

BOOK REVIEWS

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THE CICHLID FISHES: NATURE'S GRAND EXPERIMENT IN EVOLUTION. George W. Barlow. 2000. Perseus Publishing, Cambridge, Massachusetts. ISBN 0-7382-0376-9. 351 p. \$28 (hardbound).—As a basic introduction to the “evolutionary celebrities” of the family Cichlidae, Barlow’s book is compelling. It is hard to imagine that anyone who makes it through these richly illustrated 268 pages of text could come away from that reading without a profound sense of wonder at the mind-boggling versatility of these fishes. The exceptional taxonomic diversity of the family, possibly accounting for as much as 15% of all ray-finned fishes, coupled with some intricate morphological specializations and a stunningly complex behavioral repertoire, has elevated the family to the status of an evolutionary icon. Barlow does a grand job of introducing the uninitiated to the delights of the Cichlidae, already long familiar to “cichlidiots” around the globe.

George Barlow’s outstanding academic career spans the past 50 years, and his ground breaking contributions to our understanding of cichlid behavior have earned him a hallowed place in the pantheon of “cichlidophiles.” His book is long awaited, and it proves to be an interesting hybrid; written perhaps primarily with the advanced cichlid hobbyist in mind, it has much to commend it to the broad biological community also. The pitch of the book is geared for lay readers, and an appropriately leveled glossary of scientific terms is provided. For the scientific audience, a substantial bibliography citing a full 600 research articles is appended. Although this bibliography is clearly skewed toward the recent ethological literature, there are some surprising omissions in other areas. For example, a recent synthesis by Galis and Metz (1998), which poses the central question, “Why are there so many cichlid species?” and whose conclusion runs directly counter to Barlow’s, is missed. The absence of a recent summary by Kornfield and Smith (2000) is more readily explained and undoubtedly the result of its coincident publication date.

Presumably in an attempt to cut down on the book’s length, reference to all citations is numerical by chapter. However, the result is a bit clumsy, and it is surprisingly irritating having to

repeatedly check which chapter you are in, before paging through the numerical guide to citations, and finally locating the cited article in the list of references at the back of the book.

Similarly unfortunate is the unremittingly folksy style that Barlow adopts throughout much of the book. Chapter titles like “Oh Yeah? Put Up Your Fins!,” “Mating Gets Personal,” or “Beauty Is Only Fin Deep,” presumably contrived to induce levity, rapidly had the converse effect on this reviewer. But these are minor quibbles and detract only marginally from the enjoyment value of the book.

After providing a general introduction and placement of the family within a broad framework of teleostean classification (soft vs spiny rays), aspects of trophic morphology and the renowned feeding diversification of the family are very nicely summarized. However, it is in the following chapters that the real focus of Barlow’s interest and expertise is revealed. Coming through on his stated aim to “tell the story of how one family of fishes evolved the highest level of parental care known for any kind of fish—a level of care that rivals that found in birds and mammals and other animals we think of as good parents.” Barlow peppers the following eight chapters with a wealth of anecdotes and accounts of numerous experiments and behavioral studies geared at interpreting the sometimes bewildering body of data that has accumulated on these fishes. As an aside, in the preface to this work, Barlow notes that in the past 10 years BIOSIS lists some 3213 articles on cichlids! Perhaps not surprisingly given Barlow’s years of work in the area, the great bulk of the book is devoted to an exploration of cichlid reproductive biology and the behavioral strategies exhibited in trumps by members of this singular family. He does a very good job, and as a result this book will become an invaluable text for students from all fields with an interest in fish behavior and reproductive biology.

The penultimate chapter of Barlow’s book entitled “Cichlid Factories” is something of a disappointment although, as with so much of the book, it is replete with fascinating examples of the evolutionary exuberance so characteristic of cichlid fishes. In seeking to explain the possible mechanisms underlying the truly remarkable radiations of cichlid species particularly, although far from exclusively, in the large lakes of the African interior, Barlow adds little to the ideas expressed by his eminent forebears Fryer