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Book Review

Marine Interstitial Ciliates—an Illustrated Key. *By Philip C. Cary. Chapman and Hall, New York, New York. 1992. 351 p. $152.50.*

I think few biologists would disagree with the observation that ciliated protists have been neglected, relative to say bacteria, in recent studies of benthic systems. This is unlikely due to ignorance, as ciliates have long been acknowledged as probably a very important component of the microfauna especially in sandy sediments (e.g., Vernberg and Coull 1974). The cause of the neglect is probably rooted in the fact that ciliates require enumeration methodologies that are quite distinct from those used for metazoans and bacteria. Furthermore, the diversity of ciliates encountered in, for example, a sediment core from a salt marsh can be daunting. Carey's book aims to help overcome this second problem.

Marine Interstitial Ciliates is one in a series of identification guides by the staff of the British Museum (Natural History). As a key, the book suffers from a basic fault of many keys: its proper use requires a good deal of familiarity with the organisms and specialized anatomical vocabulary. Persons equipped with such knowledge generally don't require a key but instead flip directly to the section of interest. The book's strength then is not as an introduction to ciliates; it does an especially poor job of educating the uninitiated. Carey's book should be used in conjunction with existing guides to the genera, such as the ciliate section in *The Illustrated Guide to the Protozoa* (Small and Lynn 1986) and reviews of methods for taxonomic studies (Foissner 1991). This said, *Marine Interstitial Ciliates* is, I believe, the largest catalogue of ciliate species available and the only one that focuses on benthic forms.

Producing such a catalogue is no small accomplishment. A considerable body of literature, from large monographic works to individual species descriptions published prior to 1986, have been brought together; much of this literature is virtually inaccessible to most workers. The exact choice of species included is said to be all forms that have been reported as associated with estuarine or marine sediments. Apparently, in dealing with literature in which the fauna was derived from both the benthos and the water column, only sediment-dwelling species were included. Other forms excluded were those reported from pier pilings, algal holdfasts, and sea ice. One could argue with a selection process that excluded species described from holdfasts and included forms typical of fresh waters (e.g., *Paramecium aurelia, P. caudatum*). In addition, the sources of the reports are not given and this is a distinct flaw of the book since references for individual species are then limited to original species descriptions. Ecological data, even of the most cursory nature (e.g., noting species which are anaerobes) is for the most part, missing.

However, the shear volume of species catalogued, over 900, is impressive. The large number of organisms described no doubt forced some compromises in the production of the book. For instance, there are no photographs of ciliates, all are represented by line drawings. The drawings are in a section separate from the text and lack scale bars.

In spite of the book's drawbacks, Carey has made a very valuable contribution to benthic ecology because, used with other works, these protists can be identified—a necessary prerequisite to serious study.

Literature Cited

Foissner, W. 1991. Basic light and scanning electron microscopic methods for taxonomic studies of ciliated protozoa. *European Journal of Protistology* 27:313–330.

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