Syndicate for 1918-9 work K.D.

Gov Belfield 467

1916

29 July

Last previous Paper.

VETERINARY RESEARCH IN EAST AFRICA.

The report by Veterinary Pathologist as to what has been done and the immense amount of important work which awaits attention. Agrees with views and when funds permit will not hesitate to commend proposals for favourable consideration.

Rec'd Sept. 6th 21 Sept. 1916
Copy sent to Bureau 22 Sept. 1916
Ack'd by Bureau 25 Sept. 1916
Ack'd by Govt. 15 Oct. 1916
Ack'd by Govt. 8 Jan. 1917

W. Read

This is a most interesting report and a powerful plea for more expenditure on veterinary research. But the govt is right: we can't face the question at this moment.

A copy to Tropical Diseases Bureau & the Board of Agriculture

H.A.B.

12.9.16

Mr. Steel / Maitland

You will be interested & the Dr. Montgomery in the first flight

Next subsequent Paper.

Gov 4686/18

(8000) Wt. 28800—6. 45,000 12/15. B M & S.

of veterinary subjects
entitled to some consi
I am not sure that after the
it will not be possible to get some
report from the various scientific
organizations in the country with which
the C.O. is connected to carry out some
of the valuable research desired by the
M.A.
Proceed as proposed - & ask Lieut.
saying that the S. of S. has read the
Report with much interest & is impressed
by the importance of the subject, & that
[illegible] will call attention to it again
at the end of the War, with a view
seeing whether assistance can be
given by some of the scientific organizations
in country with which the C.O. is
connected in carrying out the valuable
work which is required?

H - J R

12/9/18

A.S.M. 14.9

Ans. 15.9

Read.

I have had a talk with Sir Henry [illegible] about
a Report. He is entirely of our opinion [illegible]
execution of veterinary research is of [illegible]

of veterinary experts
entitled to serious consideration.

I am not sure that [illegible] it would not be possible to get some experts from the various scientific organizations in the country with which the C.O. is connected to carry out some of the additional research desired by Mr. M.

Proceed as proposed - & ask: despatch:
saying that the S. of S. has read the Report with much interest & is impressed by the importance of the subject & that [illegible] will call attention to it again at the end of the War, with a view to seeing whether assistance can be given by some of the scientific organizations in the country with which the C.O. is connected in carrying out the additional work which is required?

H. J. R.
12/2/16
AS. M. 4-9

Mr. Read,

I have had a talk with Sir Henry [illegible] about this Report. He is entirely of our opinion that the prosecution of veterinary research is of [illegible] importance

importance to the Protectorate, and he will be glad to see some beginning made with the programme of expenditur suggested by Mr.Montgomery. Mr.Montgomery has, as you know, gone to South Africa, and it is very improbable that we shall be able to fill his post before the end of the war. Nevertheless Sir Henry suggests that we might put it to the Officer Administering the Government that he should make tentative provision for, say, one-third of the capital outlay proposed by Mr.Montgomery, and (bearin in mind that, even if Mr.Montgomery's post is filled, the capital expenditure provided cannot be ~~incurred~~ completed until late in the financial year) for a corresponding portio of increased recurrent expenditure. In writing to the Officer Administering the Government, we should of course remind him that it is ~~quite~~ very improbable that the post of Veterinary Pathologist can be filled at present, and that in any case the expenditure which it is ~~proposed~~ suggested that he should include in the Estimates will have to be reviewed when the time comes ~~for considering~~ in the light of the general financial situation. A despatch on these lines will at any rate elicit some expression of opinion or some recommendation from the Officer Administering the Government.

H.A.B

Sept: enon

at once

L. S. B.

4/VII/17

ST AFRICA PROTECTORATE
No. 467.

GOVERNMENT HOUSE,
NAIROBI,
BRITISH EAST AFRICA.

29th, 1916.

Sir,

I have the honour to transmit herewith a copy of a report by the Veterinary Pathologist on Veterinary Research as applied to the East Africa Protectorate.

Report

2. I have no hesitation in acquiescing in Mr. Montgomery's views as to the importance of this work to the country generally and I readily admit the importance of extending it. At the present time, however, our financial position precludes any undertaking of the nature recommended, but I shall not hesitate to command to your favourable consideration the proposals put forward as soon as it appears possible to provide funds.

3. In the meantime I send you the report as an intimation of what has already been done, and also as an indication of the immense amount of important work which awaits attention.

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

A. Conway Bayard

GOVERNOR.

RIGHT HONOURABLE
NDREW BONAR LAW, P.C., M.P.,
ECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET.

INCLOSURE
In Despatch No. [illegible] 183

567
A9/5/2/2.

42048

Box 323.

July 14th., 1916.

A Memorandum on Veterinary Research as applied to the East Africa Protectorate.

Historical. Biological research into Stock diseases, by which is meant Bacteriological, Protozoological, Pathological and allied scientific investigations, has been continued since 1909. Prior to that date routine diagnosis of diseases, the causal microbes of which are recognisable microscopically, was done by the Medical Bacteriologist, and by Mr Simpson during his short tenure of office as Veterinary Bacteriologist.

In 1909 the erection of a Laboratory for Veterinary Research was approved, and the initial buildings were occupied in August 1910. During the year before occupation, field experiments and the collection of data in regard to the principal cattle diseases East Coast Fever, Rinderpest and Coccidiosis ~~xxxx~~ was possible.

The position at that time was that the existence of certain stock diseases was known: the distribution of such, the methods of spread, and means of controlling them except by measures of quarantine were not known.

The material progress which has been effected since 1909 may be briefly outlined:- Research which has not yet yielded practical application is not included.

1909 - 1910. Detection of Coccidiosis in cattle, and diagnosis of Rinderpest as concurrent factors of Gastro-Enteritis.

Established that a large proportion of adult cattle in certain districts of the Protectorate are immune to East Coast Fever, and that this disease is similar to that of South Africa.

1910 - 1911. Manufacture of Anti Rinderpest Serum commenced 271479 c.c. prepared and issued, equivalent to 13563 units.

Issue of Trypanblau for treatment of Canine Tick Fever commenced.

Identification of Ovine Fever: difference between the local disease and that of Europe demonstrated.
Immunity of Abyssinian mules to Horse Sickness indicated.
Vaccine against Sheep Pox prepared.
Tick-borne Gastroenteritis of Sheep Nairobi Sheep Disease diagnosed.
Endemic areas of East Coast Fever more accurately defined.
Institution of a testing area for this disease.
Difference between Rinderpest and Gastro enteritis (Coccidiosis) established.

1911 - 1912. Certain species of Ticks proved capable of transmitting East Coast Fever.
Identity of East Coast Fever in South Africa and in this Protectorate established conclusively.
Serum against Rinderpest prepared to the amount of 97,959 doses.
Vaccine against Contagious Pleuro-pneumonia prepared.
Vaccine against Black Quarter prepared.
Trypanosomiasis acquires importance, especially in relation to Horse Sickness, and the possibility of the disease occurring where there are no tsetse flies.
Equine Tick Fever considered in relation to Horse Sickness.
Diagnosis of Infectious Anaemia of equines, made.
Successful treatment of Enzootic Lymphangitis established.
Distinction between N'garuti and Tick-borne Gastro-enteritis of Sheep established: Distinction of this latter becomes more defined.
Blistering vaccine prepared.
Kikuyu Fowl Disease identified.

1912 - 1913 and 1913 - 1914

Serum against Rinderpest prepared to the amount of 125,418 doses in 1912-13, and 201,145 in 1913-14.
Active immunity against Rinderpest shewn possible of safe and practical application.
The disease Gelonhemiasis investigated, and a vaccine against it prepared.
Detection of Contagious Abortion in cattle.
Treatment of Ulcerative Lymphangitis by vaccine established.
Diagnosis of Rabies established in Jackals and dogs.
Identification of Strongyluriasis in all animals, and treatment suggested.
Effect of Arsenic in relation to dip-poisoning, and the treatment of Trypanosomiasis enquired into.
Treatment of Nirobera in Sheep investigated and a remedy obtained.

1914 - 1915.

274,368 doses of serum against Rinderpest prepared.
Vaccine against Anthrax prepared: Manufacture stopped owing to accident when 32,150 doses had been made.
A tentative classification of the Trypanosomiasis

occurring in the Protectorate possible. Certain forms not dangerous for particular species of animals recorded.
Experimental treatment of Trypanosomes, curative and preventive undertaken.
Duration of Nirobera infection of pastures ascertained.
Treatment of Nirobera in cattle successful.
Treatment of Ulcerative Lymphangitis reduced to a simpler and less expensive method.
Vaccination of imported Stock against Redwater and Anaplasmosis undertaken.
Vaccination against Colon Bacillosis continued on an extensive scale.
Detection and investigation of a new cattle disease C.H. allied to Rinderpest.
Proof obtained that Tick-borne Gastro Enteritis in sheep is transmitted by certain stages of the Brown Tick.
Vaccine against Kikuyu Fowl Disease proved satisfactory.

1915 - 1916.

204,400 doses of serum against Rinderpest prepared.
Preparation of Ballein commenced.
Investigation of Horse Sickness possible: an antiserum manufactured.
Identification of Biest Pohmeral Fever, a Horsesickness-like disease.
Investigation of a form of Trypanosomiasis in a tsetse free area of the Protectorate: measures for suppression advocated.
Proof obtained that N'garuti is transmitted by certain species of tick.

Of the Research that has not yet yielded results capable of practical application, but which has been undertaken either continuously since the Laboratory was built or as opportunity offered, may be cited the following principle lines, all of which it is hoped will eventually be capable of field use.

Anaplasmosis and Redwater.

(1) Enquiry into the various parasites or strains of the disease with a view to safe preventive inoculation.

Anthrax

(1) To ascertain the cause of variability in the virulence of the organism, as applied to vaccine preparation.

Blackquarter.

(1) To ascertain why the disease so frequently occurs among suckling calves, and to obtain a satisfactory vaccination in this class of animal.

(2) To ascertain what species of causal micro-organisms exist in this country.

[redacted].

(1) To further prosecute research into the causal bacteria

with a view to more systematic vaccination against the disease

Contagious Abortion.

(1) To continue the investigations into the occurrence and distribution of the disease.

(2) To further investigate the causal agent in its relationship to Contagious Abortion in other countries, and to observe the effects of artificial vaccination.

East Coast Fever.

(1) To further define the areas of endemicity in the Protectorate with a view to simplifying Quarantine restrictions.

(2) To ascertain the nature of the immunity enjoyed by stock in the endemic areas in an endeavour to apply this to farms where dipping cannot be satisfactorily effected.

Paresis(Sickness.

(1) To continue the classification of diseases recognised under this name.

(2) To obtain a method of preventive immunisation which can be safely and universally applied.

(3) To ascertain how this disease originates, what transmitting agents are responsible and from this to attempt a more radical means of prevention.

Nikoro Fowl Disease.

(1) The establishment of an artificial inoculation against this condition.

Lymphangitis, Epizootic and Ulcerative.

(1) To evolve a method of diagnosis in latent cases of disease.

(2) To enquire further into means of prevention by artificial immunisation.

(3) To perfect and simplify the existing methods of treatment.

B'garuti

(1) To ascertain whether preventive inoculation can be carried out against this disease or to work out a dipping fluid against the ticks concerned.

Poisonous Plants.

(1) Collection, identification and artificial cultivation of such as are investigated by Stockowners.

(2) Experimental work into the toxicity of such the stages at which they are poisonous: the nature of the poisons and how they may be combatted.

Rinderpest.

(1) To obtain a method whereby the virus can be

safely transported long distances without loss of virulence.

(2) To find a method of separating the concurrent organisms of Redwater and Anaplasma from that of Rinderpest to enable inoculations of animals highly susceptible to those diseases being undertaken independantly.

(3) To ~~[illegible]~~ To simplify and reduce the danger of the ordinary double inoculation against Rinderpest.

(4) To concentrate the present bulky serum against this disease so as to permit of more easy transport to outlying districts.

Swine Fever.

(1) To obtain a means of prevention more satisfactor than the present fencing, and less liable to imperil all the pigs an owner possesses.

Strongylosis.

(1) Investigation of forms, and the obtaining of a means of prevention.

(2) Elucidation of a more perfect and simpler metho of treatment.

Tick-borne Gastroenteritis in Sheep.

(1) All attempts at serum and vaccine prevention hav failed up to now. To continue these on broader lines i an endeavour to find a satisfactory solution.

(2) To evolve a dipping fluid suitable for the destruction of ticks on sheep. Note Ordinary dipping fluids either damage the wool of sheep or are adapted for the destruction of the scab parasites only.

Trypanosomiasis.

(1) To continue experimental work directed towards obtaining a satisfactory preventive, either medicinal, by inoculation or the destruction of transmitting agents.

(2) To obtain a curative method against each species

(3) To continue the classification of forms, with a view to identification of species, and the several methods of spread.

(4) To so define conditions of transmission of the several specie that adequate provisions for the protectio of tsetse free areas may be made.

Worm Infections.

(1) Identification and classification of intestinal parasites of all animals.

(2) A study of their life histories within and without the animal body with a view to obtaining evidence as to the stage at which medication is most effective, and

methods of destroying the stages which are outside the body.

(3) Pending success of the above measures to evolve satisfactory medicinal treatment.

Unidentified conditions. Each year is adding to our knowledge of these and enabling classification to be effected. It would seem that diseases new to science are particularly prevalent in this Protectorate, a condition explained by the mutability of bacteria under the modifying influences to be mentioned later. At the present time it does not seem that any unidentified disease of cattle is responsible for serious epidemics, but their occurrence in individual Reserves and on Farms accounts collectively for a high mortality and financial loss. In the more imperfectly studied Small Stock Sheep & Goats, and in Equines there remain a considerable number.

2. The Functions of a Veterinary Laboratory. 186

The work at any laboratory other than one subsidised for pure research, by which is meant research not having in view immediate beneficial results, must necessarily embrace a variable amount of routine together with the applied research. The two are in large measure inseperable.

Routine. The diagnosis of disease from specimens submitted by Veterinary Officers or Farmers themselves: correspondence on such diseases and the collection of evidence, information and statistics regarding it in order that working hypotheses may be propounded upon which subsequent research developes: and the preparation of sera and vaccines against the diagnosed condition.

I Diagnosis is as yet only possible in certain diseases, and depends upon (1) the detection microscopically of the causal microbe, which must of necessity possess characteristic features to ensure identification eg Trypanosomiasis: East Coast Fever et

(2) the detection of bacteriological methods of cultures usually practicable only when suitable material is submitted, and confined to the bacterial diseases, notably Anthrax and Kikuyu Fowl Disease.

(3) the detection of a specific biological reactio between serum of an affected animal, and the causal microbe or its products. The most common instance is Contagious Abortion.

(4) Animal reactions upon inoculated subjects. This is the most crucial test, and has to be employed when doubt exists after other methods of diagnosis have failed. For such diseas es as Horsesickness, Rabies, Bluetongue, Rinderpest and Tick-borne Gastroenteritis it is the only method.

II The preparation of vaccine, antisera, and other products for use against such diseases as have yielded to this line of diagnosis (Glanders, Tuberculosis); of prevention, (Rinderpest serum: Blackquarter and Colon Bacillosis vaccine) or treatment (Ulcerative Lymphangitis vaccine).

This branch of work automatically becomes routine when the research necessary for the investigation of the disease and the preventive or curative agent has shown the efficacy of the

substance concerned firstly on experimental animals, and finally in the field trials.

III. The collection of data regarding the incidence of disease must, unless a field staff be available, be carried out largely by correspondence. This is frequently voluminous in order that the true position in regard to current day knowledge and the desirability of such data may be placed before the stockowner. Tabulation of field records and observations is an integral part of routine which acquires a material value as or when the subject becomes possible of research, and must perforce be systematic and continuous.

The routine work at this Laboratory even at the present time demands the constant attention of one Officer, two Laboratory Assistants and two Clerks. The amount is steadily increasing, and the increase cannot receive the full attention which this branch deserves. This earmarking the Staff interferes very seriously with progress in research.

Research.

The enquiry into little known or unknown biological conditions is unending: as applied in its narrow aspect to "practical" limits or commercialism it is defined by the nature of the conditions encountered; the disposition of the factors - in our case - animals - concerned in these conditions; and the financial outlay involved at the moment or likely to be within the time presumed to be occupied by the research until the objective has been attained.

The field of applied research laid down in the preceding section of this memorandum is that which, in my opinion, is necessary in the interests of the money which has been and is being expended or vested or is likely to be, in this Protectorate. Such a field makes little or no provision for pure research, without which no true worker in this branch of science could do more than exist. Such is to him the salt that stimulates and inspires the applied research

and the associated routine.

The programme of research laid down is enormous. It involves subjects which in other countries have called for the establishment of Royal Commissions, Departmental Committees or Commissions of the Royal Society in order to bring sufficient funds and workers to bear on the diseases in question. It concerns itself with diseases vital to the progress of this Protectorate which Governments of other countries have felt justified in spending large sums of money annually for investigation. A single example is Horse Sickness upon which the Transvaal Government, and lately the Union Government of South Africa have directly spent well over a quarter of a million pounds sterling during the past thirteen years.

The results of these Commissions and the work of other Laboratories have been of considerable benefit to us in enabling a portion of our enquiries to be curtailed, especially in such a direction as diagnosis, but they do not as yet help us at all in the way of preventive or curative measures. Nor is it probable that they will for several years to come, for it is a peculiar feature in the diseases of this country that in no single instance does the disease identified here, correspond in its pathology to the same conditions of other parts of the world.

The disinfecting action of the sun: the breeding of many generations of stock immune to certain diseases: the effect of soil and climate upon such transmitting agents as flies and ticks: the existance of some of Reserves within which native custom is modifying disease, are all playing a part in the gradual evolution of conditions so modified from the classical types as almost to represent new diseases, and to demand from applied research so profound a modification of method that each must be reinvestigated almost from beginning to end.

Applied research must be speculative: in some conditions a radical preventive or remedy can be obtained by deduction or by chance with comparatively little expenditure of time or money. On

the other hand in most diseases, especially those which have resisted solution, up to this date, the enquiry is likely to be prolonged, and to require more and more expenditure as the research developes on broader lines, introducing the aid of collateral sciences and of workers in them.

Investigations of these unsolved diseases demands the collaboration of men trained and specialised, not only in Veterinary Pathology, but also in such branches as chemistry, botany and forms of zoology: no single individual possesses that degree of knowledge capable of more than superficial enquiry into these sciences which must, however, be led and directed into the channels co-relating with the more pure pathology and leading to the application.

The expenditure on such work is naturally considerable: it involves the personal emoluments of suitable trained men, accomodating for their work, the necessary apparatus and animals for experimental observations. This may at first glance appear disproportionate to the results likely to accrue, but it must be accepted that without it, justifiable results cannot be obtained, and the conditions of stasis will continue.

That is the present position of this Laboratory: we have cleared the ground of such diseases as admitted of rapid and cheap diagnosis, and the inception of such preventive or curative measures as were within our scope: we are now engaged upon biological problems which do not yield to such simple methods. Much more ground clearing can be done and remains to be done, but the harvest will be scanty unless the cultivation be intensified. Does the attainment of a harvest the objective of applied research, warrant the expenditure to be entailed.?

This question may be approached from two standpoints:- a study of the past and a prophesy of the future.

Concerning the past a conclusion by competent judges is simple - the Laboratory either has or has not justified the expenditure entrusted to it: the practical results have or

have not been commensurate with the financial outlay. In arriving at a judgment on these points due consideration should be paid not only to the direct benefits actually accrued, but also to the proportionate advantages which will continue from year to year in the future as a result of past research. In other words, eliminating the actual benefits to an individual of inoculation against Rinderpest or the knowledge that certain head of cattle are immune to East Coast Fever, have these results any bearing on the present or future stability of the Protectorate as a stock raising country: has land acquired a firmer value, and is the commerce of the country more secure as a result of these or similar researches at the Laboratory.

As to the future no guarantee can be given. It may be anticipated that such progress as has been recorded will continue: greater strides are conceivable: but do these justify considerable additional expenditure?. The judgement here is more difficult, and it depends upon impressions. I personally regard this Protectorate as being pre-eminent among these countries as destined as the stock raisers of the world. I look confidently to a time when the Export of stock and their products will be considerable even under the conditions of today. With suitable adaption of these generous natural conditions, that export will proportionately increase. Among the first adaption necessary is the fuller understanding of the diseases that stock is subjected to, and the methods of circumvention.

Few stock owners from this country have ever returned to South Africa, to Australasia, Canada or The Argentine. They regard it as preferable. Some of these countries are fortunate in having few diseases: such however possess disadvantages of climate or of grazing and water facilities. Another, South Africa, joins the disadvantage of grazing and

wise, much inferior to our own with the existence of stock diseases equivalent to what we are faced with . Yet it is there considered essential to prosecute Veterinary research at an expenditure of well over £ 50,000 per annum and so make a bid to be regarded as a stock country. How much greater should be the benifits of a proportionate expenditure on research here.

Gliting from the Protectorate Blue book for 1914-1915, and calculating the value of the Stock there estimated + conservative figures for cattle and pigs - at prices below those therein given, it is found that excluding ostriches and camels, the vested value of domestic animals in this Protectorate exceeds £ 3,000,000. This figure alone might be held to justify a very substantial increase to the sum which it is a present found possible to allocate for Veterinary research.

3. The desirabilities of a Veterinary Laboratory in this Protectorate

The present Staff of this Laboratory is not competent to deal with the work now on hand; it is limited numerically and it is limited scientifically.

Eliminating the work which has arisen owing to the war- work of a purely Military nature or originated as a result of those operations, and work thrown upon it owing to a reduction in the number and disposition of Veterinary Officers -there exists every day justifiable work for at least three Veterinary research officers in addition to myself, and the services of an extra man for field duty is most essential. Such a staff would be fully occupied in properly carrying out the routine and the research existing at the moment and demanded by stockowners. One condition only is required - that these officers are trained in Laboratory routine or possess a natural tendancy for work which is very different from that usually demanded of a Veterinary Surgeon. These appointments would be required permanently.

An Officer trained in Zoology applied to worms is of the utmost importance if the diseases due to these parasites are to receive the attention they merit in a very heavily infested Country like this. The naming of species is required only as an assistance, as a diagnosis, for furtherwork which must be directed to the elucidation of life cycles within and without the animal host in order that the stages for remedial or preventive attack can be demonstrated. The field for such an assistant is high and of very great practical importance. His this appointment would be required permanently.

An Officer with adequate knowledge of Entomology applied to the habits and life histories of ticks and biting flies, is necessary for the collection and identification of species with which Veterinary work is concerned from the districts, and for the breeding of these in captivity in order that the several varieties may be tested for disease which they are believed to transmit and that the number and species capable of such transmi -sion may be ascertained. Proof that the common Stomoxys can or cann ot spread the Trypanosomiasis now in the Thika District is one point, the settlement of which alone is work a workers salary for several years.

This appointment should be entertained for two terms, but it is probable that permanency will then be indicated.

The services of a research chemist to assist in the standardisation of drugs used experimentally for treatment or prevention of disease, including experimental dipping fluids for sheep baths, will be required with the work now on hand for about five years.

Each worker requires the services of one Laboratory Assistan -t to do the preparation work, and as Laboratory routine cannot be suspended, and records must be continuous there must be two extra assistants for relief duties. The appointments are permanent.

These Laboratory Assistants would eventually be recruited from a class of inoculators which I propose should be created. These men would be attached to the laboratory and perform Labora -tory Assistants duties when not employed in the field. They

would be detailed as required for the purpose of undertakings inoculations or vaccinations throughout the Protectorate under the District Veterinary Officers. Onoccasions more numerous than is desirable accidents have occured in the course of inoculations which were not due to the material employed but to the method of employment. It is difficult in these cases to assign responsibility, and I consider it very desirable that the general use of Laboratory products be restricted to men responsible to the Laboratory who would be capable of keeping such records as would be of subsequent value, and in such a manner that weakness in any preparation could be at once detected. The employment of these men would not be necessary for every class of vaccination. These appointments would be permanent.

The Clerical staff requires reorganising and augmentation. A responsible appointment should be made of Superintendent who could relieve the technical staff of a very large amount of administrative routine, such as correspondence regarding the purchase or sale of experimental animals, feeding stuffs, stores and the disposal of and accounting for Laboratory products, sera vaccines etc.

For the accomodation of the additional staff, more houses will be necessary; the Laboratory buildings must be increased, and the animal and subsidiary accomodation enlarged.

I do not desire to appear unduly biased in favour of Veterinary Research and against the work of any other Department wherin expenditure would be well justified; I realise that financial limitations alone prevent the apportioning of larger sums. But I do wish to invite attention to the real justification of the expenditure herein suggested, and to the probable or material advantages to be derived from such.

In considering the outlay proposed below, it should be clearly understood that the Capital expenditure would be spread over two years, and that many appointments among the

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42048/16

OFFICIAL COMMUNICATIONS SHOULD BE ADDRESSED TO THE DIRECTOR.

Director:
J. G. BAUMANN, C.M.G., M.B., D.P.H.
Assistant Director:

Librarian and Secretary:
R. L. SHEPPARD.

TELEPHONE NO.
5188 KENSINGTON.

TROPICAL DISEASES BUREAU,

IMPERIAL INSTITUTE,

LONDON, S.W.

The Director of the Tropical Diseases Bureau presents his compliments to the Under Secretary of State and begs to return herewith the Report on Veterinary Research in the East Africa Protectorate, forwarded under cover of September 21st, 1916 (No. 42048/16), as requested by telephone message this afternoon.

June 6th, 1918.

191

Communications on this subject should be addressed to—
THE UNDER SECRETARY OF STATE,
COLONIAL OFFICE,
LONDON, S.W.,
and the following number quoted :—
42008/16

Downing Street,
21 September 1916.

Sir,

I am directed by the Secretary of State for the Colonies to transmit to you for the information of the Tropical Diseases Bureau.

~~with reference to letter of the~~

a copy of a despatch with its enclosure, which has been received from ~~addressed to~~ the Governor of the East Africa Protectorate on the subject of Veterinary research in the Protectorate

I am,

Sir,

Your obedient servant,

~~JOHN ANDERSON.~~

G. V. Buddle

The Director of the Tropical Diseases Bureau

191

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21 September 1916.

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29 July 1916

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~~JOHN ANDERSON.~~

G. V. Fiddes

Director of the Tropical Diseases Bureau

634 192

...Y.

...ST AFRICA PROTECTORATE

...467.

GOVERNMENT HOUSE,
NAIROBI,
BRITISH EAST AFRICA.

July 29th, 1916.

Sir,

I have the honour to transmit herewith a copy of a report by the Veterinary Pathologist on Veterinary Research as applied to the East Africa Protectorate.

2. I have no hesitation in acquiescing in Mr. Montgomery's views as to the importance of this work to the country generally and I readily admit the importance of extending it. At the present time, however, our financial position precludes any undertaking of the nature recommended, but I shall not hesitate to commend to your favourable consideration the proposals put forward as soon as it appears possible to provide funds.

3. In the meantime I send you the report as an intimation of what has already been done, and also as an indication of the immense amount of important work which awaits attention.

I have, etc.,

(Signed) H. Conway Belfield.

Governor.

THE RIGHT HONOURABLE
ANDREW BONAR LAW, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON, S.W.

567
A9/6/1/2.

Box 320.

July 14th, 1916. 193

A Memorandum on Veterinary Research as applied to the East Africa Protectorate.

Historical. Biological research into Stock diseases, by which is meant Bacteriological, Protozoalogical, Pathological and allied scientific investigations, has been continued since 1909. Prior to that date routine diagnosis of diseases, the causal microbes of which are recognisable microscopically, was done by the Medical Bacteriologist, and by Mr. Simpson during his short tenure of office as Veterinary Bacteriologist.

In 1909 the erection of a Laboratory for Veterinary Research was approved, and the initial buildings were occupied in August 1910. During the year before occupation field experiments and the collection of data in regard to the principal cattle diseases East Coast Fever, Rinderpest and Coccidiosis was possible.

The position at that time was that the existence of certain stock diseases was known: the distribution of such, the methods of spread, and means of controlling them except by measures of quarantine were not known.

The material progress which has been effected since 1909 may be briefly outlined. Research which has not yet yielded practical application is not included.

1909 - 1910. Detection of Coccidia in cattle, and Diagnosis of Rinderpest as concurrent factors of Gastro-Enteritis.

Established that a large proportion of adult cattle in certain districts of the Protectorate are immune to East Coast fever, and that this disease is similar to that of South Africa.

1910 - 1911. Manufacture of Anti Rinderpest Serum commenced 71677 c.c. prepared and issued, equivalent to 13683 units.
Issue of Trypanblue for treatment of Canine Tick Fever commenced.

Identification of Equine fever: difference between the local disease and that of Europe demonstrated.
Immunity of Abyssinian mules to Horse Sickness indicated.
Vaccine against Sheep Pox prepared.
Tick-borne Gastro-enteritis of Sheep (Kiweki Sheep Disease) discussed.
Endemic areas of East Coast fever more accurately defined.
Institution of a testing area for this disease.
Difference between Rinderpest and Gastro enteritis (Coccidiosis) established.

1911 - 1912.
Certain species of Ticks proved capable of transmitting East Coast Fever.
Identity of East Coast Fever in South Africa and in this Protectorate established conclusively.
Serum against Rinderpest prepared to the amount of 97,059 doses.
Vaccine against Contagious Pleuro-pneumonia prepared.
Vaccine against Black Quarter prepared.
Trypanosomiasis acquires importance, especially in relation to Horse Sickness, and the possibility of the disease occurring where there are no tsetse flies.
Equine Tick Fever considered in relation to Horse Sickness.
Diagnosis of Infectious Anaemia of equines made.
Successful treatment of Epizootic Lymphangitis established.
Distinction between Kiraruti and Tick-borne Gastro-enteritis of Sheep established: distinction of this latter becomes more defined.
Bluetongue vaccine prepared.
Kikuyu Fowl Disease identified.

1912 - 1913 and 1913 - 1914
Serum against Rinderpest prepared to the amount of 125,418 doses in 1912-13, and 201,146 in 1913-14.
Active immunity against Rinderpest shewn possible of safe and practical application.
The Disease Colonicacillosis investigated, and a vaccine against it prepared.
Detection of Contagious Abortion in cattle.
Treatment of Ulcerative Lymphangitis by vaccine established.
Diagnosis of Rabies established in Jackals and dogs.
Identification of Streptothricosis in all animals, and treatment suggested.
Effect of Arsenic in relation to Tick-poisoning, and the treatment of Trypanosomiasis enquired into.
Treatment of Strongyle in Sheep investigated and a remedy obtained.

1914 -1915.
74,356 doses of Serum against Rinderpest prepared.
Vaccine against Anthrax prepared: manufacture stopped owing to accident when 52,110 doses had been made.
A tentative classification of the Trypanosomiasis

occurring in the Protectorate possible. Certain forms not dangerous for particular species of animals recorded.

Experimental treatment of Trypanosomes, curative and preventive undertaken.

Duration of Piroform infection of pastures ascertained.

Treatment of Ringworm in cattle successful.

Treatment of spinotic lymphangitis reduced to a simpler and less expensive method.

Vaccination of imported Stock against Redwater and Anaplasmosis undertaken.

Vaccination against Colon Bacillosis continued on an extensive scale.

Detection and investigation of a new cattle disease C.M. allied to Rinderpest.

Proof obtained that Tick-borne Gastro Enteritis in sheep is transmitted by certain stages of the Brown Tick.

Vaccine against Nikwai Bowl Disease proved satisfactory.

1918 - 1919.

204,470 doses of serum against Rinderpest prepared.

Preparation of Mallein commenced.

Investigation of Horse Sickness (equine) and antiserum manufactured.

Identification of Misel Bihenard Fever, a Horsesickness-like disease.

Investigation of a form of Trypanosomiasis in a tsetse free area of the Protectorate. Measures for suppression advocated.

Proof obtained that Theileri is transmitted by certain species of Tick.

Of the Research that has not yet yielded results capable of practical application, but which has been undertaken either continuously since the Laboratory was built or as opportunity offered, may be cited the following principle lines, all of which it is hoped will eventually be capable of field use.

Anaplasmosis and Redwater.

(1) Enquiry into the various parasites or strains of the disease with a view to safe preventive inoculation.

Anthrax

(1) To ascertain the cause of variability in the virulence of the organism, as applied to vaccine preparation.

Blackquarter.

(1) To ascertain why the disease so frequently occurs among sucking calves, and to obtain a satisfactory vaccination in this class of animal.

(2) To ascertain what species of causal micro-organisms exist in this country.

Colon Bacillosis

(1) To further prosecute research into the causal factors

with a view to pre-systematic vaccination against the disease.

Contagious Abortion

(1) To continue the investigations into the occurrence and distribution of the disease.

(2) To further investigate the causal agent in its relationship to Contagious Abortion in other countries, and to observe the effects of artificial vaccination.

East Coast Fever.

(1) To further define the areas of endemicity in the Protectorate with a view to simplifying existing restrictions.

(2) To ascertain the nature of the immunity enjoyed by stock in the endemic areas in an endeavour to apply this to farms where dipping cannot be satisfactorily effected.

Horsesickness.

(1) To continue the classification of diseases recognised under this name.

(2) To obtain a method of preventive inoculation which can be safely and universally applied.

(3) To ascertain how this disease originates, what transmitting agents are responsible and from this to attempt more radical means of prevention.

Kikuyu Wool Disease.

(1) The establishment of an artificial inoculation against this condition.

Lymphangitis, Epizootic and Ulcerative.

(1) To evolve a method of diagnosis in late cases of disease.

(2) To enquire further into means of prevention by artificial immunisation.

(3) To perfect and simplify the existing methods of treatment.

Ticks.

(1) To ascertain whether preventive inoculation can be carried out against the ticks concerned.

Poisonous Plants.

(1) Collection, identification and artificial cultivation of such as are incriminated by stock owners.

(2) Experimental work into the toxicity of such, the stages at which they are poisonous, the nature of the poisons and how they may be combated.

Rinderpest.

(1) To obtain a method whereby the virus can be

safely transported long distances without loss of virulence.

(2) To find a method of separating the concurrent organisms of Redwater and Anaplasma from that of Gallsickness to enable inoculations of animals highly susceptible to those diseases being undertaken independently.

(3) To simplify and reduce the danger of the ordinary double inoculation against Redwater.

(4) To concentrate the present anti-Redwater serum against this disease so as to permit of more easy transport to outlying districts.

Lung Fever.

(1) To obtain a means of prevention more satisfactory than the present fencing, and less liable to imperil all the cattle an owner possesses.

Streptothricosis.

(1) Investigation of forms, and the obtaining of a means of prevention.

(2) Elucidation of a more perfect and simpler method of treatment.

Tick-borne Gastro-enteritis in Sheep.

(1) All attempts at serum and vaccine prevention have failed up to now. To continue these on broader lines in an endeavour to find a satisfactory solution.

(2) To evolve a dipping fluid suitable for the destruction of ticks on sheep. Note. Ordinary dipping fluids either damage the wool of sheep or are adapted for the destruction of the wool parasites only.

Trypanosomiasis

(1) To continue experimental work directed towards obtaining a satisfactory preventive, either medicinal, by inoculation or the destruction of transmitting flies.

(2) To obtain a curative method [illegible] and cheaper.

(3) To continue the classification of forms with a view to identification of species, and the several methods of spread.

(4) To so define conditions of transmission of the several species that adequate provisions for the protection of horses from areas may be made.

Worm Infections.

(1) Identification and classification of intestinal parasites of all animals.

(2) A study of their life histories within and without the animal's body with a view to obtaining evidence of the stage at which the medication is most effective, and

method of destroying the stages which are outside the body.

(2) Pending success of the above measures to evolve satisfactory medicinal treatment.

Unidentified conditions. Each year is adding to our knowledge of these and enabling classification to be effected. It would seem that disease new to science are particularly prevalent in the Protectorate, a condition explained by the mutability of bacteria and the modifying influences to be mentioned later. At the present time it does not seem that any unidentified disease of cattle is responsible for serious epicemics, but their occurrence in individual reserves and on farms accounts collectively for a high mortality and financial loss. In the imperfectly studied Small Stock, Sheep and Goats, and in Equines there remain a considerable number.

E. The Functions of a Veterinary Laboratory.

The work at any Laboratory other than one subsidised for pure research, by which is meant research not having in view immediate beneficial results, must necessarily embrace a variable amount of routine together with the applied research. The two are in large measure inseperable.

Routine. The diagnosis of disease from specimens submitted by Veterinary Officers or farmers themselves: correspondence on such diseases and the collection of evidence, information and statistics regarding it in order that working hypotheses may be propounded upon which subsequent research developes: and the preparation of sera and vaccines against the diagnosed conditions.

Diagnosis is as yet only possible in certain diseases, and depends upon (1) the detection microscopically of the causal microbe, which must of necessity possess characteristic features to ensure identification e.g. Trypanosomiasis: East Coast Fever etc.

(2) the detection of bacteriological methods of culture usually practicable only when suitable material is submitted, and confined to the bacterial diseases, notably Anthrax and Kikuyu Fowl Disease.

(3) the detection of a specific biological reaction between serum of an affected animal, and the causal microbe or its products. The most common instance is Contagious Abortion.

(4) Animal reactions upon inoculated subjects. This is the most crucial test, and has to be employed when doubt exists after other methods of diagnosis have failed. For such diseases as Horse Sickness, Rabies, Bluetongue, Rinderpest and Tick-borne Gastroenteritis it is the only method.

II. The preparation of vaccine, antisera, and other products for use against such diseases as have yielded to this line of diagnosis (Glanders, Tuberculosis), of prevention, (Rinderpest serum: Blackquarter and Colon Bacillosis vaccine) or treatment (Ulcerative Lymphangitis vaccine).

This branch of work automatically becomes routine when the research necessary for the investigation of the disease and the preventive

preventive or curative agent has shewn the efficacy of the substance concerned firstly on experimental animals, and finally in the field trials.

III. The collection of data regarding the incidence of disease must, unless a field staff be available, be carried out largely by correspondence. This is frequently voluminous in order that the true position in regard to current day knowledge and the desirability for such data may be placed before the Stockowner. Tabulation of field records and observations is an integral part of routine which acquires a material value as or when the subject becomes possible of research, and must perforce be systematic and continuous.

The routine work at this Laboratory even at the present time demands the constant attention of one officer, two Laboratory Assistants and two Clerks. The amount is steadily increasing and the increase cannot receive the full attention which this branch deserves. This earmarking the Staff interferes very seriously with progress in research.

Research.

The enquiry into little known or unknown biological conditions is unending; as applied in its narrow aspect to "practical" limits or commercialism it is defined by the nature of the conditions encountered; the disposition of the factors - in our case - animals - concerned in these conditions; and the financial outlay involved at the moment or likely to be within the time presumed to be occupied by the research until the objective has been attained.

The field of applied research laid down in the preceding section of this memorandum is that which, in my opinion, is necessary in the interests of the money which has been and is being expended or vested or is likely to be, in this Protectorate. Such a field makes little or no provision for pure research, without which no true worker in this branch of science do more than exist. Such is to him the salt that stimulates and inspires the applied research and

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the associated routine.

The programme of research laid down is enormous. It involves subjects which in other countries have called for the establishment of Royal Commissions, Departmental Committees or Commissions of the Royal Society in order to bring sufficient funds and workers to bear on the diseases in question. It concerns itself with diseases vital to the progress of this Protectorate which Governments of other countries have felt justified in spending large sums of money annually for investigation. A single example is Horse Sickness upon which the Transvaal Government, and lately the Union Government of South Africa have directly spent well over a quarter of a million pounds sterling during the past thirteen years.

The results of these Commissions and the work of other Laboratories have been of considerable benefit to us in enabling a portion of our enquiries to be curtailed, especially in such a direction as diagnosis, but they do not as yet help us at all in the way of preventive or curative measures. Nor is it probable that they will for several years to come, for it is a peculiar feature in the diseases of this country that in no single instance does the disease identified here, correspond in its pathology to the same conditions of other parts of the world.

The disinfecting action of the sun: the breeding of many generations of stock immune to certain diseases: the effect of soil and climate upon such transmitting agents as flies and ticks: the existance of game: Reserves within which native custom is modifying disease, are all playing a part in the gradual evolution of conditions so modified from the classical types as almost to represent new diseases, and to demand from applied research so profound a modification of method that each must be reinvestigated almost from beginning to end.

Applied research must be speculative: in some conditions a radical preventive or remedy can be obtained by deduction or by chance with comparatively little expenditure of time or money. On

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the other hand in most diseases, especially those which have resisted solution, up to this date, the enquiry is likely to be prolonged, and to require more and more expenditure as the research developes on broader lines, introducing the aid of collateral sciences and of workers in them.

Investigations of these unsolved diseases demands the collaboration of men trained and specialised, not only in Veterinary Pathology, but also in such branches as chemistry, botany and forms of zoology: no single individual possesses that degree of knowledge capable of more than superficial enquiry into these sciences which must, however, be led and directed into the channels co-relating with the more pure pathology and leading to the application.

The expenditure on such work is naturally considerable: it involves the personal emoluments of suitable trained men, accomodating for their work, the necessary apparatus and animals for experimental observations. This may at first glance appear disproportionate to the results likely to accrue, but it must be accepted that without it, justifiable results cannot be obtained, and the conditions of stasis will continue.

That in the present position of this laboratory, we have cleared the ground of such diseases as admitted of rapid and cheap diagnosis, and the inception of such preventive or curative measures as were within our scope: we are now engaged upon biological problems which do not yield to such simple methods. Much more ground clearing can be done and remains to be done, but the harvest will be scanty unless the cultivation be intensified. Does the attainment of a harvest the objective of applied research, warrant the expenditure to be entailed.?

This question may be approached from two standpoints :- a study of the past and a prophecy of the future.

Concerning the past a conclusion by competent judges is simple - the Laboratory either has or has not justified the expenditure entrusted to it: the practical results have or

have not been commensurate with the financial outlay. In arriving at a judgment on these points due consideration should be paid not only to the direct benefits actually accrued, but also to the proportionate advantages which will continue from year to year in the future as a result of past research. In other words, eliminating the actual benefits to an individual of inoculation against Rinderpest or the knowledge that certain breeds of cattle are immune to East Coast Fever, have these results any bearing on the present or future stability of the Protectorate as a stock raising country; has land acquired a firmer value, and is the commerce of the country more secure as a result of these or similar researches at the Laboratory.

As to the future no guarantee can be given. It may be anticipated that such progress as has been recorded will continue: greater strides are conceivable: but do these justify considerable additional expenditure? The judgment here is more difficult, and it depends upon impressions. I personally regard this Protectorate as being preeminent among those countries destined as the stock raisers of the world. I look confidently to a time when the Export of stock and their products will be considerable even under the conditions of to-day. With suitable adaption of these generous natural conditions, that export will proportionately increase. Among the first adaption necessary is the fuller understanding of the diseases that stock is subjected to, and the methods of circumvention.

Few stock owners from this country have ever returned to South Africa, to Australasia, Canada or The Argentine. They regard it as preferable. Some of these countries are fortunate in having few diseases; such however possess disadvantages of climate or of grazing and water facilities. Another, South Africa, joins the disadvantage of grazing and water,

Water, much inferior to our own with the existence of stock diseases equivalent to what we are faced with. Yet it is there considered essential to prosecute Veterinary Research at an expenditure of well over £50,000 per annum and so make a bid to be regarded as a stock country. How much greater should be the benefits of a proportionate expenditure on research here.

Citing from the Protectorate Blue book for 1914-1918, and calculating the value of the Stock there estimated - conservative figures for cattle and pigs - at prices below those therein given, it is found that excluding ostriches and camels, the vested value of domestic animals in this Protectorate exceeds £4,000,000. This figure alone might be held to justify a very substantial increase to the sum which it is at present found possible to allocate for Veterinary research.

3. The desiderabilities of a Veterinary Laboratory in this Protectorate. The present Staff of this Laboratory is not competent to deal with the work now on hand; it is limited numerically and it is limited scientifically.

Eliminating the work which has arisen owing to the war-work of a purely Military nature or originated as a result of those operations, and work thrown upon it owing to a reduction in the number and disposition of Veterinary Officers - there exists every day justifiable work for at least three Veterinary research officers in addition to myself, and the services of an extra man for field dut, is most essential. Such a staff would be fully occupied in properly carrying out the routine and the research existing at the moment and demanded by stockowners. One condition only is required - that these officers are trained in Laboratory routine or possess a natural tendency for work which is very different from that usually demanded of a Veterinary Surgeon. These appointments would be required permanently.

An Officer trained in Zoology applied to worms is of the utmost importance if the diseases due to these parasites

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are to receive the attention they merit in a very heavily infested Country like this. The naming of species is required only as an assistance, as a diagnosis, for further work which must be directed to the elucidation of life cycles within and without the animal host in order that the stages for remedial or preventive attack can be demonstrated. The field for such an assistant is huge and of very great practical importance. This appointment would be required permanently.

An Officer with adequate knowledge of Entomology applied to the habits and life histories of ticks and biting flies, is necessary for the collection and identification of species with which Veterinary work is concerned from the districts, and for the breeding of these in captivity in order that the several varieties may be tested for disease which they are believed to transmit and that the number and species capable of such transmission may be ascertained. Proof that the common Stomoxys can or cannot spread the Trypanosomiasis now in the Thika District is one point, the settlement of which alone is worth a workers salary for several years.

This appointment should be entertained for two terms, but it is probable that permanency will then be indicated.

The services of a research chemist to assist in the standardisation of drugs used experimentally for treatment or prevention of disease, including experimental dipping fluids for sheep baths, will be required with the work now on hand for about five years.

Each worker requires the services of one Laboratory Assistant to do the preparation work, and as Laboratory routine cannot be suspended, and records must be continuous there must be two extra assistants for relief duties. The appointments are permanent.

These Laboratory Assistants would eventually be recruited from a class of inoculators which I propose should be created. These men would be attached to the Laboratory and perform Laboratory Assistants duties when not employed in the field. They would

would be detailed as required for the purpose of undertaking inoculations or vaccinations throughout the Protectorate under the District Veterinary Officers. On occasions more numerous than is desirable accidents have occurred in the course of inoculations which were not due to the material employed but to the method of employment. It is difficult in these cases to assign responsibility, and I consider it very desirable that the general use of Laboratory products be restricted to men responsible to the Laboratory who would be capable of keeping such records as would be of subsequent value, and in such a manner that weakness in any preparation could be at once detected. The employment of these men would not be necessary for every class of vaccination. These appointments would be permanent.

The Clerical Staff requires reorganising and augmentation. A responsible appointment should be made of Superintendent who could relieve the technical staff of a very large amount of administrative routine, such as correspondence regarding the purchase or sale of experimental animals, feeding stuffs, stores and the disposal of and accounting for Laboratory products, sera, vaccines etc.

For the accommodation of the additional staff, more houses will be necessary; the Laboratory buildings must be increased, and the animal and subsidiary accommodation enlarged.

I do not desire to appear unduly biased in favour of Veterinary Research and against the work of any other Department wherein expenditure would be well justified; I realise that financial limitations alone prevent the apportioning of larger sums. But I do wish to invite attention to the real justification of the expenditure herein suggested, and to the probable or material advantages to be derived from such.

In considering the outlay proposed below, it should be clearly understood that the Capital expenditure would be spread over two years, and that many appointments among the

personnel

the personnel would not be practicable for at least two years. I have inserted such requirements as I consider essential to a Laboratory properly equipped for the work demanded of this.

APITAL OUTLAY

	£.	£.
Extensions to Laboratory	4200.	
" to animal accommodation.	2350	
Subsidiary buildings - stores- native quarters drains etc.	900	7450
Housing for Officials		
One mess for 5 Officers	2350	
2 houses for Officers at £800	1600	
One mess for 8 Assistants	1600	
5 Quarters for Assistants at £250.	1250	6800
		14250.
Machinery, Apparatus and Equipment for Laboratory		3400
Installation of Library		500
		£18150.

Expenditure spread over two years.

RECURRENT OUTLAY.

PERSONAL EMOLUMENTS.

		£
1 Veterinary Pathologist.		
3 Senior Research Officers	500-700 by £25.	1500
Allowance of £100 to one as Deputy Veterinary Pathologist.		100
4 Junior Research Officers	£400-500 by £25.	1600
4 Senior Laboratory Assistants	200-250 by £10.	800
6 Junior Laboratory Assistants	180-200 by 10	1080
2 Students	50-100 by 10	100
6 Inoculators	180-200 by 10	900
1 Superintendent	300-400 by 10	300
2 Senior Clerks (1 Technical 1 Administrative and Accounting)	200-250 by 10	400
4 Junior Clerks	150-250 by 10	600
1 Farm Overseer (present incumbent draws £200)	180-240 by 10	200
1 Yard Foreman	180-240 by 10	180
1 Engineer	180-240 by 10	180
1 Storekeeper	180-240 by 10	180
Labour		1020
		9140

Many appointments would not be made until the second year

OTHER CHARGES.

Apparatus, Machinery, and Maintenance	1500
Upkeep of Laboratory; feed and keep of animals	2000
Purchase of animals	3500
Purchase of Scientific books	120
Passages (at present appearing in Veterinary Department Estimates.)	650
Local travelling	500
Carriage of goods	150
Travelling Allowances.	200
	£8620. 17760.

(Sd.) R. Eustace Montgomery.

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		£
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(Sd.) R. Eustace Montgomery.

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21 Sept 16

DRAFT.

EAP No. 673

Gov. Sir H. Belfield

MINUTE.

Mr. Fiddian 16/9
Mr. Butler 18/9
Mr.
Mr. Grindle.
Mr. Lambert.
Mr. Read.
Sir G. Fiddes.
Mr. Steel-Maitland.
Mr. Bonar Law.
(For all Mr. Middleton's report)

Sir, I have the honour to acknowledge the receipt of your despatch No. 467 of the 29th of July transmitting a copy of a report by the Veterinary Pathologist, on the subject of Veterinary Research as affecting Uganda.

2. I have read the report of Mr. Montgomery with much interest; and I am impressed by the importance of the subject with which it deals. I shall be glad if you will call the attention of this matter again at the end of the year, with a view to ascertaining whether

by despatch

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Downing Street,

11 July, 1917.

Sir,

I have the honour to inform you that I have discussed with Sir Henry Belfield the question of veterinary research in the East Africa Protectorate referred to in my despatch No. 273 of the 21st of September last.

2. Sir Henry shares my views as to the ~~importance~~ importance to the Protectorate of the prosecution of veterinary research to the full extent to which funds can be provided for the purpose. The post of veterinary pathologist is now vacant, and you will understand that it is very improbable that it will be possible to fill it before the end of the war. Nevertheless, with a view to the possibility that a suitable

DRAFT.

EAST AFRICA PROTECTORATE

No. 515

The O.A.G.

MINUTE.

Mr.

Mr. Butler 5 7 17

Mr.

Mr. Grindle.

Mr. Lambert.

Mr. Read. 5 VII.

Sir G. Fiddes.

Sir Steel-Maitland.

Mr. Long.

for consn

successor to Mr Montgomery

suitable ~~candidate~~ may be found I should be glad if you would consider the question of making some tentative provision in the Estimates for ~~the~~ next financial year for carrying out some part of the programme of ~~expenditure~~ proposed by Mr Montgomery in his report dated the 14th of July, 1916, a copy of which was enclosed in Sir Henry Belfield's despatch No. 467 of the 29th of July. I suggest for your consideration that provision ~~should~~ ought be included in the Estimates for one-third of the capital outlay proposed by Mr Montgomery, and that the items on which expenditure ~~should~~ is to be incurred should be selected with the idea of completing the programme during the two succeeding financial years. Tentative provision ~~should~~ ought also be made for a corresponding portion of the increased recurrent expenditure proposed by Mr Montgomery. Even if it is found possible to fill the post of veterinary pathologist, you will bear in mind ~~the probability~~ that any capital expenditure provided in the Estimates for ~~the~~ next year ~~so finally sanctioned~~ cannot

Successor to Mr Montgomery
suitable candidate may be found, I should be glad if you would consider the question of making some tentative provision in the Estimates for the next financial year for carrying out some part of the programme of expenditure proposed by Mr Montgomery in his report dated the 14th of July, 1916, a copy of which was enclosed in Sir Henry Belfield's despatch No. 467 of the 29th of July. I suggest for your consideration that provision ~~should~~ not be included in the Estimates for one-third of the capital outlay proposed by Mr Montgomery, and that the items on which expenditure ~~should~~ to be incurred should be selected with the idea of completing the programme during the two succeeding financial years. Tentative provision ~~should~~ not also be made for a corresponding portion of the increased recurrent expenditure proposed by Mr Montgomery. Even if it is found possible to fill the post of veterinary pathologist, you will bear in mind ~~the probability~~ that any capital expenditure provided in the Estimates for the next year ~~as finally sanctioned~~ cannot

cannot be completed until late in the financial year, and also that it is very improbable that any of the new posts included in Mr Montgomery's proposals can be filled at present.

3 ~~In any case,~~ the expenditure the tentative provision of which is now suggested will have to be reviewed when the ~~time comes~~ (Estimates for next year are under consideration) in the light of the general financial situation, but I feel that ~~there is nothing to be gained by~~ that is not a sufficient reason for postponing all ~~present~~ consideration of the proposed expenditure ~~on this account~~.

I have &c.,

Sgd.