

reflect the orders of the day for the coral reef biologist. This volume will stand the test of time as well as its progenitor, and Peter Sale should be congratulated on the analytical rigour and environmental insights he has fostered here.

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THE FRESHWATER FISHES OF SOUTH AND CENTRAL AMERICA. Organized by R. E. Reis, S. O. Kullander and C. J. Ferraris, Jr. 742 pp. Published by EDIPUCRS (Editora Pontificia Universidade Católica do Rio Grande do Sul), Porto Alegre, Brazil, 2003. Price R\$ 146-00 or US\$ 48-00. ISBN 85-7430-361-5.

This checklist of the freshwater fishes of South and Central America, including the Caribbean islands, was prepared to meet two goals: to list all valid species for the region and to provide the basis for future updates to this biodiversity inventory. The organizers, or editors, met these goals by inviting the world's specialists on the 71 included families to provide current and authoritative data on the taxonomy and distribution of the entire Neotropical freshwater fish fauna. Sixty-four scientists, mostly from South America, but also from Europe and North America, ultimately participated in this extraordinary effort. The three editors, Reis, Kullander and Ferraris, respectively, hail from these three continents.

Four thousand four hundred and seventy five is the 'exact figure of the known species richness' is given (p. 3) as 4475, and an estimated 1550 await description, bringing the total richness of the Neotropical freshwater fish fauna to some 6025 species. This precise accounting would not have been considered feasible without the pioneering *Catalog of Fishes*, by William N. Eschmeyer, of the California Academy of Sciences. Eschmeyer's database, combined with the popular FishBase, organized by Rainer Froese and Daniel Pauly, provided the backbone for the present volume. Froese precipitated collaboration between the CLOFFSCA team and FishBase staff from the World Fish center, Penang (then ICLARM, Philippines). Support was also received from the European Commission.

Neotropical freshwater fishes, as defined here, range from the southern tip of South America, including the Falkland Islands/Islas Malvinas to Mexico, and include fishes of the Caribbean islands. The northern extent of the continental range of the Neotropical ichthyofauna is difficult to define precisely and is interpreted here as the Isthmus of Tehuantepec. So-called North American families such as the Cyprinidae and Ictaluridae are not included even though some species live in the region covered. Freshwater species in families that have large marine components, such as the Gobiidae and Mugilidae, are included. The editors anticipate that the marine species of such taxa will be treated elsewhere.

Each family is covered in a separate section or chapter, including a common name and brief family account that varies in quantity and depth of information depending on how well a family is known. Entries for each species begin with citation of the original description, type locality, museum catalog numbers of types where known, synonyms, indication of maximum length, a summary of distribution by drainage basin and by country, brief remarks, and common names, by country. A bibliography completes each family account. The taxonomic index, in 57 pages, aids navigation through the volume.

Characins, catfishes, cyprinodontiforms and cichlids comprise the bulk of the species diversity, attract the greatest numbers of students, and are reviewed in most detail. The classification includes some radical re-alignments presented in the 1998 EDIPUCRS volume on *Phylogeny and Classification of Neotropical Fishes*, edited by L.R. Malabarba and colleagues. Thus, a large segment of the traditional catfish family Pimelodidae is now classified in the Heptapteridae and Pseudopimelodidae. Four and a half pages of systematics, taxonomy and biology introduce heptapterids. In contrast, family accounts, written by the editors to ensure complete coverage, are given far less attention. For example, the eel family Ophichthidae (p. 35, spelled Ophichthyidae in the Contents), with one species in Brazil and Venezuela, is discussed in three sentences. The account

for the Engraulididae (pp. 39–42, spelled Engraulidae in the Contents) cites a 1988 publication as the source of information that over 4 million tons of anchovies were harvested worldwide in 1982, but this figure is surely of only historical interest for those fishery biologists and managers who would require more recent data.

This is a volume written by systematists and taxonomists on this extremely rich component of the world's freshwater fish fauna. It is authoritative and generally well presented and will serve as the standard for all future reviews of the Neotropical freshwater fish fauna. Equally important, it demonstrates the high level of cooperation among ichthyologists who study this fauna, a mature degree of respect and collegiality that deserves the scientific community's admiration and congratulations.

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