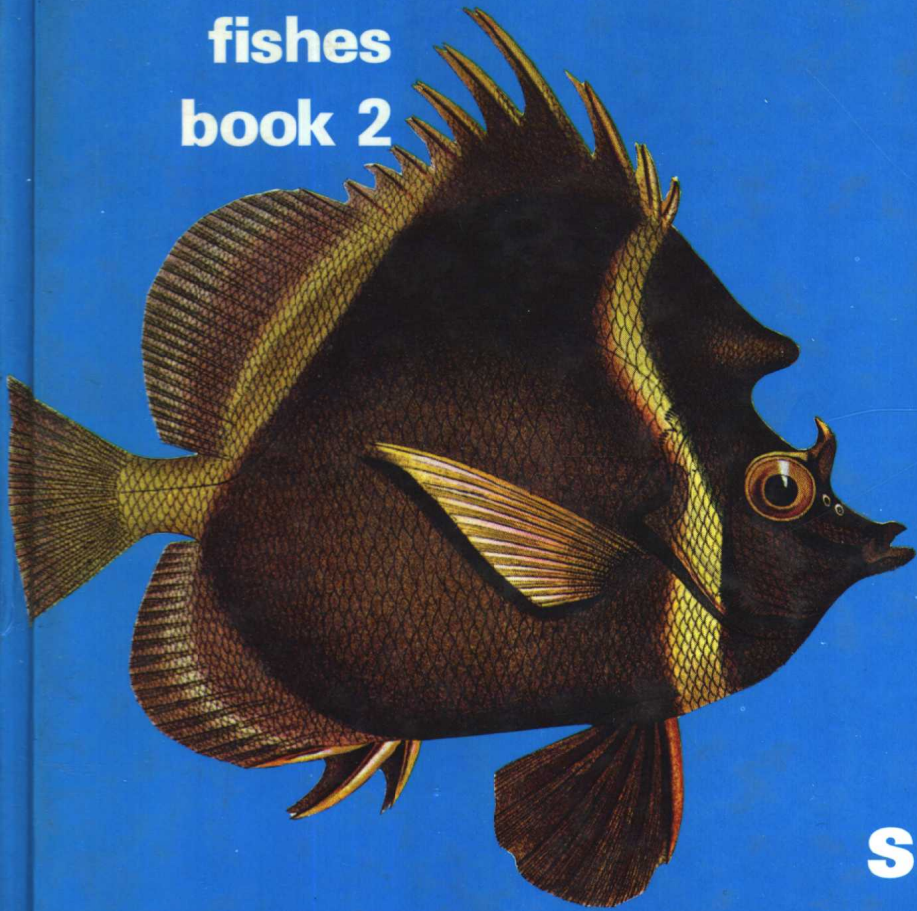
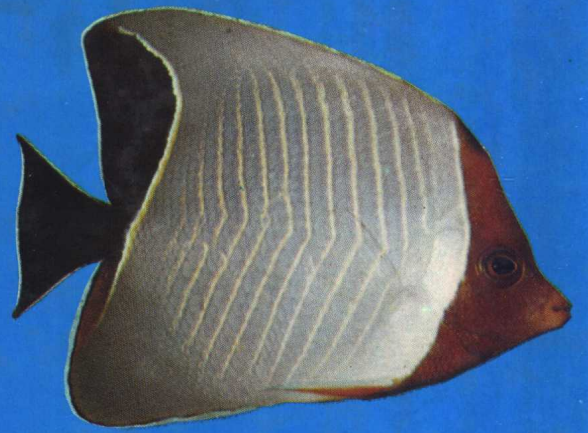


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book 2**



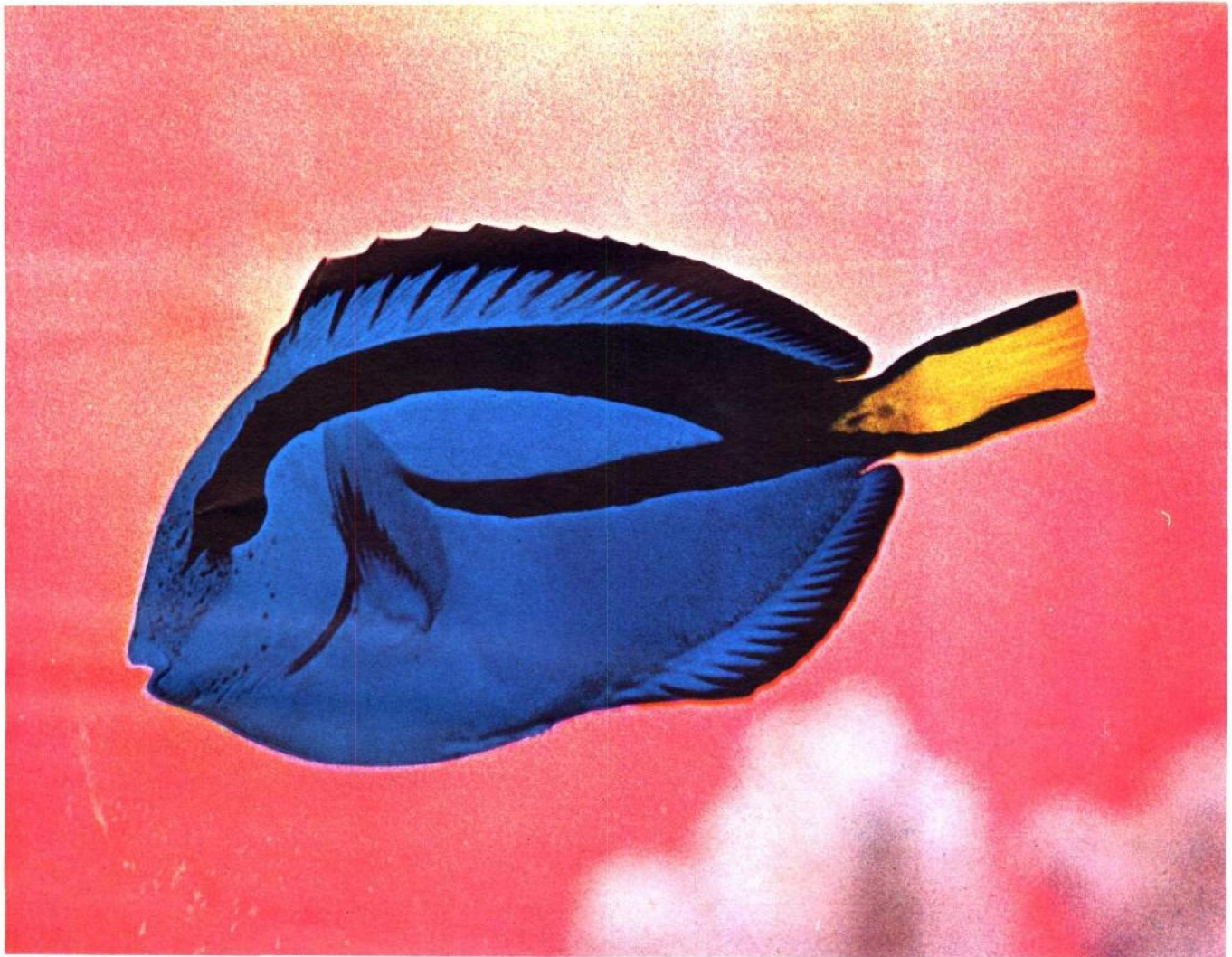
**fishes of
southern japan
and the western pacific**

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



PACIFIC MARINE FISHES

WARREN BURGESS & DR. HERBERT R. AXELROD

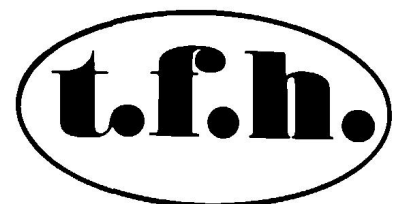


1. *Paracanthurus hepatus* (Linnaeus). Photo by Earl Kennedy.



Book 2

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INTRODUCTION

When we published the first book in this series in 1972, we anxiously awaited word from our colleagues as to the acceptance of our project. Would we be making the meaningful contribution we hoped to make? Would we get the cooperation we needed to illustrate the estimated 4,000 species of fishes to be found in the Pacific region in color?

Fortunately, our colleagues were very enthusiastic about the first book. They readily pointed out the names of unidentified fishes, if they knew them, and they gave us additional material on properly identified illustrations. This additional information will be utilized in this and future editions. They also wondered why we didn't use some of the exceptionally fine drawings we had access to; certainly good drawings are easier to use for identification purposes than poor photographs!

So, in this and probably in future volumes in this series, we'll be using drawings in place of poor quality photographs. Our standard will be to use a photograph if positive identification can be made from

the photograph; if the photograph is of such a quality that identification would be doubtful, we will replace it with a scientifically accurate drawing. In future volumes it is quite conceivable that we will have photographs of fishes which were illustrated either by drawings or by poorer photographs.

In any case, our goal is to prepare several series of books which will contain a full color illustration of every fish to be found in the Indo-Pacific, from the Red Sea to California.

While many fish photographers have contacted the authors (at the address of the publisher), offering excellent photographs of Indo-Pacific marine fishes, there are still areas where the authors have no contact. This is especially true of some of the remote areas along the African, Indian and South American Pacific coasts. Should you, the reader, have any such photographs to offer, or should you know of someone working this area ichthyologically, it would be greatly appreciated if you would contact the authors. Payment is offered for all photographs accepted.

Herbert R. Axelrod

Warren E. Burgess

The pages in this volume of **PACIFIC MARINE FISHES** follow the pagination of the previous volume; the index is, however, complete for all the volumes preceding and including the present volume.

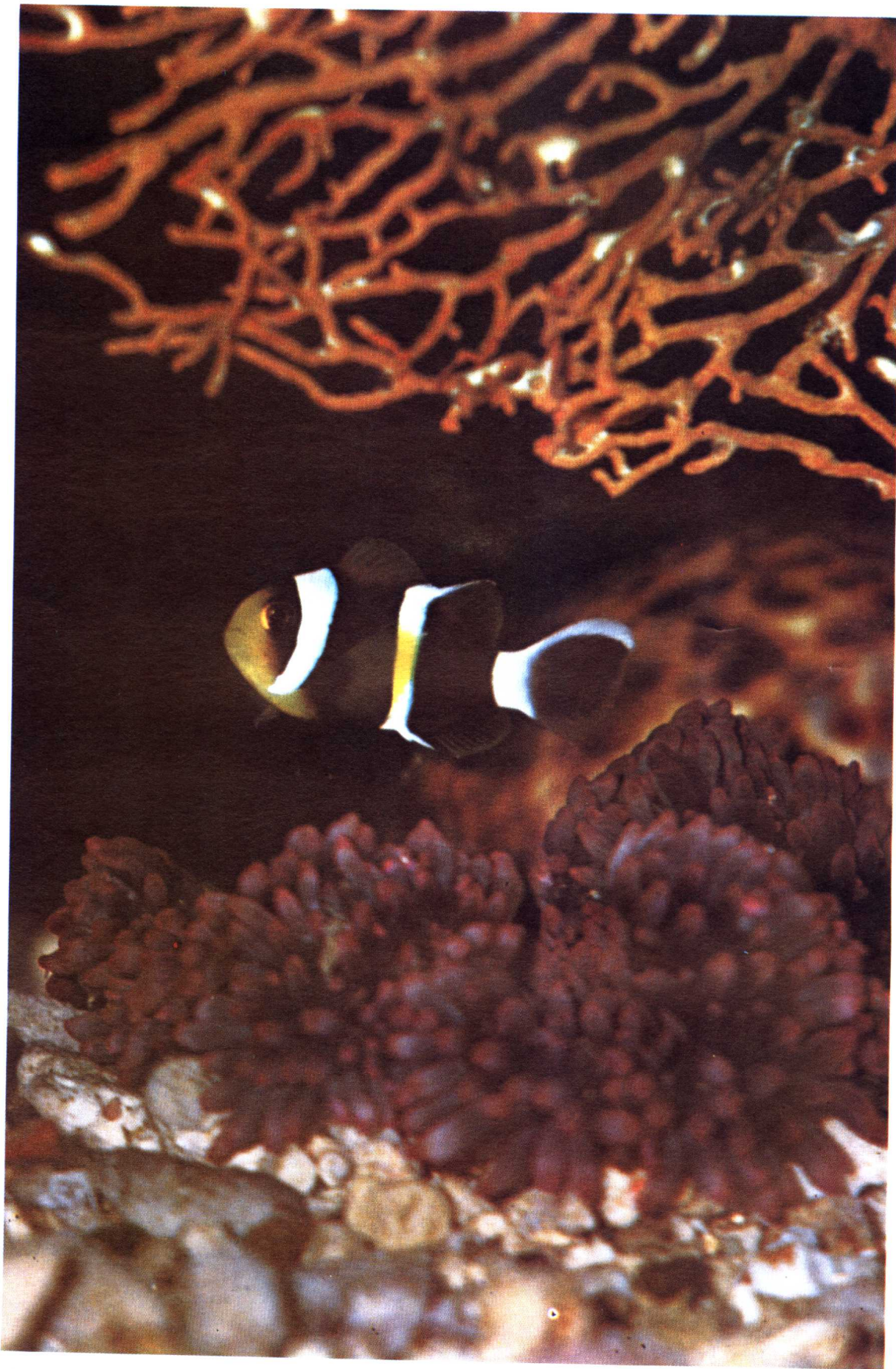
ACKNOWLEDGMENTS

This series of books has been produced in cooperation with Kodansha, Ltd. of Tokyo, Japan and the authors wish to acknowledge the drawings and some of the photographs as having originated in various publications of Kodansha, Ltd.

The text and scientific designations of the fishes included in this and the first volume (**PACIFIC MARINE FISHES Book 1**) were prepared by the American authors (Warren E. Burgess and Dr. Herbert R. Axelrod).



2. An aquarium is a window into the fascinating life of the oceans. Here clownfishes of the genus *Amphiprion* are kept with the invertebrates (anemones and coral) with which they have established a commensal relationship. Photo by Dr. Herbert R. Axelrod.



3. *Amphiprion akindynos* Allen. About 30 mm standard length. Juvenile color pattern. Queensland, Australia. Photo by Roger Steene.

Family POMACENTRIDAE

ANEMONEFISHES AND DAMSELFISHES

It is easy to distinguish the anemonefishes from the damselfishes simply by looking at them. Virtually every aquarist knows the obvious differences between the two groups, i.e. color pattern, swimming behavior, inhabiting of anemones (although some species of *Dascyllus* may share this characteristic), and most would not care to pursue the matter further, having the practical knowledge they need to deal with these fishes. For those still not sure of the differences the photographs in this and Book 1 depicting these fishes will help make recognition of the two groups quite easy.

The differences between the anemonefishes and damselfishes are great enough to warrant their separation into different subfamilies, and several scientists have even placed them into families of their own.

Recently Dr. Gerald R. Allen revised the anemonefishes; he distinguishes them from the rest of the pomacentrids by the number of dorsal spines, VIII to XI in the anemonefishes and usually XII or more in the damselfishes, the spininess and sculpturing of the suborbital, preopercle, opercle, and interopercle bones, which are all spinous and/or sculptured in the anemonefishes but not in the damselfishes (although one or more of the bones might have some serrations, etc.), and the number of transverse scale rows, more than 50 in the anemonefishes and fewer than 40 in the damselfishes.

Pomacentrids are usually highly territorial fishes, guarding their particular territory from all invaders. Fishes many times their size have quickly departed an area after the onslaught of one or more of the pomacentrids. One of the authors (WEB)

4. *Amphiprion latezonatus* Waite. Byron Bay, New South Wales, Australia. Photo by Walter Deas.





has, in many instances, been charged by these tiny fishes after having approached their abode too closely. More than once they have actually nipped at his arms and legs. This latter behavior almost always indicates that the nipper is a parent guarding a nest site.

Within the damselfishes, the fishes of the genus *Dascyllus* are especially easily distinguishable. Almost every species of this genus is black and white. There are black and white barred forms and black forms with blue spots, but basically the colors are very similar. Several species of *Dascyllus* may have small bright spots on the forehead (especially when young) in

5. A group of *Amphiprion tricinctus* Schultz and Welander, hovering near a single anemone, *Radianthus simplex* at Eniwetok, Marshall Islands. Photo by Dr. Gerald R. Allen.

addition. Probably the most evident characteristic of this genus, aside from the color pattern, is the steepness of the anterior profile of the head. This, however, is not as useful as the color characteristics, which usually are accurate enough to eliminate the need for further investigation.

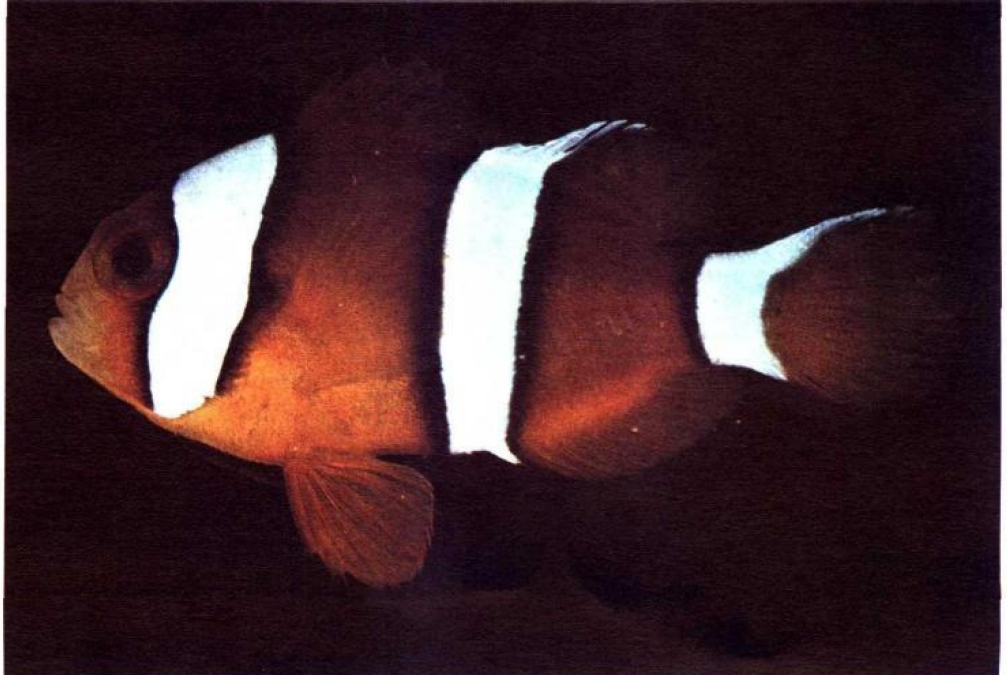
6. *Amphiprion tricinctus*
Schultz & Welander. Adult,
78 mm standard length. Dark
phase. Eniwetok, Marshall
Islands. Photo by Dr. John E.
Randall.



7. *Amphiprion tricinctus*
Schultz & Welander. Adult,
83 mm standard length. Light
phase. Eniwetok, Marshall
Islands. Photo by
Dr. John E. Randall.



8. *Amphiprion tricinctus*
Schultz and Welander. Juvenile,
25 mm standard length.
Eniwetok, Marshall Islands.
Photo by Dr. John E. Randall.





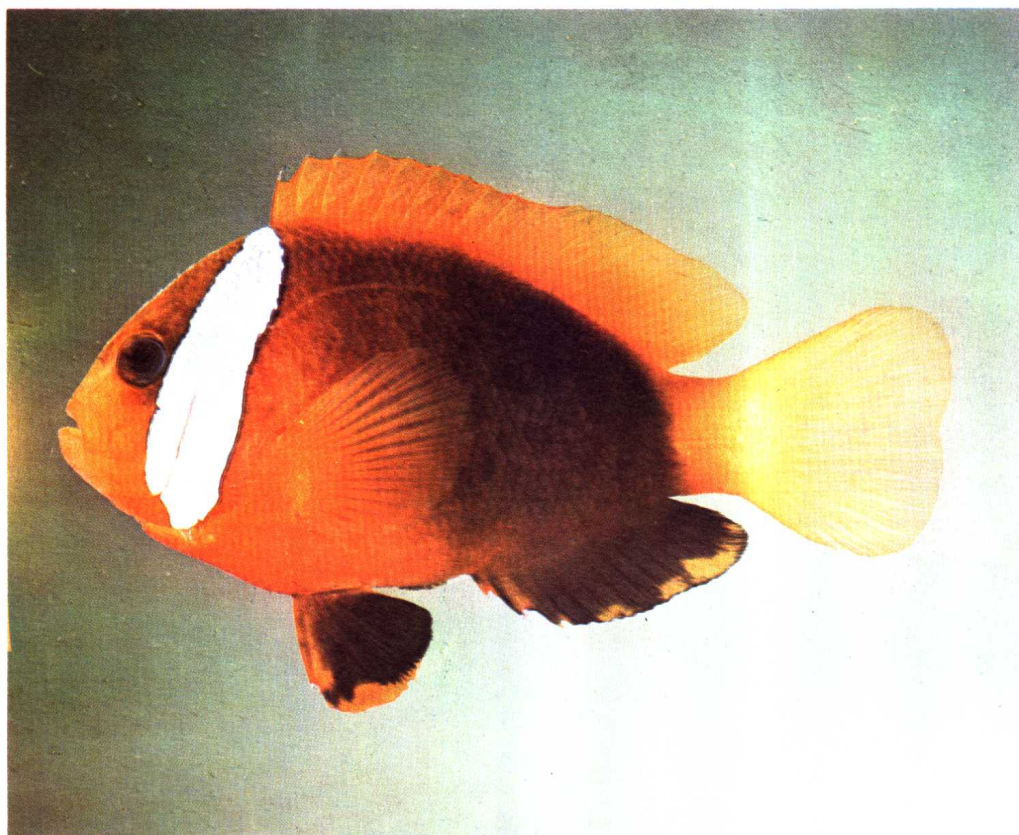
9. (Left) *Amphiprion akindynos* Allen. The anemone is *Radianthus gelam*. Queensland, Australia. Photo by Walter Deas.

10. (Above) *Amphiprion ephippium* (Bloch). The true "ephippium" lacks the white or bluish crossband on the head. Photo by Klaus Paysan.

11. (Below) *Amphiprion clarkii* (Bennett) nestled among the tentacles of the anemone, *Radianthus ritteri*. Photo by U. Erich Friese.

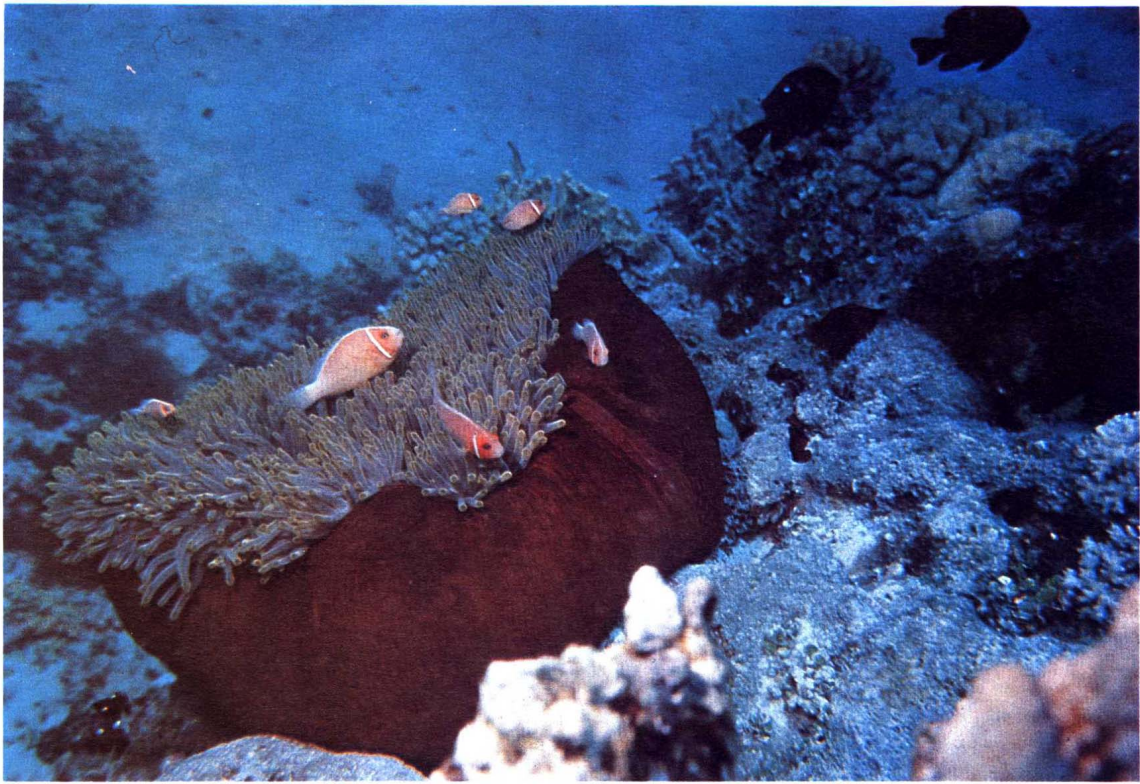


12. *Amphiprion melanopus*
Bleeker. Adult,
62 mm standard
length.
Eniwetok, Mar-
shall Islands.
Photo by Dr.
John E. Randall.



13. *Amphiprion melanopus* Bleeker. The anemone is hidden at the base of the corals. Photo by Dr. Gerald R. Allen.





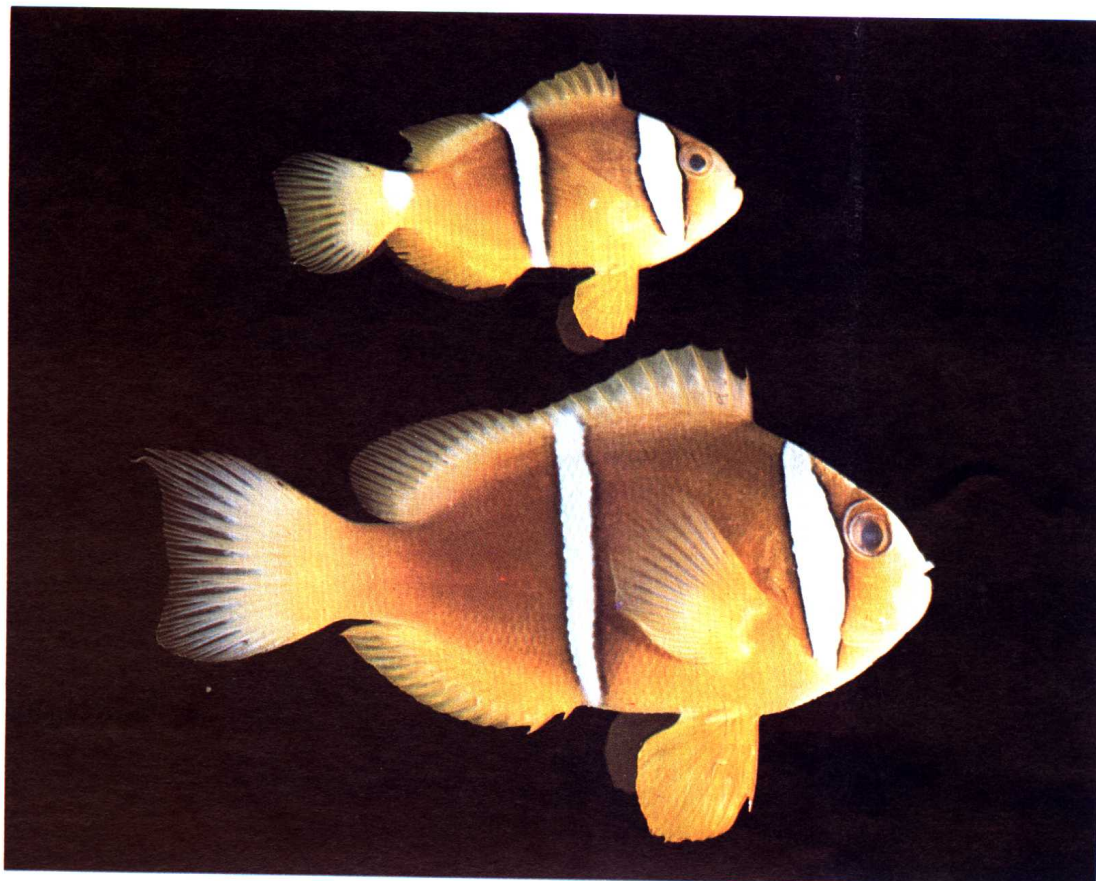
14. *Amphiprion perideraion* Bleeker. A "family" of this species in the anemone, *Radianthus ritteri*. Eniwetok, Marshall Islands. Photo by Dr. Gerald R. Allen.

15. *Amphiprion perideraion* Bleeker. Adult, 72 mm standard length. Palau Islands. Photo by Dr. John E. Randall.





16. *Amphiprion perideraion* Bleeker. These anemonefishes have "adopted" an anemone different from the usual species with which it associates in nature. Photo by Dr. Herbert R. Axelrod at the Nancy Aquarium.



17. *Amphiprion chrysopterus* Cuvier. (Upper) 32 mm standard length juvenile; (Lower) 52 mm standard length subadult. Tahiti. Photo by Dr. John E. Randall.

18. *Amphiprion chrysopterus* Cuvier. These fish are feeding on the plankton passing over their anemone, *Stoichactis giganteum*. Photo by Dr. Gerald R. Allen.

