

Book review: Insect morphology and phylogeny

Susanne Randolph¹, Dominique Zimmermann¹

¹ *Natural History Museum Vienna, Burgring 7, 1010 Vienna, Austria*

Corresponding author: *Susanne Randolph* (susanne.randolf@nhm-wien.ac.at)

Beutel RG, Friedrich F, Ge S-Q, Yang X-K (2014) **Insect Morphology and Phylogeny: A textbook for students of entomology**. De Gruyter, Berlin/Boston, 516 pp., soft-cover. ISBN 978-3-11-026263-6.

As the authors were driving forces in the recent revival of morphology it is just and equitable that they free us from the dependence on timeworn reams. A new standard work on insect morphology and phylogeny has been long overdue and will certainly constitute a valuable reference for future publications.

This textbook is a comprehensive treatment covering morphology, phylogeny, and associated methods as traditional and modern morphological techniques and phylogenetic reconstruction. It starts with a state of the art description of general hexapod morphology, supplemented with a useful separate glossary of morphological terms. The recently defined and currently applied nomenclature for the muscles of the head and the thorax is outlined in two tables. In the section on morphological techniques the authors incorporate their personal experience and discuss advantages and problems of the respective method which gives this chapter additional value.

The second part of the book deals with the 35 currently recognized hexapod orders. These chapters do not only contain detailed morphological descriptions of adults and larvae including internal anatomy if investigated, but also information on diversity and distribution, taxonomy, reproductive behaviour and development, fossil record and the economic importance of the order. The relationship of the orders is presented in several cladograms, controversial phylogenetic hypotheses are discussed and autapomorphies of the orders and higher clades are listed. In the chapter “literature“ the additional listing of textbooks, review articles and cladistic software gives students a quick overview on further reading.

Generally the structure of the book is clear and intuitive. The absence of separate subtopics for the sections on phylogenetic relationships is however a neglect. The only way to find this information is paging

through the whole chapter “The orders of Hexapoda“ again and again which is rather tiring. We suggest preparing some post-it notes before starting to read.

Altogether, the book gives the only complete and modern reference of its kind available today. The authors manage to communicate even complicate topics in an easily understandable way, not at least by enhancing the text with numerous detailed drawings, excellent scanning electron micrographs, coloured 3-D reconstructions and photographs of living specimens. Their in-depth knowledge combined with their enthusiasm for the topic make this book attractive not only for students and researchers but for everyone interested in entomology.



