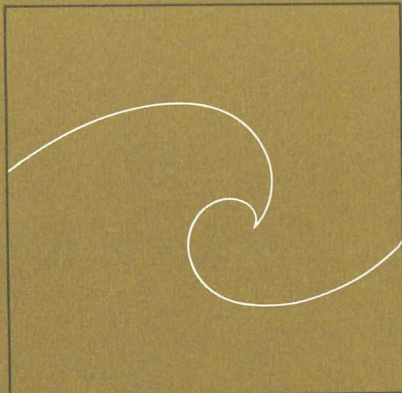
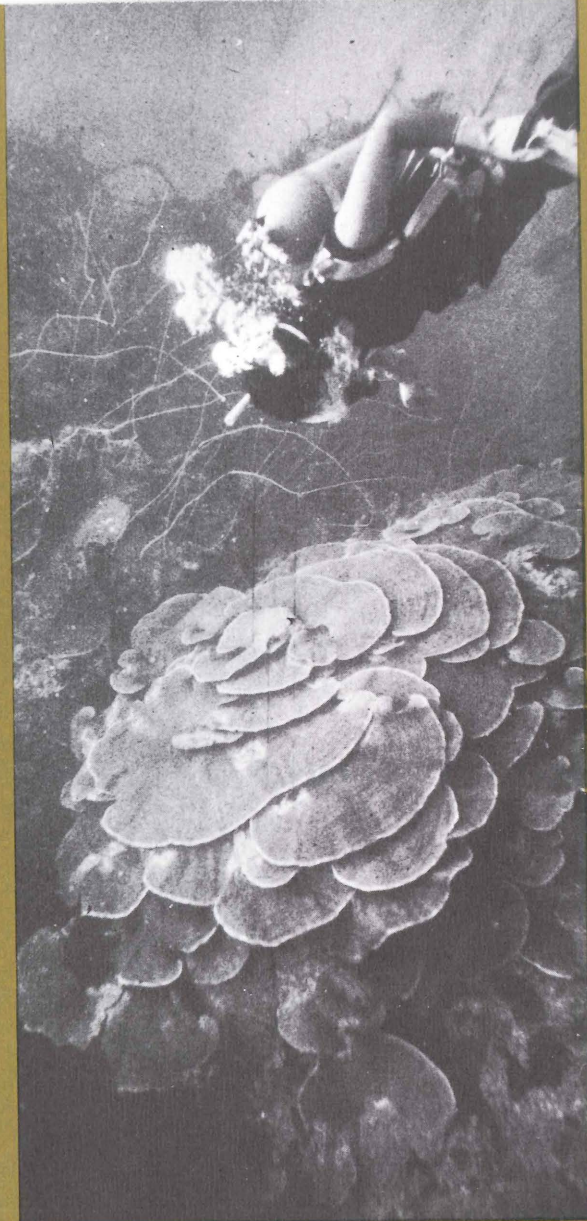


MARINE SCIENCES RESEARCH CENTER STATE UNIVERSITY OF NEW YORK ● STONY BROOK, N.Y. 11790

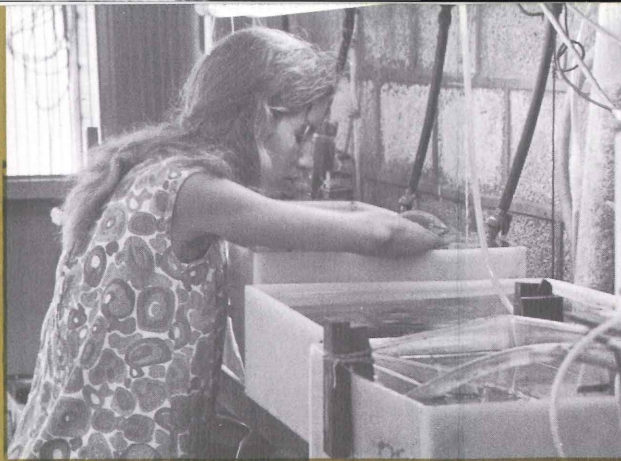


DISCOVERY
BAY
LABORATORY

MARINE SCIENCES
RESEARCH CENTER
STATE UNIVERSITY
OF NEW YORK AND
UNIVERSITY OF
THE WEST INDIES



The Discovery Bay Laboratory, jointly operated by the Marine Sciences Research Center, State University of New York, and the University of the West Indies, recently moved into a newly constructed building adjacent to the rich coral reefs of the northern coast of Jamaica, West Indies. Established in 1965, the Laboratory until now occupied temporary quarters, which has restricted its usefulness for many types of research. The new building contains facilities suited to a broad spectrum of advanced research and instruction in tropical biology, particularly that concerned with coral reefs. The Laboratory's present site, donated to the University of the West Indies by the Kaiser Bauxite Company, consists of 15 acres of rocky coastline and mangrove in the town of Discovery Bay. The area overlooks Puerto Seco Bay, whose barrier reef encloses a quiet lagoon that has been compared to a natural aquarium.



MARINE ENVIRONMENTS IN THE AREA

Widely varying marine environments are available in the immediate area of the Laboratory. The Bay, 1.3 miles wide and up to 200 feet deep, contains hard- and soft-bottom communities that can be collected by diving or dredging. The plankton of the Bay is extremely diverse, especially in larval forms. Non-swimmers may wish to explore nearby shallow-reef, rock, sand and grass-flat habitats. The beach bordering the station is rich in interstitial bivalves.

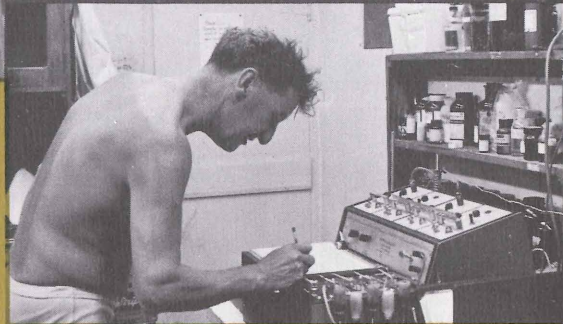
The Bay is cut off almost entirely from the sea by a reef. The shallow back-reef and reef-crest coral communities are accessible by small boat, and good collecting can be carried out there even by non-swimmers. Extremely rich and diverse coral communities exist on the seaward side of the reef: 71 species of shallow-water coral have been collected from this area, surpassing the total number of known species from all other areas of the Caribbean combined.

Good reef-coral growth occurs to a depth of about 200 feet. The deeper coral zones also contain well-diversified populations of marine algae, sponges, gorgonians, atipatharians, zoantharians, zoanthideans, etc. The interstitial fauna of the forereef consists of many unusual foraminiferans, hydrozoans, molluscs, bryozoans, brachiopods, serpulids, crustaceans and tunicates. Over 50 species of calcareous red and green algae are found, including 11 of the 12 known Jamaican species of *Halimeda*.

The north coast of Jamaica is bordered by a narrow shelf with the fringing reefs close to shore. The extreme steepness of the island's outer slope causes habitat zones of the forereef to be telescoped within a small horizontal distance. In many localities the entire vertical extent of the reef biotope can be surveyed during a single dive.

Deep-water work can be carried out within relatively short distances of the Laboratory using small vessels. Two miles north of the station the sea reaches a depth of over 1500 feet; eight miles away it is over 10,000 feet deep.

A variety of rocky, sandy, muddy, estuarine, mangrove and lagoon-type coastal habitats are within driving distance from the Laboratory. Within a three-hour drive may be found extremely interesting areas, such as the Great Morass of the Black River, Kingston Harbour and the Port Royal Cays and the Salt Ponds along the St. Thomas coast.



FACILITIES

The brand new central building consists of an air-conditioned research unit housing four small laboratories, a large "wet" laboratory, a dark room, instrument store, museum and two offices. The "wet" laboratory is subdivided into six semi-enclosed research bays provided with all services including seawater and central tables for aquaria and sorting and holding tanks. A separate reading and conference room and temporary living quarters accommodating four visitors are nearby. Support facilities include a machine shop, a boat and wood workshop and a diving locker. Three boats are available: a 22-foot twin outboard-motor vessel, a 15-foot work boat and a 12-foot inflatable boat that can be carried by car to remote sites. A landrover serves to transport equipment and personnel.

The Laboratory is equipped with a glass-distilled water supply, dissecting and compound microscopes, histological apparatus, drying oven, pH meter, top loading and analytical balances, photographic equipment and darkroom facilities, refrigerator, freezer, centrifuge, collecting gear, etc. The electricity supply is 220 V and 110 V, 50 cycle. A generator giving 60 cycle current is also available. The diving facility contains two high-capacity air compressors, a recompression chamber with air bank, SCUBA tanks, regulators and ancillary diving equipment and miscellaneous marine stores.

By individual arrangement visiting investigators may use the Port Royal Marine Station operated by the Department of Zoology, University of the West Indies. The Science Museum of the Institute of Jamaica, Kingston, has good reference collections and a first-class herbarium that is a repository for the flora of the Caribbean. Libraries with relatively up-to-date journals and reference sections are to be found at the University of the West Indies at Mona and at the Institute of Jamaica. Faculty and students of State University of New York may be extended limited borrowing privileges by prior arrangement.



OPPORTUNITIES FOR RESEARCH AND INSTRUCTION

Current research at the Discovery Bay Laboratory is centered upon the coral-reef environment, the organisms inhabiting it and their relation to reef building. The calcification process is being investigated in calcareous algae, sponges, corals, serpulid worms, molluscs and other species, as is the nutrition, reproduction and behavior of some of these forms. The physiology of algal-animal symbiosis, exemplified by the zooxanthellans in reef corals, and its relevance to calcification processes are emphasized.

Observations of the ecology of reef-building and reef-destroying organisms are being performed within the natural habitat. This has led to investigations of the geomorphology of reefs, depositional processes, submarine lithification and paleoecological correlations with fossil reefs.

Systematic and taxonomic studies of some of the more important reef-associated groups - e.g., corals, gorgonians, biochemical and ethological analysis are being investigated to determine how larval behavior affects the distribution of the adult forms.

Although formal courses are not offered at the Laboratory, its unrivaled location makes it extremely valuable as a training ground for advanced pre- and postdoctoral marine biologists and geologists. No organized diving instruction is provided; however, qualified visitors soon learn to employ SCUBA diving as a tool for making field observations by working with experienced scientist-divers. This enables beginners to proceed with their own underwater programs much sooner than would otherwise be the case. Non-swimmers may arrange to have collections made on request, either by diving teams or by dredging.

APPLICATION

Prior to making formal application for use of the Discovery Bay Laboratory, investigators should correspond with the Resident Director concerning their proposed program. Detailed information on the facilities of the Laboratory, the schedule of fees, safety and diving regulations, travel arrangements, accommodations at Discovery Bay, health and customs regulations, etc., may be obtained from either the Marine Sciences Research Center or the Discovery Bay Laboratory. Once informal arrangements have been concluded, formal application should be made, *well in advance of planned utilization*, to the Director, Marine Sciences Research Center. A limited number of grants in support of laboratory fees are available to SUNY and UWI investigators and may be requested from the Marine Sciences Research Center.

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