

Joop H. Kuchlein & Leo E. J. Bot 2010. Identification keys to the Microlepidoptera of The Netherlands. – TINEA Foundation, Wageningen & KNNV Uitgeverij, Zeist. ISBN 978 90 5011 341 0. 414 pp. Price 59.95 € (bilingual: Dutch & English).

Recently, two teams of lepidopterists independently from each other provided evidence that ‘Microlepidoptera’ do not form a natural community of descent, and that butterflies are deeply nested within this artificial group, close to gelechioids (Regier et al. 2009; Mutanen et al. 2010). For practical reasons, the term ‘Microlepidoptera’ is still in use, because methods of collecting and preparation are different for larger and smaller Lepidoptera and there is a need for identification guides to those Lepidoptera which are not treated in the bulk of literature on ‘Macrolepidoptera’ in the traditional sense. The recently published book by Joop Kuchlein & Leo Bot on the ‘Microlepidoptera’ from The Netherlands might thus be highly welcome.

The book is divided into an introduction, an illustrated glossary, a revised checklist of the Dutch Microlepidoptera, a list of scientific and Dutch names of Microlepidoptera, the identification keys (comprising 300 pages) and is completed with an index to the scientific names of Lepidoptera. The inside pages of the book cover provide colour photos of a set moth of each family of Microlepidoptera, which may help direct the reader to the correct family. Otherwise, identification should start using the key to families which contains supporting black and white drawings. At the family level, additional explanations are provided to the taxa and reference is made to the key of species of the respective family. Here, it is a bit impractical that one needs to check the page number in the contents at the beginning of the book to find the next key. For larger families, the ‘key to species’ starts with a key to subfamilies and reference is made to the next sub-key, but the page number has to be checked in the contents again. Beside this little inconvenience, the keys are clear and quick to use. Once keyed to a particular species, additional information is provided on wingspan, further morphological characters, and adult flight-time. For a final check of identification, the authors refer to the colour photographs presented on the website www.kleinevlinders.nl. On that site, the same identification keys are available and even more comfortable to use.

I have checked the Pyraloidea in greater detail, which is treated by the authors as one family Pyralidae. While it is still a matter of dispute whether to translate the basal dichotomy in Pyraloidea into two families Crambidae and Pyralidae or not, other examples of systematics and nomenclature used by Kuchlein & Bot are less acceptable. The use of ‘Pyraustinae’ in the sense of Pyraustidae sensu Marion (1954) is rather outdated. This taxon contains the Acentropinae, Evergestinae, Odontiinae, Pyraustinae, Schoenobiinae, Scopariinae and Spilomelinae. The latter taxon is not mentioned at all; together with Pyraustinae it forms the “Pyraustinae (narrow sense)” sensu Kuchlein & Bot. Other examples are the use of Nymphulinae which have for some time been synonymised with Acentropinae, *Conobathra* and *Trachycera* with *Acrobasis* as well as *Dipleurina* and *Witlesia* with *Eudonia*. This makes the use of the book unnecessarily confusing. The nomenclature could have been easily updated by using www.faunaeur.org or, in case of the Pyraloidea, also by www.pyraloidea.org. The key to the family failed to mention for the Pyraloidea two important characters which can easily be recognised using a magnification lens or a stereomicroscope, without further preparation: the presence of scales at the base of proboscis as well as the abdominal tympanal organ, of which the tympana can be recognised in dried specimens. At species level, I wonder whether identification can rely on external characters only. It would make the investigation of genitalia obsolete, saving a lot of time. But things are not that easy. Looking at *Scoparia ambigualis* and *S. basistrigalis*, two species which are frequently mixed up in collections, the keys do not provide precise characters for their identification. I know small specimens of *S. basistrigalis* as well as *S. ambigualis* specimens with a

well chequered forewing fringe, making the key characters given by Kuchlein & Bot obsolete. In contrast, an important character for *S. basistrigalis*, the black streak at the base of forewing, which gives this species its name, is not mentioned at all. *S. ambigualis* has a distinct uniform grey coloured base of forewing. Nevertheless, individual variation will require that, from time to time, even the most experienced lepidopterist checks the genitalia for proper identification of these two species, as it is the case for many Lepidoptera. This should at least have been mentioned in a book of this nature.

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