

science. Because of this broad scope the book will also be of vital concern to all who are interested in the evolution, ecology, reproduction, growth, or culture of mollusks. And this includes nearly everyone with an amateur interest in malacology or with an academic interest in molluscan biology.

The subjects covered in Volume 1 are as follows: classification and structure of the Mollusca, physiological aspects of the ecology of intertidal molluscs, physiological aspects of the ecology of non-marine molluscs, reproduction, development, the culture of marine bivalve larvae, growth, shell formation and regeneration, osmotic and ionic regulation, muscle and neuromuscular physiology, and special effectors (luminous organs, chromatophores, pigments, and poison glands). Contributing authors include such well-known scholars as Vera Fretter, Alistair Graham, W. Russell Hunter, J. E. Morton, Gareth Owen, C. P. Raven, C. M. Yonge, and others.

For a researcher working on molluscan ecology, zoogeography, or evolution, or on economic mollusks, this book is of tremendous value because it summarizes in succinct form (with references) so much specialized information, largely from the European literature, with which he is probably not familiar. The zoogeography of Canadian mollusks, for example, is bound up not only with glacial and postglacial geological and climatic events but also with innumerable physiological aspects of ecology, reproduction, development, etc. which must be considered in depth. Numerous other examples of the well-known interdependence of supposedly separate branches of science could be cited. It is clear, however, that physiology in all of its aspects is fundamental to an understanding of all other branches of biology; and since this volume is by far the most authoritative and complete source of information available on molluscan physiology no interested student should be without access to it.

Volume 2, which will complete the set, will include sections on feeding, digestion, metabolism, blood circulation, excretion, and the nervous system of mollusks, all written by a distinguished group of specialists. Three sections will deal specifically with cephalopods which, because they are phylogenetically the most advanced group, are the most complex physiologically. All workers in malacology owe a debt of gratitude to the editors for making such a wealth of information available in such easily available form. Let us hope that Volume 2 will appear soon.

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#### **Fishes of the Western North Atlantic, Part 5, Order Iniomi and Order Lyomeri.**

Order Iniomi, characters and synopsis of families by W. A. GOSLINE, N. B. MARSHALL and G. W. MEAD; Aulopidae — G. W. MEAD; Synodontidae — W. W. ANDERSON, J. W. GEHRINGER and F. H. BERRY; Bathysauridae, Bathypteroidae, Ipnopidae and Chlorophthalmidae — G. W. MEAD; Mytophidae and Neoscopelidae (interim accounts) — R. L. BOLIN; Scopelosauridae — N. B. MARSHALL; Paralepididae, Omosudidae, Anotopteridae, Evermannellidae, Scopelarchidae — R. R. ROFEN; Alepisauridae — R. H. GIBBS, JR.; Order Lyomeri — J. E. BÖHLKE. *Memoir Sears Foundation for Marine Research*, (1), part 5:1-647, 220 fig., New Haven, 1966.

Bizarre bathypelagic fishes finely figured, distribution maps and depth range graphs and a wealth of information brought together on iniomous fishes and deep-sea gulpers make this a particularly exciting volume. The text matches the fine quality of the format.

Some comments on individual sections may be noted. A noteworthy inclusion is the excellent discussion defining the Iniomi. The reviewer agrees that they form a natural group and are worthy of



ordinal recognition. To the definition of this order might be added the possession of 4 branchiostegals on the external face of the hyoid arch with the rest ventral or internal (reviewer, ms) and the possession of retractores arcuum branchialium muscles (Holstvoogd, 1965; see Koninkl. Nederlandsche Akademie Van Wetenschappen, Amsterdam, Proceedings 68: 209). These two characters, plus the fusion of the inner pelvic ray to the pterygiophore, indicate that this order has affinities with the spiny-rayed fishes. The suborders Myctophoidi and Alepisauri, usually recognized, are rejected in this treatment. Especially noteworthy are the accounts of families by Mead and by Rosen. Some, praiseworthy systematically, fall short in life history aspects. For example, although the study material of a species, in one case, included 98 specimens, not one was opened to discover its feeding habits. It is unfortunate that Böhlke did not have the opportunity of adding to his account on the Lyomeri after the publication of Orton's (1963) findings. The date of publication of *Paralepis* (= *Notolepis*) *rissoi* is given as 1841, but Salvadori (1888, see National Museum of Canada Bulletin 168: 14) indicates that it was 1840. Taxonomic changes are made in all the paralepids known from the Atlantic coast of Canada. *Bathypterois viridensis* is reported for the first time in Canadian waters. The most recent reference appears to be 1963; an indication of the date of submission of the papers would protect the author and inform the reader.

Some general observations on the volume may be noted. The accounts attain a high level of scholarship in this volume. The editing has been thorough, only a single misspelling was noted. The addition of spot distribution maps to most accounts is very worthwhile and one hopes that this will become standard. Small touches such as including pagination in the keys and capitalizing key words like GAS BLADDER in the

text are commendable. Out of keeping with the high standard is the failure to cite the titles of papers in the list of references. Authors in this volume, unlike some of those in previous ones, have studied large series of specimens. As usual Canadian literature is not well covered (e.g. Paralepididae, Anotopteridae, Eurypharyngidae).

Family descriptions are not standardized. This makes it difficult to compare characters in different families. Perhaps, in the future, an editor could recommend a format for family descriptions, at least for the larger orders. Fossil groups are ignored in most accounts. Two recommendations of the International Code of Zoological Nomenclature are not followed. Firstly, that in citing a binomen a comma separate the author's name and the date of publication. Secondly, that in synonymies the author's name follow the binomen uninterrupted by punctuation only when it is the original description; otherwise it be separated by a punctuation mark (other than a comma), such as a colon. The latter is a useful practice distinguishing original descriptions from subsequent identifications.

The first part of the series is now out of print. As the reviewer suggested previously, consideration should be given to a quality reprint of reduced size (as has been done with Bent's life histories of North American birds). A reprint of the sturgeon section by the Quebec Department of Tourism, Fish and Game Branch, shows that this can be done without great loss of quality in the figures. Consideration might also be given to printing separately full-sized prints of some of the finer figures. These would be suitable for framing and might help avoid mutilation of the volumes by print collectors. Some, such as figure 200 of *Evermannella indica* by Eva Maria Soule, are well-worthy of framing.

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