

Foissner, W., Blatterer, H., Berger, H. & Kohmann, F. 1991. *Taxonomische und ökologische Revision der Ciliaten des Saprobien systems*, Vol. I. *Cyrtophorida, Oligotrichida, Hypotrichida, Colpodea*. Informationsberichte des Bayerischen Landesamtes für Wasserwirtschaft, Munich, Germany. 471 pp., illus. DM 75 (=ca. \$50.00)

Foissner, W., Berger, H. & Kohmann, F. 1992. *Taxonomische und ökologische Revision der Ciliaten des Saprobien systems*, Vol. II. *Peritrichia, Heterotrichida, Odontostomatida*. Informationsberichte des Bayerischen Landesamtes für Wasserwirtschaft, Munich, Germany. 502 pp., illus. DM 80 (=ca. \$55.00)

For a long time, ciliate protozoologists and aquatic community ecologists have awaited the appearance of a reliable revision of the taxonomy and ecology of ciliate species used for more than 75 years as biological indicators in evaluating the quality of running and stagnant fresh waters. At last, that waiting period is over, with biologists' needs clearly being met by the publication of a series of tomes on the subject, consisting of the two remarkable works named above plus concluding volumes III and IV soon to follow. This welcome "ciliate atlas" will allow renewed and increased usage of such protozoa in research on the saprobic system generally, not only by river limnologists but also by students of lakes, sewage plants, drinking-water reservoirs, and other possibly organically polluted bodies of water.

Overall, the series will treat in detail some 350+ species of cilioprotists (generally grouped by orders), covering not only their taxonomy (via comparative cytological descriptions based on living as well as fixed-and-stained material) but also their ecological parameters (autecology, distributional data, saprobic valences, etc.). In addition, each volume will include a sizable section on some specific topic relevant to the general subject. Each tome will have its own index and an extensive bibliography of pertinent papers. The books are printed on high-quality glossy paper, with the pages four-hole punched in a loose-leaf ring-binder contained within soft covers. The costs are incredibly low; at last we have some significant protistological publications in modern times that are within the budgetary reach of graduate students! Volumes I and II together, incidentally, weight six kilograms—so they are not to be taken lightly.

Senior author Wilhelm Foissner of Salzburg is particularly well suited to lead the team of authors. Young, but yet with more than 15 years of experience in bridging the (unnecessary) gap between protistological taxonomy and ecology, his indefatigable enthusiasm, his precision and accuracy, his superb technical abilities in cytology, his appreciation of top-quality statistical analyses, his broad knowledge of the literature, and his prolific publication record have made him, deservedly, an internationally recognized authority in the diverse protistological fields of his research interests.

Briefly, Vol. I is devoted mainly to comprehensive consideration of the taxonomy and ecology of selected free-living, freshwater members of the Cyr-

tophorida (12 genera and 18 species of them), the Oligotrichida (7 and 11, respectively), the Hypotrichia (18 and 46), and the class Colpodea (5 and 9). On average, each species have five (of the book's 8¼" by 11¼") pages devoted to it, with text and tables supplemented by (again, on average) some 20(!) precisely executed line drawings and photo-and electron-(usually scanning) micrographs! A further word *must* be said about the figures, generally prepared by Dr. Foissner himself and sometimes making their first appearance in this publication. No other taxonomic work with the coverage of this one has ever attempted to offer such bountiful and beautiful figures to its readers, illustrations so indispensable to proper identification of the material in question. Their quality and quantity are simply awesome!

A special introductory section is devoted to methodology: how best to collect samples of ciliates from the field, how to study them *in vivo*, how to fix and stain them (with emphasis on methods of silver impregnation), and how to prepare specimens for examination by electronmicroscopy (especially SEM).

Vol. II, some 30 pages greater in length, covers 88 species assignable to 33 genera belonging to three major taxonomic groups of the phylum Ciliophora: the Peritrichia (considered a subclass and containing 20 of the tome's genera and 51 of its species), the Heterotrichida (9 and 29), and the Odontostomatida (4 and 8). As in the first volume, each species is treated in most helpful detail—in text and figures alike. Precision and clarity are again achieved goals of the authors. In this tome, the special introductory section is concerned with general ecological considerations, supported by numerous data (often in tabular form) from the literature. In addition, three pages are devoted to rules of zoological nomenclature relevant to usage in these treatises.

Shortcomings or weaknesses are difficult to find in these first two volumes. Perhaps a brief introductory section, in tome I, on the *bases* for selection of the species treated in such fine detail should have been included. After all, less than 5% of all the known species of ciliates are covered in this series, and surely—even if we are limited to freshwater sources—there must be more species "out there" inevitably to be encountered by the conscientious field collector. Perhaps the restriction on numbers is related to the paucity of good ecological data available to the authors from the water-quality literature published to date(?). Also, one would have liked to have had an "overview" of the taxonomy of all of the cilioprotists, giving one an idea of how/where the chosen higher taxa (usually orders) fit into the entire classification system, but I understand that such a section *is* planned for Vol. IV of the series; admittedly, at the present time, the "world of ciliate systematics" is again in a state of flux. Finally, an English translation would be most helpful for teaching purposes in the U.S.A., if the publisher can ever see his way to consideration of such a "constructively critical" request.

These very affordable volumes are a "must" for the bookshelves—better, the laboratories—of all biologists seriously interested in water pollution and in related limnological and community-ecological problems involving protists, particularly the species of ciliates so useful in studies of the "Saprobien system."—JOHN O. CORLISS, P.O. Box 53008, Albuquerque, New Mexico.