THE FISHERIES OF BARBADOS AND SOME OF THEIR PROBLEMS

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Barbados, the most easterly of the West Indian islands, situated 13° N. and 59° W., is approximately 166 square miles and supports a population of 192,000 souls which means about 1,200 persons to the square mile.

The full meaning of these figures may be best expressed by quoting the population density of two of the states of the United States of America. Since the economy of Barbados is based on agriculture, with no mineral wealth to enhance it, it will be realized what an important part the fishing industry must play.

The island is ham-shaped and has very few bays which offer any degree of shelter and protection; as a result, the majority of the fisheries of the island are carried on from the leeward coast. However, while it is possible to moor boats on the leeward side, it is only convenient to moor at four points on the eastern side of the island; boats operating from other than these four points on the eastern side, must be hauled up on to the beaches daily or they would be severely damaged by the heavy surf that is experienced on these eastern beaches. The boats that are hauled in on the eastern side are smaller than the ones operating from the leeward.

A glance at the map of Barbados will show us that the 100 fathom line varies in distance from shore approximately 0.8 to 2.6 sea miles with an average of about a mile and a half. There are deeper and broader sections of this narrow shelf off the Northeast and Northwest coasts and off Carlisle Bay in the South which supplies the main harbor to Bridgetown, the capital of the Island.

Very little work has a yet been done with respect to finding offshore fishing banks and only one bank has been charted to date, while fishermen have established for themselves and marked by common triangular bearings, many lucrative fishing banks.

The island's fishery which must have started soon after the first British settlers landed in 1625 has passed through many stages and employs over 2,200 fishermen; at the present time it produces fresh fish to the value of approximately $858,816.00 annually. This industry is operated mainly by the colored folk of the island, many owning their own boats. These men have by dint of trial and experience devised what they think to be the most adaptable sea fishing boat for their purpose.

This craft which is manned by three persons is an open boat of approximately 20-24 feet overall with almost a 1/3 beam and approximately 4-5 feet draft. The boat has no overhang, with almost a straight stem with a rounded forefoot running down to a straight keel which slopes gently to the heel of the rudder post to produce a draft of 4-5 feet. The rudder post is almost vertical and supports a transom stern. The forward section of the boat is very full to the mast section, then the boat tapers off to a clean sheer. Most boats carry inside ballast, made up of scrap iron which is trimmed to windward on the tack. The boats are propelled by two sails usually over-rigged to produce speed.

The sails are gunter rigged leg-of-mutton mainsail with a very full jib set on the end of stout bowsprit. Boats of this type have been used for the last 50 or more years,

and although some losses of both boats and crews have occurred the fishermen are reluctant to make any radical changes. The number of deep sea fishing boats registered to date is 585, with another 274 pot and sea egg boats, the entire fishing fleet having a potential value of $303,460.00, which is more than 1/3 the value of the annual catch.

The main deep sea fishery is for the flying fish "Hirundichthys Speculiger" which weigh approximately three to the pound and are marketed at 5¢ each, a controlled price. The flying fish are caught seasonally between October and July. To capture this species, the boats usually put to sea in the early mornings about 2 to 3 and shape their course in accordance with the direction of the ocean currents or tidal stream.

After crossing all deep sea banks in their course when they are then approximately 10-15 miles off shore, the boats are stopped, the mast is unstepped and the boat is brought broadside to the seas. The flying fish boat as described earlier fulfills this operation with reasonable satisfaction, i.e. to operate daily in the open Atlantic, put up with ordinary weather conditions, drift broadside to the seas while fishing, be comfortable in its motions, be relatively dry in a sea way and be yet fast enough to regain the shore in time to market the catch.

The Method of Capturing the Flying Fish

On stopping the boat a hamper of foul smelling stale fish is hung over the side awash with the water, this creates a film of oil on the water and together with the tid-bits which are shaken through the meshes of the hamper, the flying fish are attracted towards the boats from time to time small quantities of coconut oil and sea water are thrown to windward of the boat to help becalm the area and improve the visibility. The method of capture is still very primitive, namely many are hooked on a tiny baited hook using a cotton line and on days when the fish are more plentiful, after sometime of chumming up they become accustomed to the presence of the boat and come alongside; it is then that the fishermen use a dip-net and scoop up greater numbers. Catches on good days have run into thousands.

Recently, the use of short gill nets 20 yards by 2 fathoms was recommended for flying fish capture, and a few trials have been made with gill nets during daylight fishing with some quite satisfactory returns, the best being a catch of over 1,500 fish in less than two hours, although the net was hauled in within this time after being attacked by a shark. It is felt that the gill net is destined to play an important part in the future of this fishery and it is only now left to pursue with more experiments both by day and night and as well as the color of the nets to convince the fishermen of their usefulness.

Currents

The movements of the flying fish appear to be controlled by the currents, as geographically, the Island's fishing areas appear to lie on the border line of the two main drifts, namely the North and South Equatorial drifts.

It is significant to note that on days that the currents are bearing towards the Island, large catches are taken, while offshore currents seem to sweep the fish beyond the reach of the boats and few are returned. It is of further interest to note that large catches of flying fish in Barbados usually follow close on heavy rains in British Guiana and along the Brazilian coast; it is felt that these rains swell the rivers Amazon, Orinoco and other South American rivers which in turn on entering the sea divert the South Equatorial drift northward towards Barbados. This is borne out by the fact that drift wood and other matter usually seen only on the Brazilian and Guiana areas are often picked up by our fishermen.

During the current fishing season this circumstance was particularly marked, as throughout the West Indies and the Guianas a drought which was only broken in British Guiana during early April, was followed by large catches of flying fish, dolphin and albacore around the 27th, of April in the Barbados area. The rains lasted 10-14 days in British Guiana, then stopped, correspondingly a drop in catches was felt in Barbados. On the

return of the next spell of rain in British Guiana, catches again improved noticeably. Another fishing technique that is practised during the flying fish season is trolling for King fish, Marlin, Dolphin, Tuna, Bonita and any other of the larger pelagic species. During the months of March to June, schools of Dolphin and King fish are to be found around floating wood and large catches are taken with hook and line. Sharks of several varieties are taken throughout the fishing season.

About the 15th of July most of the deep sea fishing boats are hauled in onto the land as a precaution during the hurricane season which usually lasts until mid-October; this matter of protection has been practised for centuries, and I think can be traced to the fact that the only place of shelter during rough weather is the inner basin of Carlisle Bay which is usually fully occupied by much heavier craft, such as schooners and lighters, among which the lighter fishing boat would be badly damaged in rough weather.

Accordingly only the smaller boats operate during the hurricane season as they can be hauled in much more quickly on any warning of uncertain weather.

Other methods that play important parts in the island's fishery are long lining for Bream, Snapper and Grouper, mainly operated during the hurricane season; pot fishing for a miscellaneous collection of inshore species throughout the year, and turtle fisheries for Green and Hawkesbill species, ssasonally April to September.

The Sea Egg industry to describe it briefly, is the collecting of the sea urchin and removing the edible ripe roes. This industry as practised in Barbados is possibly unique in the world and some explanation may not be out of place.

The industry is protected by law and has a closed season from May to August to allow for a spawning period. The urchins are usually at their best by September, that is the roes are well developed, firm and will not run to liquid when exposed to the sunlight. Skin divers put to sea in large numbers in small open boats and collect a boat load of the urchins which are feeding in clusters on the edges of the reefs and mussel grounds in water from one to six fathoms down. The urchins are then rowed back to shore where the fisherwomen assist in breaking the collecting the roes; the roes are picked clean of any foreign matter and finally washed in sea water. Afterwards the roes are placed in an unbroken shell which has been cleaned from the lantern side of the shell; they are usually filled and finished off in a cone shape. To preserve this cone a wild sea grape leaf—Cocoloba Uvifera—is pinned into a cone shape and placed over the filled shell.

To preserve the prepared sea eggs—as they are now called—they are packed very skillfully in large containers and steamed; they can then be held overnight without cold storage and it is this way that the housewife buys them from the hawker at 8¢ per shell—controlled price. It is know that the sea egg is extremely rich in Vitamin content, and one shell can supply a breakfast for two persons. On account of its richness, many people often blame the sea egg for the over population of the island. However, be that as it may, the industry is a very lucrative one to the fishermen, especially when it is remembered that most of the boats are hauled in during this season. Good divers can clear around $2.50 - $3.50 per day in the early season. The season is, however, short lived as by the end of November most of the larger boats have been hauled out and are again going after flying fish; also around November to December, the temperature of the water and winds is too cold for prolonged spells of diving.

This industry employs almost every available fisherman and their families, and is estimated to net $30,000.00 for the short period.

It is of interest to note that the sea urchin is to be found in large numbers on the North, South and Eastern side of the island where the seas are rougher and more barrier reefs prevail.

Much work has to be carried out on the sea urchin relative to following his habits more closely, and I would like to add that Barbados would be a paradise for any research

worker who is carrying out any research work on echinoids, as it is possible to work the year round if necessary in our climate.

Having covered the main fishery effort, it may be interesting to discuss some of the fishery problems of Barbados. The type of fisherman, especially the type of boat crews, is a serious problem as they are like most fishermen anywhere else and are uncooperative when it comes to matters of doing anything differently from what they have been shown when they were lads in a boat; this attitude often takes much time to convince these men of the value of any new method or purpose.

These conditions were probably brought about on account of the fact that prior to 19[illegible] little or no attention had been paid to the fishing industry by the Government, so much so, that the Barbadian fisherman found himself in a class below that of the agricultural labor economically; as such, he set his own standards, which to him may have been satisfactory, but to other more intelligent people repulsive, unreliable and uncooperative. It has take great effort to change this attitude over the last five years, and although some progress has been made, much remains to be done.

The matter of training lads to become fishermen has been under consideration and it is hoped to launch a scheme for this purpose during 1949-1950. Matters of an improved and safer type of fishing boat has been under consideration, it is also hoped to building such a boat of an improved design during 1949. Suggestions for the design are welcomed by the Government.

Marketing problems are many and a complete program of marketing coordination will be worked out as soon as two new markets, which are proposed, are erected at the other smalle towns of Speightstown and Oistins. It is hoped to commence erecting one or both of these markets this year. These new markets will suppliment the larger one recently established at Bridgetown.

Matters of fish preservation sometimes present a problem as there is no Government cold storage plant available for fish storage and the limited storage by private enterpri is usually filled to capacity.

Matters of cold storage for fish have been under consideration for some time, but to date no definite plans or decisions have been released. Cooperative schemes for the indus are yet to be launched.

The island wide collection of fishery statistics presents quire a problem inasmuch as fish are landed at approximately 25 places around the island. It is hoped that with the erection of the two new markets previously mentioned, an even more accurate figure could b returned. At present statistical figures for the island's fishery are based on an averag of individual effort as weighed in at the main market—an average being allowed for the boats out of the Bridgetown area.

The problem of repairing the fishing fleet within the short time available is a constant one as the number of boats exceed the boat shipwrights eighteen to one. It is proposed to recommend to Government a scheme for the training of suitable lads in boat building and repairs.

A word about the present Fishery Administration may be helpful and suggestions would be welcomed if it is thought the problems could be approached along improved lines.

The Director of Science and Agriculture is in charge of the Fishery Division and is directly responsible to Government for its administration. This Division was established with the assistance of a Colonial Development and Welfare Grant in April 1944.

The Director is assisted by the Fishery Officer who in turn has two clerical assistants.

The Governor has also created a Fishery Advisory Committee. All fishery matters and schemes are prepared and then discussed by the Committee of which the Director of Agriculture is Chairman and the Fishery Officer, Secretary.

Schemes that have meant much to the rehabilitation of the Fishing Industry are:

1. Loans to boat owners for repairs to their boats and to fishermen for boat building and repairs; this scheme has grown tremendously and has involved some 744 accounts, of which 350 are now current.

2. The deepening and widening of channels on the windward coast of the island to promote an easier entrance.

3. The establishing of a main fish market at Bridgetown, the capital of the island.

A scheme embodying many phases of fishery development has recently been accepted by the Legislature, and efforts to implement the several phases are receiving attention. Important among these are marketing, beach developments and the establishment of a Fisheries Experimental Station. It is proposed to operate a powered boat, from which it will be possible to experiment with many types of modern fishing gear within the clear water areas, tracing movements of fish life and to study some of their habits, to investigate the concentration of plankton in relation to fish life, the charting of fishing banks around the island and many other phases so necessary for a comprehensive fishery. It is also proposed to carry out demonstrations of fish preservation by cold storage, smoking and salting, together with net and gear preservation.

Buildings on the sea front to house the Experimental Station have already been acquired along with a sufficient portion of land.

Material and fittings for the building of the powered boat (40 ft. overall) are already on order and it is anticipated that this Station should begin operations about March 1949.