

1929

Kenya

No. 15690

SUBJECT

CO.533/388

Proposed introduction of specimens
of the American Black Bass
into Lake Naivasha

Previous

Subsequent

~ 40/12/31

Are of opinion that introductions, such as the proposal to introduce specimens of the American Black Bass into Lake Naivasha, are greatly to be deplored and would in general depreciate all introductions of exotic animals and plants unless after very full consideration and with adequate safeguards.

(don't think a C.L. is necessary, but a deep. sub. not to be delayed)

? Copy to O.A.G. saying he will no doubt give full consideration to the representations of the Museum before proceeding further in the matter.

And ask Mol, saying a copy has been sent to O.A.G. for comment and thank the Museum for drawing Sops's attention to the matter.

Can Cuffe

5-14

This question of the stocking of Lake Naivasha is dealt with on pages 45/46 of the Department Report for 1927. Two species of black bass are mentioned, the Tilapia Nilgaha from Lake Albert, and the black bass. It seems clear from the remarks on page 45 of the Report that there is no intention of introducing the black bass. We should therefore acknowledge, say it is presumed that the reference is to the remarks in the same Department Report (p. 47) of which the Museum has no doubt had a long knowledge, and to that effect of the corresponding correspondence with the Government of Kenya in 1927-28, and so on in the correspondence.

A

Draft

J.A. Allen

9/14

at all

2. To A.U. (Nat. Hist.) Mol said 17 APR 1929
Nov. 280 (w/c 1+2) 19/10
Covers

4.

O.A.G. 328. 31 MAY, 1929.
States that the importation, and introduction into Lake Naivasha of Black Bass, was effected after the fullest consideration and that the Game Warden is satisfied that the safeguards are adequate.

At the canon

Erasmus

3/6/29

accp

at. G. 2

at. G. 2

To British Museum

To Gov. Sub - w/ copy 5 A/1 - 31.11.1929
(4 ansd)

7.

BRITISH MUSEUM (NATURAL HISTORY). 3 AUGUST
Adheres to views expressed in No. 1. and enquires what are the safeguards approved by the Game Warden.

Mr Allen

I copy to G.W. in short deap. for

others

And also to saying G.W. is being asked for others

Car Cliffe

29

Mr Allen

6/6

at. G. 2

To Brit. Museum

(Y. Amund)

13 AUG 1929

To Gov. 625 4 Aug w/ copy 7

14 AUG 1929

DESTROYED UNDER STATUTE

10.

GOVERNOR 633. 10 OCTOBER, 1929.
Submits observations upon the introduction of American Black Bass into Lake Naivasha.

Mr Allen

This despatch is a little too zoological in character for much comment by a layman: but I shall say that the Governor puts up a good case against the objection of the Trustees, who after all can have little knowledge of the peculiar local conditions of Lake Naivasha.

? Send copy of deap. to B. Mus.

WMA for info

I do not think we should ask for others again, though these are likely to be forthcoming in anticipation of what? wait three weeks after sending the letter to the B Mus. before sending Kenya a reply, which seems to be demanded by the last para of the deap.

Mr Bailey may wish to comment

on this

Ch. Cliffe

S. Xing

In the first instance to
H. M. as proposed [unclear]
other [unclear] as suggested.
Wholly need not be troubled in
the meantime

H. Allen

6/11

at once

29/11

To Brit. Museum (or/c 10) 8 NOV 1929

DESTROYED UNDER STATUTE

12. British Museum 5th Dec. 29.

The objection to the introduction of American
Black Bass into Lake Naivasha -

H. Allen

It was anticipated that the B.M.
was advised to the change and
in fact is pushing it a little further
in view of my great enthusiasm
for the preservation of plantations
in the district.

It is only very much to see no this
is a serious matter and has some
importance.

It is only very much to see no this
is a serious matter and has some
importance.

It was proposed in 1926

reference No. 10, which, although to be
last part of Mr. 10.

Ch. Cliffe

7. 11. 29

by Dorley

than can any other?

I think the use of the word
"all considered" in the last sentence
is a little unfortunate as in the
Kilimanjaro case it seems clear that
the matter was carefully considered

H. Allen

10/11/29

H. Allen

As you know, I mentioned briefly in another paper
at an earlier date

I sympathize with both the last two minority
reports as much as anyone the destruction of ^{species of} minute
animals that may quite probably carry with them out
of reach the solution of many biological problems: yet
if the welfare of the colony or its finances are imperilled
by the presence of a "sporting" fish, it is difficult to
conceive the introduction of the latter, would on this
head make the possible gain to the colony the test.
Again I agree that the terms "all considered" as
applicable to the case as themselves all chosen. Mr. Dent
has put up a very well considered case, it is clear
his action was neither hasty nor careless of
consequences.

The question however is whether his data are
sufficiently safe-guarded adequate. I am ex-
abstract of a discussion occasioned by another
acclimatization project, that of Black Buck into
Ceylon, which occurred at the same time. I think
you will see that the dominant feeling among

the following facts after all include some of the best
 informed people on the subject) was advised
 to introduce, except after the results are
 first considered as far as possible of the reasons
 are adequate. The motives of some
 of our workers were very seriously undesirable
 results arising from introductions of alien
 species and largely of plants becoming
 pests: but this is quite irrelevant. The whole
 interaction of flora & fauna is a complicated
 interlocking system that is quite capable of
 being thrown out of gear by a kind of sabotage.
 I am sure that had the case been the
 other way round, and that the farmhouses were
 covered up by it. For then, only to be
 rediscovered when the depredations of the
 species were fought by the introduction of an
 insect (possibly) from America.

It is in part of the consideration of
 results that is so difficult as to be almost
 impossible of satisfactory completion. It
 is not possible sufficiently to segregate
 a single animal by its establishment
 on an island, or sufficiently strictly
 to control its movements. But I am
 not at all convinced that if the Black
 Rat flourished in the Naivasha they will
 remain long enough to that lake. An
 underground exit is mentioned, and there
 is human agency & that of piscivorous
 birds to consider. It is sufficient
 time it is difficult to set a limit
 to the power of a founding species to
 "take away" from its point of entry.

The Black Rat not from any known
 result of the introduction of Black
 Rat in 1901, but from the general &
 result of upsetting the system
 & relations of the native fauna &
 flora that I am rather doubtful as to
 the wisdom of this introduction and
 as to whether the reason for the operation

~~General Staff~~

It is the wish of the
 acclimatization of an active
 fauna to ever been taken up
 as a general matter?

J. H. Allen
 20
 25/1/30

Mr. Borley

I can't find that the question has ever
 cropped up here as a separate one. But possibly
 the Veterinary Research Committee has discussed it?

B. G. Perry
 24/1/30

I have no recollection of this question
 being raised with the last 18 months - you will
 see the action taken on 7/22/30 by the
 human Society's protest (Mr. Strickland would doubtless
 have an answer) please see
 24/1/30

Mr. Parkinson,

recd

I don't like simply shooting No. 12 at the
 Colonial Government in view of the last sentence which
 seems to me somewhat unfair and certainly tactless.
 Mr. Borley has kindly obtained for me a duplicate of
 the record of the discussions of the Linnean Society
 on the 21st November and 5th of December, and I think
 this gives us an opportunity of trying to make the
 British

British Museum's letter a little less unpalatable. I would therefore suggest that in sending a copy of it to the Governor, we might say that as regards the general remark in the last sentence of the letter the Governor may be interested in the accompanying copies of the proceedings of meetings at the Linnean Society of London held on the 21st November and 5th December 1929 at which a resolution on this question of acclimatization was discussed. The despatch might also ask for a report on the results of the experiment in a year's time (Mr. Borley thinks we might usefully do this).

And send a copy of the despatch to the British Museum short draft.

M Allen

28/1/30

For economic reasons the introduction of an extraneous creature may certainly be justified provided the thing is done with thorough care & preparation - of the resources - control in Fiji.

Hope you will send part of the whole letter to

As proposed by Mr Allen.

Mr Parkinson

is proposed, but we can say to the Gov. that the final remark in the letter is of course general

to chambers and does not imply that they referent to in the opinion of the Trustees have all considered.

[I am not afraid of the underground water. So far as I know no one has suggested a re-emergence of New Guinea water except perhaps in 'Lulu Mayadi'.]

W.H.S.

29.1.30 a.m.

13 To Gov 120 - (1) 11 (without incl), 12 + 2 copies of Linnean Society Proceedings of 21.11.29 + 5.12.29.
No. 10 Barbud - 1000 - 8/1/30

6 FEB 1930

DESTROYED UNDER STATUTE

To British Museum (w/c 13 w/o incl) (12 Barbud)

in Barbud

To reply to the 13 yet

shown

6/2/31

Give them 6 months

Paterson 9.2.31

The

at

X5370/29
KENYA

13

C. G.

Mr. Clipp 20-1-20
Mr. Allen 3/11

W. Schindler

Mr. Bostonley

Sir J. Sheelagh

Sir G. Grindle

Parat. U.S. of S.

Parly. U.S. of S.

Secretary of State

COPY TO SMALL & FINE PRINT DIVISION 6 FEB 1930

CP
AT
B
54

And to /
11/11/29

6 February, 1930

DRAFT.

Kenya, No: 120
Crown Grigg

Sir,
I have to refer to
your despatch No: 633 of
the 10th October, 1929,
and to transmit to you,
for your info, the
acc. copies of correspondence
between the Trustees of the
British Museum
(~~British History~~) regarding
the introduction of
American Black Bass into
Lake Naivasha.

To British Museum (20/1/29)
From (No: 11)
21. xi. 29
Crown Society's Receipts, (No: 12)
21. xi. 29
5. xii. 29

[X It will suffice to send
the copies in the full
one copy of each only]
will

2

The final remarks
made by
the Trustees in their

25/11

~~the contents of the~~
letter from the British
Museum of the 5th
December 1928

is of
a general
character, and I do
not understand it
to imply that this
particular experiment
has, in the opinion of
the Trustees, been ill-considered;
but you may be interested,
in this connexion, to
read the accompanying
copies of the proceedings
of meetings at the
Linnean Society of London
at two meetings
held on the 2nd November
and 5th December, 1928
at which a resolution
on the subject of the introduction and
acclimatization of wild animals & plants
was discussed

I shall be glad to

C. O.
Mr.
Mrs.
Mr. Bottomley.
Sir J. Shackleton.
Sir G. Grindle.
Permt. U.S. of S.
Party. U.S. of S.
Secretary of State.

DRAFT.

be furnished with a
report on the results
at Lake Kainache
of the experiment in
a year's time

(Signed) PASSFIELD.

Sect. X. Bye-Law, Chapter I, Section X, to be repealed to the words "Annual Contributions," and the following to be substituted for the part repealed:—

"No Person elected a Fellow of the Society shall be entitled to exercise any Privilege as such, nor shall he be admitted nor his Name entered in the List of the Society until he shall have paid his Admission Fee if any and the Contribution for the current Year and signed the usual Obligation for the Payment of Annual Contributions, and unless he pay his Admission Fee if any and the Contribution for the current Year and sign the Obligation within two calendar Months or within such further Time as the Council may grant, the Election of such Fellow shall be void."

CHAPTER IV.

Of the Foreign Members.

SECTIONS I to IV inclusive to be repealed and the following to be substituted for them:—

"I. The Number of Foreign Members shall not exceed Fifty. The Election of Foreign Members shall be by Ballot and the Date of such Ballot shall be fixed by the Council.

"II. Any Fellow of the Society may propose a Person for Election as Foreign Member by a Certificate signed by himself and other Fellows. Such Certificate, on the Form provided for that Purpose, shall state the Name and Nationality of the Person proposed and indicate clearly the Grounds on which his Selection is urged. The Certificate shall be given to the Assistant Secretary.

"III. The Certificates proposing Foreign Members shall be filed by the Assistant Secretary, and in the Event of a Vacancy or Vacancies in the List of Foreign Members the Council shall select from the Persons so proposed at such Time or Times as they may think fit the Number necessary to fill the Vacancy or Vacancies, and the Names of the Candidates so selected shall be read at three General Meetings and the Ballot shall take place at the Meeting at which the Certificate is read the third time.

"IV. No Person shall be declared to be elected a Foreign Member who has not received the Votes of two-thirds of the Fellows balloting."

CHAPTER V.

Of the Associates

SECTIONS I to III inclusive to be repealed and the following to be substituted for them:—

"I. The Number of Associates shall not exceed twenty-five. The Election of Associates shall be by Ballot, and the

Date of such Ballot shall be fixed by the Council. Associates must be elected from Persons who for any Reason are not in a Position to offer themselves as Candidates for Election as Fellows, but whose Work as Naturalists deserves honourable Recognition, and who are likely by Attendance at its Meetings, or by the Communication of scientific Notices, to benefit the Society.

"II. Any Fellow of the Society may propose a Person for Election as Associate by a Certificate signed by himself and other Fellows. Such Certificate, on the Form provided for that Purpose, shall state the Name of the Person proposed and indicate clearly the Grounds on which his Selection is urged. The Certificate shall be given to the Assistant Secretary.

"III. The Certificates proposing Associates shall be filed by the Assistant Secretary, and, in the event of a Vacancy or Vacancies in the List of Associates, the Council shall select from the Persons so proposed at such Time or Times as they may think fit the Number necessary to fill the Vacancy or Vacancies, and the Names of the Candidates so selected shall be read at three General Meetings, and the Ballot shall take place at the Meeting at which the Certificate is read the third Time.

"IV. No Person shall be declared to be elected an Associate who has not received the Votes of two-thirds of the Fellows balloting."

The Sections of Chapter V, at present numbered IV, V, VI, and VII, to be numbered respectively V, VI, VII, and VIII.

CHAPTER XIII.

Of the General or Ordinary Meetings of the Society.

In Section I for "November" read "October."

The following to be added to **SECT. III** :—

"Strangers may be officially invited to attend the General Meetings by the President or Officers, but may attend the Anniversary Meeting only" on the Invitation of the President."

Dr. A. B. KENDLE showed, on behalf of Dr. Maurice Gepp, an abnormal flower of *Tropaeolum speciosum* Poepp. & Endl., exhibiting an unusual type of median proliferation. From the centre of the ovary protruded a vegetative shoot about three inches long, bearing numerous small leaves resembling those of the normal plant. This is not a case of vivipary, but a growth of the floral axis continued vegetatively above the pistil. Dr. Gepp stated that the plant, which he had grown for three years, had never produced a normal fruit.

Dr. D. H. Scott exhibited, and gave an account, illustrated with lantern-slides, of some Fossil Seeds of *Eospermatopteris*, the oldest known Spermophyte.

The seeds of *Eospermatopteris* exhibited are of Upper Devonian age, and are attributed to the great "Tree-ferns" forming the Fossil Forest of Gilboa, in the State of New York. The seeds are from 6 to 8 mm. in length by about 3 mm. in breadth; they are borne on forked stalks. Each seed has a pointed, presumably micropylar, free end. The bodies have all the appearance of seeds, but the internal structure is not known.

The "Tree-ferns" were originally described by Sir William Dawson. They, and the seeds attributed to them, have been fully investigated by Miss Winifred Goldring, of Albany.

The specimens exhibited were kindly lent by Dr. Kräusel, of Frankfurt, who obtained them on a visit to the American locality.

Dr. A. B. Rendle agreed that the bodies exhibited showed no features inconsistent with their being true seeds.

The President expressed the Society's appreciation of the interest and importance of Dr. D. H. Scott's exhibit.

Dr. Hugh Scott gave a lecture, illustrated with lantern-slides, of a natural history excursion into Basutoland.

This excursion, made in February 1929, during a holiday in South Africa, occupied only about eleven days. It was undertaken to see the general conditions in a little-visited part of South Africa, to collect as many insects as possible, and to compare this very mountainous country with other mountain regions where the lecturer's field-work has lain. Basutoland is nearly 150 miles across in either direction. It lies at the principal watershed of South Africa. From its mountains the Orange and its tributary, the Caledon, flow hundreds of miles W. to the Atlantic, while numerous shorter rivers run down S.E. to the Indian Ocean. Along the N.W. side lies the Maluti range, rising at its W. end to about 10,000 feet in Mt. Machaba. The S.E. frontier is formed by part of the Drakensberg, and the area between the two ranges is filled with lofty mountains and deep valleys. There are no railways except a mile or two linking up Maseru, the capital, on the N.W. frontier, with the South African system. The few roads are all in the less rugged W. borders, the rest of the country being penetrated only by bridle paths.

Until little over a century ago, Basutoland was inhabited almost solely by Bushmen. The foundation of the present Bantu nation, the Basuto, by Moshesh in 1831, and their vigour and progressiveness, have profoundly affected the natural history. Deforestation and destruction of big game have been extensive. Almost the only native "timber" seen was scrub composed of a Rosaceous bush, *Leucosidea sericea*, about 5-15 feet high. All arable land is devoted to cultivation of mealies (maize) and kafir

corn (*Zorghum*), and the grassy slopes are stocked with horses and cattle. Entomological collecting revolves itself largely into "sweeping" grass and flowers, searching under stones and working the low dense bush of *Eleocharis*. The country would doubtless repay prolonged investigation, which might reveal how far the insects of the mountains differ from those of the high veld surrounding Basutoland, and of the Cape Province mountains a long way south west.

Basutoland is a native reserve, but with the help of the Local Commissioner at Maseru and other friends an excursion was made over 30 miles E. from Maseru to a branch store at Nyakocaba, whence the Maluti Mts. were visited. Afterwards the extreme N.E. corner was touched; a three-days' journey by horse was made from Witziesshoek, O.F.S., to the Drakensberg National Park in Natal. Basutoland being re-entered on the summit of Mont-aux-Sources, the highest mountain in South Africa, over 11,000 feet. On top is a flat moorland ending in a precipice more than 2000 feet high, over which the Dugals River falls. Heavy miststorms and high wind interfered with collecting on the summit, but the broken weather was compensated for by the profusion of flowers in blossom during the summer rains.

The lantern-slides were chosen to illustrate topography, vegetation and the inhabitants. The spores obtained, about 1000 specimens, are being dealt with at the British Museum. A species of cockroach was observed to display maternal care for its young, a fact of considerable biological interest.

Dr. A. B. Rendle asked as to the nature of the undergrowth in the Basutoland Forest. The forests in the George and Kanyana districts recently visited by him; though containing numerous species of trees, were generally poor in undergrowth, thus contrasting with the well-developed undergrowth in the forest on Mt. Kenya.

Mr. H. N. Dixon hoped that Dr. Scott had collected for the insect-entomists some specimens of mosses from the Mont-aux-Sources; if so, he would be very grateful to receive the remains when the insects were extracted, as the mosses on isolated mountain peaks are little known and of great interest.

Dr. Hugh Scott replied that there was no undergrowth in the forests except a beautiful carpet of red begonias. Unfortunately, he had gathered no mountain mosses, as he would certainly have done if he had heard Mr. Dixon beforehand.

The President read a letter from Dr. Joseph Pearson, Director of the Colombo Museum, requesting the opinion of the Society as to the advisability or otherwise of the proposed acclimatization of Black Buck (*Antelope cervicapra*) in Ceylon.

After a preliminary discussion of the question by Dr. W. T. Calman, Mr. H. N. Ridley, Mr. F. H. Lancaster, and Lt.-Col. J. H. Tull Walsh, Jr. W. T. Calman gave notice that at the next

General Meeting he will propose the following resolution —

"That this Meeting deprecates all attempts to introduce or acclimatise wild animals or plants in countries where they are not native, unless such introduction is urgently needed for economic reasons, and until a thorough study has been made of the local conditions and of the results that are likely to follow."

In the absence of Professor G. E. NICHOLLS, through ill health, a paper, illustrated with lantern slides, on "A new Syncaridid from the West Coast of Tasmania," was given by Dr. W. T. CALMAN.

The small freshwater crustacean which forms the subject of this paper was first taken by the author in February 1928 in a sphagnum choked ditch near Queenstown. As but a few specimens were secured, none of which appeared to be mature, a second collecting trip was made a year later, and resulted in the discovery of the animal in several widely separated localities living under quite diverse conditions.

The third member of the sub order Anaspidacea to be discovered in Tasmania it seems most closely related to *Koomana* *varia*, a species at present known only from the Australian mainland. From *Koomana*, however, it differs in the relative shortness of its peron and the reduction in the number of its gills, as well as in the loss of eyes. In the main, other differences are to be noted, the remarkable superiority some might say of *Koomana* being wanting, and the first pleopod modified more profoundly than in many other Syncaridid.

Less than one third of an inch in length, colourless and almost transparent, the living animal may nevertheless be distinguished immediately in a mixed assemblage of small Crustacea by its swift and steady gliding movement. The fully mature animal is rendered much more conspicuous by its golden or orange coloured gonads, and in these specimens a chocolate-brown pigment is developed irregularly upon the dorsal surface.

In its eyeless condition, its transparency, its small size, and its cylindrical body, as well as in the reduced number of its gills, it approaches more nearly to the condition seen in the Bathynellidae than does any other member of the Anaspidacea, these characteristics being correlated with the subterranean mode of life.

Dr. Calman mentioned also that Dr. S. M. Manton, F.L.S., had just returned from making valuable investigations into the Anaspidacea of Tasmania; and Dr. Bidder alluded to her observations on the visual powers of *Brachyotus*.

The President thanked Dr. Calman for his presentation of Professor Nicholls' valuable work on a group which is obviously of very great interest.

The next General Meeting of the Society will be held on
Thursday the 21st November, 1929, at 5.0 p.m.

AGENDA.

1. Confirmation of the Proceedings of the previous meeting held on the 7th November, 1929.
2. Statement of donations received since the previous meeting.
3. Admission of Fellows.
4. Recommendations of candidates for Fellowship.
5. Second reading of the proposed alterations in the Bye-Laws.
6. Communications:—

5.15 P.M. Mr. W. C. WORSDELL. Exhibit of a Hybrid Poppy (dried specimen).

5.20 P.M. Col. M. J. GODFREY. The Pollination of *Cephalanthera*.

5.30 P.M. Prof. E. B. POULTON, F.R.S. Recent Observations on Snake-like Caterpillars which throw light on a statement in H. W. Bates' classical paper on Mimicry. Illustrated with lantern-slides.

5.40 P.M. Dr. W. T. CALMAN, F.R.S., will move the resolution, of which he gave notice on November 7th, in regard to the proposed acclimatisation of Black Buck in Ceylon (see p. 6).

(An abstract of the discussion will subsequently be sent to Colombo for the information of the authorities.)

6.30 P.M. Dr. S. K. MONTGOMERY. Report on the Crustacea Brachyura of the Percy Sladen Trust Expedition to the Abrolhos Islands under the leadership of Professor W. J. Dakin, D.Sc., F.L.S., in 1913; along with other crabs from Western Australia, illustrated with lantern-slides.

The Crustacea Brachyura of Professor W. J. Dakin's Percy Sladen Trust Expedition to the Abrolhos Islands in 1913 are described. Of 57 species and varieties in the collection, there are 8 species and 4 varieties described as new; and a new genus is suggested to contain one of these, along with *Grapsus inornatus* (Heas) and *Brachynotus octodentatus* (Milne-Edwards). New light is thrown on the identities of *Plagusia depressa* (Herbst), *Plagusia squamosa* (Herbst), and *Plagusia tuberculata*. The specific identity of *Schizophrys dana* (Herbst), with *Schizophrys aspera*

(Milne-Edwards), and of *Actea affinis* (Dana) with *Chlorodopsis areolata* (Milne-Edwards) is affirmed. The incompleteness of knowledge of the Western Australian fauna is stressed.

The opinion is expressed that the Brachyuran fauna of the Abrolhos Islands is more nearly related to that of the north of Australia than to that of the south and south-west. It is suggested that the Ninety Mile Beach, north of Broome, has divided the Brachyura into a Northern and a North-Western group. The relative absence of the Onystones both from the North-western and the Southern groups is noted. The Brachyuran fauna of Australia as a whole, and of the South of Australia in particular, is shown to vary considerably from the general homogeneity of the Indo-Pacific.

G. P. BIDDER, }
J. RAMSBOTTOM, } *Secretaries.*

NOTICES.

LIBRARY.

The attention of Fellows and Associates resident in the British Isles is invited to the facilities for borrowing books from and consulting books and current scientific periodicals in the Library. A copy of the Rules will be sent to any Fellow or Associate on application to the Librarian. The Library is open ordinarily from 10 a.m. to 5 p.m. every day throughout the year except on Sundays, Good Friday and the following Saturday, Christmas Day, and Bank Holidays.

Special attention is drawn to the fact that the Library is open on Saturday afternoons. The Library Catalogue, now available, includes all additions up to 1925, and costs, carriage free to Fellows and Associates, 2s. in cloth binding and 18s. 6d. in paper covers.

ADMISSION OF FELLOWS.

Fellows who desire to be formally admitted to the Society on the occasion of the Meeting on the 21st November next are asked to let the Assistant Secretary know before 5 p.m. on that date.

PRESIDENT'S ADDRESS.

Attention is called to the fact that separate copies of the President's Address, delivered on the 24th May, 1928, on the History of Whaling,¹¹ are available for sale at the Society's Rooms. Price 1s.

General Meeting he will propose the following resolution:—

That this Meeting deprecates all attempts to introduce or acclimatise wild animals or plants in countries where they are not native, unless such introduction is urgently needed for economic reasons, and until a thorough study has been made of the local conditions and of the results that are likely to follow."

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5.15 P.M. Mr. W. C. WORSDELL. Exhibit of a Hybrid Poppy (dried specimen).

5.20 P.M. Col. M. J. GODFREY. The Pollination of *Cephalanthera*.

5.30 P.M. Prof. E. B. POULTON, F.R.S. Recent Observations on Snake-like Caterpillars which throw light on a statement in H. W. Bates' classical paper on Mimicry. Illustrated with lantern-slides.

5.40 P.M. Dr. W. T. CALMAN, F.R.S., will move the resolution, of which he gave notice on November 7th, in regard to the proposed acclimatisation of Black Buck in Ceylon (see p. 6).
(A paper abstract of the discussion will subsequently be sent to Colombo for the information of the authorities.)

6.30 P.M. Dr. S. K. MONTGOMERY. Report on the Crustacea Brachyura of the Percy Sladen Trust Expedition to the Abrolhos Islands under the leadership of Professor W. J. Dakin, D.Sc., F.L.S., in 1913; along with other crabs from Western Australia. Illustrated with lantern-slides.

The Crustacea Brachyura of Professor W. J. Dakin's Percy Sladen Trust Expedition to the Abrolhos Islands in 1913 are described. Of 57 species and varieties in the collection, there are 8 species and 4 varieties described as new; and a new genus is suggested to contain one of these, along with *Grapus inornatus* (Hess) and *Brachynotus petadentatus* (Milne-Edwards). New light is thrown on the identities of *Playusia depressa* (Herbst), *Playusia squamosa* (Herbst), and *Playusia tuberculata*. The specific identity of *Schizophrys dama* (Herbst), with *Schizophrys aspera*

(Milne Edwards), and of *Actea affinis* (Dana) with *Calorodopsis areolata* (Milne Edwards) is affirmed. The incompleteness of knowledge of the Western Australian fauna is stressed.

The opinion is expressed that the Brachyuran fauna of the Abrolhos Islands is more nearly related to that of the north of Australia than to that of the south and south-west. It is suggested that the Ninety Mile Beach, north of Broome, has divided the Brachyura into a Northern and a North-Western group. The relative absence of the Onyustomes both from the North-western and the Southern groups is noted. The Brachyuran fauna of Australia as a whole, and of the South of Australia in particular, is shown to vary considerably from the general homogeneity of the Indo-Pacific.

G. P. BIDDER, }
J. RAMSBOTTOM, } Secretaries.

NOTICES.

LIBRARY.

The attention of Fellows and Associates resident in the British Isles is invited to the facilities for borrowing books from and consulting books and current scientific periodicals in the Library. A copy of the Rules will be sent to any Fellow or Associate on application to the Librarian. The Library is open ordinarily from 10 a.m. to 5 p.m. every day throughout the year except on Sundays, Good Friday and the following Saturday, Christmas Day, and Bank Holidays.

Special attention is drawn to the fact that the Library is open on Saturday afternoons. The Library Catalogue, now available, includes all additions up to 1925, and costs, carriage free to Fellows and Associates, 2s. in cloth binding and 18s. 6d. in paper covers.

ADMISSION OF FELLOWS.

Fellows who desire to be formally admitted to the Society on the occasion of the Meeting on the 21st November next are asked to let the Assistant Secretary know before 5 p.m. on that date.

PRESIDENT'S ADDRESS.

Attention is called to the fact that separate copies of the President's Address delivered on the 24th May, 1928, on the "History of Whaling," are available for sale at the Society's rooms. Price 1s.

Milne-Edwards), and *Chelonia affinis* (Dunn) with *Chlorocephalus* *melanota* (Milne-Edwards) is affirmed. The incompleteness of knowledge of the Western Australian fauna is stressed.

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G. F. BUDDER } Secretaries.
J. RAMSBOTTOM }

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THE LINNEAN SOCIETY OF LONDON.

The next General Meeting of the Society will be held on
Thursday the 21st November, 1929, at 5.0 p.m.

AGENDA.

5.40 P.M. Dr. W. T. CALMAN, F.R.S., will move the resolution, of which he gave notice on November 7th, in regard to the proposed acclimatisation of Black Back in Ceylon (see p. 6).
(An abstract of the discussion will subsequently be sent to Colombo for the information of the authorities.)

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has, however, now been solved for us by the Rev. A. Miles Moss, who has made a special study of the life-histories of Amazonian Lepidoptera, and by Lord Rothschild, who has reproduced the beautiful coloured drawings in 'Novitates Zoologicae.' It is evident, from the descriptions and plates (vol. xxvii, 1920, pp. 391, 392, pl. ix & x), that Bates was referring to a Sphingid larva which deceived him by the reduction of the caudal horn to a mere hump in the final stage, although, as the author has shown, possessing it fully developed when young. The two larvae figured on these plates, *Leucorhampha tripolemus* Cram. and *L. ornatus* Rothschild, behave exactly as Bates described, and bear their terrifying eye-like marks on the ventral surface. There can be no reasonable doubt that Bates was describing one of these species or an allied species of the same genus.

Mr. H. N. Ridley described a snake-like caterpillar in the

No. 508.

THE LINNEAN SOCIETY OF LONDON.

GENERAL MEETING.

21st NOVEMBER, 1920.

Sir SIDNEY F. HARRER, K.B.E., F.R.S., President,
in the Chair.

Dr. W. T. CALMAN moved his resolution:—

"That this Meeting deprecates all attempts to introduce or acclimatise wild animals or plants in countries where they are not native, unless such introduction is urgently needed for economic reasons, and until a thorough study has been made of the local conditions and of the results that are likely to follow."

He stated that he intended to make only a few general remarks on the matter, and that those who followed him in the discussion would no doubt give specific instances of serious results that have followed the introduction of animals and plants. This century, and particularly the last few years, has seen a remarkable increase in the appreciation of the damage that is being done to the wild

4
life of the world by the actions of man, and a no less remarkable increase in the sense of our responsibility for handing on to our successors, as little impaired as possible, all the variety and wonder of the living world. Much is being done in many countries towards this end by game laws, by the establishment of Nature Reserves, and in other ways.

The object of this resolution is to call attention once more to the danger to the native fauna and flora of ill-considered attempts at acclimatisation. We all realize nowadays that Darwin was one of the first to make clear, that the living inhabitants, plant and animal, of any region form an organic whole, united by the most complex links of inter-relationship, and that the disturbance of any one of these links may have far-reaching and uncalculable effects.

Some introductions are necessary if the white races are to occupy the empty spaces of the world; some are regrettable but perhaps unavoidable accidents. All that this resolution seeks is to protest against intentional introductions for trivial reasons—for example, for purposes of sport.

Mr. M. A. C. HUSTON seconded the motion. He called attention to the risk of a probable introduction of North American Musk Rats (*Ondatra zibethica*) to Britain in the near future. In 1905 two or three pairs were liberated in Bohemia, and their progeny have now spread over most of that part of Central Europe lying between 47° and 52° N latitude and 10° and 18° E longitude. In 1926 the Musk-Rat population of Central Europe was estimated to be 100,000,000. It was impossible to make such an introduction without doing great biological damage. It was true that certain landowners and fur-merchants had made considerable profit from the introduction; but much material damage had been done to embankments by the Musk-Rats, and the burdens of repair and Musk-Rat control were thrown upon the community. An extensive literature relating to the Musk-Rat in Europe now exists; a comprehensive and up-to-date summary has been published by Toit (Die Pelzrausch, v. 1928, pp. 185, 200, 219, 223, 245-248, v. 1929, pp. 1, 11, 31-33, 47, 51, 69, 73, and v. 93-97).

The President said that the spirit and intention of Dr. Calman's motion commanded his cordial sympathy and agreement, but the wording seemed too sweeping. Passed in its present form the resolution would represent the meeting as deprecating the introduction of any of the exotics which adorn our gardens, and yet are certainly not arguments needed for economic reasons. He thought that the sentiment of the resolution was better expressed in the following words, which he moved as an amendment:—

“That, in view of the disastrous results which in certain well-known cases have followed from the introduction of

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animals or plants into countries where they are not native, this meeting is of opinion that acclimatisation should not be attempted without adequate motives and after careful consideration of the possible results of the experiment.”

Dr. REEDLE said that, while sympathising with the spirit of Dr. Calman's resolution, he agreed with the President that it was impracticable in its present form, as it would prevent the introduction of plants for horticulture or agricultural purposes. He would prefer the resolution as amended by the President. It might be useful to test the resolution by its application to specific cases. A number of well-meaning plant-lovers had recently proposed to introduce plants into suitable wild situations in Great Britain with a view to the improvement or beautifying of the native flora. No true botanist could approve of this, and Dr. Calman's resolution would meet this case. But other cases were not so simple. The introduction of the “Port Jackson Willow,” an Australian species of *Acacia* (*A. saligna*), into the Cape Flats which stretch for twenty miles between Table Mountain and the Hottentot's Holland range had, we were given to understand, exercised an ameliorating effect on the soil. What had been barren scrub land was being converted into farm land, as the *Acacia* spread and became dominant. Here was presented a conflict between the natural history and economic points of view. The botanist, ornithologist, and entomologist had to regret the destruction of interesting species coincident with the improvement of the area for agriculture. This might be quoted in the terms of the resolution as “urgent need for economic purposes,” but the results of the introduction could not definitely have been foretold.

The classic case of the Island of St. Helena was an instance of the practically complete destruction of one of the most interesting and peculiar insular floras on the face of the globe by the introduction of goats at the time of the discovery of the island in 1501, and later, under the rule of the Hon. East India Company, of trees, shrubs, and herbs from many parts of the world. The latter was a well-meaning attempt to make good the havoc caused by the goats (introduced originally as an act of mercy, that shipwrecked mariners might find milk and meat for their use) and the extravagance of early settlers, but the disastrous effects on the native vegetation could scarcely have been foretold.

Settlers from Great Britain in overseas parts of the Empire were in the habit of introducing plants from the old country into their gardens. In ninety-nine cases these did not spread to the hurt of the native vegetation, but in the hundredth the plant might become a pest, like the Scotchman's thistle in New Zealand, or the prickly pear in Australia. Special reference was made to the English gorse which the speaker had seen spreading over the cliffs round the harbour at Wellington and displacing the native vegetation, and, more recently, at St. Helena, strangling one of the

few remaining examples of an endemic arborescent Composite on the highest ridges of the island. Numerous similar instances might be quoted. It would seem impossible to foretell the results of the introduction of a given species, and on the other hand impracticable to forbid the introduction generally of exotics into gardens.

Some of the worst pests were accidental introductions, brought in with fodder, wool, &c., but these were presumably outside the range of the resolution. The resolution in its present form would be extremely difficult of application in the case of plants.

Dr. G. P. BIDDEN pointed out to Dr. Calman that his resolution was of such wide philosophic interest that in discussing it the critical powers of the meeting would be alert to prove exceptions to its generalities, in complete forgetfulness that we are asked by a Fellow to advise him as to a concrete problem. The whole meeting, and probably the whole Society, was unanimous in disapproving of the introduction of the Black Buck into Ceylon for the greater amusement of sportsmen, unless after the most careful appreciation of the likelihood that an Indian antelope, among the weaker fauna of Ceylon, might increase abnormally and destroy crops and forests. He hoped that Dr. Calman would allow of the expression of this unanimity by adopting the President's form of words.

Lieut.-Col. J. H. TULL WALSH agreed with the reasoning of the Zoological Secretary.

Major S. S. FLOWER wished no word changed in Dr. Calman's resolution. The Little Owl and the Grey Squirrel are flagrant instances of the harm wrought by irresponsible acclimatists. Recently he had communicated to the Zoological Society the occurrence of the Fat Dormouse (*Glis glis*) in Hertfordshire and elsewhere. Lord Rothschild had now told him these are descendants of specimens turned out by him. They gave an instance of the unexpected changes in an animal acclimated to a new environment; the Fat Dormouse in England has largely abandoned the practice of winter hibernation, finding that hothouses and other human buildings allow the winter to be passed in activity.

Dr. CALMAN stated that he was quite unrepentant and saw no reason to diminish his resolution in any way.

Mr. H. N. DIXON suggested that the criticisms would lose force if Dr. Calman would substitute the word "naturalise" for "acclimatise". He would suggest the same change in the President's amendment.

The President was unable to see the distinction drawn by Mr. Dixon.

On the invitation of the President Mr. N. B. KINNEAR moved the adjournment of the discussion. This was seconded and carried.

Dr. S. K. MONTGOMERY gave an account, illustrated with lantern slides, of his paper entitled "Report on the Crustacea Brachyura

THE LINNEAN SOCIETY OF LONDON.

GENERAL MEETING:

St. Dunstons, 1838.

Sir SIDNEY F. HARRIS, K. B. E., F. R. S., President,
is the Chair.

Discussion on the Introduction of Alien Species.

The President pointed out that, while the Society was asked for advice as to the introduction of Black Buck into Ceylon, the immediate question before them was that another form of words should be substituted for Dr. Calman's resolution. He called on the President of the Royal Horticultural Society for information as to the manner in which horticulturists would regard the resolution as it stood.

Mr. G. W. E. LODGE considered that taking into account all the risks run and all the damage done, nevertheless the human race has gained immeasurably from the introduction by human agency of plants and animals into countries to which they are not

native. Had Dr. Calman's resolution been statutory law in Queen Elizabeth's reign the potato would have been prohibited; at a still earlier time wheat would have been prohibited. He had been asked to speak as representing the Royal Horticultural Society, — in that capacity he could not agree to such a sweeping condemnation of the great collectors who had enriched our gardens and woods. At the last meeting there had been mention of the Musk Rat, — had the zoological Fellows considered the question of the Silver Fox now being bred for its fur in England?

Mr. J. C. SHENSTONE referred to the wild-flower garden, which a few years ago attracted much attention, on a building site at Aldwych. Unfortunately, some mischievous persons scattered seeds of garden flowers over the site, thus destroying the scientific evidence of the self-sown garden.

Dr. CALMAN, on the President's invitation, replied that Mr. Loder had misinterpreted the resolution, which would not have prohibited tea, the potato, or wheat. He regretted being unable to accept the form of words moved from the Chair, for he objected to the resolution being based merely on a few disastrous results. He stood by his own wording, which condemned irresponsible acclimatisation even if unaccompanied by flagrant disaster, and in this he thought would have the agreement of every Fellow of the Society, even the President of the Royal Horticultural Society.

The PRESIDENT considered that the wording he proposed would command more universal assent, and put his amendment to the meeting.

The amendment was lost.

Mr. N. B. KINNEAR proposed an amendment that for the words "introduce or acclimatise" be substituted the words "introduce and naturalise."

Mr. A. J. WILMOTT seconded the amendment.

The amendment was carried.

Mr. W. G. FREEMAN said that, having spent many years in Colonial Departments of Agriculture, he naturally looked at the motion from the point of view of an officer concerned with the introduction of desirable animals and plants and the prevention of the importation of those which are undesirable. Whilst agreeing entirely with the general idea underlying the resolution, he was unable to agree with its terms. There were many plants, for example, which it would be desirable and useful to import into a country, but for which no claim could be substantiated that they were urgently needed for economic reasons.

It had been suggested by some previous speakers that, whilst it might be permissible to import certain plants or animals, attempts should not be made to naturalise or acclimatise them. He did not think that any such distinction was practicable, as there were well-known instances of animals and plants which no one had deliberately attempted to acclimatise or naturalise, but which had found conditions suitable to them and "got away" and

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become nuisances. Agricultural officers in the Colonies did not lightly embark on introductions, but at present the weak point was that in many countries there was no law by which, say, a private person could be prevented from making an introduction which might be regarded as undesirable. There were laws and regulations controlling the importation of plants and animals which might carry diseases or pests, and the necessary machinery for their enforcement. To secure an advance on the present position there should be laws on similar lines controlling the importation of all animals and plants, giving power to prohibit entirely or to permit importation under certain conditions.

Such laws were, he believed, already in existence in the U.S.A., South Africa, and some of the Australian States. As a concrete example Mr. Freeman instanced a New Zealand Act of 1895, which provided that "No Society, authority, or person shall introduce or import into the Colony, or turn at large for the purposes of sport or acclimatisation, or as game, any wild animal or bird whatever, without the consent in writing of the Minister for the time being in charge of the Department of Agriculture; nor shall any insect or reptile be introduced or imported into the Colony without such consent as aforesaid."

To give similar powers to control plant importations, there was the New Zealand "Introduction of Plants Act", 1927, No. 39. This provides machinery for controlling the importation of plants of a kind not hitherto found in New Zealand. The importation of certain other plants, namely those classified as noxious weeds, is definitely prohibited.

In order to bring matters to a practical issue he would suggest as an amendment that the resolution be worded as follows -

"That this meeting recommends that the Government of each country of the British Empire should consider the advisability of taking any action necessary to prohibit entirely, or to permit, subject to any conditions which may be deemed advisable, the importation of any animals or plants not hitherto found in their territory; such prohibition or permission to be determined on in each case after giving careful consideration to local conditions and the results that are likely to follow."

Should a resolution on these lines meet with the approval of the Society, he suggested that it should be sent to the Secretary of State for the Colonies and Dominion Affairs with the request that it be submitted to the Governments concerned for consideration.

Prof. R. R. GATES seconded Mr. Freeman's motion, and said that he thought the proposal to send a copy of this resolution to the Colonial Office was a very reasonable and useful action, which the Linnean Society might take.

Mr. A. J. WILMOTT said that Mr. Freeman's suggestion raised considerably wider issues which would require much consideration. He thought it preferable that the Linnean Society should keep to its own particular sphere, which is the study of wild life, which

5
study is often made more difficult or impossible owing to the interference caused by those who deliberately try to naturalise alien animals or plants. This is quite different from introducing plants into gardens or for economic reasons; such introductions rarely affect the natural vegetation. Naturalisation must upset the balance of nature. The study of wild life becomes increasingly difficult with the continual restriction of its area, and such areas as remain to us should be kept as free from interference as possible.

Dr. A. W. HILL said he would support Mr. Freeman, for unless some such action as he suggested were taken no good result could be looked for from the discussion.

Mr. J. RAMSBOTTOM suggested that Mr. Freeman's amendment was too wide-sweeping to be pressed at such a meeting. The matter of the Black Buck was fairly simple; but if it were pointed out that some of the regulations mentioned by Mr. Freeman were essentially quarantine regulations for the prevention of the introduction of such plant diseases as chestnut blight and white pine blister rust, it would be seen that we got a complex of host, parasite, and politics. It was much better to restrict discussion to Dr. Calman's motion.

The PRESIDENT ruled that Mr. Freeman's motion was not an Amendment, but a proposal to substitute another subject for that on the Agenda.

Dr. G. P. BIDDER begged that the discussion should be continued by Fellows who knew the tropics, and that they should illustrate Dr. Calman's general thesis by particular instances related to the proposed introduction of Black Buck into Ceylon. The Game Protection Society, who wished to introduce Black Buck into Ceylon, presumably know of plains there suitable to its life, and they may rely on panthers and sportsmen to prevent its disproportionate increase. But to the mere reader of text-books it appeared possible that the Buck, which maintained its numbers in Orissa where there were not only panthers, but tigers, wolves, and dihole dogs, might increase in its new home to a noxious extent.

Mr. A. H. MAUDE agreed that the discussion should properly be centred on the question of Black Buck, but he considered that the general terms of Dr. Calman's motion might be misconstrued as condemning the work of acclimatisation societies, which was well-considered and had often been highly beneficial. Their experiments in gardens under skilled observation afford the true safeguard against the introduction of harmful plants.

Mr. F. H. LANCEUM suggested that the country concerned could not afford to take the risk of introducing the Black Buck. Past experience has shown that in the majority of cases where alien fauna are introduced one of two results follows,—either the species concerned dies out, or it flourishes too well generally at the expense of some native species. He cited as instances the rabbit in Australia, the mongoose in Jamaica, the English Sparrow in

America, the Musk-Rat in Central Europe, and the little grey and Grey Squirrel in this country.

Mr. W. P. PYCHART was of opinion that if an animal were introduced into a new environment, it would be impossible to foretell how far the native fauna and flora would be affected.

Mr. H. N. RIDLEY said that he had not seen any place in Ceylon suitable for Black Buck, unless possibly Harton Park. Although he considered that the introduction would be perfectly harmless, nevertheless he thought it would be a failure. He pointed out that Tiger and Black Buck do not inhabit the same ground.

Mr. I. H. BURKILL remarked, with regard to Mr. Freeman's proposal, that it was obvious from the fact that Dr. Pearson had advised the Government of Ceylon not to permit the importation of the Black Buck, that his Government had already legal powers in such matters.

Lt.-Col. J. H. TULL WALSH agreed with Mr. Ridley that there was no place in Ceylon suitable for Black Buck. It was a beast very destructive to crops, less by what it eats than by what it tramples down.

Mr. A. J. WILMOTT emphasised the point that naturalised species often change their habits to suit a changed environment as when rabbits climb trees.

Mr. W. P. PYCHART suggested that if they introduced the Black Buck into Ceylon, they would have to introduce the Tiger as well.

Dr. W. T. CALMAN moved that his resolution should be communicated to the Colonial Office, with a rider to the effect that the subject was brought to the notice of the Society in connection with the proposed introduction of Black Buck into Ceylon.

The PRESIDENT having put the question to the meeting declared that the amended motion, with its rider, was carried unanimously.

The next General Meeting of the Society will be held on
Thursday the 19th December, 1929 at 5.0 p.m.

AGENDA

1. Confirmation of the Proceedings of the previous meeting held on the 5th December, 1929.
2. Statement of donations received since the previous meeting.
3. Admission of Fellows.
4. Recommendations of candidates for Fellowship.
5. Ballot for the election of the following candidates for Fellowship:

Ernest Philip Esquett Sutton, M.B.F.
Robert Brian Dawson, M.Sc.

All communications
should be addressed
to the Director.

Telephone
WESTERN 7115 & 7119.

Grams:
NATHISMUS, LONDON

5546/29.

BRITISH MUSEUM (NATURAL HISTORY)

CROMWELL ROAD,

LONDON: S.W.

5 December, 1929.

RECEIVED
DEC 9 1929
COL OFFICE

Sir,

I am directed by the Trustees of the British Museum to acknowledge the receipt of Mr. Parkinson's letter (No. 15670/29) of the 8th ultimo, forwarding a copy of a despatch from the Governor of Kenya regarding the introduction of American Black Bass into Lake Naivasha.

The Trustees have given consideration to the reply made by the Governor to their observations on this subject, and they think it desirable to point out for the information of Lord Passfield that the Governor's answer is in effect that the fauna of the Lake previously consisted of a single species of fish, and it does not dispose of the Trustees' anxiety as to the possible disturbance and destruction of the native fauna of the Lake, since in using the word fauna the Trustees had in mind invertebrate as well as vertebrate animals.

Miss P.M. Jenkin in a preliminary report on the Biology of Lakes in Kenya, published in "Nature", October 12, 1929, states that on her recent expedition she found Lake Naivasha to contain an "abundant fauna", amongst which she mentions planktonic Entomostraca and Rotifera.

The Trustees consider that the whole history of attempts to introduce and acclimatise animals in countries where they are not native shows that the most unexpected, far-reaching and sometimes disastrous results have followed. It is impossible to predict with any confidence the result of such an interference with the complex and unstable balance of nature. Occasionally, but perhaps not very often, such attempts may be justifiable for economic reasons. From a practical and commercial point of view it is not unlikely that the reaction on the invertebrate and plant life following the introduction of exotic species may prove in the long run to be more important than its effect on vertebrate animals.

The Trustees therefore direct me to state for the information of Lord Passfield that the despatch from the Governor of Kenya contains nothing to modify their previously expressed opinion that the introduction of American Black Bass into Lake Naivasha is to be deplored. The Trustees further desire me to express in general their strong disapproval of all-considered attempts to introduce or acclimatise wild animals in countries where they are not native.

I am,

Sir,

Your obedient servant

C. Tate Regan

THE UNDER SECRETARY OF STATE,

COLONIAL OFFICE,

(No. 11.)

Copy Case 120-6-1930
6 FEB 1930
Cinwood

(No. 1.)

20
12

KENYA.

No. 633



10.
GOVERNMENT HOUSE,
NAIROBI,
KENYA.

RECEIVED
4 NOV 1929
COL. OFFICE

10th October, 1929.

My Lord,

With reference to Your Lordship's despatch No. 625 dated the 14th August, 1929, transmitting a copy of a letter No. 3545/29 dated the 3rd August, 1929, from the British Museum (Natural History) I have the honour to submit the following observations upon the introduction of American Black Bass into Lake Naivasha.

2. Two possible dangers might have arisen from the introduction of this predatory fish.

- (i) The disturbance and destruction of existing fauna of scientific and commercial value and
- (ii) escape of the Bass from the lake resulting in destruction of the indigenous fauna of other water.

3. Insofar as (i) is concerned, in 1908 extensive netting operations were carried out by a Danish Fisherman named Aarup with a view to finding a fish of commercial value. Aarup found no species other than *Haplochilus Antinorii*.

At a later date Mr. Paul J. Rainey, a keen naturalist made a careful investigation of the Lake but found no other species of fish.

Again Mr. R.E. Dent, Fish Warden of Kenya,

THE RIGHT HONOURABLE LORD PASSFIELD, P.C.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON, S.W.1

copy to Brit. Museum 5 Nov. 1929

No. 9
7

spent two months on the Lake investigating its fauna. In his hunting for fish he used every variety of net, also baited lines and traps as well as heavy charges of blasting powder in various parts of the Lake. He also examined over 50 stomachs of Cormorants and other birds. The only species of fish obtained was *Haplochilus Antinorii*.

From these investigations as well as information from the riparian owners and natives, the Game Warden concluded that the only indigenous species of fish in Lake Naivasha is *Haplochilus Antinorii*.

4. The possibility of the Black bass escaping from the lake has also been considered by the Game Warden, in whose opinion no danger can arise owing to the facts that the two streams which feed the lake from the mountains contain no indigenous fish and the only outlet to the lake is subterranean.

5. In order to provide food for the Bass some 350 *Tilapia Nigra* from the Atni River have been introduced and are said to be in an excellent condition. This species was chosen for the reasons that the *Tilapia Nigra* is phytophagous and the lake is rich in Phytoplankton; also, in the event of the Bass proving a failure the *Tilapia Nigra* is a fish of some value to man.

I trust you will agree with me that the Game Warden has taken every precaution against any danger which could arise from the introduction of American

3.

American Black Bass.

I have the honour to be,

My Lord,

Your Lordship's most obedient, humble
servant,

Edward Glegg

GOVERNOR.

Mr. Nash 7.8

X.15670/29 Kenya

Mr. *Vennings*
Mr. Bottomley

Sir E. Harding,

Sir J. Shuckburgh

Sir G. Grindle

Sir J. Lumsden

Sir S. Wilson

Mr. Ormsby Gore

Lord Lovat

Mr. Amery

Downing Street,

13 August 1929.

8.22

Sir,

DRAFT.

THE DIRECTOR,
BRITISH MUSEUM (NATURAL HISTORY).

I am etc. to ack. the receipt of your letter of the 3rd August 3345/29, regarding the introduction of ~~fifty six~~ ^{from} Black Bass ~~of~~ America into Lake Naivasha, and to request you to inform the Trustees of the ^{British} Museum that the Acting Governor of Kenya is being asked for his observations in the matter.

2. A further communication will be addressed to you on receipt of his reply.

2 drafts

I am, etc.

PARKINSON.

Telephone:-
WATEREN 6382
Telegrams:-
NATHIANUS, SOUTHKENS, LONDON.

BRITISH MUSEUM (NATURAL HISTORY),
CHROMWELL ROAD,

5 AUG 1929

LONDON, E.W.7.

3348/29.

COL

5 August, 1929

30

Sir,

The Trustees of the British Museum have had before than Mr. Parkinson's letter (No. 15670/29) of the 3rd ultimo, stating that fifty-six Black Bass from America were introduced into Lake Naivasha in February last, and that the introduction of these fish was only effected after the fullest consideration, the Game Warden being satisfied that the safeguards were adequate.

The Trustees have directed me to state for the information of Lord Passfield, that they see no reason to change the views on this subject which were expressed in their letter of 3 April. The Trustees' objection to the proposal was based upon the probable disturbance and destruction of the native fauna of the Lake - still largely unsurveyed - by the introduction of a large and predatory exotic fish, and they will be glad if they can be informed what are the safeguards against this result which have been approved by the Game Warden.

I am,
Sir,
Your obedient Servant,

C. Tate Regan

THE UNDER SECRETARY OF STATE,
COLONIAL OFFICE,

S.W.1.

Copys Ser. 6257-4 AUG 1929
Answered 15 AUG 1929
No. 5

X 15670/29 k 26
5

- Mr. Laitson 29/6
- Mr. Parkyn
- Mr. Bottomley
- Sir E. Harding
- Sir J. Shackbrough
- Sir G. Girdle
- Sir C. Davis
- Sir S. Wilson
- Mr. Drenby-Gore
- Lord Lival
- Mr. Amery

C.D.
R 28 JUN
D 3 July

3 JUL 1929
~~1929~~

Answered by

Sir,

DRAFT.

The Director
British Museum
(Natural History)

(2)

Paper No 506 - Pt. 8 JUL 1928

With refer to the letter
from this Dept. of the
17 April ^{relative to} ~~the~~ ^{on the subject}
the introduction of fish
of the proposal of the
~~same Dept of Kenya to~~
stock Lake Naivasha,
with fish, I am to
request you to inform the
Trustees of the British
Museum that he has
now received a dep. from
the O.C.S. of Kenya
stating that 56 Black
Bass from America were
introduced into the lake
on the 19th Feb 1928

*Copy 1000 for
right of (4)*

2. The ~~sup~~ ^{O.A.E.} act, that the
implication & introduction of
these fish was only effected
after the fullest consent &
that the Game Warden is
satisfied with the safeguard
measures.

(Signed) P. C. G. PARKINSON



GOVERNMENT HOUSE,
NAIROBI,
KENYA.

KENYA.

No. 328

31 May, 1929.

RECEIVED
24 JUN 1929
COL. OFFICE

Sir,

No. 3

With reference to your despatch No. 280 of the 19th April, relative to the Stocking of Lake Naivasha with Black Bass, I have the honour to state that 56 Black Bass from America were placed in Lake Naivasha on the 19th February last.

2. The importation and introduction into Lake Naivasha of these fish was effected after the fullest consideration and the Game Warden is satisfied that the safeguards are adequate.

I have the honour to be,

Sir,

Your most obedient, humble servant,

[Signature]
ACTING GOVERNOR.

Am d 506-41 - 8 JUL 1929
From Mr Am d 625-1 4 AUG 1929

THE RIGHT HONOURABLE
LIEUTENANT COLONEL L.C.M.S. AMERY, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON S.W.1

X.15670/29 Kenya.

28

2

Downing Street,

17 April 1929

Mr. Eastwood

Mr. Allen

Mr.

Mr. Bostonley

Sir E. Harding

Sir J. Shuckburgh

Sir G. Grimald

Sir C. Davis

Sir S. Wilson

Mr. Ormsby Gore

Lord Lovat

Mr. Amory

DRAFT.

THE DIRECTOR

BRITISH MUSEUM

(NATURAL HISTORY)

Sir,

I am etc. to acknowledge the receipt of your letter of the 3rd April, on the subject of the proposal of the Game Department of Kenya Colony to stock Lake Naivasha with fish.

2. It is assumed that the information is derived from the remarks on pages 45 and 46 of the Annual Report of the Game Department of the Colony for 1927, of which the ^{Fishes of the} Museum has ~~no~~ ^{B.M. have} no doubt received a copy direct. ^{Two}

Copy to Dept. 280

~~It will be observed that two species of fish are there suggested into Lake Naivasha for introduction, one the Tilapia Nilotica from Lake Albert, and the other the American Large mouth Black Bass; but it would appear that there is no intention to introduce the latter~~

2-8/5

species is not recommended. It is obvious however the
transfer in rural deposits will introduce a lot of species which
3. A copy of this correspondence is ~~being~~ ^{being} sent to the Officer Administering
herefor } all cases of adequate
 } reports

being sent to the Officer Administering
the Government of Kenya for his observations, ~~and~~,
on receipt of which a further letter will
be sent to you.

I am,

etc.

(Signed) H. T. ALLEN

Telephone -
WESTERN 7115 & 7116

Telegrams -
NATHANSON, SOUTHGATE LONDON.



BRITISH MUSEUM (NATURAL HISTORY),

ORONWELL ROAD,

LONDON, S.W. 7.

3rd April, 1929.

RECEIVED
4 APR 1929
S. COL. OFFICE

It has come to the knowledge of the Trustees of the British Museum that it is proposed by the Game Department of Kenya Colony to introduce specimens of the American Black Bass into Lake Naivasha.

The Trustees have directed that the attention of Mr. Secretary Amery be drawn to this matter and that he be informed that in their opinion such introductions are greatly to be deplored, especially in view of the fact that a Committee of the British Association has recently made arrangements for a biological survey of Lake Naivasha and other lakes in Kenya; and that a lady zoologist, Miss P.M. Jenkin, is now on her way to East Africa to carry out some of the work. The Trustees feel that it would be particularly unfortunate for the fauna of the lakes to be disturbed by introduced species before the native species have been fully collected and recorded.

The Trustees would, in general, deprecate all introductions of exotic animals and plants, ~~and~~ after very full consideration, and with adequate safeguards.

I am,
Sir,
Your obedient Servant,

C. Tate Regan

The Under-Secretary of State,
Colonial Office,
S.W.1.

Handwritten notes:
12 April 1929
Copy to Gov. 288