



A view of Moorea

TAHITI, the proverbial island paradise of the South Seas, has for centuries, like a lodestone, attracted men to its shores. It has been said that for every person who travels to Tahiti the island holds a different promise. Captain Bligh set his course for Tahiti to obtain breadfruit, a hoped-for answer to England's agricultural problems. Captain Cook once visited the island because it was a good vantage point from which to observe the transit of Venus across the disk of the sun. Gauguin, of course, found artistic inspiration there.

Recently a well-known Chicago businessman and world traveler, A. Rush Watkins, also responded to Tahiti's call. What was it that lured him to the island?

Fish! . . . Not to eat, or to mount as a trophy above a fireplace, but fish for the research collections of Chicago Natural History Museum.

Tahiti's Polynesian inhabitants have always relied on fish as the most important staple of their diet. Yet only one half of Tahiti's approximately 600 species of fishes are well known to scientists. The first really intensive studies made of marine fauna of the Pacific were begun in 1946 and 1947, when the United

States conducted its series of atomic tests off the island of Bikini. At that time scientists were concerned about the effect of the bomb on marine life.

For some years Chicago Natural History Museum had been aware of a number of gaps in its scientific records and collections from this area of the Pacific. However, an opportunity to obtain the needed data and specimens had never presented itself until Mr. A. Rush Watkins walked into the Museum late in 1961 to announce that he was contemplating a trip to Tahiti and wondered if the Museum would be interested in any of its animal life. Watkins had already contributed handsomely to the research collections of the Museum through sponsorship of and participation in three other expeditions: to Mexico in 1947-48 to collect small coastal fishes; to Thailand in 1949 to collect mammals, birds, reptiles, insects, and some botanical specimens with Colin Sanborn, then Curator of Mammals; and to Arkansas to obtain swamp rabbits and raccoons.

Loren Woods, Museum Curator of Fishes, sat down with Watkins, described the Museum's interest in the fishes of Tahiti—and it was settled. Watkins

would go to the island to collect specimens for Chicago Natural History Museum, and would provide whatever financial backing was needed for the venture.

WHAT the Museum wanted were fishes from depths below 35 feet. Watkins had only collected in shallow water, using hand nets. The Tahitian expedition called for deep coral reef diving. So the first step was to enroll in a SCUBA diving class in a Chicago YMCA. There Watkins trained for two months. Later he traveled to the University of Miami's School of Marine Biology to learn how to collect fish by using a poisoning agent.

With these exacting training lessons out of the way, it was full sail for Tahiti.

WATKINS arrived on the island in January of 1962, in the midst of the annual rainy season, when it is not unusual for as much as 40 to 45 inches of rain to fall during a single week. This complicated his early work considerably for after a strong rain the lagoons become murky and the danger of attacks by sharks is heightened. On the other side of the ledger, however, he found ideal water temperatures of 80 plus degrees and air temperatures generally around 90 degrees.

The first consideration was to obtain suitable accommodations for sleeping

AL REEF COLLECTING

in Tahiti

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and working. Luckily, Watson was able to find a comfortable bungalow located on the western part of the island in the District of Papeari. Next, there was the problem of hiring assistants for the weeks of collecting ahead. Watkins found the help he needed in Christina Spies and Star Teriitahi. Star, known as Tahiti's best male diver, had the reputation of being able to free dive (without tanks or weights) to depths of 60 feet. Christina's job was to take care of things in the boat while Watkins and Star were diving.

For more than two months Watkins spent almost every day with these two helpers, working in the water six or seven days a week. The result, according to Loren Woods, is "an excellent, representative collection of approximately 1,200 fish specimens well preserved and annotated." Many of the specimens are described by Woods as "very uncommon," especially the smaller varieties—blennies, some unusual types of sea bass, sand divers, squirrel fishes (so named because of their big brown eyes), angel fish, and butterfly fish. A good number of these are new to the Museum's collections.

Before his departure Watkins had been instructed to go after the little fish because they are much less known than the larger varieties. However, he did collect some of the more spectacular large fishes, including the notorious stone fish whose poisonous dorsal spines

can cause the death of anyone stepping on them. Another poisonous species "bagged" by Watkins is the lion fish whose high dorsal fin is suggestive of a lion's mane.

THE QUESTION that naturally comes to the mind of anyone who has never done any deep coral reef collecting is: "How does one actually go about it?"

The answer is found in Watkins' own description of a typical day during his stay in Tahiti:

"Morning began for me at about 6 A.M., when a breakfast of French bread, Danish bacon, grapefruit, bananas, papayas, and mangoes was brought to my bungalow by the daughter of my Tahitian landlady. After that delightful start for the day, I faced the chore of preparing the previous day's catch for storage and shipment. By the time this painstaking business was out of the way, Star and Christina usually had arrived on the scene and we all pitched in to load the boat with gasoline and our collecting and diving equipment. Then we were ready to begin cruising the lagoon for a good collecting site. The best time of day to collect is around high noon, when the sun's rays are most nearly vertical and you can see better under water.

"First we investigated the waters around the island, using our snorkels. The most desirable area for diving is a



A. Rush Watkins relaxes in his bungalow in the District of Papeari

clear sandy or dirt bottom flanked by a natural wall. When we found such a location, we measured the depth, because the waters had to be more than 35 feet for the fish to be of value to the Museum. To do this, I had a lead line as well as a depthometer that I wore on my wrist.

"If the depth was right, I dived down with a plastic container filled with the poisoning agent. Star would watch me from above, and when he noticed I was out of the poison he would free dive down to me with additional containers. We waited in the boat 10 or 15 minutes for the poison to diffuse through the water. Then we went down and scooped

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Honors

An honorary doctor's degree was awarded D. Dwight Davis, Curator of Vertebrate Anatomy, by his alma mater, North Central College, at the annual commencement exercises of the college held June 9.

Dr. Davis received his Bachelor of Science degree from North Central in 1930, and did graduate work at the University of Chicago. Author of many articles published in technical journals in his field of research, he is also co-author, with K. P. Schmidt, of a popular work, *Field Book of Snakes of the United States and Canada*. His most recent research, a definitive study of the morphology of the giant panda, will be published by the Museum.

Davis has been a member of Museum expeditions to Texas (1937), the Caribbean (1940), North Borneo (1950), and Malaya (1958-59). In 1954, he was visiting professor of paleontology at the California Institute of Technology, and in 1962 was invited to deliver five lectures at a summer institute on comparative anatomy held at Harvard University.

Miss Edith Fleming and Miss Harriet Smith, guide-lecturers in the Museum's Raymond Foundation, have been selected to participate this summer in a training program in anthropology sponsored by the American Association of Museums under a grant by the National Science Foundation.

The six-week program, conducted June 15 to July 25 at the Arizona State Museum in Tucson, offers advanced courses in anthropology to 28 candidates selected from the professional staffs of museums throughout the United States and Canada. The program is a pilot project in a nationwide effort to assist the museum professional in bringing to his community the most recent advances being made in various fields of natural science.

Lectures will cover the archaeology of the Old World and the Far East, as

well as African ethnology. Greatest emphasis, however, will be on the Americas, with one week devoted to an intensive study of Southwestern archaeology and ethnology followed by field trips to Hopi and Navajo Indian reservations and to various archaeological sites.

Lecturers for the courses include many of the country's most eminent anthropologists, among them Dr. Donald Collier, Chicago Natural History Museum's Curator of South American Archaeology and Ethnology. Dr. Collier will present four lectures on the development of civilization in Peru and in Meso-America.

Seminars for the exchange of educational techniques developed by individual museums will also be part of the Arizona program.

Both Miss Smith and Miss Fleming bring to these invitational sessions a wide experience in anthropology and museum education. After graduating from the University of Chicago with a master's degree in anthropology, Miss Fleming was appointed a research assistant on the University's Committee on Human Development. She came to Chicago Natural History Museum first as a museology student in the department of anthropology, and later joined the staff of the Raymond Foundation as a guide-lecturer.

Miss Harriet Smith was graduated from Northwestern University and received her master's degree in anthropology from the University of Chicago. Before coming to the Museum she had served as state supervisor of the extension program of the Illinois State Museum, as assistant to the director of the Chicago Academy of Sciences, and as director of nature study films for Coronet Instructional Films.

Dr. Fritz Haas, Curator Emeritus of Lower Invertebrates, was made an Honorary Member of the German Malacological Society at its annual meeting in April. Dr. Haas was born in Germany and for many years was curator of mol-

lusks at the Senckenbergisches Naturforschende Gesellschaft in Frankfurt-am-Main. He came to Chicago Natural History Museum in 1938 as Curator of Lower Invertebrates and remained in that position until 1959 when he achieved emeritus status.

Miss Miriam Wood, Raymond Foundation head, has received a special award in recognition of her work over many years in providing educational and recreational programs for the Girl Scouts of Chicago. The award was presented during the recent Girl Scout Day Program at the Museum.

In addition to this event held once a year in the Museum, other programs for Girl Scouts are provided by the Raymond Foundation, with the cooperation of the scientific staff, which help toward the earning of "Nature Proficiency

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Badges." Miss Wood has served as Consultant on the Girl Scout Program Committee for several years and has worked with both professional and volunteer Girl Scout leaders in planning programs of value to the girls.

Meetings Attended

In May, Miss Wood and Mr. E. Leland Webber, Director, attended the annual meeting of the American Association of Museums in Seattle. Mr. Webber participated in a panel discussion on "Coordinating Museums with Schools and Colleges," and was elected to the Council of the Association.

Dr. Joseph Curtis Moore, Curator of Mammals, and Mr. Philip Herskovitz, Research Curator, Mammals, represented the Museum at meetings of the American Society of Mammalogists held during June in Albuquerque, New Mexico. Dr. Moore presented a paper entitled "A Reconsideration of the Beaked Whale Species, *Mesotodon Stejnegeri* and reported on the work of the Standing Committee on Marine Mammals, of which he is chairman.

Mr. Herskovitz' contribution to the session was a report on the classification and distribution of New World primates.

Dr. Alan Solem, Curator of Lower Invertebrates, presented two papers, "Pacific Snail Trail" and "Shells and Their Keepers," at the annual meetings of the American Malacological Union held June 18-21 in Buffalo, New York.

"Pacific Snail Trail" is an account of Dr. Solem's recent round-the-world expedition for Pacific endodontid land snails. It first appeared as an article in two parts in the April and May issues of the BULLETIN this year. "Shells and Their Keepers," based also on Dr. Solem's year-long study trip, is a world survey of museum shell collections and their curators.

Dr. Fritz Haas attended the malacological meetings with Dr. Solem.

up the anesthetized fishes with hand nets.

"We had to pay careful attention to the length of time spent under water, because if we got the bends, the closest decompression chamber was 2,500 miles away. We used the *U.S. Navy Diving Manual* as our guide, and then worked under water only two-thirds of the suggested time for that depth. Our average total length of diving time every day was 45 minutes. When we had exhausted our underwater time, it was usually already well into the afternoon and time to return to shore.

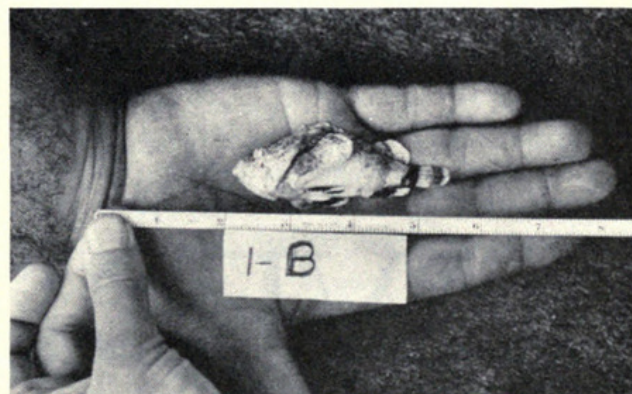
"As soon as we got back, we would immediately put the compressor to work building up air for the next day. At the end of two months, however, our compressor broke down, forcing us to have our air tanks filled by a commercial compressor on the island. This was a bit of bad luck, because it was responsible for both Star and myself suffering a bout with carbon monoxide poisoning. We were knocked out for about ten days, feeling weak, extremely dizzy, and showing evidence of the blue color associated with carbon monoxide poisoning.

the Museum.

"After each day's collecting, I would write up my field notes. Towards evening, I headed for the Faratea Hotel in Afaahiti—about two miles from my bungalow—for a leisurely dinner. Each evening I returned to my bungalow to read or write letters by the light of a Coleman lamp, for there was no electricity available, and generally turned in fairly early to be ready for another day's work."

AS A COLLECTOR, Watkins had to be constantly on the alert for dangers that are easily forgotten when one is absorbed by the island's loveliness. These dangers included the sharks, and the stone and scorpion fishes that inhabit the ragged reefs surrounding the island, as well as the stinging corals which emit a chemical substance that painfully burns anyone touching it. Early in his stay, Watkins burned a leg and his hands on these corals. After this experience, he always wore a heavy glove on the hand he used for steadying himself while diving near the bottom.

The poisonous dorsal spines of this stone fish can cause death



"When the fish were brought up into the boat at the collecting site, Christine would immediately put them in a can filled with a formalin-water solution. The next morning after breakfast, I would place the hardened specimens in formalin-filled plastic bags with appropriate labels and collecting information. These bags were, in turn, inserted into cans of formalin, ready for shipment to

WATKINS found the Tahitians to be an exceedingly warm and friendly people. When I asked him if he would recommend the island to vacationers, or to those looking for a place in which to retire, he summed up his feelings:

"There is a favorite saying of those who have spent any time on the island—two weeks are too long, and a year is too short."



Jindrich, Marilyn. 1963. "Coral Reef Collecting In Tahiti." *Bulletin* 34(7), 2-5.

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