

## BOOK REVIEW

Specific Title (Volume 1): *Geologische und biologische Entomoloökologie der rezenten Seidenbiene Colletes*

General Title: *Entomoökologie der Nestbauten und Nestsubstrate der Seidenbiene Colletes daviesanus und anderer rezenter solitärer Wildbienen und Wespen in Buntsandstein, Rotliegend, Keuper, Lias, Dogger, Tertiär und Quartär*

Volume 1: XLIII + 807 pages

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Author: DETLEF MADER

Editor: Logabook, Köln

Dr. Detlef's book deals with the nesting biology of the bees and wasps, as well as with ecological relationships between nesting substrates and several geological formations and biotic communities. Flower visits and preferences and other trophic interactions are also focused. In other words, it is a true natural history contribution. The way he makes his meticulous work of documentation is similar to that of the old naturalists such as St Hilaire, von Martius (both Nineteen Century botanists as well as ethnologists), Malyshev (Russian hymenopterist), and given his holistic preoccupation with with natural process, perhaps even to that of Elton (the pioneer of the modern animal ecology), but in a more modern way. At the beginning of the sixties, we (Sakagami and Laroca) contributed to the studies of wild bee biocoenotics, by adding a new standardized method of sampling bees in the context of a biotic community. This quantitative method of sampling has increased the scientific knowledge on the melissocoenosis at world wide scale. But

now Dr. Detlef is adding a significant and powerful methodology, which in the future certainly will make possible to integrate several fields as paleontology, botany, entomology, sedimentology, and climatology, as a solid base for the construction of the biocoenology of the Twenty-One Century. The illustrations are all of high standards, such as the magnificent photographs, maps and drawings, as well as all other graphic aspects. The main subject of study of the present volume is the bees of the genus *Colletes* (especially *Colletes daviesanus*), of the family Colletidae, which is one of the most primitive bee group. This primitive taxon, as indicates its short bi-lobed tongue, possibly derived from a primitive predatory wasp (sphecid like) ancestor. The modern long-tongued bee families, whose origin is contemporaneous to the origin and expansion (tertiary) of the angiosperm forests (including our Amazonian forests) of the world, derived from short-tongued bees. After the derivation of the flora and the expansion of the angiosperms to all latitudes, various short-tongued bees, possibly in order to cope with these new conditions and to compete with the long-tongued bees, suffered several morphological modifications (especially in the mouth parts and in the pollen transportation apparatus) related with pollen and nectar harvesting.

One example of those modifications in the colletid bees can be seen in *Niltonia virgilii* Moure, whose enormously elongated labial palpi make possible to take nectar in the deep tubular flowers of *Jacaranda* (LAROCA & ALMEIDA, 1985 — *Revta brasil. Entomol.* 29: 289-297; LAROCA, MICHENER & HOFFMEISTER, 1989 — *Jornal Kansas Ent. Soc.* 62: 1989).

He analyzes the nests and trophic relationships as well as the natural enemies (parasitoids and predators) of palaearctic and neotropical species of *Colletes*. Nest architecture of these bees is peculiar due to the fact that the interior of the cells is lined with a cellophane like material secreted in the bee's glands (Duffor and/or salivary glands). These "cellophane like bags" are provisioned with pollen (generally as a semi-liquid mass) and latter, in each of this "bags" an egg is laid. After this process, the cell is sealed with a cellophane like membrane. Several aspects of recent and fossil nests are analyzed.

The choice of the members of Colletidae for these studies seems to be an appropriate decision by several reasons that we can easily enumerate such: peculiar patterns of geographical distributions, morphological diversity as well as the antiquity of this group. This and other characteristics of this group make world wide biogeographical correlations possible.

Therefore, it is a nice book that deserves a place in your bookshelf, especially if you work on bee ecology and/or behavior, or if you are a naturalist or even if you are just a curious person or a nature lover.

Finally, I must say that this kind of work is a genuine representative of the European culture, whose best examples are the humanistic contributions of Goethe, Brecht, Schweitzer and many others. Dr. Detlef is a very hard and patient worker from Baden Baden (Germany). So, I am very proud to have some of my remote ancestors in Wormsgau (also in Germany), and therefore to share with him this culture, from my side unfortunately only as an ideal.

The book may be acquired for instance in the Internet electronic bookstores.

REMARK — The title of the second volume of the series is: *Substratformationen und Substratprovinzen der Niststandorte der Seidenbiene Colletes daviesanus und anderer Aculeata in Europa*

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