

Book review

Beutel, R.G., Leschen, R.A.B. (Eds): Coleoptera, Beetles. Volume 1: Morphology and Systematics. Archostemata, Adephaga, Myxophaga, Polyphaga partim. 2nd edition, in R.G. Beutel & N.P. Kristensen (Eds) *Arthropoda: Insecta*, in Schmidt-Rhaesa A. (Editor-in-chief) *Handbook of Zoology*. de Gruyter, Berlin, Boston, 2016, xvii + 684 pp. - ISBN 978-3-11-024906-4. Price € 279.95

Zoology treatises are not the most obvious place where entomologists would look for information about their favourite groups, especially in the case of the most popular orders such as Lepidoptera or Coleoptera. This is also true of the largest, multi-volume works. How many coleopterists, for example, read carefully and with profit through the 307 pages René Jeannel and Renaud Paulian wrote for the famous *Traité de Zoologie*? How many lepidopterists did the same with the 275 pages on butterflies and moths written by Jean Bourgonne for the same treatise?

Things are very different with the *Handbook of Zoology*, the current series borne out of the *Handbuch der Zoologie* founded long ago (1923) by Willy Kükenthal, and originally published in German.

The new *Handbook* volumes on the insects were initially planned under the leadership of the late Niels Peder Kristensen (who personally edited two precious volumes on the Lepidoptera, published in 1998 and 2003 respectively), soon joined by Rolf G. Beutel who, together with Richard A.B. Leschen, has managed to edit an impressive treatment of the Coleoptera. Three (of four) volumes have been issued thus far, the first of which was published in 2005. Volumes 2 and 3 followed soon, in 2010 and 2014 respectively. With these volumes, all families have been eventually covered. Despite the relatively short time since first publication, Volume 1 is now replaced by a new edition. The fresh availability of this volume provides a good opportunity to review here the whole editorial project, but also to show – based on a comparison between the 2005 and 2016 editions of this book – how momentous are still the changes we are witnessing today in the knowledge of the beetles, despite the passionate efforts already paid on them by legions of entomologists.

To begin with, two new families of Adephaga have been added. The first is the Aspidytidae, created in 2002 for *Aspidytes niobe* Ribera, Beutel, Balke & Vogler, 2002 (South Africa), and still including today two species only, the second being *Sinaspidytes wrasei* (Balke, Ribera & Beutel, 2003) (China); the second family is the Meruidae, established in 2005 to accommodate the tiny (0.85-0.9 mm) *Meru phyllisae* Spangler & Steiner, 2005 (Venezuela), still the only known member of this family. Adults and larvae of these newly discovered beetles are described in the *Handbook* in great detail and are also illustrated by excellent SEM images. Throughout the whole volume, indeed, many new SEM images have been added, in respect to the first edition, that help a lot familiarizing with beetle groups of which most of us only know, perhaps, the name, e.g. the Lepiceridae, Torridincolidae and Ommatidae.

As in the first edition of the volume, the general part is very

short (40 pages in the 2016 edition), but this is simply intended as an introduction to beetle morphology and phylogeny, whereas a detailed treatment of organ systems, evolution etc. will be published as the final volume of the series.

Following recent advances in phylogenetics, the editors are now treating the former family Scydmaenidae as subfamily Scydmaeninae of the Staphylinidae (the former Pselaphidae, Clavigeridae, Dasyceridae and Scaphidiidae were already treated as parts of this huge family in the 2005 edition).

Forty-four authors have contributed to this volume, representing 17 countries: 11 authors from the USA, 7 from Germany, 4 from Spain, 3 each from Brazil and Canada, 2 each from Austria, Czech Republic, Mexico and Slovakia, 1 each from Argentina, Australia, the Netherlands, New Zealand, Poland, Russia, South Africa and Taiwan. The complete list of contributors to the three hitherto published volumes includes about 120 authors from 29 countries!

Altogether, the three volumes offer a 2150 pages strong treatment of all beetle families known thus far.

The publication of a revised version of the first volume only nine years since the first edition is an exemplary demonstration of the clever editorial policy of the good German publishers, among which the timely update of handbooks is top priority. I wonder whether the next item in this *Handbook* series on beetles will be the promised final volume with an overview of comparative anatomy and evolution, or an updated edition of volume 2, where the newly described family Iberobaeniidae (Bocak et al. 2016) will find its place. Despite the tremendous effort hitherto paid to the study of this enormous branch of the tree of life, with the description of *Iberobaenia minuta* Bocak, Kunderata, Fernández & Vogler, 2016 and *Iberobaenia lencinai* Bocak, Kunderata, Fernández & Vogler, 2016, we have just learned that undescribed beetle families can still be discovered in Europe. What next? Impossible to say, but remember that, altogether, as many as 36 of the 179 extant beetle families were proposed since 1950.

References

- Bocak L., Kunderata R., Fernández C.A., Vogler A.P. 2016. The discovery of Iberobaeniidae (Coleoptera: Elateroidea): a new family of beetles from Spain, with immatures detected by environmental DNA sequencing. *Proceeding of the Royal Society B*, 283: 20152350.

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