

## BOOK REVIEW

Chironomidae of the Holarctic region. Keys and diagnoses. Part 1. Larvae. Torgny Wiederholm (Ed.). Entomologica Scandinavica Supplement No. 19, 1983, 455 pp. 73 USD.

The Chironomidae, or non-biting midges, are undoubtedly one of the most important groups of aquatic insects encountered in freshwater environments. They have also been one of the most difficult groups to identify. It has always been a problem for ecologists to feel confident about the identification of midges without consulting the handful of specialists available. At last we have the first of a series of three books (the next appearing 1986) that attempts to bring chironomid taxonomy at an understandable level to the non-specialist.

This volume is both practical and scholarly. Larvae of about 230 taxa can be accurately identified to genus and sometimes subgenus or species-group. Specialists who have published in the chironomid literature for years treat their own groups and provide their own illustrations. With few exceptions all genera are named, and the correct authorship and original publication are given for each taxon.

The book contains 12 chapters, including an introduction, keys to the subfamilies, references, index to taxa, and one chapter for each of the 8 subfamilies occurring in the Holarctic. These last chapters range in length from one page for the Buchonomyiinae, to 143 pages each for the Orthocladiinae and Chironominae. Approximately 383 references cover the major literature up to 1983.

The introduction, which for the non-specialist is too brief, cites the major reviews and bibliographies in chironomid systematics, and outlines the historical development of chironomid taxonomy. The sections on collecting, rearing, preservation and mounting are more personal than comprehensive. The terminology for the volume is explained in 3 plates of labelled figures, and the reader is referred to Saether's (1980) glossary for a lesson in morphology.

Any difficulties with the keys can be overcome easily by referring to the plates and diagnoses. Indeed, the excellent plates and diagnoses are the strengths of this volume. Differences exist between the chapters on the different subfamilies, and these arise not only from the midges themselves, but from the philosophies of the specialists. For example, the same structures are not used or given equal weight in the different subfamilies. In Tanypodinae the couplets are lengthy, with as many as 8 characters per couplet. In Chironominae a previously ignored structure, the frontal apotome, is frequently used. In Orthocladiinae certain couplets (e. g. 30) present difficulties early in the key. All keys and diagnoses are based on 4th larval instars, and caution must be used for identification of earlier instars. Well prepared slides and a high quality microscope, preferably phase or interference contrast, are essential.

The book is attractive and heavy, bound in a golden hard cover, and printed on high quality paper. The layout is good and type easy to read. Genera appear in boldface in the text and are listed alphabetically within the subfamilies. It's easy to rapidly locate genera, making the index to taxa almost unnecessary.

Only a few errors were found in this carefully edited work. On p. 155, part 2 of couplet 86 should read 87, not 83. On p. 383, *Goeldichironomus holoprasinus* is misspelled. On p. 413, *Polypedilum (Polypedilum) tuberculum* Maschwitz is not a valid name and becomes a nomen nudum.

Although this book is intended primarily for use by ecologists and non-specialists, it fails to introduce the beginner to chironomid taxonomy. The authors have assumed that users will be proficient in larval chironomid morphology and terminology. It would have been helpful to have labelled head capsules for each of the different subfamilies, or at least the largest subfamilies. Not only are parts difficult to locate in the schematized figures, but there are too many labels per figure and important parts are missing (e. g. the premandible in Fig. 2.3). For the beginner, the keys to subfamily may be the most difficult to use because many of the key characters are not or are not clearly illustrated. The reader is constantly referred to unlabelled figures throughout the different chapters. The beginner will have to learn basic morphology and terminology for chironomid larvae in other publications.

In conclusion, this book belongs on the shelf of every serious identifier of chironomid larvae. The book will not replace the specialist who will still be needed to identify species and unknown taxa. It is a big help to both the specialist and non-specialist, and we can be thankful for this group of specialists and to ENTOMOLOGICA SCANDINAVICA for providing us with a much needed state-of-the-art publication on the currently recognized chironomid genera of the Holarctic.

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