The LINNEAN SOCIETY of London ZOOLOGICAL Journal of the Linnean Society

Zoological Journal of the Linnean Society, 2014, **171**, 226–231.

Book Reviews

Australian Beetles, Volume 1, Morphology, Classification and Keys, by John Lawrence and Adam Slipinski. Collingwood, Vic: CSIRO Publishing, 2013. ISBN 9780643097285. Hardback. 576 pp.

This is a beautifully produced book with relevance beyond Australia. It is very clearly laid out and with a profusion of excellent and well-chosen illustrations. The 94-page Introduction begins with a brief very well-focussed account of the defining characteristics of beetles and includes a clear résumé of their fossil history. An overview of the principal habitats of Australian beetles, with well-chosen photographs of representative beetles in the various habitats, is followed by a brief but informative account of techniques currently used for collecting beetles.

The section on Adult morphology (33 pp) is well-illustrated by high quality drawings and SEM photographs. It includes, among many other things, a clear explanation of the new terms for the ventral sclerites of the metathorax (metaventrite, etc.). The account of larval morphology, only slightly shorter, is clear, comprehensive and authoritative.

Shorter sections on eggs and pupae are followed by a brief account of beetle biology and special features of the Australian fauna.

Chapter 2, Classification and Keys, has a well-referenced account of the development of the current family classification of the Coleoptera, beginning, in the main, with the work of R. A. Crowson, and outlining the various modifications which have been made to the system, and ending with a note that the story is not over as ongoing studies, including molecular work, continue to provide further insights. This is followed by an ordered list of the 117 families of Coleoptera currently recognised, with approximate numbers of the species known from Australia.

The key to families of adult beetles runs to 293 couplets on 19 pages. It is very clear and a particularly helpful feature is that at the start of the various major groupings that emerge in the key, clear bold headings summarising the defining features of the group (e.g. 'Mesotarsus pseudotetramerous. Rostrum longer than wide') are given, allowing the worker to confirm that he is still on track (or not!). The key to larvae (74 pp, 281 couplets) has a similar form and its greater length results from provision of numerous illustrations of the characters used.

The treatments of individual families is the largest section of the book, followed by the References and Index. The treatment of each family comprises descriptions of adult and larval morphology, an account of classification and world distribution, and a more detailed description of the Australian fauna.

This book contains a mine of comprehensive, authoritative, well-illustrated and referenced information. It is well-written and a joy to use. Volumes 2 and 3 will give more detailed accounts of the various families (excluding the weevils which have already been covered by fairly recent work), and are something to look forward to.

ROBERT ANGUS

Australian Longhorn Beetles (Coleoptera Cerambycidae) Vol 1, Introduction and Subfamily Lamiinae, by Adam Slipinski and Hermes Escalona. Collingwood, Vic: CSIRO Publishing, 2013. ISBN 9781486300037. Hardback. 504 pp.

The format and high standard of publication are similar to those of '*Australian Beetles*'. The accounts of adult and larval morphology are clear and very well illustrated. Keys to species are given and for each species details of material examined, distribution and known details of its biology. An excellent book.

ROBERT ANGUS

Zooplankton of the Atlantic and Gulf Coasts. A guide to their identification and Ecology, by William S. Johnson & Dennis M. Allen, with illustrations by Marni Fylling. Baltimore: Johns Hopkins University Press, 2013. Second edition: ISBN-13: 978-1-4214-0618-3. 452 pp. Paperback.

I have vivid memories of the first time I saw live plankton down a microscope: such beautiful and bizarre creatures darting and jetting around the petri dish – mostly

translucent but with spots of red or black revealing the presence of pairs of eyes. As well as being in awe of the diversity I was shocked by my inability to classify, even to phylum, much of what I saw. Good field guides are needed to help one make sense of such diversity. This new edition of the zooplankton guide by William S. Johnson & Dennis M. Allen provides an excellent introduction to the diversity of planktonic life found off the eastern and southern coasts of the USA from Cape Cod to Florida along the Atlantic seaboard and from Florida to Texas in the Gulf of Mexico. Its primary focus is on the zooplankton commonly found in estuarine and nearshore waters within 10km of the shore, but it also includes large phytoplankton and fish larvae that are commonly retained in zooplankton nets. Coverage is limited to common taxa but in such works it is always difficult to draw the line between common and rare. The authors have relied on their considerable experience and that of numerous colleagues to define the limits to their coverage – and have got it largely correct.

The authors provide a general introduction to zooplankton – introducing terminology, size categories, common larval types, and key adaptations to life in the plankton. They then briefly summarise factors affecting zooplankton distributions in the area, such as currents, tides, coastal morphology and water column structure. There is a very basic section on collection methods, although this is supplemented by an appendix on methods and sources of collecting gear. The introduction closes with a look at how plankton is impacted by changes in environmental quality such as hypoxia, harmful algal blooms and climate change. This overview provides a basic appreciation of the functional significance of marine zooplankton, and is supported by a selection of key references to more detailed studies. Further detail is provided in a set of appendices covering: 1. Collecting Zooplankton, 2. Observing zooplankton, 3. Relaxing, Fixing and Preserving Zooplankton, and 4. Sample processing and Data Analysis. A fifth appendix lists references to regional and taxon-specific zooplankton surveys, and this is followed by a glossary and a comprehensive list of references to the literature cited. The second edition added 50 new taxa and illustrations and updated information on biology and taxonomy of existing taxa. The references are well chosen and helpful in pointing the reader onwards to more specialised sources.

The core content of the volume is a visual key that facilitates the identification of zooplankton by non-specialists or even beginners. It begins with a set of 'Quick Picks' which are the first step in identifying major categories such as 'small protozoans', 'gelatinous, usually transparent', small and large crustaceans, 'elongated, worm-like', and 'fishlike, with fins'. These practical categories are supported by illustrations of examples to guide the user to the appropriate pages for species identification. The advice to users recommends selecting a 'quick pick' category, then jumping to the detailed pages and consulting the boxes highlighting 'identification hints'. Users who already possess a basic familiarity with plankton can go direct to the taxonomically organised sections.

Open the volume in the species pages and typically the left page will carry the species name and a brief summary of its ecology, distribution and biology while the right page carries a line drawing of the organism, together with at least a statement on body size. In some sections, such as hydrozoans or decapod larvae, the illustration is accompanied with a list of characteristic features, selected to allow the species to be distinguished from similar species (which are named). The illustrations are basic line drawings, with much detail omitted. A few are so schematic that inaccuracies are apparent: in the body and antennal segmentation of *Mesocyclops edax*, or in the leg segmentation of *Monstrilla helgolandica*, for example, but by and large the illustrations are clear and sufficiently accurate to serve their primary purpose.

The appearance of this very traditional teaching-style work brings into focus comparisons with a distinctly different approach, that of Otto Larink and Wilfried Westheide, who created the *Coastal Plankton: Photo Guide for European Seas* which provides colour micrographs of common species. Both are intended as guides for students, marine researchers and even the interested lay person. Given the species richness of the fauna covered by Johnson & Allen, I suspect their detailed approach based around line-drawings works much better than a photographic guide, for getting to a species level identification, but perhaps less well when dealing with the myriad of ciliated larval forms.

I think this volume is excellent and it will serve its audience well – from the level of beginner through to seasoned marine researchers. The price is good value for such a substantial volume. The cover of the paperback edition feels waterproof and it is clearly expected that the book will lie on the lab bench, next to the microscope. It is designed for users to use – good job!

GEOFF BOXSHALL

Discovery of Australia's Fishes. A History of Australian Ichthyology to 1930, by Brian Saunders Collingwood, Vic: CSIRO Publishing, 2012. ISBN 97806431046703. 520 pages. Hardback. AU$ 99.95.

This is a book for ichthyologists, a meticulously documented study of people of many nationalities who col-