BOOK REVIEW


German challenged readers have historically only had limited access to the German language Handbook of Zoology volumes that have appeared at regular intervals since the mid-19th century. The publisher switched to English with the publication of the Lepidoptera volumes (Kristensen 1999, 2003), making these milestone references available to a much wider readership. The Coleoptera series is the second English language set. Four volumes are planned, with the first reviewed here, the second scheduled for publication late 2007, and subsequent volumes at intervals thereafter. Volumes 2 and 3 will cover family level systematics, as most of the present volume, and volume 4 will treat evolution, physiology, development, and other broad aspects of beetle biology. This is an epic project with the objective of establishing a concise baseline of comparative information about taxonomy, morphology, phylogeny, and natural history of the beetle fauna of the world.

This first volume comprises 80 chapters, including several introductory chapters and suborders Archostemata, Myxophaga, and polyphagan series Staphyliniformia, Scarabaeiformia, and Elateriformia, in part. This accounts for about 40% of global beetle diversity. Thirty-eight contributors are listed. Beutel is sole or lead author on 12 chapters and John Lawrence on six. Clarke Scholtz and Vasily Grebennikov wrote all 16 scarabaeoid chapters. Several other contributors wrote multiple chapters. One or the other volume editor is listed as an author or co-author on 19 chapters, suggesting a significant effort above and beyond editorial duty to push the project to completion. A short preface describes the methodological approach adopted by editors and includes a dedication to Michael Hansen, who died unexpectedly during initial preparation of the volume.

The first chapter is a brief, concentrated summary of putative sister-group relationships, beetle groundplans, character transformations, and characters that support monophyly among recognized higher taxa within the order. Chapter 2 is a checklist of families and subfamilies that follows Lawrence and Newton’s (1995) classification with a few recent additions and changes. Chapter 3 provides a synopsis of the rapidly changing state of molecular systematic studies of Coleoptera, including a critique of the relative utility of genes that have been employed at various phylogenetic levels. Chapter 4 contains descriptions of the morphology of Coleoptera life stages (excluding egg), to the extent they can be summarized for the entire order in four pages.

The bulk of the volume is sections and subsections presented as chapters. Each major family-group taxon is introduced separately, followed by more detailed family treatments. These are reasonably standardized, featuring sections on distribution, biology, ecology, morphology of known life stages, and phylogeny. References are included in most chapters, but are combined for some smaller families at the end of the relevant superfamily chapter. Some inconsistency in coverage and presentation is obvious and expected due to different levels of knowledge, taxonomic complexity, diversity, and author styles. Large families are broken down into subfamilies, and occasionally tribes, though not always in consistent ways. For example, the hydrophilid chapter describes synapomorphies and diagnostic features to the level of tribes, but includes only about a page on biology and ecology. In contrast, the next chapter on the similar sized Histeridae deals briefly with diagnostic and phylogenetically informative characters for subfamilies only, but includes a whopping 13 pages of solid text on life history and behavior, much of it highlighting species-specific predator/prey and symbiotic relationships. The chapter on Staphylinidae stands out as perhaps the most effective presentation of a major group of lineages within the necessary constraints of space. Content and style of illustrative material is likewise variable. Generally, illustrations are carefully chosen to depict diagnostic characters rather than providing a comprehensive overview of body forms via habitus illustrations or photographs from life. Illustrations in some chapters approach lavish, but this would be considered a coffee table book only in a room full of coleopterists.