

# The Bahama Coral Reef

Loren P. Woods, Curator, Fishes

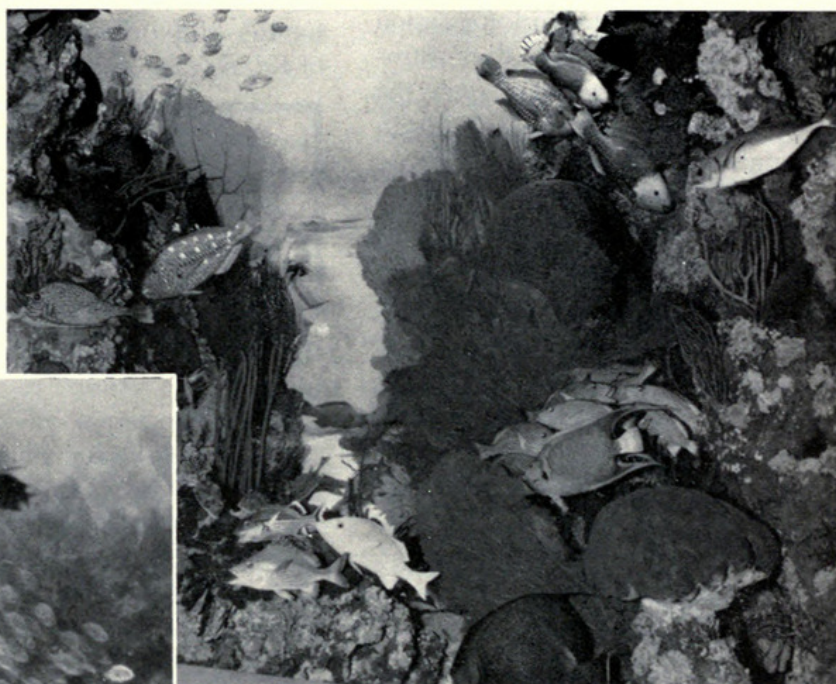
CORAL reefs are the busy, crowded cities of the seas. Their most striking feature is the great abundance and diversity of their animal population. In this respect, a coral reef may be compared with a tropical rain forest, where the environment is relatively stable and the competition is between species rather than with the elements. In such a biologically controlled (as distinguished from a physically controlled) environment, large numbers of species coexist without one ever becoming dominant.

Some of the animals of the reef are attached to it like plants, some burrow into the soft substrate deposited by

other animals and by calcareous algae, while still others crawl or swim over the surface. Fishes, large and small, are everywhere. Many of the fishes are brightly colored and often in addition have bold, contrasting patterns of red, blue and yellow, set off by markings of intense black and pure white. The colors of the corals and sponges are more subdued but also display a great variety of hues.

THE REEF corals of the Bahamas grow luxuriantly in the clear warm waters reached by the side currents and eddies of the Gulf Stream. Although the variety and color

*Below: Coral reef fishes photographed from the undersea diving chamber developed by J. E. Williamson.*



*Above: A section of the Museum's Bahama Coral Reef exhibit, reproduced with the aid of undersea photographs like the one on the left.*

*Upper Left: Drawing of Williamson's diving chamber.*



of corals in the West Indian reefs are not equal to those of the East Indian, the massive brain corals, branching staghorns of several shapes, and fine-pored corals present a confusing and interesting seascape very different from any landscape. In place of shrubs and trees there are sea fans and sea feathers which, like plants rustled by balmy breezes, bend and wave in the underwater currents. These undersea forms, however, are not plants but animals related to the corals. Other animals such as cup and chimney sponges and encrusting bryozoans serve as ground cover.

The reef fishes may be divided roughly into three groups according to the time they are most active. One group feeds at night, hunting widely and individually over the reef. During the day some of these night predators, like the nocturnal morays, hide in holes. Others, like the striped grunts, lie crowded together in sheltered places.

The active, diurnal sergeant majors, parrot fishes, wrasses, angel, and butterfly fishes browse on the reefs or dart about investigating every activity, ready to pick up any scraps of food that may float free from a larger fish's meal. At night most of these diurnal fishes retire to a crevice in the coral or else burrow into the loose sand of the bottom. Some of the parrot fishes even spin a thin mucous cocoon that fully covers them when they settle for the night.

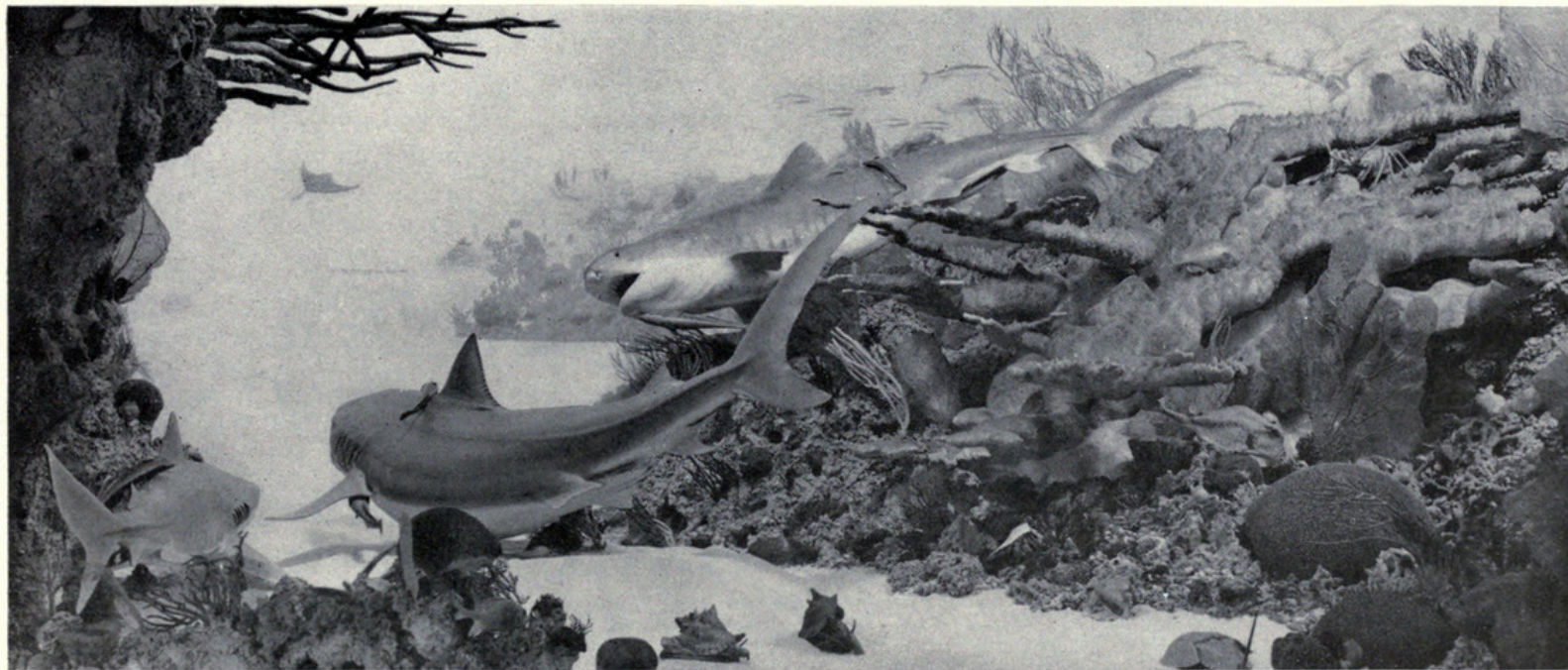
Fishes of the third group, including several kinds of snappers, are more likely to be hunting at dawn and dusk.

Of course there are many exceptions. A moray may be lured from its hole during the day by a particularly tempt-

ants, which come in from open waters to forage on the reef. Active day and night, with no respect for time, are the large tiger sharks. Often accompanied by several remoras, the sharks search through the channels between the coral stacks, driving out sting rays and eagle rays. Amberjacks, which travel in schools, cruise over the tops of the reefs looking for silversides and round herring—small fishes that are enormously abundant on the reef, where they seek the shelter of its shallow water. When these predators appear, most of the typical reef fishes scatter and disappear into the nearby hiding places.

THIS ever-changing life of the coral reef has been caught in an exhibit that fills the west wall of the Museum's fish hall. The studies for the exhibit of the Bahama Coral Reef were made in the spring and summer of 1929, the materials being collected with the help of Mr. J. E. Williamson, a pioneer in undersea motion picture photography. Williamson had developed a unique diving chamber suspended from a barge (see drawing opposite). This chamber, which could be entered from the surface, was large enough for a photographer to work in comfortably for an extended period of time, taking pictures of reef details or various fishes without disturbing them.

Mr. Leon L. Pray, then a Museum staff member, spent 10 weeks in the Bahamas with Williamson, noting and recording the actions and changing colors and patterns of the reef fishes as they rested or moved about. Using his numer-



*Large tiger sharks are shown foraging between the coral stacks. From the Bahama Coral Reef exhibit.*

ing bait. And though they normally feed at night, snappers and grunts will also eat during the day. The daytime aggregations of grunts are not really asleep, but resting, and are readily disturbed. Fishes and crabs that hide away in the sand during the day may be uncovered by trigger fishes deliberately searching out buried crabs.

Then there are those fishes, not normally reef inhabi-

ous photographs, along with carefully collected and preserved corals, gorgonians, sponges, crabs, and other invertebrates, a portion of the reef with its colorful inhabitants was reconstructed. The group was finally completed in 1932.

One of the largest habitat exhibits in the Museum, the Bahama Coral Reef is an authentic and outstanding record of the most conspicuous features of life on a coral reef.





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