

## Fisheries Session

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Chairman — William B. Hannum, Jr., *President, Sea Farms, Inc.*  
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### **The Lobster Fishing Industry of Mt. Pleasant, Bequia Island, West Indies**

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#### INTRODUCTION

Relatively little is known about the subject of fishing in the West Indies. The land has monopolized the attention of most writers, reflecting the traditional interest of the islands in cash crop agriculture. Although a number of technical publications are available on West Indian fisheries, there still exists a large gap in our knowledge concerning West Indian fishing lore, and the nature and distribution of marine industries in the islands. Hopefully, this study will make a contribution to the better understanding of fisheries in the West Indies.<sup>1</sup>

The purpose of this study is to describe the marine industries of Mt. Pleasant, Bequia Island, northernmost island of the Grenadine archipelago.<sup>2</sup> Special emphasis is placed on commercial lobster fishing which has developed in recent years as the community's most important activity in terms of income and employment.

#### THE COMMUNITY

Mt. Pleasant is a community of approximately 100 white inhabitants living in 20 households dispersed over the summit of Bequia Island's central upland. Mt. Pleasant offers a spectacular view of the Grenadine Islands and most of its half square mile surface is exposed to the refreshing trade winds. However, these attractions for settlement are little compensation for the community's acute shortage of arable land.

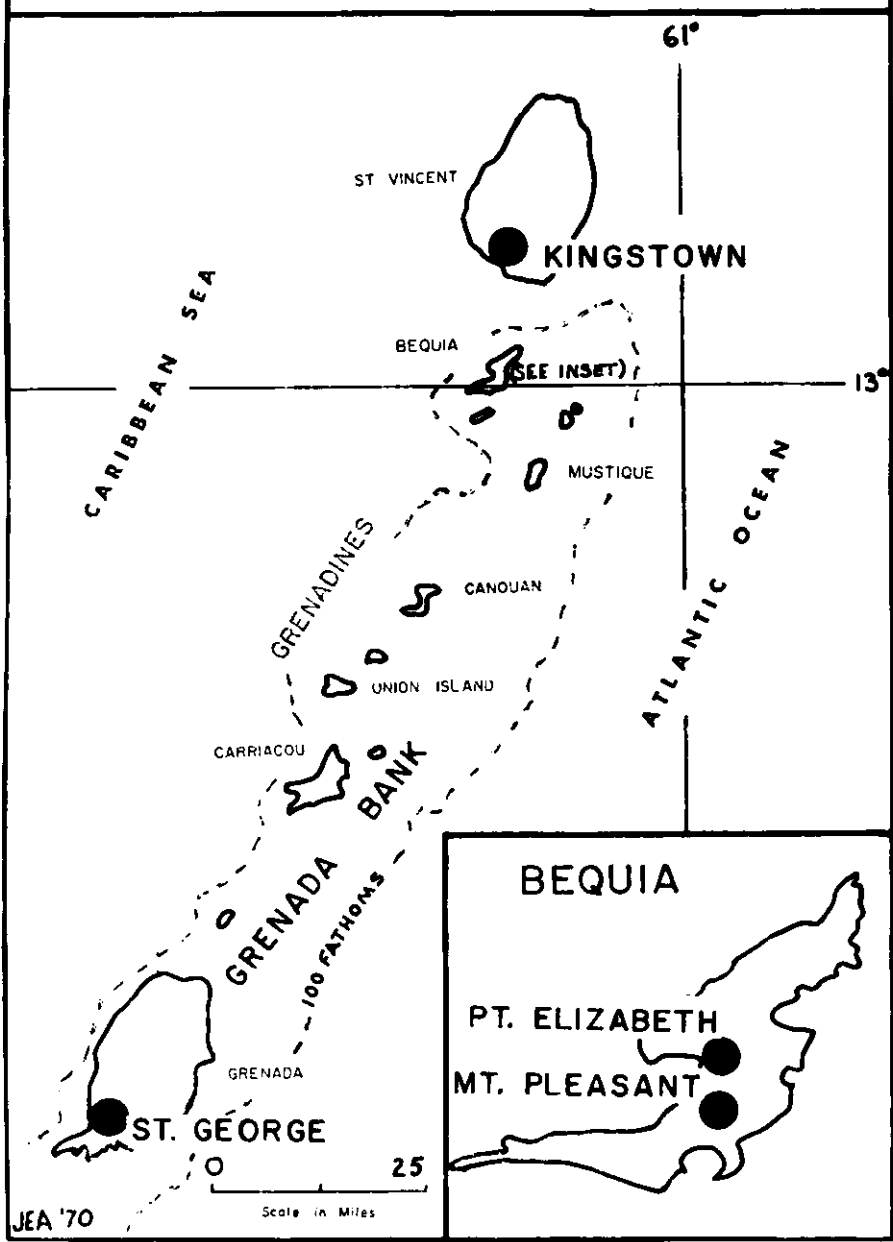
The most striking features of Mt. Pleasant's landscape are its sparse, dry

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<sup>2</sup>The Grenadine Islands are comprised of a chain of over 100 small volcanic islands, islets and reefs that stretch 70 miles between St. Vincent and Grenada in the Lesser Antilles. The total area of the Grenadines is approximately 35 square miles and has a population of 15,000.

# LOCATION MAP



vegetation and its eroded hillsides. The windward slopes are parched by the trade winds, and for most of the year the vegetation, consisting of savannah grass and drought-resistant shrubs, has a brown, withered appearance.

Erosion goes on at a terrifying rate. Dark basaltic boulders protrude everywhere through the thin soils. On the steep slopes slumping is severe.

Agriculture is virtually non-existent. Small patches of maize, pigeon peas and cassava are cultivated near a few of the households, but there are no commercial crops of any kind. A small number of emaciated cattle and sheep graze the sterile upland. Repelled by unproductive soil and the absence of remunerative employment on land, the able-bodied men of Mt. Pleasant have turned to the sea for their livelihood. Many of the males are engaged in shipbuilding and sail making while others work on local trading schooners based at Pt. Elizabeth, Bequia. However, the leading enterprise of the community is lobster fishing which offers employment to nearly 20 men.

### DEVELOPMENT OF THE LOBSTER INDUSTRY

Before 1950 the spiny lobster was little exploited in Bequia and the Grenadines. There was no significant demand for the product in the neighboring islands of St. Vincent and Grenada and the shellfish was not gathered for home consumption. The majority of people living in the islands were not accustomed to preparing or eating spiny lobster.

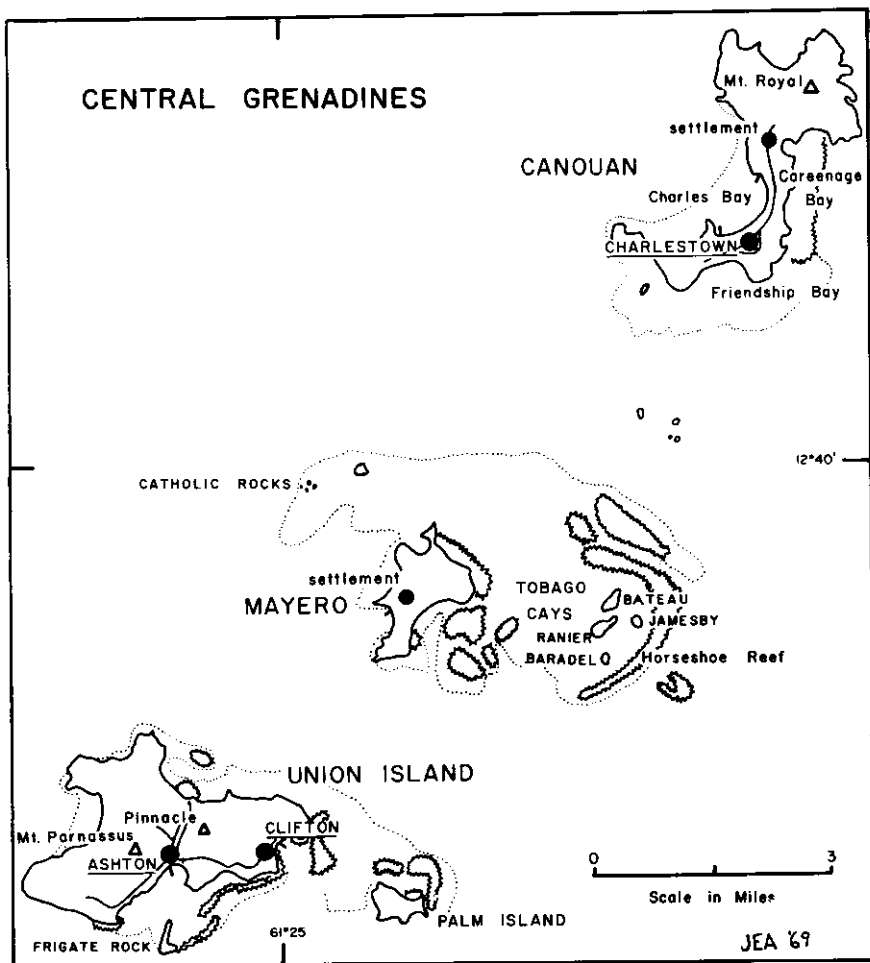
In the early 1950's, Martinique began to purchase a wide variety of marine products, including spiny lobster, from Bequia fishermen. Martinique ran one and sometimes two trading schooners to the Grenadines on a monthly basis. These vessels, equipped with cold storage facilities, were able to operate in the islands for 8 to 10 days at a time before returning home with large quantities of chilled and frozen fish. In 1957 Martinique merchants offered Mt. Pleasant fishermen 62 cents (B.W.I.) a pound for lobster tails and 25 cents a pound for most species of freshly gutted fish (Wiles, 1957). Before devaluation in 1969, one British West Indian dollar was valued at 66 cents to the American dollar. In this study monetary values are quoted in West Indian currency.

Lobster gathering offered Mt. Pleasant males an unusual opportunity to make extra income. This activity was relatively easy, as well as rewarding. One knowledgeable informant reported that during the 1950's lobsters could be found "under every rock and ledge in just a few feet of water." Several dozen of the crustacea could be gathered by one diver in a few hours.

Initially, lobster fishing in the Grenadines was characterized by small-scale operations which could be suspended at any time without a serious dislocation of labor and capital. Divers used small sailing craft to reach lobster grounds. Normally the crew consisted of one oarsman and one or two divers. While the diver(s) probed for lobster over nearby reefs, the oarsman rowed close behind and collected the lobsters from the divers.

In the early 1950's lobsters were caught with homemade spears, or by hand. From about 1955 to 1964 Mt. Pleasant fishermen used the arbalete, a sling-powered harpoon gun of French design, to spear lobster. The arbalete and other skin diving gear were introduced to the Grenadines by Martinique fishermen accompanying the trading schooners engaged in the fish trade. There was probably also some influence from St. Vincent as sport fishermen of that island had been skin diving for finfish since the late 1940's.

One advantage of the arbalete is that it is light enough to be carried under one



arm giving the diver freedom of the other hand for swimming. The sling gun has two or four strong rubber bands which drive a long steel-barbed spear. The projectile is retrieved by a line which runs from the spear to a reel mounted on the gun. The arbalete is ineffective beyond a range of nine feet so divers must maneuver close to their quarry before releasing the harpoon.

In 1964, Bequia divers adopted a wire snare to catch lobsters, a device that had several important advantages over the harpoon gun, noted later in this study. However, the arbalete is still used by Bequia divers to spear turtle, barracuda and reef fish.

#### DISTRIBUTION AND CONSERVATION OF LOBSTERS

The coral-fringed coasts of the Grenadine Islands together with their outlying reefs provide an excellent habitat for spiny lobster (*Panulirus argus*). Spiny

lobsters are found mainly on rock, coral and hard sand bottoms adjacent to reefs and headlands. The crustacean normally avoids soft, muddy grounds and strong currents. Lobsters usually are encountered in less than 5 fathoms of water, well within free-diving range; however, fishermen report catching them at depths of 6 or 7 fathoms.

Spiny lobsters feed at night on small shelled animals including young conch, sea snails and clams (Smith, 1958: 14). During the day they find shelter under rocks, seafans, seagrass and large sponges. Fishermen detect the presence of lobster by their whips, or antennae.

The Grenada Bank, which is dominated by the Grenadines, is the best-stock lobster ground in the Windward Islands; however, it is a narrow formation and does not support the lobster population found elsewhere in the Caribbean and western Atlantic, notably British Honduras, Cuba and the Bahamas.<sup>3</sup> The Grenadines have the capacity to support only a modest lobster fishing effort and, even then, provisions must be made to regulate fishing intensity.

In May 1954, the St. Vincent Government, which has administrative jurisdiction over the northern Grenadines, enacted legislation to protect spiny lobsters. The major provisions of St. Vincent's Lobster Protection Ordinance are summarized (Anon, no date): (1) It is unlawful for any person to expose for sale, buy or have in his possession any lobster of less than 1 pound in weight, or measuring less than 9 inches in total body length. (2) It is unlawful for any person to take, catch, destroy, or have in his possession, sell or offer for sale any female lobster when the same shall be found to be carrying eggs. (3) A closed season is established from May 1st to September 30th. The date of the closed season may be altered in the Government Gazette.

In 1965 Grenada passed a similar ordinance, to protect spiny lobsters in the southern Grenadines, which are dependencies of Grenada.

St. Vincent's and Grenada's lobster ordinances are designed largely to protect breeding stock, but there is no limit placed on the number of legal-sized specimens that can be caught in the open season. As a result of fishing pressure in the open season there has been a serious depletion of lobster grounds in the Grenadines. Fishermen complain frequently about the scarcity of lobster and, in recent years, divers have been forced to extend their search into all parts of the Grenadines and to greater depths.

## CONTEMPORARY LOBSTER FISHING INDUSTRY

*Reorganization of the industry:* The Martinique fish trade with the Grenadines ceased in 1959. Since then Mt. Pleasant fishermen have delivered their catch to St. George's, Grenada, on the southwest coast of the island. Unlike the Martinique trading pattern, Grenada sends no vessels into the Grenadines to pick up lobsters from fishermen. Mt. Pleasant fishermen built two motorized sloops for the purpose of transporting lobsters from the Grenadine fishing grounds to St. George's. The two lobster sloops are family-owned and operated. Although vessel owners do no fishing themselves, their sons comprise the nucleus

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<sup>3</sup> The Grenada Bank is a volcanic formation that extends over 100 miles from the St. Vincent channel to a point 20 miles south of Grenada. The northern 70 miles of the Bank is occupied by the Grenadine Islands, of which Bequia is the northernmost island. The Grenada Bank is a narrow formation measuring only 10 to 17 miles in width, and its border is marked by a steep descent to ocean basins. Most of the submarine formation is less than 20 fathoms below sea level.

of the two seven men crews, each having four divers, two motorboat operators and one cook.

*Lobster fishing pattern:* The lobster fishing season, which is regulated by St. Vincent's Lobster Protection Ordinance, begins October 1st and ends the last day of April. Normally three or four fishing trips are made in the Grenadines in the 7-month season. One or two expeditions are made before Christmas, followed by two trips after the holiday period.

There is no fixed or regular schedule for lobster fishing trips. Generally each trip lasts about 5 weeks, followed by an indefinite rest period at home. Expeditions may be delayed for a considerable period because of adverse weather conditions and difficulties in gathering a crew.

At the start of a fishing trip the sloop is fueled and ice and provisions are taken aboard. Most of these supplies are purchased in Kingstown, St. Vincent.

Most lobster fishing is done in the central Grenadines, including the east and south coast of Canouan, the Tobago Cays and Petit St. Vincent. The favorite lobster fishing ground is located in the vicinity of the Tobago Cays and nearby reefs, lying about 1 mile east of Mayero. The Tobago Cays are a group of four waterless and uninhabited islets bordered on the north and south by Horseshoe Reef. The two eastern islands, Jamesby and Baradel, lie on a slightly submerged coral and sand formation which is also shared by Horseshoe Reef, a few yards to the east. The west lying islands, Bateau and Ranier, are separated from this complex by a tortuous channel 4 to 8 fathoms deep. Shallow drafted vessels approach the channel either from the northwest or from the southwest. Sloops and other small vessels, including yachts, find secure anchorage in the channel or on the leeward side of Bateau Island.

Two square stern boats powered by outboard motors are used to ferry lobster divers from the anchored sloop to nearby reefs. These small, shallow-drafted boats are maneuvered easily over slightly submerged reefs and around coral obstructions, giving divers good access to lobster lairs.

In probing for lobster, divers swim slightly submerged breathing through a snorkel. Visibility is about 10 to 12 feet in the exceptional clarity of the inshore waters. Marine life is easier to detect over sandy or shell bottoms than over moss-covered or dark rock bottoms. Lobster divers work close to rocks and coralline reefs generally in depths of from 1 to 4 fathoms. Strong currents, breakers and rough water are dangerous for divers, and are avoided.

As noted earlier, from 1955 to 1964, Bequia fishermen used harpoon guns to catch spiny lobsters. But spearing lobster had two serious disadvantages: (1) the meat was damaged by the projectile resulting in an inferior product and (2) fishermen were dependent on a fresh supply of ice to keep the crustacean from spoiling. Tails were removed and iced in the sloop's cold storage compartment. After 8 or 9 days, when the ice supply ran low, the catch was delivered to St. George's, Grenada, and a new supply of ice was brought aboard.

In the years since 1964, Mt. Pleasant divers have captured their quarry with a wire snare. This device, of local invention, consists of a copper wire noose attached to the end of a 6-foot pole. The loop is placed around the "flapper" or tail of the lobster and pulled tight. The wire is of sufficient thickness (18 gauge) to keep the tail from being cut, and the pole is long enough to permit divers to capture the shellfish in deep crevices. After the lobster is snared it is brought to the surface and given to a boatman.

Lobsters are kept alive in wire cages anchored in about 2 feet of water. At market time they are transferred to the vessel and placed in giant containers

measuring 4 x 4 x 2 feet. These are built by nailing chicken wire over a stout wooden frame. Several hundred pounds of live lobster can be held in one cage.

Lobsters are gathered 8 or 9 days before they are taken to market in St. George's Grenada. The catch varies depending largely on weather conditions and the abundance of lobster. Four divers, working steady over a 7-day period, can gather upwards of 3,000 pounds of lobster (live-weight) representing approximately 2,000 specimens. However, the average catch is usually no more than half of this amount. Normally three or four deliveries are made to market in the course of one 5-week fishing trip.

## MARKETS

*St. George's, Grenada:* Mt. Pleasant fishermen deliver most of their lobster catch to two food firms located at the waterfront in St. George's harbor. Both firms sell lobster to a Trinidad wholesaler who delivers the product, by ocean liner, to Port-of-Spain, Trinidad. The demand for lobster in hotels and restaurants is good, but the Grenadines satisfy only a small fraction of this market.

No records are available on lobster landings in Grenada before 1965. Mr. Pressey, the major buyer, claimed that from 1960 to 1963, Mt. Pleasant divers delivered up to 1,000 pounds of lobster tails monthly which is equivalent to 3,000 pounds of live-weight lobster (the tail makes up approximately one-third of the lobster's total weight). Since 1964 there has been a sharp decline in the amount of lobster delivered to St. George's. This has been due to over-fishing resulting in the depletion of lobster stocks in the Grenadines.

*St. Vincent:* St. Vincent's potential market for lobster does not exceed 2% of the island's 100,000 population, consisting of a few tourists, and well-to-do merchants who occasionally buy the shellfish for a weekend meal. Lobster fishermen do not find it profitable to sell their product in St. Vincent on a regular basis because of the limited demand. In St. Vincent spiny lobsters retail for about \$1.00 (B.W.I.) per pound live weight, which is about equal to the best cuts of fresh beef in the Kingstown market.

*Tourist market:* Bequia divers sell a small but increasing quantity of their catch to hotels and tourist resorts in Grenada, St. Vincent, and the Grenadines. Fishermen also sell lobster to yachts passing through the Grenadines. The booming tourist industry of the Grenadines promises to become the leading market for spiny lobster in the near future. Fishermen prefer to sell lobster to tourist establishments as they generally receive a better price for the product than the regular markets.

## ACTIVITIES DURING THE CLOSED SEASON

During the lobster closed season, Mt. Pleasant lobster fishermen are relatively inactive. Trolling and skindiving for finfish are relatively popular activities in this period. In May and June, Mt. Pleasant fishermen troll for bonito and other pelagic fish with artificial spoons attached to wire lines rolled on reels. Throughout the closed season they also spear snapper, grouper, crevalle and barracuda. The bulk of the catch is sold in Kingstown, St. Vincent.

## PROBLEMS AND PROSPECTS

The Mt. Pleasant lobster industry is in serious difficulty, as reflected by the

decreased landings of this shellfish after 1964 and the negative attitude of fishermen engaged in the lobster trade.

The most pressing problem is the inadequate supply of lobster to support the highly capitalized industry. In 1965, the wholesale value of the lobster catch was estimated at \$5,000 to \$6,000 (B.W.I.). Approximately one-half of this amount was spent for upkeep on the two vessels, and for fuel and other supplies, leaving only a small return for the eight divers and six helpers. As a result, many divers have lost interest in lobster fishing. Frustrated in their attempts to find commercial concentrations of lobster and much fatigued by deep diving, they hesitate to organize new fishing expeditions. The captain of one crew plans to emigrate to the United States, and his boatowner father is looking for a buyer for his fishing sloop.

The small spiny lobster population in the Grenadines cannot support a relatively large-scale, or a highly capitalized fishing effort that has characterized the industry in recent years. In years ahead, the Grenadine lobster enterprise will probably be dependent upon small-scale units, i.e., boats and their crews rather than on motorized vessels.

Furthermore, fewer deliveries of lobsters will be made to Grenada, and it is likely that an increasing amount of the shellfish catch will be sold to resort centers in the Grenadines.

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