

## Book Review

**Subterranean Fishes of the World. An account of the subterranean (hypogean) fishes described up to 2003 with a bibliography 1541-2004.** Graham S. Proudlove, illustrated by Rhian Hicks, International Society for Subterranean Biology, Moulis, France, 300 p. ISBN10 2-9527084-0-1, ISBN13 978-2-9527084-0-1

*Subterranean Fishes of the World* is a book that must not be missing of anyone interested or working in subterranean biology and for all researchers and students of hypogean fish biology. The major objective of this book was to list the complete literature on subterranean fishes that has been published, since the first scientific description of a cave fish, the North American *Amblyopsis spelaeus* (= *spelea*) in 1842. The bibliography of around 1,600 articles is a great source of references, and an effort has been made to include articles even from very specialized journals with a relatively small readership, or older articles.

The major components of this book are:

1. An introduction to the biology of subterranean fishes, with a checklist and special emphasis on distribution patterns, conservation status and history of investigations;
2. Number of subterranean species described up to 2003 with comments about systematics, with black and white figures for most species, and
3. A bibliography of the literature on subterranean fishes from 1541 through 2004.

Several appendices list abbreviations, a glossary of frequently used biospeleological terms, contact addresses and so forth.

Proudlove has done a good job to keep the information included in his book up-to-date, and even more so since the very last chapter ("*Notes added in proof*") summarizes the

latest findings in the field of cave fish biology. There is chapter in the introduction dealing with non-stygobitic subterranean fishes, *i.e.*, fishes with "normal" eyes and/or pigmentation regularly found in subterranean waters (although the latter are not included in the species account, where only obligatorily cave-dwelling fishes are listed; "non-troglobitic fishes reported from caves worldwide" [a contribution by Bill Poly] are listed in one of the appendices). Non-stygobitic species are important members of subterranean ecosystems.

Each species account contains taxonomic and systematic information (divided into the sections Family, Synonyms, Types, Systematics and Museum Holdings). The inclusion of synonyms is extremely helpful. The species account for *Astyanax jordani* illustrates how the author not only reviewed previous taxonomic work, but rather integrated his own evolutionary considerations (in this case: doubt in the validity/applicability of Mayr's biological species concept, which emphasizes reproductive isolation as the major characteristic of species). This has led the author to list the cave form of *Astyanax* as a species on its own (*A. jordani*) rather than just a cave population of *A. mexicanus*, as suggested by some other researchers. The sections on Distribution, Habitat, and Conservation Status briefly summarize the basic information on the general biology of the respective species. Finally, each of the species accounts ends with either Key References, a summary of the most relevant publications for species which have been well studied; or References, including all known publications for the majority of not-so-well studied species.

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