

BOOK REVIEW

CHEN P.-P., NIESER N. & ZETTEL H. 2005: THE AQUATIC AND SEMI-AQUATIC BUGS (HETEROPTERA: NEPOMORPHA & GERROMORPHA) OF MALESIA. FAUNA MALESIANA HANDBOOKS 5. Brill, Leiden-Boston. 546 pp. ISSN 1388-3895, ISBN 90-04-14768-3; (hard cover) Price EUR 149.00; USD 199.00.

Malesia is a transitional part of the Indo-Australian region and located between the isthmus of Kra in southern Thailand and the islands east of New Guinea. It is very interesting from the biogeographical point of view. The first overview of the Malesian water bug fauna, published by Lundblad (1933) more than 70 years ago, listed 55 genera and 169 species. Chen's, Nieser's and Zettel's voluminous handbook is a useful modern comprehensive guide to Malesian water bugs which reveals the relatively high level of diversity. It provides an overview of 11 families and 44 genera of true water bugs (Nepomorpha) and 6 families and 69 genera of semiaquatic bugs (Gerromorpha), known to occur in Malesia and adjacent regions. 970 species (404 spp. of Nepomorpha, 566 spp. of Gerromorpha) are included in the checklist. The book is based on a deep knowledge, personal faunistic and taxonomic research on the Malesian water bug fauna by the authors and nearly eighth hundred papers and monographs.

Two introductory chapters (1. Introduction and 2. Introducing Nepomorpha and Gerromorpha) define the area of Malesia, present information on the history of heteropterological research in this area and adjacent regions, provide a short survey of heteropteran morphology, note their economic importance and introduce the problems of collecting and preserving of these insects. These chapters present water bugs as a group of morphologically specialized insects adapted to aquatic environments, which have an important role in aquatic ecosystems and are good indicators of the biological quality of water and surrounding habitats. These chapters also present a short account of water bug morphology and biology. Only the parts on pteropolymorphism (pp. 18–19) and feeding (p. 31) are a bit too simple; they could be more informative. Chapter 3, is on taxonomy, phylogeny and distribution and introduces major concepts of water bug classification and phylogeny that were prevalent in 2003. Important papers dealing with water bug phylogenetic relationships and presenting innovative concepts (Hebbsgaard et al., 2004; Damgaard et al., 2005) were published at the same time as this handbook. The ideas presented in these papers are still being discussed and do not substantially change the higher classification presented in chapter 3 of this book.

The major part of this book is chapter 4. Families and genera of Malesian bugs (pp. 46–407). This chapter is not only taxonomic. It includes Keys to subfamilies and genera, and also paragraphs Diagnosis, Characteristics, Fossil records, Distribution worldwide, Distribution in Indo-Australia or Malesia, Taxonomic and Biological notes, for all the families, subfamilies and

genera considered. This extent part is presented in detail and based on a sophisticated selection of information. Chapter 5, Checklist of Malesian species of Nepomorpha and Gerromorpha (pp. 410–453) is also relatively large and of great taxonomic importance. It presents list of families and subfamilies arranged in accordance with the findings of recent (see also above) insight of water bug phylogeny, and includes lists of genera and species arranged alphabetically. Original sources of the descriptions of the taxa are cited, including pagination. Distribution of individual species are noted by abbreviations. Chapters 4 and 5 present many taxa (including subfamilies and genera) that were not included in the widely known Schuh's and Slater's (1995) monograph on true bugs because they were only described in the last decade.

The glossary defining morphological and biogeographical terms, forty maps illustrating the distribution of certain taxa and a table with the numbers of individual taxa in Malesia compared to the world fauna, are also useful parts of the book. (The total number of Malesian Hebridae presented in the table is probably erroneous.)

The text is illustrated by 601 black and white line drawings (figures of adult representatives, morphological or morpho-diagnostic schemes, maps) of high quality.

This well presented book is of an interest to a wide audience. It is, and will be in the future a welcome and helpful brief introduction to the water bug morphology, taxonomy and biology, and especially, an important source of knowledge of Malesian water bug diversity and a useful comprehensive treatement of aquatic entomology for heteropterists and specialists, as well as students of Malesian zoogeography. The book is suitable for both those that are experienced in studying water bugs and starting their studies. In spite of the minor notes to the text, I appreciate the effort of the authors and have very good "heteropterist's feelings" about this publication.

REFERENCES

- DAMGAARD J., ANDERSEN N.M. & MEIER R. 2005: Combining molecular and morphological analyses of water strider phylogeny (Hemiptera-Heteroptera, Gerromorpha): effect of alignment and taxon sampling. *Syst. Entomol.* **30**: 289–309.
- HEBSGAARD M.B., ANDERSEN N.M. & DAMGAARD J. 2004: Phylogeny of the true water bugs (Nepomorpha: Hemiptera-Heteroptera) based on 16S and 28S rDNA and morphology. *Syst. Entomol.* **29**: 464–468.
- LUNDBLAD O. 1933: Zur Kenntnis der aquatilen und semiaquatischen Hemipteren von Sumatra, Java und Bali. *Arch. Hydrobiol. (Suppl.)* **12**: 1–195, 263–488, pls 1–21.
- SCHUH R.T. & SLATER J.A. 1995: *True Bugs of the World*. Cornell University Press, New York, xiv + 336 pp.

M. Papáček