

Book Reviews

Andersen, N. M. & Weir, T. A. (2004): **Australian Water Bugs. Their Biology and Identification (Hemiptera-Heteroptera, Gerromorpha & Nepomorpha)**. – Entomograph, Vol. 14, 24 × 17 cm. 344 pages incl. 8 colour plates. Numerous line drawings, scanning electron micrographs, distributions maps etc. Hardback. Apollo Books, CSIRO Publishing. ISBN 87-88757-78-1, Price excl. postage: DKK 420,00.

Water bugs are key species of aquatic ecosystems and provide benefits to humans since many species prey on mosquitoes and themselves are food source for fish. Water bugs also can be useful in monitoring the quality of certain aquatic environments. These insects are also valuable for understanding historical biogeography and evolutionary processes.

The recently published book presents an up to date account of all known water bugs in Australia, Tasmania and adjacent islands. Australia, the driest continent on earth, provides nevertheless a wide variety of aquatic natural habitats, especially on the coast, where water bugs occur.

The handbook is overall an excellent monograph. Without any restriction it is highly recommended for every entomologist who is interested in Australian water bugs or those entomologists who would like to study water bugs in adjacent areas but also worldwide. It is as well for environmentalists who are serious students of Australian aquatic habitats.

The authors, Tom Weir from Canberra and Nils Andersen from Copenhagen, are outstanding specialists of water bugs and have studied these insects in Australia for decades. Both authors discovered and described numerous species from this region. The comprehensive guide gives all the essential facts about the Australian 261 known species of Nepomorpha and Gerromorpha and provides an overview on the 15 families, 17 subfamilies, and 55 genera of the region. 129 semiaquatic Heteroptera (Gerromorpha) which live upon the water surface and nearly the same number of species, namely 132 true water bugs which live beneath the water surface are known from Australia are presented in this book.

The first part deals with general biogeography, biology and ecology, phylogeny, classification, morphology, and collecting and preservation methods. In the second part detailed illustrated keys help well to identify adult water bugs. For each family and genus, the handbook includes a description of habitus characters and for each species a map showing the locations where the species has been found in Australia.

It is worth-while to mention that a checklist of all species, notes on type material and general information on distribution in Australia's provinces and outside of the continent is appended, as well as an index of used morphological and general scientific terms and taxa; this makes the book complete.

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Fotoatlas und Bestimmungsschlüssel der Raubfliegen Deutschlands – Photographic atlas and identification key to the robber flies of Germany (Diptera: Asilidae), by Fritz Geller-Grimm 2003, CD-ROM, Ampyx Verlag (ISBN 3-932795-18-0), Price EUR 25,00.

Identification of species of insects can be troublesome even for well-known faunas like Central Europe. New, modern identification tools have been recently developed to help less-experienced biologists with identification of species. The featured identification key to the robber flies of Germany (Diptera: Asilidae) is one example as it is a computer-based

identification tool for 82 Asilidae species. The distinguishing morphological features are illustrated with digital photographs of pinned specimens and two language versions, German and English, are provided. The key includes all species that have been recorded from Belgium, Denmark, Germany, the United Kingdom, The Netherlands, and Sweden and can therefore be used for these countries, too. Furthermore, it summarises biological and distributional information for Asilidae, gives useful references for further reading, stimulates research by outlining collecting and ecological observation techniques, and provides illustrations and explanations for morphological characters used in the key. This beautifully illustrated identification key provides a comprehensive tool that can be used by biology students, amateur entomologists, dip-terists, and everybody who is interested in insects and flies.

The robber-fly fauna of Germany is with 82 species rather small in comparison to the world fauna of approximately 7000 described species. However, a number of species, e.g. in the genera *Choerades* Walker, 1851 and *Tolmerus* Loew, 1849, are difficult to distinguish and for a number of genera taxonomic revisions including the European fauna are still needed. To date, two identification keys to the robber flies of Switzerland (Weinberg & Bächli 1995; in German) and The Netherlands (van Veen 1996; in Dutch) are available that cover the fauna of Central Europe. Both works are traditionally published keys illustrated with line drawings and can be used to identify asilids occurring in Germany. The present key takes advantage of digital media by incorporating more than 1900 colour photographs of pinned specimens or parts thereof and facilitating a better identification by providing comparison tools for morphologically similar species.

The identification key is published as a CD-ROM and can only be used with a personal computer with a CD-ROM drive. It is written in HTML as an off-line web site and can be used in any web browser. It contains five basic features: (1) the illustrated identification key, (2) a catalogue of species, (3) a tool to compare photographs of morphologically similar species, (4) notes on the biology, distribution, research, and digital photography as well as selected literature references on Asilidae, and (5) a glossary of morphological terminology.

The illustrated identification key is similar to a conventional dichotomous key in that a number of features to be investigated are listed in a couplet. By comparing the specimen at hand with the description a decision is to be made which couplet to go next. The photographs of the morphological features that are presented for every couplet highlight the important structures to be investigated by using arrows or colour, which makes it easy for the user to examine the position of them in the specimen at hand. This identification key is different from another recent development of computerised identification tools like Lucid, which are based on morphological data matrices. By selecting characters from a list a decision for a certain morphological character is made and all taxa that do not have this feature will be excluded by the software and step-by-step one can identify the specimen at hand. This method has certain advantages especially when identifying unfamiliar taxa, but the present dichotomous key is well-illustrated and is user-friendly for beginners as well as for experienced entomologists.

The catalogue of species lists the distribution of species in the different countries. By selecting a particular species information on the known distribution, the size, and photographs of morphological structures of females and males are accessible.

With the help of the comparison pages congeneric species can be compared based on a selection of photographs of

morphological features. This is a very useful tool because one can compare the species at hand with morphologically similar species using a different set of characteristics than might have been applied in the dichotomous key.

The morphological terminology pages are very important and ensure that the user can exactly determine the position of setae, sclerites etc. and give an overview on the morphological nomenclature used. The illustrations are vector-drawn graphics and show all the detail necessary for determination of morphological structures in asilid flies.

The author Fritz Geller-Grimm has published extensively on robber flies, has a comprehensive knowledge of the European species as well as other taxa distributed in other zoogeographical regions, and hosts a web site featuring the Asilidae that contains more detailed information about these fascinating flies (link: <http://www.geller-grimm.de/asilidae.htm>). The identification key to the robber flies of Germany is an outstanding tool to identify asilids in Central Europe and neighbouring countries. It features language versions in German and English and can therefore be used by a larger community.

I highly recommend this CD-ROM to everybody interested in identifying, observing, and studying these fascinating flies. It is a useful tool for university teachers introducing students to entomology and the use of dichotomous identification keys as well as provides data on biology, distribution, and taxonomy of Asilidae species occurring in Central Europe.

References

- Weinberg, M. & Bächli, G. 1995. *Insecta Helvetica (Fauna): 11. Diptera Asilidae*. Schweizerische Entomologische Gesellschaft. 124 pp., Genève.
- van Veen, M. 1996. *De roofvliegen van Nederland*. Stichting Uitgeverij Koninklijke Nederlandse Natuurhistorische Vereniging 216. 120 pp., Utrecht.
- Torsten Dikow, Cornell Universität, Ithaca, NY, USA
- Adamski, D. (2002): **A synopsis of described Neotropical Blastobasinae** (Lepidoptera: Gelechioidea: Coleophoridae). Thomas Say Publications in Entomology: Monographs. Entomological Society of America, Lanham, Maryland, 150 pp., ISBN 0-938522-96-5.
- Taxonomic data and morphological descriptions are provided for all described species of Neotropical Blastobasinae. Photographs of adults, illustrations of male and female genitalia, and keys are presented for the first time. Accounts for each species include complete synonymy, diagnosis, re-description, type information, distribution, and host plants. Fourteen lectotypes are designated. A checklist is provided for efficient retrieval of species placement within genera. Three new synonymies, 44 new combinations and two revised status levels are proposed. One species is transferred to another family.
- The monograph is a consolidation of information on the Neotropical species of the group and facilitates future study on this taxon.
- Wolfram Mey, Museum für Naturkunde Berlin
- Miller, W. E. (2000): **A comparative taxonomic-natural history study of eight Nearctic species of *Gnorimoschema* that induce stem galls on Asteraceae, including descriptions of three new species** (Lepidoptera: Gelechiidae). Thomas Say Publications in Entomology: Monographs. Entomological Society of America, Lanham, Maryland, 76 pp., ISBN 0-938522-88-4.
- Gnorimoschema* is a worldwide genus with a diversity centre in the Nearctic Region. Little information has been available for most of the species. This study elucidates and compares

life-history traits of eight species. Coverage includes adult, larval, pupal, and gall characters, distribution point maps, development of larvae and pupae, and gall biology. Study material consisted mostly of galls and adults that issued from them which were collected in Ohio, Maryland, Michigan, Minnesota and adjacent countries. The taxonomically similar species are univoltine, with adults eclosing in late summer, and unhatched pharate larvae overwintering. Larval foodplants include species of *Solidago*, *Aster*, *Grindelia* and *Haplopappus* (Asteraceae), on all of which the species are monophagous to oligophagous. Interestingly, the architecture of the exit prepared by the larva to enable the adult to escape from the gall is diagnostic. It is used as character in a key for distinguishing the eight species.

Wolfram Mey, Museum für Naturkunde Berlin

Koster, S. & Sinev, S. Y. (2003): **Momphidae, Batrachedridae, Stathmopodidae, Agonoxenidae, Cosmopterigidae, Chrysopeliidae**. Microlepidoptera of Europe, 28 colour plates, volume 5, 387 pp., Apollo Books, Kirkeby Sand 19, DK 5771 Stenstrup, ISBN 87-88757-66-8.

The fifth volume in the series provides the treatment of six families of the superfamily Gelechioidea, which are collectively called "narrow-winged moths". They are characterised by very slender, lanceolate wings with long cilia considerably exceeding their width. A subapical excision of the wing margin is lacking which separates the group from species of the related family Gelechiidae. The larvae are mono- or oligophagous leaf- or stem-miners. Sometimes they feed within seeds, flower-heads, or induce stem galls. The families do not form a monophyletic group. They are traditionally treated together and the authors follow the taxonomic tradition. But each of the six families possesses a number of autapomorphies, which justifies their high taxonomic rank. Altogether, a total of 37 genera with 163 species are recognised in Europe, North Africa and the Near East. The species are reviewed according to the general scheme used in this book series: A complete synonymy is provided, including original combination and source of description. The diagnoses of the adults and their genitalia are kept briefly and should be used in combination with the accompanying figures. They are placed in the text and on 123 separate plates. The illustrations of the adults are arranged on 28 watercolour plates. Identification keys are given for the genera *Cosmopterix*, *Eteobalea*, and *Vulcaniella*. Biological data and information on immature stages are based on literature and on the rich personal experience of the authors. Information about the distribution includes only larger geographical regions. In a distribution catalogue the countries where the species occur are listed. One new genus (*Gibauxiella*) and ten new species are described. Four new synonymies are recognised and some new combinations are introduced.

The new issue of the series is a welcome addition to the taxonomic "tool kit" of lepidopterists and entomologists in general. An important part of the Microlepidoptera fauna is now identifiable. A weak point of the book is the absence of identification keys to families and genera. The groups are distributed in other parts of the world too, where identification books are hardly available, and thus, keys of the European genera and families might be very helpful. The inclusion of the North African and Near East species is a very reasonable extension of the geographical coverage of the series. This geographic extension should be applied to further volumes too. The book is a fine and valuable continuation of the series and can be ordered directly from Apollo Books.

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