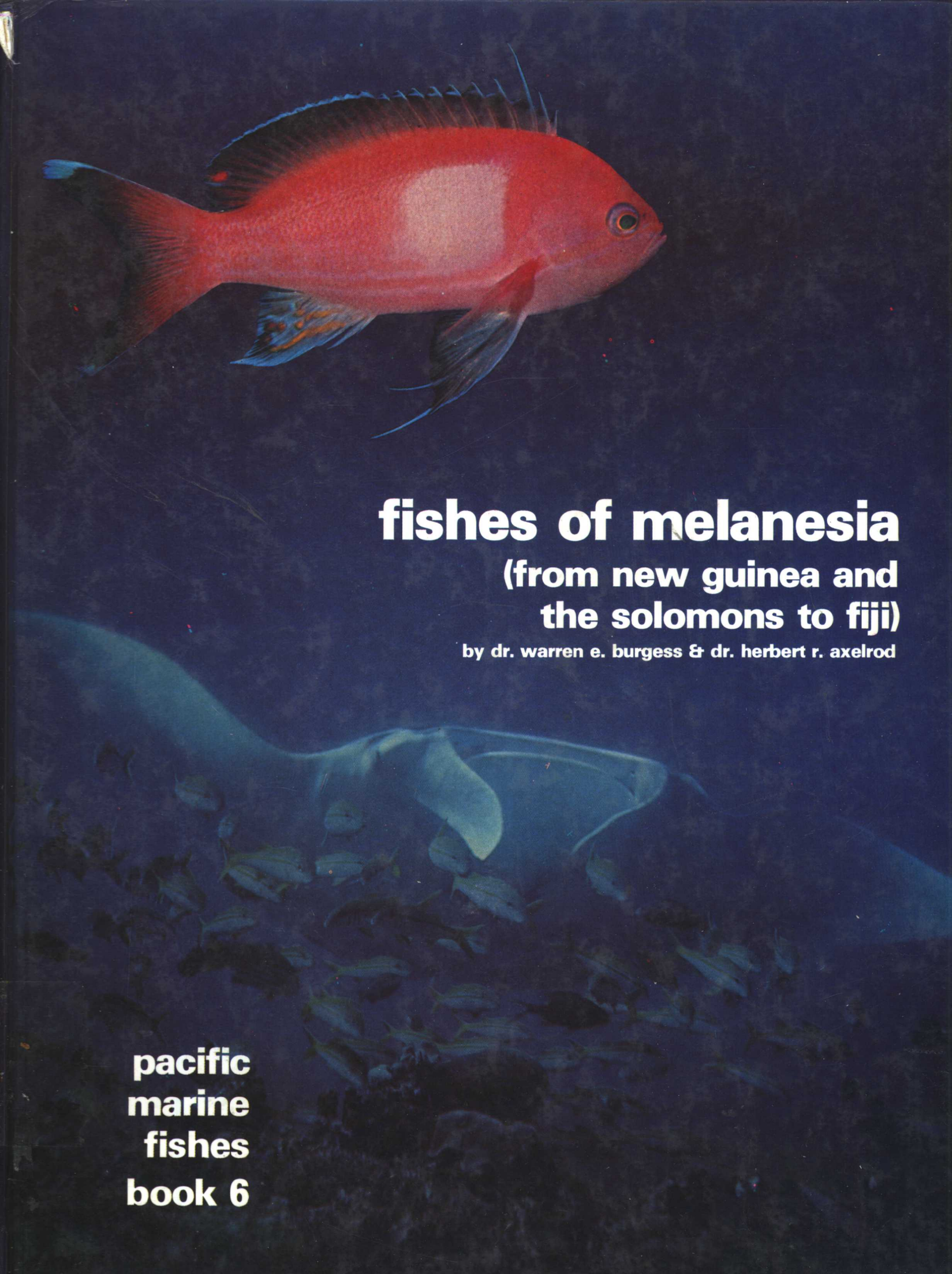

fishes of melanesia

(from new guinea and the solomons to fiji)

by dr. warren e. burgess & dr. herbert r. axelrod

pacific marine fishes book 6

PACIFIC MARINE FISHES

WARREN BURGESS & DR. HERBERT R. AXELROD

1. *Mirolabrichthys tuka* Herre. Purple queen. Photo of a five-inch specimen from Guadalcanal, Br. Solomon Islands, by Dr. Gerald R. Allen.

Book 6

FISHES OF MELANESIA

t.f.h.

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Covers:

Front Cover: *Manta birostris*. Photo by Pierre Laboute.
Anthias pleurotaenia. Photo by Dr. Gerald R. Allen.

Back Cover: *Mulloidichthys auriflamma*. Photo by Allan Power.
Amphiprion perideraion. Photo by Allan Power.

TABLE OF CONTENTS

FISHES OF MELANESIA

INTRODUCTION

In the southwestern part of the Pacific Ocean there is a group of islands collectively called Melanesia. Included are such well-known islands or island groups as the Fiji Islands, Solomon Islands, New Hebrides, and Bismarck Archipelago, and such lesser known islands as the Santa Cruz and Loyalty Islands, although this last group includes New Caledonia, which should be recognizable separately. Also included as part of Melanesia is New Guinea, the largest island in the southwest Pacific (excluding the island continent of Australia). The islands of Melanesia spread over a vast area from New Guinea in the northwest to the Fiji Islands in the southeast. They are bordered on the west by the East Indies, on the north and northeast by Micronesia, on the east by Polynesia, on the southwest by Australia, and on the south by the cooler waters of the South Pacific. On one side of this island chain is the Pacific Ocean and on the other the Coral Sea. The Solomon Sea is included.

The fish fauna is therefore a mixture of elements from all these surrounding areas plus species which are found only in Melanesia or parts of it. Although many collections of fishes have been made in Melanesia, the fish fauna is still not that well known. It is hoped that the photos presented in this book will help make the fishes better known and bring to ichthyologists and aquarists some of their first glimpses of these fishes in their natural colors.

The islands covered in this book offer a tremendous variety of different habitats, just about every type that could be found in tropical regions. There are reef flats where one can walk across the tops of the corals at low tides and collect or view fishes and invertebrates without much equipment. There are shallow reefy areas where a swimmer can poke around corals and rocks in search of biological prizes. And of course there are the deeper reefs where more accomplished divers can collect or photograph the species unknown to the shallow waters and therefore not seen as often. For adventurous expert divers there are dropoffs to very deep water where the limits of SCUBA gear and physical prowess of the diver are the only barriers to the greater depths. Not every fish lives on the coral reefs, as you know, and there are sandy, rocky, and muddy areas where different types of fishes live. There are even variations in salinity for fishes that are able to venture into brackish or fresh waters.

As in earlier books of this series, we are again attempting to show the species of fishes two ways. First we give a fish 'portrait,' a photo which shows the fish close-up for identification purposes. Second, a photo or photos of the same species in its natural habitat gives the reader an idea of what it looks like in the wild. The portrait-type photos were taken by using a photo tank. The fish was placed in this small glass or plastic tank and further confined by use of a sheet of glass. The *in situ* photographs were taken through use of underwater cameras and aqualungs. Since the warm end of the light spectrum (reds and yellows) is filtered out quickly in depth so that the scene ultimately appears basically green or blue, an underwater flash is used to help render the colors more naturally. SCUBA gear is necessary for underwater fish photography. Fishes are much more easily approached by a slow moving diver, deeper water fishes can be photographed, and there is more time for the photographer to get that good pose that really shows the fish off to best advantage.

As we have done before, we try and represent the different aspects of the various fishes, presenting males and females if they look quite different, and juveniles if they too diverge from the typical adult patterns.

Some of the fishes in this book are species new to science and therefore specific names cannot be given. In future editions it is hoped that once the scientific descriptions have appeared we can rectify this situation. The new names will be incorporated into the cumulative indexes of future books as they become available.

The next book in this series will cover the greatest stretch of coral reef in the world, the Great Barrier Reef of Australia.

2. One of the authors (HRA) hard at work photographing a clownfish, *Premnas biaculeatus*, using a photo tank. Photo by Heiko Bleher.

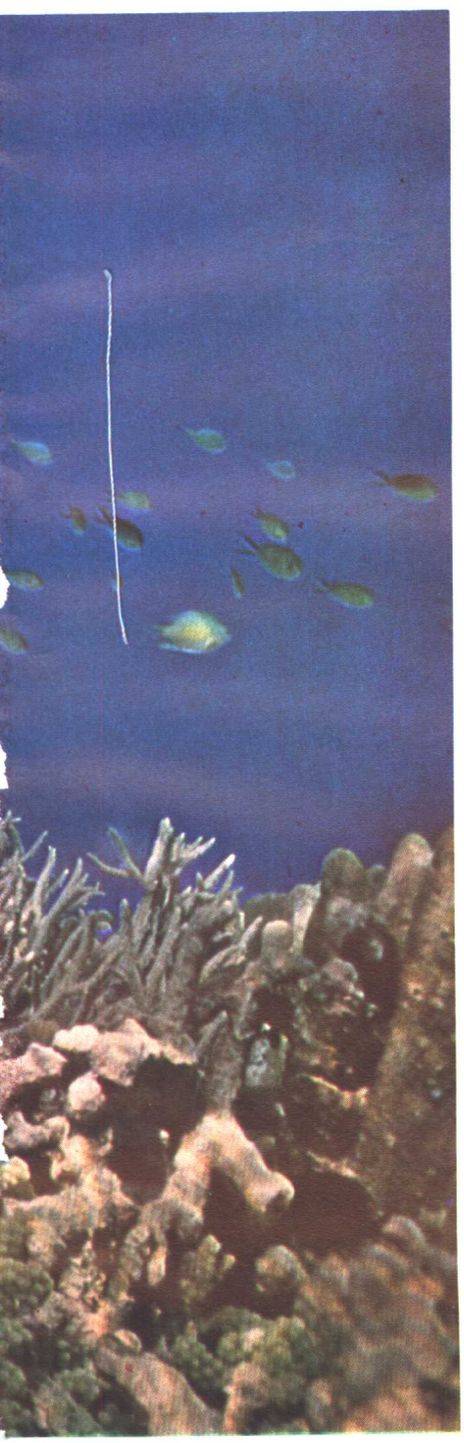
3. Underwater photographs are best taken while SCUBA diving. Photo of Dr. Herbert R. Axelrod by Heiko Bleher.

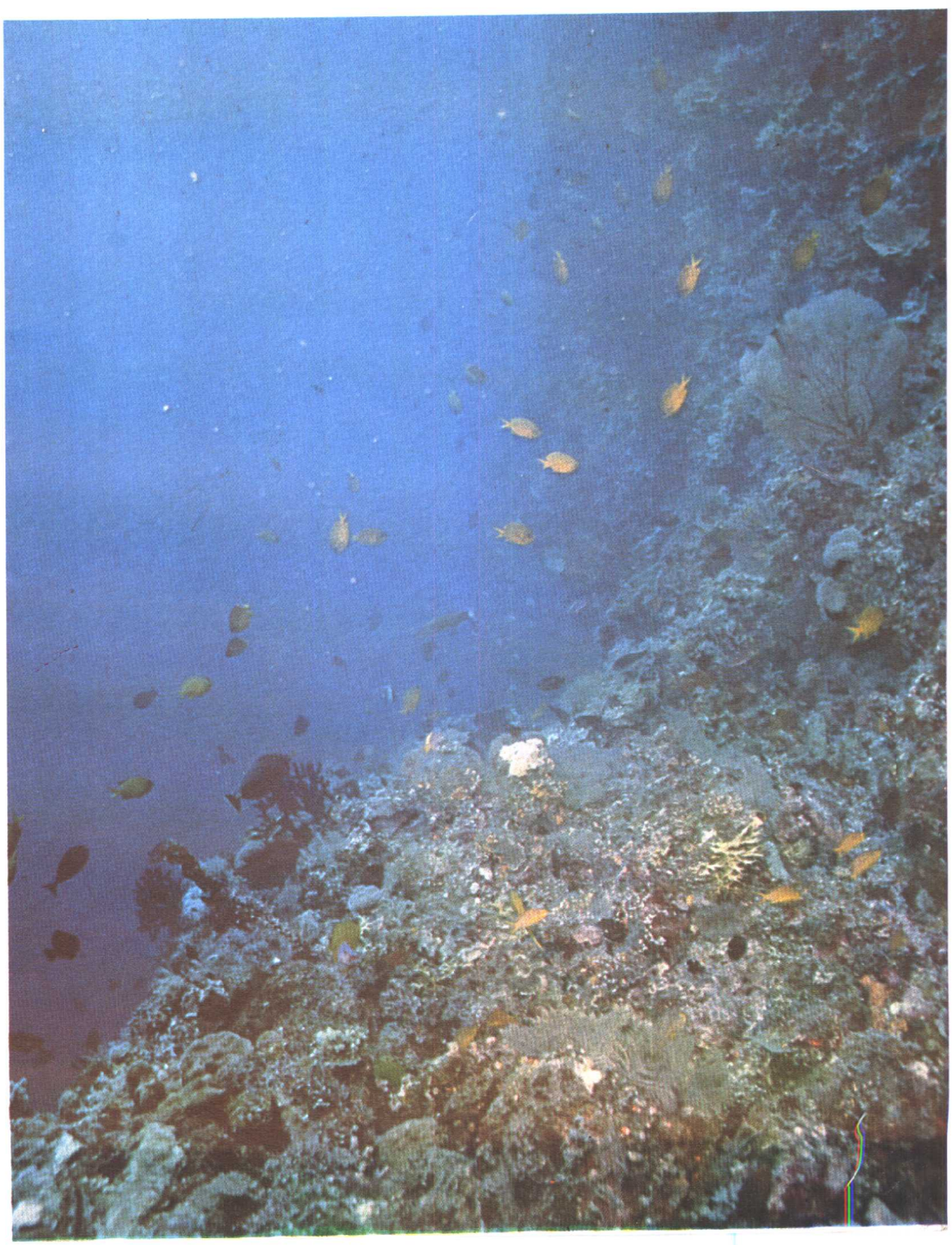
4. A view from the air of shallow reefs. Florida Island in the Br. Solomon Islands. Photo by Dr. Gerald R. Allen.

5. A stand of *Acropora* coral provides shelter for many different types of fishes. Lagoon reef at Malaita, Br. Solomon Islands. Photo by Dr. Gerald R. Allen.

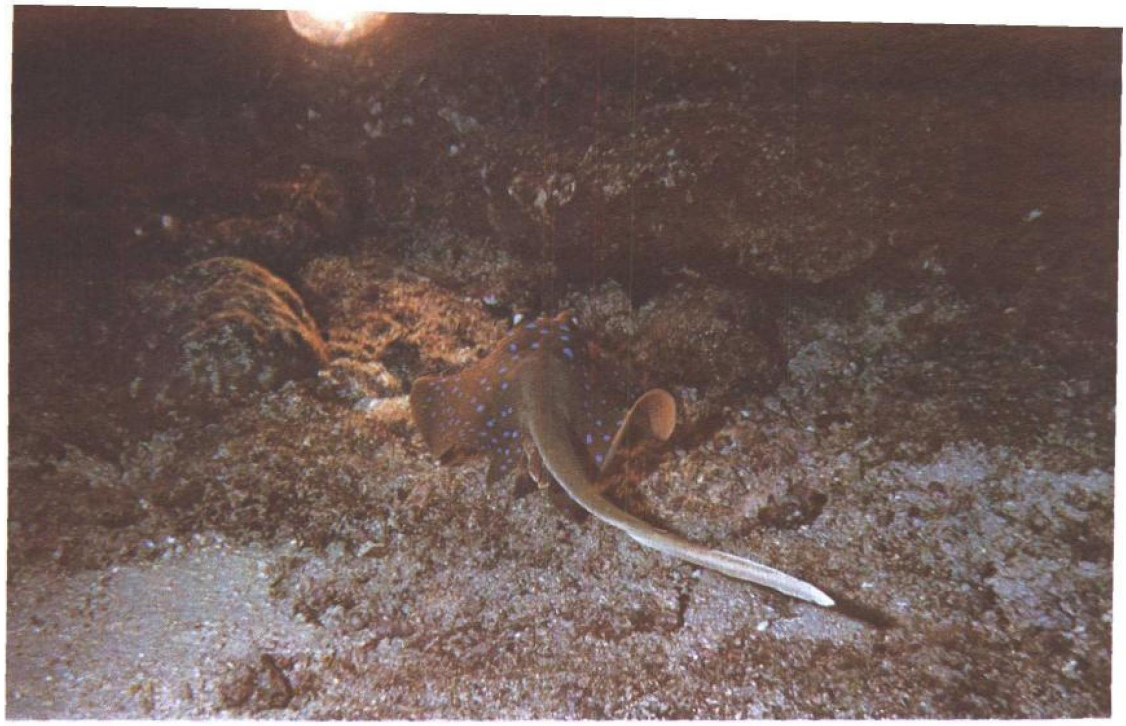
6. Even shallow waters contain much that would interest collectors: corals, shells, other invertebrates, and small fishes. Photo by Dr. Herbert R. Axelrod in Fiji.

7. On the outer reef there may be a sheer drop-off to relatively deep water. Photo by Dr. Gerald R. Allen. Florida Island, Br. Solomon Islands.





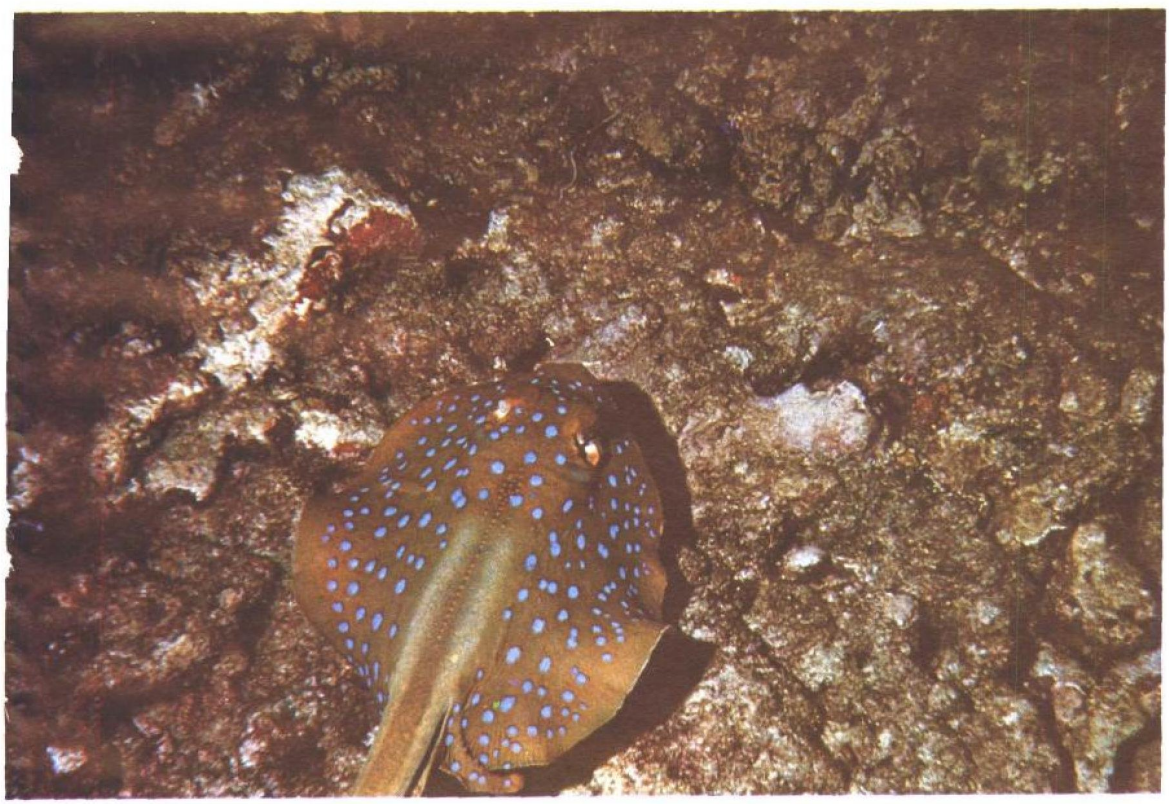
8. *Taeniura lymma* (Forskal). The opening behind and below the eye is called the spiracle. Photo by Allan Power. New Hebrides.



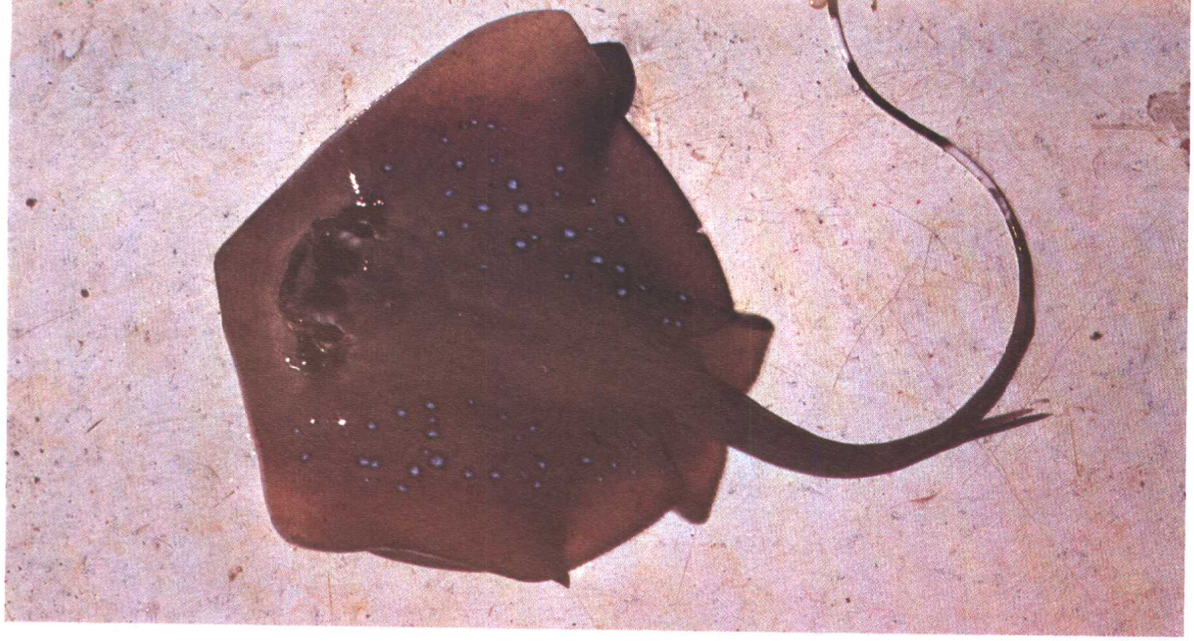
9. *Taeniura lymma* (Forskal). Flashes or flood lights are necessary to bring out the true colors of an object underwater. Note how quickly the light fades out with distance. Photo by Dr. Herbert R. Axelrod. Marau, Br. Solomon Islands.

Family DASYATIDAE
STINGRAYS

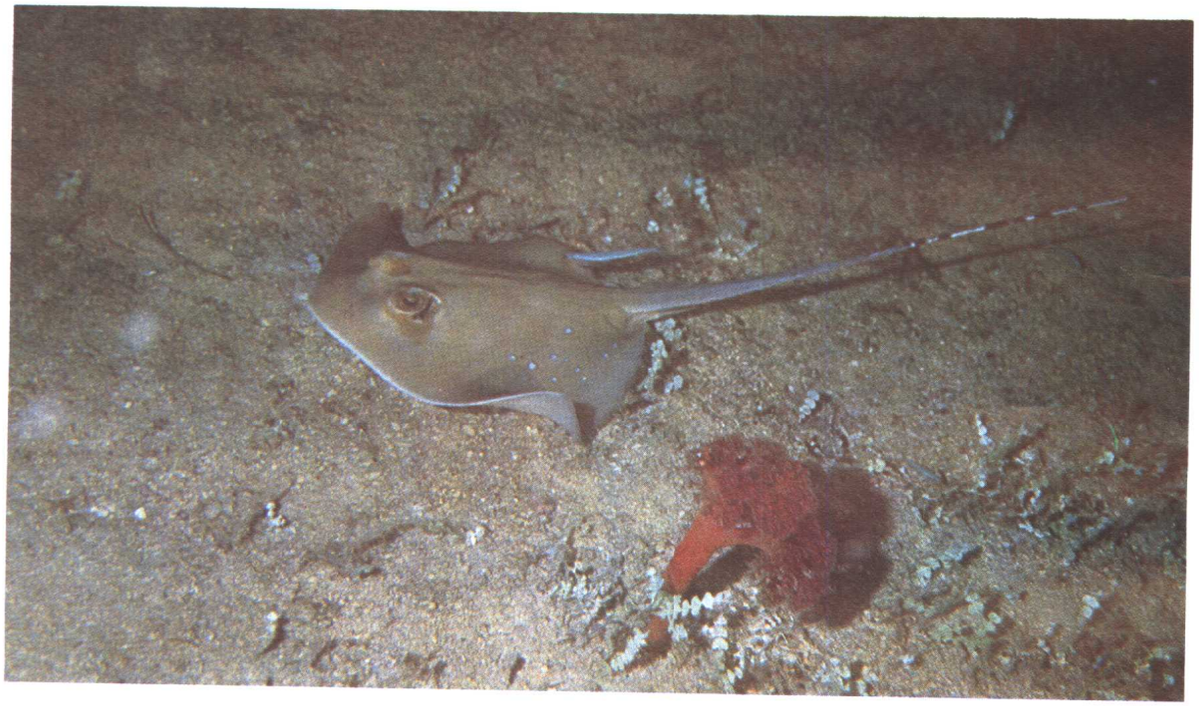
One of the more colorful rays is *Taeniura lymma* with its tan disc liberally covered with bright blue spots. A bluish stripe is said to extend along each side of the tail from the back to behind the spines. It is a wide ranging species found throughout the tropical Indo-Pacific region and is fairly common in our area, where it frequents sandy lagoons among the coral formations. The food of the blue-spotted lagoon ray (also known as the lesser fantail ray) seems to consist of various invertebrates such as crustaceans (shrimps, stomatopods, etc.) and worms.



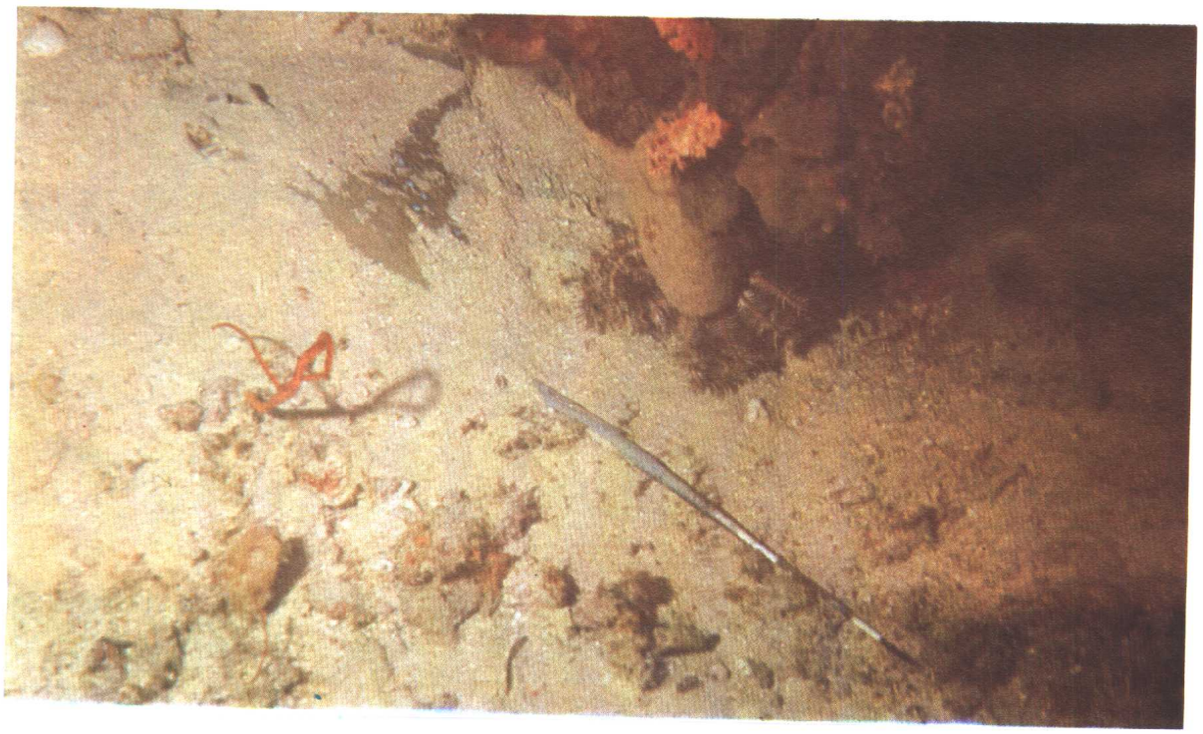
10. *Taeniura lymma* (Forskal). The same individual as above, but taken with the camera next to the light. Photo by Dr. Herbert R. Axelrod. Marau, Br. Solomon Islands.



11. *Amphotistius kuhli* (Muller and Henle). The spine on the tail can inflict painful wounds. Be careful when handling these stingrays. Photo by Dr. Herbert R. Axelrod. Marau, Br. Solomon Islands.



12. *Amphotistius kuhli* (Muller and Henle). Characteristic of this species are the blue-white spots on the disc and the black and white banded tail. Photo by Heiko Bleher. Marau, Br. Solomon Islands.

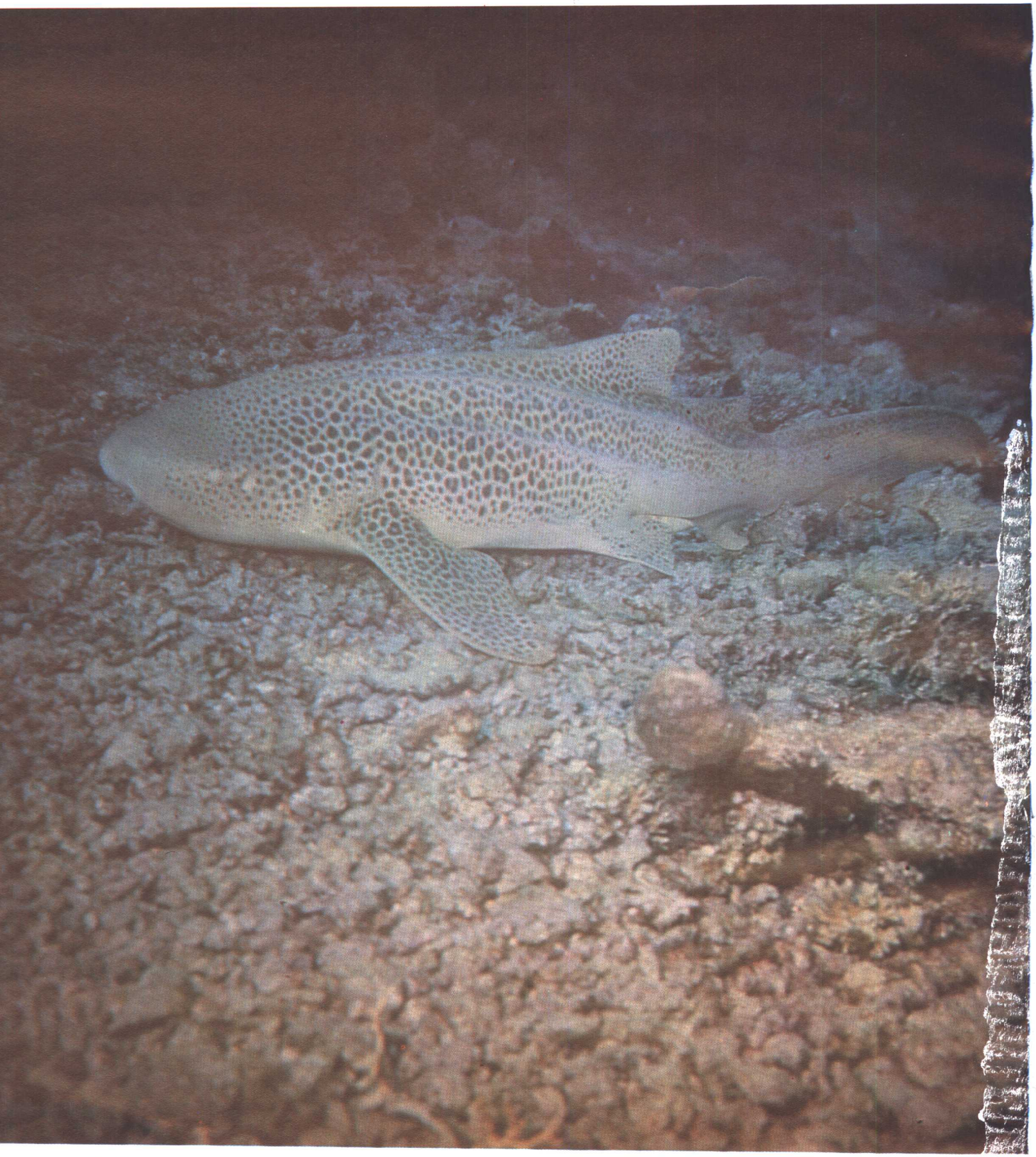


13. *Amphotistius kuhli* (Muller and Henle). Rays often lie buried in the sand with only the eyes and tail exposed. Photo by Heiko Bleher. Marau, Br. Solomon Islands.

14. *Amphotistius kuhli* (Muller and Henle). Found in shallows around coral reefs. Also referred to as *Dasyatis kuhli*. Photo by Allan Power. New Hebrides.

15. *Trygonorrhina fasciata* Muller and Henle. Fiddler ray. An easily identifiable ray more commonly found in Australia. Photo by Allan Power. New Hebrides.

16. *Manta birostris* (Walbaum). Although ominous in appearance, the devil rays are not dangerous. A school of goatfish is seen in the foreground. Photo by Pierre Laboute. New Caledonia.



17. *Stegostoma fasciatum* (Hermann). Adults of this species bear a striking superficial resemblance to the whale shark, *Rhincodon typus*. A juvenile is shown in PMF book 4, p. 1084. Photo by Pierre Laboute. New Caledonia.