

Book reviews

Electronic tool for Noctuidae identification

Rötschke, H. & Huber, K. 2003: Noctuid moths of Central Europe – an interactive identification tool on CD-ROM. Verlag für Interaktive Medien, Gaggenau. Can be purchased through <http://www.vim.de/>. Price 99 EUR.

There is a tendency that, when speaking about taxonomic tools, we are getting more and more used to think of electronic media rather than products made of ink and paper. This is perhaps due to the fact that there has been quite some development in recent years to provide technologies to prepare interactive keys for distribution via CD-ROM or the World Wide Web. Interactive keys have several advantages over conventional keys, and, given the recent technological advances, it is not surprising that an increasing number of such keys becomes available. The “Verlag für Interaktive Medien” (V.I.M.) recently published the first part of a series of interactive identification tools entitled “Butterflies and Moths of the World”, which itself is part of a “professional identification series”. The first part of this series is a CD-ROM called “The Noctuid Moths of Central Europe” and includes information about 740 species. Each species is illustrated by at least one photograph of a prepared specimen and, in some cases, supplemented by a live photograph, altogether over 1,300 photographs. Clicking on a species name from a list with selectable sort order (systematically, species, or genus) opens a species fact sheet with information about similar species, synonyms, common names (English and German), and distribution within Europe. The species sheet does not include a species description or diagnosis with the exception of some taxonomically difficult taxa where an identification aid is given. Clicking a button will open a separate window with a plate of photographs of similar species. The photographs are of superb quality and clearly represent the highlight of the CD-

ROM. However, the dark blue background is a matter of taste and in some species with very thin hind wings the background colour shows through, resulting in a slight bluish colour bias. A feature equally useful for amateurs as well as for specialists is the ability to choose among six nomenclatorial standards, including Forster & Wohlfahrt (1971, 1981), Koch (1984), and Nowacki & Fibiger in Karsholt & Razowski (1996, 2001).

The interactive key is probably the part of the CD-ROM which will attract the primary attention of most users. It allows to choose any of the given characters in any order and is therefore, by definition, an interactive key. However, it doesn't have the advanced features of other interactive key software, like Lucid (<http://www.lucidcentral.com/>) or Intkey (<http://www.biodiversity.bio.uno.edu/delta/>). For example, it is not possible to set an error tolerance, to find similarities and differences between taxa, or to select a single “best character”. The key does not present alternative character states for each character, but the user has to select from a range of character states. For example, it is possible to select the character state “hind wings with red”, but not “hind wings without red”. The available characters include four shape characters, wing colour (13 states), and wing pattern (14 states). The number of taxa can be further reduced by selecting a wing span, geographical and spatial restrictions. This works with noctuid species which have a distinctive wing colour or pattern. However, problems arise when the species to be identified has wings without any discernible colour pattern, in which case the user is left with a high number of remaining taxa, often exceeding 200 or even 300 species. Furthermore, it is not possible to view all remaining taxa if the number of images is more than 100, the maximum number of images which can be displayed side by side on a plate.

I put the system to a test by trying to identify 19 noctuid species selected by a colleague who is noctuid specialist and comprised species with

varying degrees of taxonomic difficulty. Of these 19 species, I managed to identify 12 species correctly, for three species the number of remaining taxa exceeded 100, and four species were misidentified. Considering my rather limited knowledge of noctuids (I am a hymenopterist), the interactive key worked better than expected. However, many users probably will expect more from an interactive key which is labelled “professional identification series”. Perhaps the solution would be to include two versions, a simple key like the present one and a professional version for the experienced user who is familiar with identification keys and who purchases a tool like this to obtain accurate identifications at species level.

In summary, the CD-ROM is a very useful information system of European noctuid moths and as such it is of interest not only to the amateur collector or entomologist who wants to identify noctuids, but also to the specialist who is mainly interested in obtaining up-to-date information about nomenclature, taxonomy, and distribution of European noctuids.

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Walking in Lindroth’s footsteps – the life history of North American ground beetles

Larochelle, A. & Larivière, M.-C. 2003: A Natural History of the Ground-Beetles (Coleoptera: Carabidae) of America north of Mexico. Pensoft, Sofia-Moscow. Pensoft Series Faunistica Nr. 27. ISSN 1312-0174, ISBN 954-642-165-0. Price USD 78.

This book presents much of the existing life-history knowledge of over 2,400 ground-beetle taxa (for my personal convenience I use the word “species” in the following) of North America in a very compact format. The book begins with three chapters with a total of ten pages: Foreword, Introduction and Methods, of which the latter explains the contents of the following pages of species-specific information. The species section has been done in a similar way as previously done by

Carl H. Lindroth (1961–1969), with the species presented in alphabetical order. If published or authors’ unpublished knowledge exists, the species section contains general ecology (including the associated environment of the species in various spatial scales; e.g. “Lowlands” and “Coniferous forests with gravelly soil”), biology (e.g. seasonality, tenacity, overwintering, mating, food and parasites) and dispersal power (e.g. wing length, flight observations and other movement activity).

A nice detail is the often-included section of collecting techniques that should show, as the authors state in Methods chapter, “the best methods for collecting each species”. However, I would suspect that the methods listed are those that have been most often used, rather than lists resulting from comparisons of different collecting methods for a particular species or a group of species (that are rare). Pitfall trapping is the most often used collecting method because of its unbeatable cost/benefit ratio, and much of the life-history knowledge in the present book is consequently based on that method.

Each species text ends with References (if such exist). The length of these species texts varies from single line to over half a page, depending on how well a given species has been studied. The book ends with pages 516–554 that include an impressive reference list. A noteworthy detail is that the references of the first author barely fit to four pages – an indication of truly dedicating one’s life to carabidology! The last pages contain a species index that helps to use the book; however, I missed genus names and especially their synonyms here.

Limited space (the book contains information on over 2,400 taxa, squeezed into ca. 500 pages) has forced the authors to compress the available information much. Splitting the vast amount of data into the pages of two or more books (e.g. Canada and the United States) would perhaps have allowed the authors to include even more life-history details in the text, and spared the reader from some leafing through sections that may not be relevant for his/her purposes. Hundreds of species are also poorly known, as indicated by their single- or a-few-line presentations, often with “Unknown” notes. Life-history knowledge never becomes perfect, but I hope

these indications of knowledge gaps would initiate research on these poorly-known species.

As distributional data were missing from the book, something I would like to see in the near future (perhaps from the present authors?) would be an atlas showing geographic distributions of the presented species. That would be a good basis on follow-ups of changes in the geographic distributions of carabids. For example, the climate is shown to change, and many Canadian boreal forests are logged for the first time ever: the ecological consequences of these large-scale factors should be carefully monitored. Such atlas data exist e.g., from the Netherlands, Belgium and Denmark. Comparing old and new atlases may produce important ecological findings, as shown e.g. by Kotze *et al.* (2003) and Kotze & O'Hara (2003).

To study any organism or ecosystem soundly demands basic knowledge on various aspects of life history of the focal taxa. A result of Larochelle and Larivière's 40-years walk in Carl H. Lindroth's footsteps, the book provides exactly

such information, and is therefore a valuable update and completion of Lindroth's work. I recommend this book for anyone interested in or studying North American ground beetles, and to be included in scientific libraries world-wide.

References

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- Lindroth, C. H. 1961–1969: The Ground-Beetles of Canada and Alaska. Volumes 1–6. — *Opuscula Entomologica Suppl.* 20, 24, 29, 33–35. Entomologiska Sällskapet, Lund.

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