

## BOOK REVIEW

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*Atlas of the Helminth Parasites of Cichlid Fish of Mexico*. Victor M. Vidal-Martínez, María L. Aguirre-Macedo, Tomáš Scholz, David González-Solis, and Edgar F. Mendoza-Franco. 2001. Academia, Legerova 61, 120 00 Praha 2, Czech Republic <http://.cas.cz.ACADEMIA/sales>: <http://www.knihy.cz> (book in English, web sites in Czechoslovakian). 165 pp., color cover, 266 line drawings (in 91 Plates), 1 7-page table. ISBN 80-200-820-9. E\$30.17(Euros)/=approximately US\$29 or 959 Czech Crowns (Czech Republic Koruny). Available from ACADEMIA-The Publisher of the Academy of Sciences of the Czech Republic, FAX (+420) 2 2494 1982.

This is an excellent book. We wholeheartedly recommend it for the bookshelf of every fish parasitologist, pathologist or aquatic animal health specialist. It is an in-depth and comprehensive treatment the helminths of an interesting and important family of fishes in a region where they are receiving intense study. If more outstanding compilations were made from diffuse and stilted peer-reviewed sources, parasitologists might be better appreciated.

**Contents** (page 7) are sufficiently detailed. The higher taxonomy, while perfectly understandable, is a bit classic or outdated (see Williams, 1999).

**Preface** (page 8) briefly summarizes the importance of cichlids and their parasites. Unfortunately, it inadvertently implies that these fishes only occur in Central and South America.

**Summary** (page 11, repeated on page 20, and back cover) adequately characterizes the content of the book. Only minor numerical errors occurred [e.g., 90 helminth species = 91 illustrated species (actually just 88 real species since 2 are subspecies of the same species, and 2 pairs are metacercariae and adults of the same species), 6 acanthocephalans = 7].

**Introduction** (pages 12-13) addresses the need for this book, explains their avoidance of gray literature sources, discusses the problem of excessive nationalism in specimen collections, and emphasizes the importance of cichlids and their relationship to some major fish parasitology advances in Mexico.

**Helminth Collection, Fixation and Study Techniques** (pages 14-19) presents some general parasitology methods that are useful and perfectly adequate, but not necessarily the most popular or expedient ones. An accompanying explanation that these are the authors' choices among a multitude of possible methods might have been illuminating for the general reader. One short paragraph describes dissection techniques for collection of parasites. The terms prevalence and abundance are explained in some detail, although these values are not presented for the parasites in the text.

**Notes on the Use of the Atlas** (pages 20-21) explains the data that will be presented for each parasite species including scientific name, brief morphological de-

scription, host(s) scientific name(s), distribution in Mexico, organ(s) infected, brief biological information (mostly concerning aspects of the life cycle, but eight times mentioning host damage), and "References" cite the publications containing records in Mexico. A section giving broader geographic distributions and literature citations outside Mexico would have been useful.

**Table 1** (pages 22-28) lists the geographic localities where cichlids were examined for parasites, latitude/longitude, habitat type, and cichlid species examined.

**Species Descriptions** (pages 29-148) are the greatest value of the book, providing excellent keys, illustrations, and descriptions of the parasites. Keys are presented for adult flukes, grubs, adult gillworms, adult and larval tapeworms, adult roundworms, larval roundworms, and adult spiny-headed worms. Whole worm or anterior/posterior drawings are usefully presented in a rather large format. Multiple views and/or diagnostic characters are illustrated for many species. An entire page is dedicated to each featured parasite species; such appropriate, if luxurious, treatment is rare in parasitology texts. Full information is presented for 14 species of flukes, brief information about 6 doubtful flukes, full for 32 grubs, partial for 7 doubtful grubs, full for 10 gillworms (3 partially figured), full for 2 adult and 5 larval tapeworms (3 partially figured), full for 8 adult and 13 larval roundworms, partial for 9 adult or larval roundworms, and full for 7 spiny-headed worms, for a total of 113 species units (110 presumed species). Occasionally, a Remarks section notes taxonomic differences, although this is sometimes included in Biological Information. Summaries of each parasite's abundance, host relationships, and museum deposition numbers [only provided for 1 species and 3 doubtful ones] would have been useful.

**Host-Parasite List** (pages 149-155) is complete and useful. The inclusion of authors of the fish scientific names and approved common names of fishes would have taken no additional space, and would have provided useful information. Additional data detailing the number of collections and total number of specimens examined for each fish species would have also been valuable for judging effort and completeness.

The Guapote Tigre, *Cichlasoma managuense*, has been introduced by aquaculture to Puerto Rico and possibly other Caribbean localities. None of the long list of 34 parasite species in this book has been introduced into Puerto Rico, as far as we can tell from preliminary examinations. Bunkley-Williams and Williams (1994) found that the gillworm *Cichlidogyrus tilapiae* survived aquaculture introduction into Puerto Rico and spread to five species of tilapia. It is also interesting that two species of *Cichlidogyrus* were introduced into Mexico by aquaculture. The Asian Tapeworm, *Bothriocephalus acheilognathi*, infected exotic African tilapias after being introduced into Cuba (Prieto, 1991). This does not appear to have happened in Puerto Rico or in Mexico. The spread of this worm to three native species of cichlids in Mexico suggests that it is a potential threat to Mexican cichlids.

**References** (pages 156-163) emphasizes Mexican publications, which is understandable, but some references potentially important to the study appear to have been omitted, perhaps due to space constraints.

A concluding summary of results, discussion, or conclusions emphasizing the usefulness, importance, and utility of this work might have been warranted. This could have been used as a transition into what will happen to the various undescribed taxa discussed, and how this body of work will continue.

**Index of Scientific Names of Helminths** is presented as a partial index on pages 164-165. Ninety names are included (*Mesostephanus* sp. omitted), although 91 parasites are featured, 113 discussed, and 166 mentioned in the text. A complete Index would have been much more useful.

The back cover of this Atlas suggests that it is useful for a wide audience. This is an excellent scientific volume; however, the methods, descriptions, and explanations are too scientific for the average aquarium hobbyist. The book actually makes little attempt to reach a general audience [i.e., what are helminths? What is the interesting origin of this collective term?]. Common names of parasites [e.g., digeneans = flukes; metacercariae = grubs; monogeneans = gillworms; cestodes = tapeworms; nematodes = roundworms; acanthocephalans = spiny-headed worms] could have been used. Common names of fishes, mollusks, reptiles, etc. could have also been provided to aid a general audience. Most aquarists, public servants, fishery, and students of cichlids (back cover) are only interested in control or treatment of general groups of parasites causing problems, and not in species identification. Popularizing taxonomy is never an easy task.

Very few typographical errors [1 hyphenation], phrasing [1], citation [5], and updating errors [Hoffman, 1999, preferred over 1975] were found, which shows the great care that went into crafting this volume. With more than 39 % of the featured parasites

not identified to species, we hope there will be future editions of this work.

This book is hard bound with 23.5 × 17.0 cm non-glossy pages. The paper quality and binding are good. The type quality is good with no smears or faded areas. The line drawings are outstanding.

#### LITERATURE CITED

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