had a very high % of infected corpuscles but recovered from the attack in about 10 days. An experiment with previously immunized imported animals is being conducted at present, the results of which will be communicated later.

(b) Piroplasma BURNI. 25 slides were examined showing the Piroplasm of East Coast Fever without complications. These specimens were received from native half bred and pure bred animals.

The progress of disease in the Nairobi area has been slow, this might be accounted for by the comparatively small number of bovines in the area and the large number of other animals on which infected ticks might choose themselves.

Until within a few weeks, the cases that

case under the notice in the Laboratory occurred within the Quarantine area, but since that date an outbreak has been reported from a few miles outside the Quarantine Area. The post mortem showed the characteristic lesions of East Coast Fever, and microscopic examination of smears of organs has demonstrated the invariable presence of the characteristic blue bodies described by Esch and in previous reports from this Laboratory.

(c) NON-REPRODUCTION OF PIRAPLASMIA.

6 slides on examination showed a mixed infection of *Piroplasma Parvum* and *Piroplasma Sigmundii* probably due to the break down of Resistor immunity consequent upon an attack of East Coast Fever, and in two cases East Coast Fever was complicated with Trypanosomiasis.

(d) PIRAPLASMIA OTHER THAN THE PIRAPLASMIA.

Until quite recently Tropical Bovine Piroplasmiasis included *Piroplasma Parvum* and *Sigmundii*; at the Suda Pooth conference in 1903 however Buchenbender described a piroplasm simulating the *Parvum* in many details but differing clinically and in mortality in outbreaks which he called the Piroplasm of Trans-Caucasian Fever - a new species - Theiler in the Transvaal up to as recently as 12 months ago, had accepted the presence of ring and red piroplasma following an attack of Resistor as the immune form of that disease, recently however Theiler as a result of an exhaustive series

series

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(c) OTHER MICROSCOPIC INVESTIGATIONS.

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(d) PIROPLASMA SPECIES OTHER THAN P. PARVUM.

Until quite recently Tropical Bovine Piroplasmosis included *Piroplasma Parvum* and *Sigmans*; at the Cape Town conference in 1903 however Eschschewsky described a piroplasm simulating the *Parvum* in many details but differing clinically and in mortality in outbreaks which he called the Piroplasm of Transvaal Fever - a new species - Theiler in the Transvaal up to as recently as 12 months ago, had accepted the presence of ring and rod piroplasma following an attack of Redwater as the immune form of that disease; recently however Theiler as a result of an exhaustive series

series

series of experiments has convinced himself that what he previously accepted as the Fireplasma of immune Rodents are really the Fireplasma of a separate diseased condition and he has named his new species the Fireplasma *Strains*; Up to now however he has not been able to transmit the fireplasma except as a sequel to Rodentia. Placing the *Bigenium*, on one side as an undoubtedly distinct species and accepting Thaler's Fireplasma as a new species we are now faced with 3 different species of Fireplasma, all bearing a distinct resemblance to one another viz- *Parvum*, so called *Basilar*, and *Strains*. Undoubted cases have occurred in the Protozoate of animals showing Fireplasma in their blood which in many ways resembled those described by Thaler and which up to now have been accepted as evidence of the later stages of Rodentia and we hope to be able to follow up the question in experimental animal's Koch has described Doshunkovsky's disease in German East Africa and we have reason to suppose that we have observed cases similar to those described by him. The whole question is one that will require exhaustive experiments before any conclusion can be arrived at.

(12) Strains

12 slides on examination showed marked alteration in the shape and staining character of the corpuscles which indicate the late or convalescent stage of Fireplasmia.

(13) Strains

This affection is dealt with in connection

series of experiments has convinced himself that what he previously accepted as the Piroplasma of immune Rodents are really the Piroplasma of a separate described condition and he has named his new species the Piroplasm Britanicum; Up to now however he has not been able to transmit the piroplasm except as a sequel to Redwater. Placing the Bigeminum, on the one side as an undoubtedly distinct species and accepting Theiler's Piroplasma as a new species we are now faced with 3 different species of Piroplasm, all bearing a distinct resemblance to one another viz:- Parvum, so called Mueseler, and Britanicum. Undoubted cases have occurred in the Protectorate of animals showing Piroplasma in their blood which in many ways resembled those described by Theiler and which up to now have been accepted as evidence of the later stages of Redwater and we hope to be able to follow up the question in experimental animal's Koch has described Doshunskovsky's disease in German East Africa and we have reason to suppose that we have observed cases similar to those described by him. The whole question is one that will require exhaustive experiments before any conclusion can be arrived at.

(8) **HEMOPHAGOUS**

In slides on examination showed marked alterations in the shape and staining character of the corpuscles which indicate the late or convalescent stage of Piroplasmicosis.

(9) **HEMOPHAGOUS**

This affection is dealt with in connection

with Human Trypanosomiasis.

(4) STRONGYLIDAE

Ovine Strongylidosis both Bronchial and Gastric is apparently a wide spread affection in the Protectorate and from information it is a serious factor in the commercial raising of young stock. The specimens obtained from dead animals have been Contortus and Convolutus, and a species which has been classified as Cervicornis and the Strongylus Piliaris.

Another sheep affection which is fairly wide spread is the presence of Oestrus Ovis; whilst although not a fatal affection, it seriously affects the condition of the infected animals. So far it has not been possible to successfully hatch out the larvae for the purpose of ascertaining the fly responsible for its deposition but arrangements have been made by which larvae freshly blown out from the nostril will be forwarded to the Laboratory for this purpose.

(5) HORSE SICKNESS

Only one case of horse sickness was diagnosed but the period over which this report extends does not include the Horse-Sickness season. So far, the experiments carried on by the Bacteriological Laboratory in the Transvaal have not proved the effectivity of an immunisation suitable for horses, although success has attended the preventive inoculation in India. The drawback so far has been the difficulty in ascertaining the different degrees of intensity of the Virus in various districts, but this to a great extent now has been overcome. This will probably be the

difficulty

difficulty in the Protectorate, and it will be necessary to test the virulence of the blood in the different districts, before proceeding further in the matter. This can be done by submitting samples to Dr. Sholler at the Pretoria Laboratory who has kindly undertaken to test them and report the result. In any case if it is desired, immunised Mules could be obtained at Pretoria and it would be interesting to ascertain if the immunity against the South African strain of Virus is efficient for this Protectorate. When this has been determined, the advisability of preventive inoculation could be entertained on a large scale.

(4) SPERMATOCYSTICUS (SPERMATOCYSTICUS)

3 specimens submitted for examination showed the presence of the typical organism of this disease.

(7) SPERMATOCYSTICUS

Several specimens of parasites have been obtained principally the Gastric and Bronchial Filaria from sheep. In one instance the post mortem on a Wild Ewe revealed the presence of an enormous quantity of parasites in the stomach and bowels which are apparently identical with those found in the horse viz:- *Schistosoma dentatum*, *Schistosoma stenosomum*, *Capri's Curculionid*, and the abdominal Filaria Equina; in the stomach were found immense quantities of larvae which were probably the Gastric Ept., but attempts to hatch them out and ascertain the fly responsible for their production have failed. The presence of these parasites

apparently

apparently had no deleterious effect on the animal who was in good condition.

The *Salicostema tetracontatum* and *Salicostema Arumton* are directly responsible for the production of *Vermineous Anourion* and *Parasite Hysteritis* and taking into consideration the enormous number of *Salicostema* in the *Proctostoma* and their wide distribution, the fact of their harbouring these parasites must be looked upon as a serious factor to be reckoned with in the successful raising of horse stock. Larvae have also been obtained from the intestines of *Rhinoceros*, but like the preceding, have so far failed to hatch out.

(a) ~~RESULTS~~

(a) Simia 6 specimens of lung were affected with simple pneumonia, viz:- Fig 2, Cx 1, Cx 2, 1, and Cx 3, 1.

(b) Salicostema Bovine Flavour-Pneumonia. The lung of one calf was the only specimen which showed *Salicostema Bovine Flavour-Pneumonia*. It is hoped in a short time when satisfactory arrangements have been completed that we may be in a position to produce a *Salicostema* in the laboratory which will supersede the present method of preventive inoculation now in use. In this case we shall have a stock of *Salicostema* in hand which can be sent out for use as required, and there will be no necessity to wait for an affected animal before the inoculation can be carried out.

(c) Flavour-Pneumonia of Simia. This affection apparently has a wide distribution in the *Proctostoma*



and is responsible for a high mortality in stock. Unlike the preceding Novik's affection, no known method of preventive inoculation has yet been devised, in fact attempts to produce the disease experimentally have failed. Microscopical examination of the spleen of animals dead of this affection have shown in some cases the presence of extra corpuscular blue staining circular bodies with chromatin particles, but up to now we have not been able to associate these, as in any way causal in connection with the disease.

(9) DOG DISEASE

An imported dog in quarantine at Nairobi, suffered from an illness simulating Canine Tick Fever but microscopical examination of the blood failed to reveal the presence of the *Fireplasma Canis*. This dog died after an illness of three weeks duration. During the latter part of the illness blood smears were stained microscopically with chromatin-staining particles.

Experimental inoculation of blood from this affected animal into an apparently healthy dog has up to the present not produced a definitely similar condition, but unfortunately the experimental dog contracted Canine Fireplasmosis from which he is recovering. The affected dog had only been in the country a few days and had not suffered from Fireplasmosis, whether this disease is a form of Canine Fireplasmosis or not, we have not yet determined but in a later report we shall hope to be able to produce more information on the subject. A case had occurred previously which showed similar symptoms showing life and on post-mortem and similar blue bodies

on microscopical examination, together with enlargement of the spleen.

(10) W'KUNU.

A disease affecting oxen has been observed amongst native and half-bred stock which has been called by the natives by this name. Reference has been made to it in a previous report, and when circumstances permit experiments will be carried out in connection with it.

11) AVIAN DIPHTHERIA.

One case of Avian Diphtheria occurred in an imported Game Cock. The animal died, and the disease was experimentally transmitted with cultures of the organism to a susceptible fowl with fatal result.

12) BLACK-QUARTER.

2 slides on microscopical examination showed the organism of Black-Quarter from muscle near of an affected animal in the Mashaka district. This is the only case that has been observed in the Laboratory.

13) ACARIASIS.

Only one case of Acariasis has been reported upon which occurred in a horse in the Haurhi District.

14) SPIRILLICIDIOSIS BOVIS.

This is discussed under the heading of Human Spirilliosis.

In addition to the reports made on the above mentioned diseases considerable time has been taken up in the classification and mounting of the various ticks and flies - a number of specimens have been received for classification and in those cases where they would not be relegated to their various Genera here, duplicate specimens have been sent to England with a view to ascertaining their correct species.

The tick plays such an important role in the dissemination of disease in the Protectorate that it is absolutely essential that the fullest data should be obtained regarding its habits and complete life history both on and off the animal body. The habits of the common varieties such as the *Dorsatoratus*, *Appendiculatus* and *Everetti* have been thoroughly worked out and it has been proved with certainty that they are carriers of specific diseases - there appear however to be several varieties of Ticks in the Protectorate whose life history and relation to disease have not yet received attention, and it is hoped that it may be possible to deal with this very important subject in an exhaustive manner. Here than one of these varieties has been found only on wild animals, but from this we must not conclude that this is their only host - it is quite possible that domesticated animals may also play an important part in the intermediate stages of their development.

The above remarks apply equally to the question of the biting and sucking flies of which there are an enormous number in the Protectorate. As soon as circumstances

circumstances permit, it is proposed to set apart a room as a museum where, as far as possible, the ticks and Flies will be exhibited in their natural conditions and various forms, together with their regional distribution as it becomes known. It will then be possible at a glance to demonstrate to those who desire it the tick and fly distribution in the various districts which should be invaluable.

Vaccine and Serum preparation will also be started as soon as circumstances permit in the new Laboratory.

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New Diseases in dogs	7.

A CASE OF SPIRILLOSIS IN THE HORSE.

By R. J. STORDE, M.R.C.V.S., Chief Veterinary Officer,
Nairobi, East Africa Protectorate.

ON the 17th June last I was called to see an Abyssinian pony gelding, the property of Mr. G. H. Goldbach, which had been brought into Nairobi from Donyo Sabak, about sixty miles distant.

I found the animal dull, with hanging head, large swellings over



FIG. 1.

Throatgirth of pony, to show swellings and dilatation swelling.

the neck, and acute oedema of the neck; temperature 102° F. the evening temperature 99°.

I diagnosed the disease to be the "dik dik" form of horse sickness, which was then and still remains prevalent in the Nairobi district, and a stimulating draught was administered.

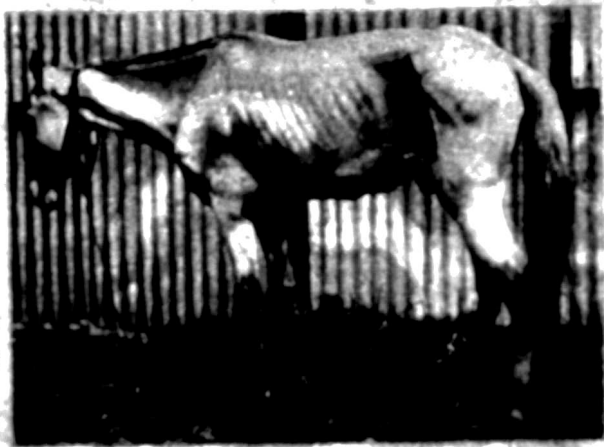
The following morning I was surprised to find that the swelling had disappeared from the supra-orbital fossa and neck, but the oedema had accumulated between the fore-legs, extending backwards towards the sheath; the animal was extremely dull and weak, eating and drinking but little. The temperature had fallen to 95° F. during

A CASE OF DYSPEPSIA IN THE HORSE

By R. J. GIBSON, V.M.D., IOWA STATE COLLEGE

With a Plate Illustrating the Case

ON the 15th June last I was called to see an Abyssinian pony owned by Mr. H. Godtsch, who had been brought into Nairobi from Kenya Sabak, about forty miles distant. I found the animal ill, with hanging head, large swellings over



the ribs and the neck, and the animal was unable to eat.

The animal was brought to the hospital and was given the following treatment:

1. A cathartic consisting of 100 grains of calomel and 100 grains of

potassium permanganate, given in divided doses over a period of 24

hours. The animal was kept in a dark, cool place during the treatment.

The first series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

The second series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

The third series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

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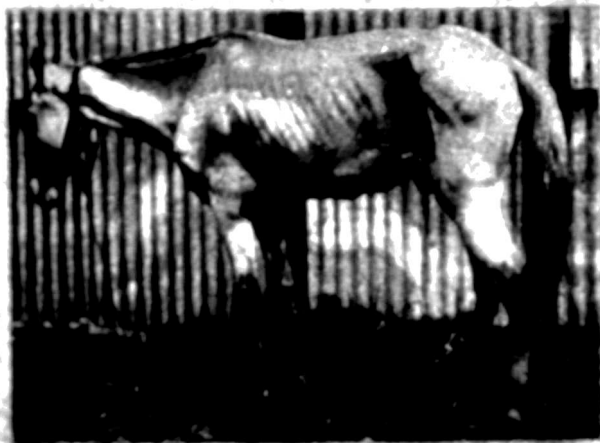
The sixth series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

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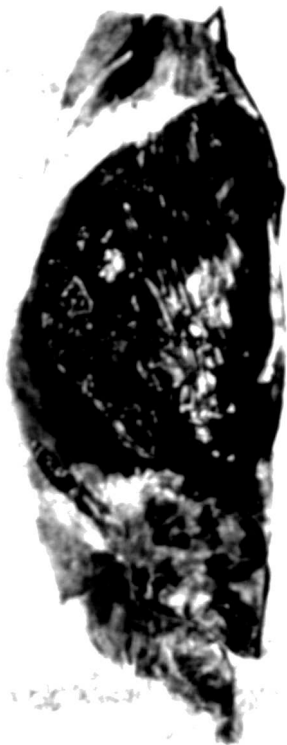
The eighth series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

The ninth series of experiments was made at 95° F. In this series, as the temperature fell to 93° F., the rate of reaction increased. This was due to the fact that the rate of reaction is a function of temperature. The rate of reaction is a function of temperature.

BY R. J. ...
 ...
 On the 13th June last, we called to see an Abyssinian dog
 ... the property of Mr H. H. Godfrich, who had been brought
 from Nairobi from Kenya Salute about forty miles distant.
 ... found the animal full, with hanging head, large swelling over



...
 ...
 ...
 ...



persistent, and the temperature rose to 99° F. It and smearing gave negative results. On the 12th the temperature rose to 97° F., rising again to 99° F., the animal would only occasionally nibble at its food and stood resting its head on the manger through about weakness. Smears were taken from the blood and the redematous swellings and, after staining with Lushenko's stain, were examined microscopically. In the peripheral blood ten to twelve spores were found in each smear, and a few were also demonstrated in the smears from the redematous swellings. The organisms resembled the spores of *Spizella* observed.

A dog was exposed simultaneously with the animal, but the results have been negative.

On the 13th the temperature was 97° F. The animal was lying on itself up against the side of its stall and the temperature was still 97° F.

During the day it gradually weakened and died at 10:30 A. M. The temperature shortly before death being 97° F.

The treatment throughout was confined to starvation.

Post-mortem examination was made early next morning. The animal was extremely emaciated and shrunken, every one of the ribs protruding, the lungs and between the hind legs were a number of *Spizella* spores, which the animal must have taken in during its life, and some being found, with them, when they are also a good deal of great importance to human beings. The animal was a few days before death, also a few days before it died through the *Spizella*.

The stomach glands had a pale appearance, the stomach itself contained a gelatinous straw-colored mass, which was lying into the chest cavity a large coil of blood-colored membrane, which was found lying on the surface of the stomach. On removing this coil the pieces of the fat was found to be ruptured, and a large infectious mass was found near the white color of the stomach. The left lung was practically normal. The stomach contained a few bits and several dark-colored blood clots, but was otherwise healthy. The spleen, liver and lungs were of normal appearance. The kidneys, however, were noticeably enlarged, pale in color, and weighed fifty-six grams each. The bladder and the prostate gland were taken from all the organs, but no organisms could be demonstrated.

The most marked feature throughout the illness was the rapid and extreme emaciation, the animal, a well-developed young pig, refused to a weighing of bones in five days.

The animal died in a weak condition of respiratory function in a few days.

April

1907.

1907.

Sir,

I have the honour to report, that in accordance with your instructions, I left here for Voi and Taveta on the 25th ultimo, arriving at Taveta, about 70 miles from Voi, on the 29th. I inspected 20 head of trek oxen at Voi, the property of an Italian, Mr. Ortolani, which had been plying between Voi and Taveta for some weeks and were the survivors of about 50 head brought down from Machakos.

They were all in miserable condition and very weak. Only one, however, had a abnormal temperature 104° , from which I took blood-smears for microscopic examination.

The animal was very anæmic, no patches on conjunctiva, but some œdema on under surface of abdomen. The animal appeared to be suffering from tsetse-fly disease. On my return I found this ox had died 4 days later.

The Voi-Taveta road is a very trying one for transport animals, owing to the scarcity of water, the poor grazing en route and the presence of tsetse-fly at several points on the road.

There is no water between Voi River and Mwatate

17

The Chief Veterinary Officer,

N A I R O I.

17 miles, ~~was~~ between Bura and Taveta River 10 miles. Tsetse fly is found at the following points on the Road:-

- (1) At Voi River drift (bushes from Voi) and for $\frac{1}{2}$ mile beyond the river, through the thick bush; here it is ~~particularly~~ bad.
- (2) At Mwatate, at the stream in the valley below the Kuma, here there are only a few.
- (3) At Bura near the river swamps.
- (4) At Mukhomoi, about 8 miles beyond Bura, where it is very bad in the thick bush.
- (5) At the Taveta River, where it is common.
- (6) In German territory, at the dry water course at the Marago foothills.

At this dry season the flies are much less prevalent and there is not much danger to animals if no delay is made at the points where the flies are known to be and if they are crossed in the heat of the day. The animals have to be watered, however, at most of these points and I have strongly advised transport riders to keep their boys busy whisking the animals with ~~branches~~ while they are drinking. In the wet weather, however, the flies are very numerous at all these points and the mortality is very serious.

All transport animals, oxen and donkeys, which I inspected en route were in poor condition and I took a number of blood smears from those showing an abnormal temperature or clinical symptoms of disease.

I made a post-mortem examination of an ox which I slaughtered at Bura: he was somewhat emaciated,

temperature

The following is a list of the specimens collected during the expedition to the interior of the island of Java, East Indies, in the month of August, 1905. The specimens were collected by the author and his assistants, and are now deposited in the collection of the U. S. National Museum. The list is given in the order in which the specimens were collected. The specimens are arranged in groups according to their general characters, and the number of specimens of each group is given in parentheses. The specimens are arranged in the following order: (1) Mammals, (2) Birds, (3) Reptiles, (4) Amphibians, (5) Fishes, (6) Insects, (7) Plants, and (8) Miscellaneous. The specimens are arranged in the following order: (1) Mammals, (2) Birds, (3) Reptiles, (4) Amphibians, (5) Fishes, (6) Insects, (7) Plants, and (8) Miscellaneous.

temperature before death 106.1, mucous membranes anemic and hurried breathing. I found the 4th stomach inflamed throughout most of its internal surface with several shallow ulcerations, enlarged spleen, and with 3 or 4 dirty-white, opaque infarcts in the liver, urine normal. I took smears from peripheral blood before death and from liver, kidney and spleen. The animal had come from German East Africa some weeks before. From post mortem appearances I was led to suspect East Coast Fever.

In another ox which I slaughtered at Taveta, the property of Mr. Jolly, I found similar lesions except that there were no infarctions of liver; this ox had been used for transport purposes on the Voi - Taveta road for some 2 months and had also come from German East Africa.

Near the foothills of Mwangi in German East Africa I inspected a large herd of some 600 head of cattle belonging to Masai; they were in excellent condition.

I inspected considerable numbers of cattle belonging to Masai, Patterson, Mwangi, Gertel and others near Mwangi also a number of native Herds. Most of these were very healthy and well but a few native cattle, which had been segregated, showed signs of sickness and though the natives were extremely averse to having their animals touched or interfered with, I was able to take a few temperatures and blood smears portions of which are with the slides.

I learnt here that since December last the following

Following deaths have occurred among cattle near Marangu, in German Territory. I obtained these particulars from the Rombo and Kilema Missions and from Messrs. Hengede, Patterson and Jolly.

Mr. Ortolani lost 22 in British Territory which had recently come from Marangu.

Mr. Hengede lost 30 in German Territory.

Native Chief Nvala lost 170 near Mr. Patterson's place at Marangu.

The Kilema Mission had lost 80 cows near Marangu, German East Africa.

The Rombo Mission had lost 48 cows near Marangu, German East Africa.

Mr. Patterson had lost 31: 15 in German East Africa, 16 in British East Africa.

Mr. Jolly had lost 44: 18 of which had come from German East Africa but all had died in British East Africa on the Voi-Taveta road.

I also learnt that a caravan of 50 oxen with wagons, belonging to a Greek Mavarides and some Swahis, left Moshi at the end of December for Rombo the Railway terminus of the German Railway, a distance of 100 kilometres—a 12-day journey. En route all the oxen died, also 3 of the bear conductors and 4 of the transport boys.

These were all the particulars I was able to obtain in German Territory and as the Commandant and the

the

the Secretary were not at Moshi I was unable to get any official information but presuming my inferences to be accurate, it will be seen that a considerable mortality (nearly 500 head) has occurred during the past 2 or 3 months in this locality. Taken in conjunction with Dr. Keuth's report of East Coast Fever around Kilimanjaro, it would appear particularly necessary to enforce most strictly the prohibition against cattle from German East Africa, especially through Taveta, and also to declare the Iteta district an infected area, and prevent all exit of cattle from it. The Masai, I understand, frequently smuggle cattle across the border and while I was at Taveta, two heifers were caught being brought in and the herdsmen with them were arrested and punished by the Acting Collector Taveta.

He is now placing a police-post at Laitokotok, through which most smuggled cattle have to pass, which I trust will in some measure prevent this smuggling in future.

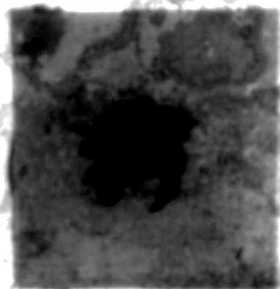
I have the honour to be,
 Sir,
 Your most obedient servant,

Chas. J. Hanna
 Cpl
 Live Stock Inspector.



HELVETIA LAMPELLA (LIVER FLUKE)

Common throughout the Protectorate, found in the livers of sheep and cattle.



TICU OF THE GREAT AUSTRALIA.

Not yet classified. Found generally on the mountains.



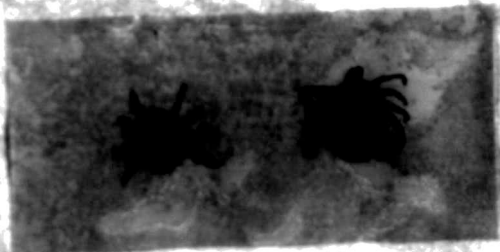
DISTOMA LANCOLATUM (LIVER FLUKE)

CLASSIFICATION: Phylum: Platyhelminthes, Class: Trematoda, Order: Platyhelminthes, Family: Platyhelminthes, Genus: *Distoma*, Species: *D. lancolatum*.



FIGURE OF THE ADULT ANTHROPOD.

CLASSIFICATION: Phylum: Arthropoda, Class: Insecta, Order: Diptera, Family: Simuliidae, Genus: *Simulium*, Species: *S. vittatum*.



AMERICAN VARIAGATED TICK, HORN AND SHEEP. *amblyomma*

(The variegated tick)

Practically the commonest and most widely distributed tick in East Africa! cause considerable damage to the tents and saddles of men and the more tender parts of all animals.

Enlarged.



AMERICAN VARIAGATED (HORNS AND SHEEP) *amblyomma*

Capable of laying thousands of eggs often attain the size of a large cherry.



AMBLYOMMA VARIEGATUM TICK, MALE AND FEMALE. *Wagner*

(The variegated Tick)

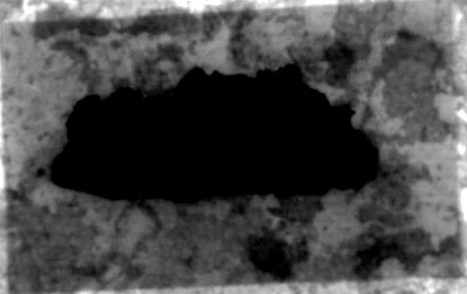
Practically the commonest and most widely distributed tick in East Africa causes considerable damage to the hides and udders of cows and the more tender parts of all animals.

Enlarged:

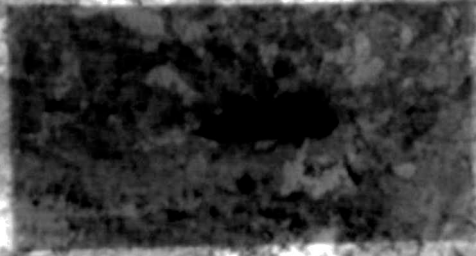


AMBLYOMMA VARIEGATUM (ENLARGED FEMALE) *Wagner*

Capitulum of living specimens of several specimens of a large tick.



REDACTED



REDACTED

REDACTED

REDACTED

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REDACTED

REPUBLICAN PARTY, NEW YORK STATE

(The Republican Party)

THE REPUBLICAN PARTY OF NEW YORK STATE

OFFICE OF THE STATE COMMISSIONER OF EDUCATION

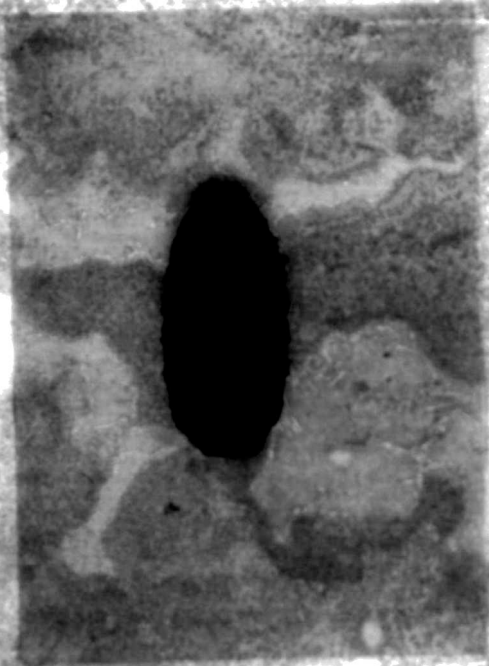
ALBANY, NEW YORK

1912

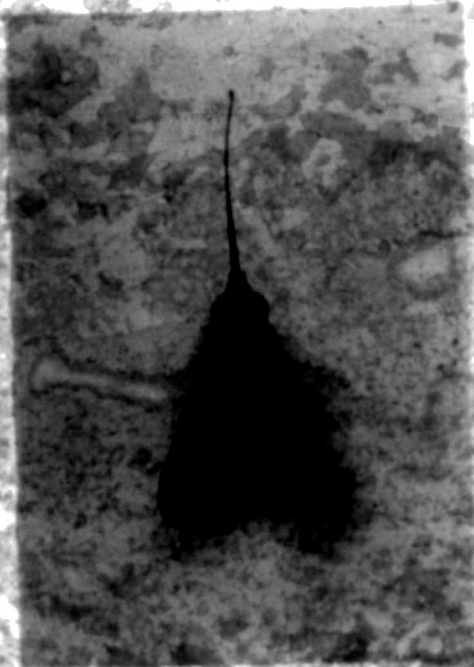
REPUBLICAN PARTY, NEW YORK STATE

ALBANY, NEW YORK

1912

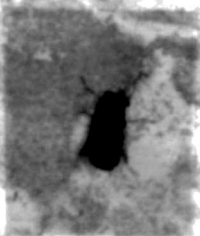


LARVA OF ONE OF THE GASTROPHIL. N. Y.
Found in the Nest of a Kingbird.



PANORHIZA KASHMIRI. *religiosa* *shank* *honey*

Very prevalent on the Vas - Sharda road, Kital
and Gucha districts are said to convey no disease
but are a source of great irritation to animals



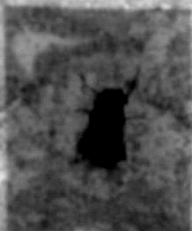
BLOOD-SUCKING FLY (SIMULIUM HAEMATODES) X 2

Comes throughout the Protectorate especially after the rains. causes intense irritation to all animals. Some avoid places where the fly is prevalent.

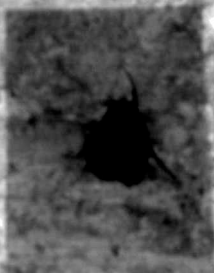


BLOOD-SUCKING FLY (SIMULIUM PAMBOLIUM) X 2

Found at East swamp Linye and Elbong. bites severely and irks with blood. known as a propagator of disease.



BLOOD-SUCKING FLY (GENUS HANNANTHUS) X 2.
 Common throughout the Protectorate especially
 after the rains. causes intense irritation to all
 animals. Some avoid places where the fly is
 prevalent.



BLOOD-SUCKING FLY (GENUS HANNANTHUS) X 2.
 Found at Lari among Limbu and Kibwezi, bites
 severely and draws much blood; unknown as a
 propagator of disease.



FLY Fossil. X 25

Found over the whole Protocretaceous system. It is
 interesting and is capable of living through strata.

Dear Mr. Sturdy,

Local prices of livestock are as follows today and show in almost every case a considerable increase during the last twelve months:-

- Harvest- Rs.600 to Rs.1,000 (demand pretty regular)
- Mules- Rs.400 to Rs.600 (Demand strong and turnover large)
- Donkeys- Rs.50 to Rs.75 (the latter figure for mares). The market is flooded and large herds are now in the hands of sellers, which will depress the price considerably in the near future.
- Cows- Rs.110 to Rs.150 (with calves at foot)
Rs.80 to Rs.120 (in calf)
- Heifers- Rs.45 to Rs.100
- Bullocks- Rs.35 to Rs.50 (untrained) Rs.40 to Rs.70 (trained)
- Sheep- Rs.40 to Rs.50.
- Goats- Rs.3/6 to Rs.5 (Does) (in short supply, demand strong and considerable increase of price imminent)
Rs.2/6 to Rs.3/6 (Wethers)
- Pigs- Demand slack and no quotations lately. Last lot sold by us averaged about Rs.5/-.

N. B. All above quotations are for native stock. Imported stock are impossible to quote, owing to great fluctuations.

Yours sincerely,

Edw. V. N. Newland.

October 1st 1906.

Sir,

I have the honour to inform you that, owing to reports from the Collector, Bahal of many native cattle dying, I proceeded to Bahal on August 6th.

The place where the deaths had been taking place was Kalsieni, a days march from Bahal.

Seventeen cattle had been impounded there by the Collector; these were Bahali cattle en route to Muzbass and five of them had died since their arrival. I found two sick; symptoms were dullness and depression, off feed, standing apart, emaciation, eyes sunken and glassy, staring coats, pulse quick and irregular (about 75), breathing very laboured, temperatures 100° and 102°. They were slaughtered and on post mortem examination I found the pericardium in both cases full of straw-coloured fluid which coagulated immediately on exposure; the 4th stomach slightly but noticeably congested; other organs appeared normal. I took slides which were examined microscopically by Dr. Loys. Nothing unusual was noticed except a great excess of fibrin in the slides from the pericardial fluid. I searched the country

The Chief Veterinary Officer,

F A I 1 0 6 1.

thoroughly as far as the Masvuni district but found
no other outbreak. The natives were very reticent but
admitted that many cattle had died but it was im-
possible to get even an approximate idea of the
numbers all I could gather was that there had
previously been a large number of cattle in the
district but that none were left except those
impounded at Kalsiani.

The natives, however, had probably moved such
cattle as they possessed before the arrival of the
colonists.

I returned to Kalsiani on the 17th and found
another animal sick. Symptoms as before, temperature
104.5, similar post mortem appearances, slides ^{at} negative.
I left orders that no cattle should move within 5
miles of the district.

I inspected several herds of native cattle at
Matsiana and found them healthy.

I returned to Kalsiani on the 26th and found the
remaining nine cattle healthy.

Being in a bad attack of fever I could not visit
them again for nearly a month when I found that all
nine had meanwhile died.

I have etc, etc, etc.

Sd/ R. A. Henshaw.

Veterinary Officer.

CG 553/29

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One Document, being in name of National Security

Agency lead up this to make further

has been removed to MPG 1073

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H. Neary

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DRAFT

10 Feb 1948

R J Sturdy Cuy

Sir

MINUTE 8/5

- Mr. Wood 7/1
- Mr. Read 11/2 1/2
- Mr. ...
- Mr. ...
- Mr. ...
- Mr. ...
- Mr. ...
- Mr. ...
- Mr. ...

... was directed by ...
 ... of ... to ask you
 to be good enough to
 review and return to the
 Dept the enclosed pages
 of the Annual Report
 the City Dept of the ...
 ...