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East Africa High Commission:
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Dear Mr. Rogers:

In his opening speech at a fisheries conference in East Africa the Governor of Uganda remarked that knowledge of the waters is to the science of fisheries as knowledge of the soil is to the science of agriculture. In East Africa scientific knowledge of the inland waters, the natural balances of which are being disturbed and changed by the recent impact of civilization, is even more sparse than knowledge of the soils. With the established importance of fresh water fisheries in their contribution to the critical protein element in native diet and with scientific knowledge accepted as prerequisite to any sound program of expanding the fishing industries, the role of inland fisheries research could be economically important. With Lake Victoria and other bodies of water geographically shared by the territories, strong arguments exist for central rather than territorial administration of at least a part of the fisheries research program.

The unexplored status of fisheries in the Indian Ocean off the East African shore, and the generally accepted need for higher production of animal protein foods for the East African population dictates a need also for some sort of a marine fisheries research program. The facts that these waters are shared by the two coastal territories and by the Island of Zanzibar, and that the shipment of marine fisheries food inland to Uganda was already established in a small way indicated that such a program might best be undertaken on an interterritorial basis under administrative control by the High Commission.

Today in East Africa there are three interterritorial fisheries organizations: the East African Fisheries Research Organization, which carries out fresh water fisheries research; the Lake Victoria Fisheries Service, which is concerned with legislative control of fishing in the lake, the gathering of data on fishing, and improvements in the fishing industry; and the East African Marine Fisheries Research Organization, which carries on a fisheries research program in the Indian Ocean. Each of these organizations will be described in some detail below.

The East African Fisheries Research Organization

The headquarters of the East African Fisheries Research Organization is located at Jinja. In 1950 approval of a scheme for the development of a sub-station on Lake Tanganyika had been received from the East African Fisheries Advisory Committee and from the three territorial Governments. The 1950 Annual Report announced that application had been made to the Colonial Office for an additional grant to cover the capital expense of the sub-station, but the project was not mentioned in either the 1951 or 1952 reports.

At the end of 1952 the staff included, besides the director, two Fisheries Research Officers, one Hydrologist, one Officer in charge of Malacology, Parasitology, and Laboratory maintenance, one technician doing fishery work and maintaining the boats, one secretary and one assistant secretary. This total of eight fell one short of the authorized complement, one research officer vacancy being unfilled.

The main building program was reported completed in 1950, providing a well equipped laboratory, stores, eight staff houses, and auxiliary buildings. An aquarium house, begun in 1951, was still in process of construction at the end of that year. A mobile laboratory, especially built on a four ton truck chassis, was completed in late 1951. A workshop was started in 1952. Two motor launches, one fitted with an echo sounder, along with several dinghys, trawling nets and auxiliary equipment are further properties.

The East African Fisheries Research Organization began operations at Jinja in 1946, with finance provided from C.D.&W. funds, and fell under the High Commission on inception. The work and plans of the organization were subject to supervision by the East African Inland Fisheries Research Advisory Committee composed of three ex officio members (the Assistant Chief Secretary to the High Commission, who was Chairman, the Director of the Organization, the Chief Fisheries Officer of the Lake Victoria Fisheries Service) and three members appointed one each by the Governors of the territories. As one of the research services its Director is responsible to the High Commission through the Administrator in his capacity as one of the several Executive Officers.

The initial capital outlay for the Organization, which amounted to £64,330, was provided out of Colonial Development and Welfare funds, and up to 1952 recurrent costs were also provided. Beginning with the year 1952 half of the recurrent costs were taken over in equal shares by the East African governments. Recurrent and extraordinary expenditures during 1948-1950 (covered by C.D.&W. Scheme R.71) were:

	1948	1949	1950
Recurrent	4,438	7,521	11,257
Extraordinary	11,967	3,205	10,014
Total	16,405	10,726	21,271

Revenue of the Organization amounted to £277 in 1949 and £419 in 1950, most of which came from rents.

The diversity of fisheries conditions throughout East Africa is illustrated by the wide variety of conditions in Lake Victoria alone, the northern waters of which have provided the Fisheries Research Organization's principal area for research. With its indented coastline, numerous islands, the conditions of water and aquatic life were quickly found to be highly local, so that the Lake had to be regarded from the scientific standpoint as many lakes within a lake. Fish populations were found to be irregularly distributed, determined by sets of conditions peculiar to each locality. Research problems were rendered more complex by the lack of previously gathered scientific data; at the inception of the Organization this knowledge was limited to a list of the various species of fish, some very general information regarding their food requirements and a very rough indication of their distribution. Inevitably, with such a complete lack of data,

the question of exactly where research should begin has been much discussed, and apart from the necessary basic research into the chemistry and biology of the waters the emphasis has been placed upon studies more directly concerned with particular endemic species already proved to be economically important. This emphasis has been stimulated by the generally recognized protein deficiency in the diet of an increasing native population, particularly along the northern shores of Lake Victoria. The position of Lake Victoria, geographically shared by the three territories, would partly justify concentration of research upon its waters, which comprise the major fresh water fisheries of East Africa. However, the easterly areas also have a claim on the services of any interterritorial research body, and research of a less intense nature has been carried on in other parts of East Africa. In 1952 data of various sorts were collected from twelve lakes including Tanganyika, Rudolf and Bunyoni.

The methods of research employed have been dictated to a large degree by limitations of plant, equipment and personnel. The laboratory at Jinja provides facilities for an increasing degree of analyses and observations, and in 1951 work was begun on an aquarium house. The two motor launches are operated on Lake Victoria, allowing the comprehensive experiments with gillnets of various meshes and the trawling experiments to be carried out. The operation of hydrological stations for investigations of temperature and oxygenization variations and phytoplankton counts are also facilitated by launches under direct control of the organization. Research in outlying areas, necessarily dependent upon territorial departments or other local agencies whenever the mobile laboratory is not brought along, is carried out by members of the staff from time to time.

From the beginning basic work in hydrology has been done in the waters of the Buvuma Channel. In 1952 the facilities for investigating temperature, oxygenization, and phytoplankton population were being augmented. The diatom *Melosira* has received special attention because of its known value as a fish food. Chemical analysis of the waters was also an investigative target, with alkalinity, conductivity and chloride content recordings being periodically taken and related to fish populations and phytoplankton counts. The rate of release of nutrients from decomposing mud was being measured, especially in the more fertile coastal waters where the young fish pass through a growth period thought to determine ultimate size and weight. As more data was gathered detailed research was undertaken in the laboratory: in 1952 blue and blue green algae were being observed in inorganic mediae, resulting in the detection of certain chemical deficiencies, notably sulphur, nitrogen and phosphorus, in the waters of Lake Victoria. The effects of temperature upon the mixing of waters and mud when the temperature of layers of water and mud differed from one another were observed, resulting in a finding of further local environmental variety in the waters of Lake Victoria. Even between bays within 6 miles of one another marked differences were noted. The effect of various fish predators were studied, the feeding habits of crocodiles, cormorants, darters, herons and pelicans being observed in order to determine their effect on the ecology of the lake. Though these studies were necessarily limited - with the exception of a more intense study by a visiting scientist - some strongly supported the view that animal life was ecologically vital, not detrimental, to fish populations in shallow tropical lakes. The 1949 annual report of the organization, citing the damage done to gill nets by crocodiles, mentioned the probable necessity of a campaign against them. In the 1952 report, which presented data on the stomach contents of crocodiles, a doubt was expressed - much to the consternation of some native legislative representatives - of the wisdom of further reduction of crocodiles and hippopotomi.

Entomological research has been mainly concerned with the lake flies, chironomus and Chaoborus, whose obviously huge swarms indicate at once their ecological importance. Considerable data has been gathered, confirming their importance both as a fish food and as feeders on algae. Their periodicity of hatching, habitat during various stages, and egg laying site preferences have been explored. It was found that larval mortality was very high, with swarms of size thus being produceable only by very large breeding swarms. The larval and breeding stages and feeding habits in the mud, water and on the surface were observed to determine both their availability as fish food and their competition with fish life for other foods. Examinations of contents of fish stomachs were an important part of this work.

Studies of Mollusca were another aspect of research because of their importance as fish food and their importance as intermediate hosts of a human disease parasite. By 1952 the Organization claimed the most complete collection of aquatic snails in Africa, and a guest scientist of the organization had completed a monograph on "The Aquatic Snails of Uganda and Neighboring Territories." Parasite-free snails were being experimentally infected, and mice were in turn infected with Cercariae liberated from the snails to obtain further data. Sampling procedures indicated that the distribution of snails seemed to be determined by the incidence of oxygenization in the water, and snails collected close in shore were found in some localities to be 50 percent infected. Two possibilities under investigation were the introduction of snail-eating fish into infected areas to keep down the parasite hosts, or the propagation of weed and algae eating fish to reduce snail populations indirectly by competing for their natural food. Removing the weeds by other means, or poisoning the water were other measures being tested. The overall effort of the fisheries organization in respect of snail research related to the disease has been cited as an outstanding illustration of the value of cooperative research under inter-territorial oversight, with benefits of scientific research multiplied and duplicative efforts reduced by a better coordination than independent bodies generally achieve.

Because of its pioneer nature, the work of the organization has involved considerable exploration and gathering of basic statistical material. In 1948 material to determine ages and growth rates of fish in Lake Victoria was begun, and data was being sought to determine the distribution of fish in waters within 50 miles of Jinja. New fisheries opportunities were explored; preliminary deep water trawling experiments soon indicated that large catches of Haplo-Chromis were obtainable and trial efforts using nets set on the bottom of deeper waters hinted that previously unexploited reserves of Mormyrus might ultimately become economically more important than talapia. More definitive efforts of collection and measurement of specimens, examination of stomach contents, physiological and sexual conditions were effected after the laboratory at Jinja became fully operative. Detailed attempts were made to arrive at a method of determining the age of talapia by various measurements or counts of bones, markings, colors and scales. Some material was collected on the spawning intervals, growth rates and spawning age of Haplochromis melanopus under aquaria conditions in 1951, and brood mortality rates were assessed. Further physiological work and neurological experiments on Mormyrus kannume revealed details of an electrical impulse and receptor mechanism similar in principal to radar, which was thought to be a warning device against predators.

In 1952 the Organization extended its work to include a survey of fish life in the Malagarasi Swamp lying between Lakes Victoria and Tanganyika, where a plentitude of fish indicated possibilities for further fisheries development. Statistics of weight of dried fish shipments from Lake Tanganyika were also examined.

The heavier research effort focused upon the various species of *Talapia* brought forth considerable interesting information. Growth appears to be rapid up to the point of sexual maturity, with the rate then much slower, apparently due to rapid breeding; gonads have been observed ripening while the brood was still in the females mouth. Age rather than size appears to determine maturity, and ultimate size appears often to be determined by the amount of phytoplankton available as food to the fish during the critical growth stage following its emergence from the brood. Through regular seining in different places some information was gathered regarding periodic migrations from place to place and to higher or lower levels in the water. Diatoms were found to be a most important food for *talapia*, and their quantity was found to be influenced indirectly by thermal currents affecting the deoxygenization of bottom waters and release of nutrients. Studies were made of the feeding mechanisms of some species, revealing that the phytoplankton was brought in utilizing the respiratory currents, being retained by adhesion to mucus secretions. The ratio of sodium to calcium in water was found to condition blue green algae and make it digestible for *talapia*, providing a possible explanation for the very large size reached by *Talaria nilotica* in Lake Rudolf.

Taxonomy studies accompanied other work, with attempts to find a standard of identity not being very successful. A more promising means seemed to be upon the basis of feeding mechanisms and related morphological feature: color and the numbers of jaw teeth provided no criteria because of irregularities. Some time also was devoted to the study of interspecific hybridization and its effect on fish populations. An officer on leave at the end of 1951 was making comparisons with type specimens in the British Museum with a view to enhancing the body of information regarding evolution and specialization within the genus. Besides the more extensive studies of *Talapia*, some material was gathered on *Haplochromus* in Lake Victoria, Lake Bunyoni, and the Malagarasi Swamp. In 1952 the breeding season of *Mormyrus kannume*, previously undetermined, was found to be between September and December, and the spawning sites were found to be in deep water, on rocks protruding above the mud.

Among the more tangible findings of the research program were the possibility of a trawling industry revealed by the 70 hauls during 1951 on Lake Victoria; the possible usefulness of residue from copper smelting operations in fertilizing sulphate-deficient waters; and the propounding of a new theory that "... within certain limits the greater the number of animals in a shallow tropical lake, the greater becomes its potential fertility, and therefore the greater number of animals it can support."² The Organization also was instrumental in the setting up of a small native controlled fishery under the Busoga Native Administration. The 1951 report of the Organization contained two sentences apologizing for not being able to supply fish to stock dams, where perhaps a longer explanation would have been appropriate, in view of the criticism from some quarters of the High Commission research agencies for their lack of "practicable" and "tangible" service.

Besides the annual reports of the organization, which grew thicker and more comprehensive up to 1953, containing increasing amounts of texts, tables and graphs, a number of scientific papers were completed each year. In 1952 five

were reported published, two were in process of being printed, and eleven were in preparatory stages.

The Organization maintains contact with scientific agencies in East Africa and outside. The importance of the work on snails is directly connected with medical research and the organization has also cooperated with the geological, game, and fisheries departments of the various governments. Certain material is sent abroad to laboratories for specialized analyses. Facilities have been provided for a number of visiting scientists, whose work has contributed to the organization's knowledge of East African fisheries. Public relations are benefited by explanations in lay terms, in the introductory sections of the annual reports, of the problems and the potential of fisheries research in East Africa. The 1952 report was made particularly readable by this device. Visitors to the research station at Jinja in 1949 included the Governors of Kenya and Uganda, the Fisheries Advisor to the Secretary of State for the Colonies, and two of the faculty of Gordon Memorial College, Khartoum.

The Director's membership on the Uganda Pollution Committee, the Lake Victoria Fisheries Board, and the Advisory Committee to Northern Rhodesia and Nyasaland Joint Fisheries Organization and the East African Inland Fisheries Research Advisory Council further increased interdepartmental contacts and provide a further medium for exchanges of technical information. The Director attended the 1949 Anglo-Belgian Fisheries Conference set up by the Belgian Congo Government at Elizabethville and a four day conference in 1952 of 40 specialists from various parts of Africa called under the auspices of the Scientific Organization for Africa South of the Sahara.

The Lake Victoria Fisheries Service

The Lake Victoria Fisheries Service is concerned with the exploration, administrative and legislative control, and the development and improvement of fisheries in the Lake. Gathering data of a practical nature on the number of fishermen, quantity of their catch, and the possibilities for fisheries expansion are the first responsibility. Others are the enforcement of legislation to control and further the fisheries, and the introduction of improvements in fishing techniques, in marketing, and in processing and distribution.

The Service was created in 1948, and submitted its initial annual report for the year 1949. By the beginning of 1950 a complete staff had been gathered. For some nine months previously the organization had been operating with limited equipment. In 1951 buildings were purchased in Kisumu, Kenya, and the headquarters was shifted there from a more remote location at Mwanza, Tanganyika. By 1953 a considerable list of activities, such as the introduction of the Lake Victoria Fisheries Regulations of 1951, the completion of buildings, aquaria, and a slipway at Kisumu, and the compilation of a more comprehensive list of statistics in the 1952 annual report, indicated that the Service was growing in size and intensifying its operations.

As a research organization the Service falls under the Administrator as the pertinent executive officer, and in administrative matters is responsible through his office to the High Commission. Besides the headquarters in Kisumu permanent stations are established in Tanganyika at Mwanza, and in Uganda at Entebbe.

The use of launches permits fisheries officers and dinghies to visit and establish fish rangers' stations as needed anywhere around the lake. European personnel at the end of 1952 numbered seven: the Chief Fisheries Officer, three Fisheries Officers, a temporary Fisheries Officer, Field Officer, and a part-time clerical assistant. Three African head fish guards, some seventy-five African fish guards, and a small number of clerical assistants and nautical laborers were also employed.

The principal advisory body to the High Commission on Lake Victoria Fisheries is the Lake Victoria Fisheries Board, the membership of which includes four ex officio members: the Provincial Commissioner, Nyanza Province, Kenya, the Provincial Commissioner, Lake Province, Tanganyika, the Resident, Buganda, Uganda, and the Director, East African Fisheries Research Organization. There are six appointed members, three appointed by the High Commission, and one each by the Governors of Kenya, Tanganyika and Uganda. The Board exists to advise the High Commission in all matters concerned with fisheries in the Lake.

Besides the headquarters buildings the Service possesses in Kisumu aquarium tanks, a slipway, and a small workshop. Offices, store, and subordinate staff housing provide facilities at the Mwanza station and an office store, and subordinate staff house are at Entebbe. A number of houses for fish guards' camps are sited at points along the lake shore. In 1950 these camps totalled 19 in all three territories. Three 45 foot motor fishing vessels and several dinghies have been in use from time to time. In 1952 the wooden hulls of the motor vessels, unsatisfactory for Lake Victoria waters because of "dry rot" were being replaced by special steel hulls on order from England. The new launches when made up were to be fitted with echo sounding machines for charting depths and detecting and measuring schools of fish. All motor fishing vessels were equipped with receiving and transmitting radio sets.

The expenditures of the Lake Victoria Fisheries Service during 1948, 1949 and 1950 were as follows:

	1948	1949	1950
Recurrent	£ 3,829	£ 9,138	£12,335
Extraordinary	<u>18,472</u>	<u>9,857</u>	<u>20,162</u>
Total	£22,301	£18,995	£32,497

Revenue credited to recurrent expenditure was £250 in 1949 and £400 in 1950. In 1951 and 1952 revenue was £1,637 and £989.

The net extraordinary or capital expenditure during the years 1948-1950 was paid entirely through C.D.&W. funds under C.D.&W. Scheme D. 910. Net recurrent expenditure was met by equal contributions from Kenya, Uganda and Tanganyika.

The first four years of operational effort were devoted to compiling basic statistics regarding fish populations and migrations, to exploring and sampling the fisheries possibilities in less known waters of the Lake, to practical examination of tackle and technique and improvement of methods and equipment, and to the enforcement of fishing regulations.

Investigations of market and catches were mainly concerned with the economically important genus Tilapia. A recording and analysis of railway shipments from

Kisumu of fresh Tilapia, amounting in 1949 to 320 tons and in 1952 to 1,500 tons, made possible rough estimates of fluctuations in the local catches, found to be related to the rainy seasons. Sizes and quantities of fish caught at various times in various places with the different mesh-sizes of gill nets were recorded and tabulated, the printed tables occupying considerable space in the later annual reports. It was found that the size of mature fish varied from locale to locale, calling for flexible regulations of the net mesh sizes allowable throughout the Lake. Catches with seine nets in different mesh sizes were also checked and recorded. Hook fishing with long, multi-hook lines, employed in the Uganda waters from April to August, was examined and an average catch of 7.5 fish per 100 hooks per 24 hours was considered as profitable and the method perhaps worthy of further exploitation. In the Kavirondo Gulf area, where Kenya Fisheries Rules in 1950 allowed only the 5 inch mesh gill nets, the catch has declined, since the introduction of gill nets about 1900, from some 20 to 1.9 fish per net. (In Tanganyika during the same year there were no restrictions on gill net mesh size, perhaps indicating a need for centrally promulgated Lake Fisheries regulations.) Most of the results of the Service's statistical investigations are presented in tabular form with each annual report.

At first the figures above provided an only means of estimating fish populations. In 1952 the device of marking and releasing fish was employed on a small scale in order to obtain further information on the growth of fish under natural conditions and a better idea of their migration. Of 1,392 fish marked in 1952, 2.2 percent were reported caught during the same year, mostly in a single area some 33 miles from the Kisumu shore where they had been released. The Echo Sounding machines, used to estimate the size of schools of fish, would provide another means of estimating fish population.

Comparatively unknown waters of the Lake are being explored from the fisheries standpoint. After 1950 the area of the mouth of the Kagera River was visited, reported upon, and found to be the probably most prolific fishing area of the entire Lake. This was thought due to a combination of food supplied by the effluency at the river mouth and to the response of ripe fish to a stimulus to head up current through a stream mouth. Besides Tilapia fisheries conducted close in shore, further fisheries of other species were hoped to be found through bottom sounding, and the trawling experiments conducted by the East African Fisheries Research Organization.

Wide observations of net-performance throughout the lake, and a number of practical experiments indicated that nylon gill nets were superior to flax nets. Some 200 nylon nets were obtained by the Service in 1952 and proved to be at least 25 percent better than the older flax nets in terms of catch. They also lasted some three times longer than flax nets in the lake waters. Experiments with a net preservative "Cupronol" were successful and considerably prolonged the life of cotton seines, though the effect of the preservative on flax gill nets was to harden the twine and decrease the snaring quality of the net. The floats and sinkers used on gill nets and seines were generally made of imported cork, but a local tree and tree bark also provide substitutes. Sinkers are made locally, being iron rings or drilled-through stone, their clever manufacture providing evidence of native craftsmanship. No special attempts to improve hook catching methods or equipment were reported prior to 1953.

In late 1950, at a meeting of the Lake Victoria Fisheries Board, a sub-committee of that body drafted new Fisheries Regulations to be made under the Lake Victoria Fisheries Act, 1950. The draft, after modifications, came into force April 1, 1951 as the Lake Victoria Fisheries Regulations, 1951.³ The

regulations provided in detail for the registration of boats and licencing of fishermen, gave specifications of the types and sizes of nets allowed and conditions of their use, and named fines for certain offenses. The Act under which the regulations were made established the composition of the Lake Victoria Fisheries Board, outlined its functions, outlined offenses (such as the use of explosives in the taking of fish) and provided the authority of various officials, including the authority of the Administrator of the High Commission to make regulations controlling fishing, fishing vessels, equipment, sales, and authorizing the collection of required fishing statistics by authorized persons.⁴

The revenue collected for offenses against the Act and the Regulations is given in each annual report, indicating a certain amount of law enforcement despite the paucity of fisheries officers - three for the entire lake.

Considerable assistance from the East African Fisheries Research Organization and from the Fisheries Section of the Uganda Game Department was acknowledged by the Service. Periodic meetings of the Lake Victoria Fisheries Board provide opportunities for coordination and exchanges of information between the Service and the East African Fisheries Research Organization. The symposium on African Hydrobiology and Inland Fisheries at Entebbe in October 1952 was attended by the Acting Chief Fisheries Officer.

The East African Marine Fisheries Research Organization

After a series of suggestions and proposals by various research authorities a survey of the fisheries of Mauritius and the Seychelles was undertaken shortly after World War II. While this survey was underway in 1948 a Marine Fisheries Meeting at Tanga, in line with an expression of the Central Legislative Assembly that Marine Fisheries Research should be carried out for East Africa interterritorially, created an "Inter-Territorial Marine Fisheries Research Department."

Throughout 1949 and 1950 the necessary steps of providing finance, obtaining a ship, fittings and building and equipping the shore installations were initiated. Capital finance and half of the recurrent costs for five years were to be met from C.D.&W. funds. The other half of recurrent costs were to be met two-fifths each by Kenya and Tanganyika and one-fifth by Zanzibar. Expenditures began in 1950, when the housing program was begun under the supervision of the Development Officer, Zanzibar.

As one of the interterritorial research agencies the Organization is executively under the Administrator, responsible administratively through his office to the High Commission. An East Africa Marine Fisheries Research Advisory Committee, consisting of the Administrator or his representative, the Organization Director, and one member each from Kenya, Tanganyika and Zanzibar reviews the Organization's program, recommends alterations or modifications to the High Commission and serves to keep the governments informed of progress of the organization.

The Organization headquarters is situated at Mazazini, Zanzibar, though the ship provides a mobile headquarters which could be situated conveniently at any of the several East African ports. The staff at the end of 1952 included a Director, a Ships Master, a Ship's Engineer, a Scientific Officer. Appointment of a third scientific officer (the Director counting as one) was pending.

Facilities in charge of the Organization, besides four European staff houses, included in 1952 a variety of laboratory equipment. The refitted Motor Vessel "Research" with trawls, nets, lines, lures and other gear constituted the floating. In 1952 a laboratory building had been contracted for, and a certain amount of library material was being gathered.

The estimated total capital expenditure, £33,000, was to be covered by a grant from C.D.&W. funds, with half of the recurrent expenditures for a period of five years also covered by the grant. The other half of current expenses was to be provided two-fifths by Kenya, two-fifths by Tanganyika, and one-fifth by Zanzibar. A special grant from C.D.&W. funds also was provided to meet costs of £4,500 for refitting the Motor Vessel "Research" which was to be taken over from the old Mauritius-Seychelles Fisheries Survey.

Total capital expenditures to the end of 1952 came to £19,455. Recurrent expenditures, as given in the 1952 Annual Report, amounted to £9,200 in 1951 and £12,300 in 1952. A small, directly earned revenue came from the sale of surplus fish in Zanzibar market, amounting in 1952 to £84.

Through 1952 the Marine Fisheries Research Organization was occupied mainly with tasks of initial organization, staffing, and equipage. A limited program of scientific investigation, however, was begun, based upon the counsel of Fisheries Advisory Committee, that the first operations should be a "survey lasting about two years of the Fishery Resources off the coast of East Africa." The survey was to include the study of methods of off-shore fishing outside the range of native fishing craft; detailed studies of the habits, migrations and other ecological factors of the economically important species; investigations of the value and availability of by products such as fish liver oils and air bladders for isinglass; studies of the plankton types known to be of importance; and investigation of hydrobiological conditions, especially the effect of sea currents. These scientific terms of reference were obviously broad, and it was realized - in view of staff shortages and equipment - that only a portion of the studies could be undertaken soon.

In May 1951 the Motor Vessel, a ten-years-old ship which had been used for two years on fisheries survey for the Mauritius-Seychelles islands, was taken over by the Organization. After considerable refitting and interior modification the ship was put into commission, making 10 scientific cruises totalling 1,347 miles. In 1952, with further repairs and routine maintenance, the ship altogether cruised 94 days, totalling 7,036 miles. Because of the apparent greater importance of pelagic fishes and because of limitations of equipment for investigation of bottom fishes, work up to the end of 1952 had been concerned mainly with the adult population of surface swimming fish. Investigations of eggs, developmental stages and of plankton were carried on in a small way.

The work done at sea in 1951 involved ten cruises totalling 21 days. The catch was 36 pelagics, and 6 bottom fishes, weighing altogether 398 pounds. In 1952 the 26 cruises involving 94 days at sea resulted in a catch of 402 pelagics and 246 bottom fishes totalling 6,344 pounds. The cruises ranged the entire East African coast, from the Kenya-Somaliland border to the north to the southern end of the Tanganyika coast. Particular efforts were made to identify scientifically the fish taken, notes, paintings and detailed measurements being taken in addition to data regarding size, shape, weight, gonads, and stomach contents. Mechanical difficulties of the ship, and the delayed arrival of dredges,

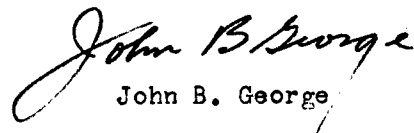
trawls, float tackle and other equipment hampered operations up to the beginning of 1953: delivery of a bathythermograph and water-sampler ordered in 1951 was still being awaited at that time. Much of the effort during the first two years of actual operations was expended in testing and adapting the gear and training the crew.

Other operations up to 1953 were the building of staff housing at Mazazini, the planning of and letting of a contract for a laboratory building, and the manufacture of fishing lures and gear, and the adaptation of some of the fishing gear remaining from the previous commission of the ship "Research." Some tidal fishponds at Chukwani were taken over in May 1952. Observations of the fish were undertaken and experiments in marking fish with silver wire, were tried. Nutritional analysis of a sample of dried millet was to be made by a Medical Research Council officer at Makerere College at the end of 1952.

The appointment of the chemist-hydrologist and the ordering of necessary laboratory equipment indicated that a laboratory program would be getting under-way in 1953. It was claimed at the end of 1952 that the "formative period of organization was nearing its end," with hope expressed that increasing facilities and staff would permit the scope of the work to be widened and intensified.

Beyond the information channels to the three concerned governments provided by the interterritorial membership of the Advisory Committee, progress of the Organization was publicly reported in the East African press. Relationships with other fisheries research organizations and personages were maintained. The laboratory was visited at different times by fisheries authorities from the Colonial Office, Madagascar, and other territories, with some thought being given to exchange visits. Two of the officers have given lectures at the local government secondary school.

Sincerely,


John B. George

P.S.

Footnotes

1. Worthington, E.B., Nature, February 14, 1953, p. 291.
2. East Africa High Commission, East African Fisheries Research Organization Annual Report 1952, pp. 2-3, 41.
3. Laws of the High Commission, Revised, Chapter 6, p. 845.
4. Ibid., p. 177.
5. East Africa High Commission, East African Marine Fisheries Research Organisation, Annual Report 1952, p. 11.

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