

***Geologische und biologische Entomöökologie der rezenten Seidenbiene Colletes.* (tr. Geological and biological ecology of the extant silk bees [genus *Colletes*]) 1997 by D. Mader. Logabook, Cologne. 807 pp. ISBN 3-87361-263-1. Hardcover. \$50.00 Euro**

The following is not intended to be a review, rather it is a synopsis of the contents of Dr. Mader's book. This large volume (807 pages, A7 format, hardcover), written entirely in German, is the first of two volumes detailing the nesting and foraging ecology of primarily *Colletes daviesanus*, with other examples from the family Colletidae and other solitary members of the order Hymenoptera.

After a short introduction outlining the morphology and various types of nest structures made by *C. daviesanus* and a small selection of solitary bees and wasps comes section two, the meat of the book. It is divided into several subsections as follows (notes in parentheses are not in the German text, and are given here for descriptive purposes):

- 2.1 Substrate preparation and nest construction.
- 2.2 Substrate types (rock species and formations) and nest site environment (divided into palaeartic, nearctic and neotropical species).
- 2.3 Nest site choice in reference to substrate characteristics (drainage, sun exposure, etc.).
- 2.4 Colonial and solitary nesting.
- 2.5 Geology of nest substrates (sedimentology and palaeogeography, etc. with emphasis on Germany and Europe including western Russia and the Baltic states). Included in this section are descriptions of anthropogenic substrates.
- 2.6 Construction of the silk nest linings.
- 2.7 Botanical environment and flower visiting ecology (divided into palaeartic, nearctic and neotropical species of *Colletes*).
- 2.8 Kleptoparasites and predators.
- 2.9 Use of *C. daviesanus* nests by *Osmia adunca* and other *Osmia* species.
- 2.10 Long-term population dynamics of nesting sites (mostly within Germany).
- 2.11 Selected bibliography of nest construction and/or nest substrates.

The last parts of the book are 64 pages of references and a 132-page index.

The book is profusely illustrated (over 450 illustrations in black-and-white, colour, line drawings, and charts) but even to someone fluent in German, the length of the text may seem daunting. Non-fluent readers of German should expect difficulties with the text; it is full of classic German extended sentence constructions. As a reference work on its topic it is superlative, and it presents a complete (especially when the second volume due in the year 2000 is included) description of the natural history and nesting ecology of *Colletes*. Even if the emphasis is at times centred on Europe or Germany, the book includes enough mention of species found in other geographical areas to be of interest to workers outside Europe.

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