

R.G. Beutel & R.A.B. Leschen. Walter de Gruyter, Berlin and New York. 2005. XI+567 pp. ISBN 3-11-017130-9. US\$334.80

The *Handbuch der Zoologie* series, started in German language in 1925 by Willy Küenthal with the de Gruyter publishing house, has always provided state-of-the-art reference books for zoology. In about 100 published parts the series now covers a large part of the animal kingdom. This millennium's entomological Handbooks deal with Lepidoptera (Kristensen, 2003) and Archaeognatha (Sturm & Machida, 2001). Now the first part of a three to four volume beetle treatise is published. The beetles were included already in the first edition of the fourth *Handbuch* volume published in the 1930s (Meixner, 1935) which was written in German and is far out-of-date.

The *Handbooks* have no equivalent in the anglosaxon market. The only comparable series is the French *Traité de Zoologie*, but its beetle volume was published almost sixty years ago (Chopard *et al.*, 1949). Modern treatises of insects, like the *Insects of Australia* or *American Beetles* are restricted geographically. With its global scope, the present *Handbook* is unique and fills a gap so huge that we can only admire the editors Rolf Beutel and Richard Leschen for having committed to such a daunting task.

This first beetle *Handbook* covers short introductions into systematic position and early evolution (R.G. Beutel), the current status of molecular systematics (A.P. Vogler) and morphology of beetles (R.G. Beutel & J.F. Lawrence), followed by systematic treatment of the three smaller suborders Archostemata, Adephaga and Myxophaga and several polyphagan groups (Staphyliniformia, Scarabaeiformia, and Elateriformia without Elateroidea). Morphology of adults and larvae is described and illustrated comprehensively; distribution, biology and ecology, and phylogeny and taxonomy are discussed. When all volumes of this *Handbook* are published, we will have an almost complete treatment of every single family of beetles, in some groups down to every single subfamily.

The second beetle volume will conclude the systematic treatment of the Elateriformia and contain the Tenebrionoidea; covering the Phytophaga, the third will conclude the systematic part on beetles; a fourth volume is intended to deal comprehensively with skeletal and organ systems, functional complexes, and evolution of adults and larvae (Beutel, pers. comm.).

Beutel & Leschen follow Lawrence & Newton's (1995) classification, but consider more recent studies up to 2005. As a result, a particularly useful up-to-date beetle classification from subfamily level upwards is presented on pages 11-15, including families like Meruidae (Spangler & Steiner, 2005) or Aspidytidae (Ribera *et al.*, 2002) which were described too recently to be included in the systematic chapters of the present volume. The *Handbook* is not a textbook that only offers well-seasoned consensus knowledge, but presents not less than the current state of beetle systematics.

The new reference for beetle systematics

HANDBUCH DER ZOOLOGIE/HANDBOOK OF ZOOLOGY, VOL. IV (ARTHROPODA: INSECTA), PART 38 COLEOPTERA, BEETLES. VOLUME 1: MORPHOLOGY AND SYSTEMATICS edited by

Being a joint effort of 38 authors from 16 countries, all eminent experts, this enormous accumulation of knowledge is the strength of this volume, but on the other hand results in a certain inconsistency in the presentation. Not all characters are described in all families, e.g. nothing is stated about the number and position of the abdominal spiracles in Silphidae. The position of the spiracles is described for Histeridae and Hydrophilidae, but not for Synteliidae. With not all characters described for all taxa, extracting comparative information or building a character matrix for a group of families is sometimes difficult. However, the wealth of data presented in this volume is unprecedented. Although the Handbook contains extensive and well illustrated descriptions, it would have profited from a more formal presentation of the data (if available): phylogenetic tree, apomorphies (as the volume editors do in their papers, e.g. Beutel & Leschen, 2005), and additionally the ground plan of each major taxon (as recently masterly done by Mickoleit (2004) for vertebrates; see Krell, 2005).

As much as we have to be grateful to the publisher to have continued the unique *Handbook* series for over eighty years, when it comes to purchasing a copy, the price of US\$ 334.80 is certainly prohibitive for most entomologists. This is particularly unfortunate since this Handbook is likely to remain *the* reference for morphological information on Coleoptera for a long time.

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