

1932

18054

CO 533/420

18054

KENYA  
UGANDA

Introduction of fishes into  
East African lakes

Previous

17140/31

See 17022/31. (Lake Fisheries  
Investigation  
C. S. Working Co)

Subsequent

- Rom 297 9/1/32
- W. Rom 309 10/1
- The Archon 10/1
- T. L. Archon 23/2
- The Alder (any) ✓
- Rom 309 2/3
- See / Sh... 2/3/32

Trs. 2 copies of Memorandum received from Capt. R. E. Dent and Dr. Worthington. The Trustees of the British Museum adhere to the views formerly expressed that these introductions of fishes, particularly of exotic species are to be deprecated from a scientific point of view. Endorse the suggestion regarding the setting up of fishery departments in the Colonies.

If the B.M. Trustees' doctrine had prevailed in history, there would be - e.g. - no root crops in England, no horses in America, & no sheep or cattle in Australia.

Th. Bailey should see; and a copy of the Trustees' letter (with encl.) shd. go, in due course, to Kenya & Uganda w/ earlier correspondence.

J.P. Dent  
10/2

C.R. Achmuty  
5.10/2

M. Allen

The memorandum is interesting & shows satisfactory progress. In regard to the actual introduction I am only a shade nervous from aspect, is that the writers may prove to be too optimistic as to the Bas being compared to L. Navarinho: this is on general principles only, not on any specific grounds.

If, as seems the case, we got this memorandum first through the Trustees of the B.M., isn't it a little surprising? It seems not impossible that the exchange of despatch of memoranda on a controversial subject by officers of Colonial Govt to the B.M. direct might prove rather embarrassing to the S.O.S. or the C.O. It wd. be dangerous to limit scientific discussion, but I shd. have expected C.O. to make copies before the despatch to the B.M.

Have kept this back till now for you.

J.P. Bailey 23.2.32

Then aft. course to Kenya & Uganda, sending

3 copies to each - copies of B/A letter and memo enclosed.

And separate Conf. disp. to Kenya, ref. the open disp., saying that while S.O.S. has no desire to depreciate direct consp. between officers of the Kenya Govt. and scientific authorities in their country on matters of purely technical interest, he feels sure that Govt. will recognize the possibility of embarrassment - which may arise if such direct communication ~~is employed~~ for later place ~~is assigned~~ to a subject which is not free from an element of controversy affecting the administration.

[Send copy of the ~~2~~ conf. disp. to Govt. ~~to guide Conf. for info.~~]

W. B. B. 29/2 att

K.J.  
2/3/32  
at once

DESTROYED UNDER STATUTE  
3  
4  
To Gov. Kenya 192 (w/c 1)  
" Conf.  
" Rega. 128 (w/c 1)

3 m  
75  
H

C. O.

- Mr. Priestman 2/2
- Mr. ~~Smith~~ 2/2
- Mr. ~~Rehm~~ 2/2
- Mr. Parkinson
- Mr. Tomlinson
- Sir C. Bolton
- Sir J. Shackleton
- Permt. U.S. of S.
- Party. U.S. of S.
- Secretary of State.

DOWNING STREET,

9 March, 1932.

Sir,

I have, etc., to transmit to you,  
 for your information, <sup>transcript</sup> the accompanying  
 copy of a letter dated the 3rd Feb.

with enclosures from the Trustees of  
 the British Museum on the subject of  
 the introduction of exotic species of  
 fishes into the East African lakes.

I should add that the previous  
 correspondence mentioned in the Trustees  
 letter was on the subject of the intro-  
 duction of American black bass into  
 Lake Naivasha which is mentioned at the  
 beginning of the memorandum forming  
 the second enclosure to this despatch.

I have, etc.,

DRAFT.

UGANDA

NO. 128

Gov. Gowers.

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delap/b

(Sgd.) P. CUNLIFFE-LISTER

C.D.  
R 8-MAK  
D 84

34  
me  
71

G. O.

Mr. Priestman 2/2

Mr. *Drishin* 2/3

Mr.

Mr. Parkinson

Mr. Tomlinson

Sir C. Bottomley

Sir J. Shackburgh

Parnt. U.S. of S.

Parly. U.S. of S.

Secretary of State

*2/3/32*

*84*

DOWNING STREET,

9 March, 1932.

Sir,

I have, etc., to refer to my  
despatch No. 193 of the... *9<sup>th</sup> March*...

regarding correspondence between the

Trustees of the British Museum and

Captain Richard E. Dent, Assistant

Game Warden, Kenya, and to inform you

~~that while~~ I have no <sup>will</sup> ~~desire~~ <sup>interfer with</sup> ~~to~~ <sup>disrupt</sup>

direct correspondence between officers

of the Kenya Government and scientific

authorities in this country on matters

of purely technical interest; I feel

sure that you will recognise the

possibilities of embarrassment which

may arise if such direct communication

<sup>extends to</sup> takes place on ~~the~~ subjects which are

not free from an element of controversy

affecting the administration.

I have, etc.,

DRAFT.

KENYA

CONFIDENTIAL

Gov. Byrne.

*I think it well, in  
this connection to  
draw your attention  
to a point of  
procedure.*

*2/3/32*

CG.

BRITISH MUSEUM (NATURAL HISTORY),

CROMWELL ROAD,

LONDON: S.W.7.

Telephone:  
WESTERN 7118 & 7119.

Telegrams:  
NATHANUM, SOUTHKENS,  
LONDON.



3rd February, 1932.

COL. OFFICE 6, ✓

Sir,

I am directed by the Trustees of the British Museum to forward, for the information of Secretary Sir Philip Cunliffe-Lister, two copies of a memorandum which has been communicated to the Trustees by Captain Richard E. Dent, Assistant Game Warden in charge of Fish, Kenya Colony, and Dr. E.B. Worthington, Balfour Student, Cambridge University, and leader of the Cambridge Expedition to the East African Lakes, 1930-31. The memorandum deals with the introduction of fishes into East African lakes, and is intended as a reply to the opinion expressed by the Trustees on this subject in various communications to the Colonial Office, terminating in my reply of the 4th July last to Mr. Parkinson's letter, No. 17140/31 of the 4th May.

The Trustees direct me to state that they adhere to the views formerly expressed that these introductions, and more particularly the introduction of exotic species from another continent, are to be deprecated from a scientific point of view. They agree that the economic development of the Colonies may render interference with native flora and fauna inevitable, but they consider it desirable to postpone such interference as long as possible, and to accompany it by the formation of reserves. They endorse the suggestion in the memorandum that the economic development of inland waters should be supervised by fishery departments with competent staffs.

I am,

Sir,

Your obedient Servant,

C. Tate Regan

Ho 3 on 17/4/31  
9 MAR 1932  
copy to Sir { Kenya 192 }  
                  { Uganda 128 }

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

Some 18 months ago a dispatch from the Colonial Office to the Kenya Government embodied the opinion of the Trustees of the British Museum (Natural History) that the introduction of Black Bass to Lake Naivasha by the Kenya Game Department had been effected rashly. The body of Trustees viewed the introduction with disapproval fearing that it might upset the balance of nature in the lake and might result in the loss to science of certain forms of animal life. The attitude of the Kenya Government was to the effect that they considered the advantages to be derived from the introduction to outweigh the disadvantages.

It is the duty of one of us (Dent) to continue the improvement of fishing facilities in Kenya Colony but it is unsatisfactory that he should have to do so with a background of disapproval from the Trustees of the British Museum. For this reason we have put the case for the introduction of Black Bass to Lake Naivasha and for other fish introductions in East African waters as briefly as possible in the following pages in the hope that the decision of the Trustees may be reconsidered. At the same time as recommending these introductions we would urge that such work should be very thoroughly controlled by a competent authority and that no introductions whatever should be effected without previously investigating in detail the biological conditions and ecology of the waters to be affected.

#### THE CASE OF LAKE NAIVASHA

Lake Naivasha lies at an altitude of 6,230ft. and enjoys a healthy climate in the rift valley, in the middle of the settled area of Kenya. The Kenya and Uganda railway line runs along its East shore and the lake is encircled by a good road. The lake is roughly circular with a diameter of 13 miles. Ever

since European settlement in Kenya it has been much frequented for its beautiful scenery, boating and duck-shooting.

Previous to August 1925 there were no indigenous fishes in the lake except Haplochilus antinorii but the opinion was often expressed in Kenya that the facilities of the neighbourhood would be greatly improved by the presence in the lake of a good sporting fish. The temperature of Lake Naivasha is about 63°, too warm for trout to breed in although trout flourish in most of the highland streams. Moreover, this temperature is too cold for any indigenous African fish which can be readily caught with rod and line. Therefore Dent was compelled to look outside Africa for a fish to fill the required rôle. Before a predacious fish could be introduced it was necessary to provide food for it and therefore in August 1925 Tilapia nigra<sup>x</sup> was introduced to the lake from the Athi river system. In three years this Tilapia had reproduced enormously and now can be netted in large numbers round the lake shore. On the 19th. February, 1929, fifty living Black Bass were introduced, obtained from a hatchery in Scotland. Two years later, one or two full grown Black Bass were captured, and in October, 1931, their numbers had increased so much that the lake was opened up to anglers.

We would mention that before the Black Bass were found to have taken foot-hold in the lake at the beginning of 1931, the ecology had been studied and exhaustive collections of invertebrates had been made, firstly by Dent before the Tilapia nigra was introduced, secondly by Miss Penelope Jenkin in 1929, and thirdly by the recent Cambridge Expedition to the East African Lakes in 1930 - 31. Consequently we can be reasonably certain that no unknown organisms will be exterminated by the Black Bass.

(x) The food of Tilapia nigra consists mostly of phytoplankton, although insect larvae and other invertebrates are sometimes eaten.



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The effect of the introduction has been to increase the value of land bordering the lake from 10/- to £10 or £20 per acre. More and more people are treating Naivasha as a holiday resort. A large general store and hotels have been built to provide accommodation for fishermen, and trade in the neighbourhood has improved enormously. A yacht club has been formed and as a single instance, a certain resident who lets out boats on the lake had more than 80 visitors for a weekend. The large European populations of Nairobi, Nakuru and other towns can now have cheap fishing holidays instead of expensive shooting trips. In fact, the introduction of Black Bass has added greatly to the general amenities of the Colony, and together with the excellent trout fishing is attracting foreign visitors and is causing a strong tendency in the country to forsake the rifle for the rod.

Indirectly the uphill work of saving the fauna of the empire is benefiting from the introduction of trout and Black Bass into Kenya, since by attracting sportsmen to the waters the great game animals are being saved from a great deal of unnecessary persecution.

#### THE CASE OF LAKE BUNYONI

Lake Bunyoni lies in the Kigezi district of Uganda at an altitude of 6,474 ft. It is a drowned river valley blocked by a lava flow at the north-west end and so is a long straggling lake, very different in appearance from Lake Naivasha, but also much visited for its healthy climate and fine scenery. Like Naivasha, the water temperature is a little too warm for trout and there is a large invertebrate fauna but no indigenous fishes. An ecological survey was made and the fauna and flora was collected a few months ago by the Cambridge Expedition. The possibilities of introducing fishes to the lake have been much discussed in Uganda, and since 1919 several attempts have been made, with little success. The lake offers ideal possibilities

for development into a highland holiday resort in Uganda as Naivasha does in Kenya and therefore one of us (Worthington) has recommended that the waters should be developed in exactly the same way as those of Naivasha: that Tilapia nigra should be introduced immediately and later, when the Tilapia have bred, that Black Bass should be introduced to feed upon them.

THE CASE OF LAKE NABUGABO

Nabugabo is a small lake occupying an area of about 12 square miles, near the north-west shore of the Victoria Nyansa. At one time it undoubtedly formed part of the great lake but has been shut off completely by the growth of a sand spit and now is separated from it by a mile or more of swamp and dry land. Nabugabo contains a complete sample of the Lake Victoria fauna and reproduces the great lake in miniature.

The fisheries of Lake Victoria at present leave much to be desired. The economic species (Tilapia esculenta) is restricted to the in-shore waters. When the fishery was started at the beginning of the century enormous catches were made, but these fell off seriously after some years and there seems no chance of the stock being improved. In the open deep waters of Lake Victoria, however, there are immense numbers of small fishes (Haplochromis) which at present cannot be utilised; but the presence of an easily caught large predacious fish in Lake Victoria would utilise that potential food supply and lead to a big fisheries development. Such a fish is the Nile Perch (Lates), which now inhabits Lake Albert, Lake Rudolf and the Lower Nile, and consequently it has been suggested from time to time, that the Nile Perch should be introduced to Lake Victoria. It was strongly recommended by Graham (1929) and Worthington (1929) that the introduction of Nile Perch to Lake Victoria should not be

effected until exhaustive research has been carried out into its probable consequences..

Lake Nabugabo offers an ideal opportunity for carrying out this research with a minimum of trouble and expense and therefore one of us (Worthington) has recommended that Nile perch be introduced to Lake Nabugabo from Lake Albert. The result of this introduction must result in one of two things: either the balance of nature will be upset and the Nile Perch will eat out their food supply and eventually die off themselves, or, a natural balance will be struck with the indigenous fishes and a fishery for Nile Perch will result. If the former, the introduction of Nile Perch to Lake Victoria must be prevented at all costs, if the latter their introduction to the great lake might well be reconsidered.

#### GENERAL PRINCIPLES

In view of the growing development of the East African colonies it is impossible to prevent the development of lakes just as it is impossible to prevent the cultivation of arable land. Our principle in recommending or affecting introductions of the type described is that there must be ample safeguards that the introduced fishes cannot escape to other waters, and that previous to the introductions the entire fauna must be known and ecological surveys made. There are innumerable cases in which rash introductions have led to disaster. In the case of fishes for instance, the introduction of Trout to lakes in Tasmania has resulted in the almost complete extermination of Paranapides.

For these reasons it seems to us that if the indigenous fauna of our colonies is to be saved and at the same time the inland waters are to be developed economically, fisheries departments should be set up in the colonies with a staff

capable of doing the necessary preliminary work of biological surveys and supervising all the changes involved.

REFERENCES

M. Graham (1929) Report on the Fishing survey of Lake Victoria, 1927 - 28.

E.B. Worthington (1929) Report on the Fishing survey of Lakes Albert and Kioga, 1928.

(Both published by Crown Agents for the Colonies).

Signed: RICHARD E. DENT

Assistant Game Warden in charge of Fish, Kenya Colony.

E. B. WORTHINGTON

Belfour Student, Cambridge University.