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BOOK REVIEW

BLÖCHLINGER H. 2023: DIE WOLLSCHWEBER DER SCHWEIZ. DIPTERA: BOMBYLIIDAE. FAUNA HELVETICA 34. Centre suisse de cartographie de la faune, Neuchâtel, 166 pp., 215 figs, 40 distribution maps. ISSN 1422-6367, ISBN 978-2-88414-047-8. Price CHF 50.00. Bilingual German/French.

Bee flies (Bombyliidae) are among the most attractive and specious groups of flies. Within central Europe, the family is moderate in species number, but some species are almost omnipresent and fairly abundant, suggesting they play an important role in natural processes, such as pollination or biological control.

Currently, a growing attention is paid to European pollinators, namely butterflies, bees and hoverflies. European-level red list, online identification keys and field guides are now available for all three groups. In this respect, the bee flies are far less studied and no recent, comprehensive and fully illustrated work is available. The work of Herman Blöchlinger partly fills a large gap.

The book is divided into several chapters: The general part includes morphology, biology, habitats and distribution, and the systematic part includes a checklist of Swiss bee flies, keys to genera and species, and species descriptions. The book is bilingual (German/French) except for species treatments (German only).

The treatments of species contain paragraphs devoted to diagnostic characteristics (differentiation from similar species and special features), and distribution and biology. The species chapters are accompanied by images of pinned adult specimens, usually both sexes, and a distribution map. Records before and after the year 2000 are distinguished, so one gets an idea of whether the given species is in decline or how formerly numerous it was. For instance, all records of *Triplasius pictus* originate pre-1999, suggesting that the species is in decline or even extinct in Switzerland. Two histograms are also included in the map, illustrating the seasonal activity of adults and the distribution of locations along the altitude. The species chapters are frequently supplemented with images of living specimens, habitats or pupal exuviae. Somewhat surprisingly, notes about flowers visited and flight season are included in the paragraph "Distribution". The "Biology" paragraph contains information about adult behaviour, preferred habitats, copulation, egg laying and hosts. Where known, descriptions of pupae/exuviae are included in a separate paragraph.

Regarding biology, the author tried to include all the information available to him, however, he omitted some interesting data. For example, in the species *Thyridanthrax fenestratus*, he mentions the larvae of sphecid wasp *Ammophila sabulosa* and also the oothecae of grasshoppers as hosts. Already in 2015, however, it was known that it also develops in the nests of a crabronid wasp, *Pemphredon fabricii*, which builds its nests in old common reed galls induced by the fly *Lipara lucens* (Agromyzidae) (Bogusch et al., 2015). More recently, it has been shown that although the distribution ranges of *P. fabricii* and *T. fenestratus* overlap in much of Europe, nests of *P. fabricii* attacked by *T. fenestratus* were reported only in the Pannonian lowland, despite intensive research that took place in other areas common to both species (Heneberg et al., 2024).

The generic key allows for safe identification of all extant genera in Switzerland. The key uses the usual morphological characters, such as proboscis length, antennal morphology, wing venation, etc., but also often uses the color of certain hairs or pubescence (genus *Bombylius*), which is a potential weak point of the key. Bee flies lose hair easily, e.g., the material from Malaise traps can be practically bald, which complicates determination based on hair color. Therefore, I would welcome additional morphological features, e.g., drawings of both male and female terminalia. This requirement is partially met in the genus *Villa*, represented by ten species of which some are very difficult to distinguish from each other. Illustrations of male copulatory organs of seven *Villa* species are taken from literature to aid in identification.

I rate the book very positively. I myself have been looking for identification literature about bee flies for some time, and this book came in very handy. I hope that it will go a long way in raising interest in this fascinating group of flies, and that in the near future we will see new and interesting observations and research on the biology of bee flies.

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