

Preface

Guest editor:
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Butterflyfishes of the family Chaetodontidae are conspicuous members of almost all tropical reefs. These colorful fishes have attracted a great deal of attention from both the scientific community and especially the aquarium fish industry.

At first one is tempted to say that butterflyfishes are abundant worldwide, but the evidence does not support this statement. The biomass of chaetodontids on reefs may range from 0.02–0.80%, and in terms of numbers they comprise only 0.04–0.61% of the individuals on the reef. Yet in spite of these relatively small numbers they have been extensively studied. A quick census shows some 170 articles on or about butterflyfishes, with 78% of them being published since the 1970's. Along with the cichlids and damselfishes they might be one of the most studied and well published family of tropical fishes.

Why then have chaetodontids attracted so much attention? The butterflyfishes are mostly shallow water inhabitants that are approachable and easily recognizable, making their study very feasible. Their bright coloration has provoked many hypotheses but has posed more questions about coloration than it has provided answers. And despite their apparent overall morphological similarity, their highly structured and varied social systems have made them an ideal model for such studies. The reasons for choosing these organisms are indeed as diverse as the studies themselves.

What then have most of the studies of the group concentrated on? There have been two general categories of scientific publication on the group. Books by Burgess, Allen, Thresher and Steene discuss the classification, identification, and reproduction of butterflyfishes. There is also an extensive background of primary literature, which, not surprisingly, has centered on coloration, their social behavior, reproduction, and feeding. Most of these studies would be classified as being behavioral or ecological. However, as witnessed by this symposium, the burgeoning research base has expanded to encompass systematics and evolution, morphology, neuroanatomy, early ontogeny, and biogeography.

Many of these research programs are scattered throughout the world in geographically isolated camps in the continental United States, Australia, China, Japan, France, Hawaii, and the West Indies, and the field sites are just as diverse. While this has made for a rich comparative base, there has been no overall coordination among members and little scientific contact other than through the scientific literature.

In 1987 I decided to convene as many butterflyfish researchers as possible in order to organize an international symposium on the group. From the very onset this symposium was perhaps not typical of many symposia. The presentations were never intended to be exhaustive reviews of the literature and they were not to be presentations of previously published ideas and data, although such ideas and data could be the building blocks for new thoughts. Invitations and solicitations therefore went out to those only currently involved in chaetodontid research; naturally not all researchers were reached in this effort. The invitations had the desired effect in many cases; it sent researchers into the field to complete data collection. Some papers also tend to be more speculative than traditional research papers as the authors were encouraged to be more speculative in order to expose new ideas and hypotheses. Furthermore, I attempted to include research from as many differing disciplines as possible. One notes that certain areas are represented by many more papers than others, and other disciplines are totally lacking. This in itself indicates strengths and weaknesses in our understanding of the group.

The goals of this symposium were therefore: (1) to present the latest research on butterflyfishes encompassing as many disciplines as possible, (2) to bring these researchers together under one roof for the first time to coordinate efforts, discuss findings, and increase communication, (3) to investigate deficient areas of study and suggest avenues for future research on the group, (4) to relate the findings to other fish groups, (5)

to stimulate new ideas and hypotheses not only for chaetodontid research but hopefully for fish biology in general, and (6) to present these ideas to the widest possible audience. The latter could be best served by having the symposium at the joint meeting of the American Society of Ichthyologists and Herpetologists, The Early Life History Section, and the American Elasmobranch Society, and by publishing the proceedings in a widely distributed international journal, the *Environmental Biology of Fishes*.

A symposium such as this does not occur without the cooperation and effort of many. The American Society of Ichthyologists and Herpetologists and its officers as well as Gerald Smith and the hosting University of Michigan worked with us and supported us from the start. The publishers of *Environmental Biology of Fishes* and specifically their editor Eugene Balon put in an extraordinary effort into its publication. Our authors worked against many deadlines, pulling together as a group and supporting me from the beginning. The other three chairpersons, Ernst Reese, Stanley Blum, and Timothy Tricas contributed not only their papers but their time. The University of Montana, University of the Virgin Islands, and now the University of South Florida provided support throughout the project. Last but by no means least the reviewers listed at the close of the journal volume put in an outstanding effort in critically evaluating every manuscript. My profound thanks to all.

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