

The two indexes, one to morphological and the second to the scientific names, are both equally good. However, confining the indexes only to these topics does omit some things in the behavioral and evolutionary realm that would be of interest to many users. For example, a favorite topic of mine, myrmecophily, is not in either index. Rather, the trait must be sought via browsing with prior suspicion in particular groups (some Lycaenidae and Riodinidae). But the fact that myrmecophily also occurs in other, less well-known groups (e.g., Cyclotornidae) cannot be accessed via the index, it must be stumbled upon. A general index would have been welcome and useful indeed.

It may be one of those humorous examples where British and Americans are 'divided by a common language', but I was puzzled by one word choice. In this book the term used to denote the need for experience to develop a "gestalt" to identify various groups has repeatedly and amusingly sprung unbidden to my mind. The fact that experience imparts the ability to correctly identify butterflies and moths by a "feel" is a very real phenomenon among experts. But using the word "jizz" to describe the result of that mental process (and including it in the index) conjures up dated, but seminal American hipster slang that typically means something altogether different. What an interesting experiment in linguistic evolution has been set in motion!

In sum, I believe this important handbook will inspire genuine enthusiasm for a hands-on research approach to topics concerned with Lepidoptera. We need more books of this type to counter the facile "look but don't touch" method of studying the natural world that is advocated by the popular media, and the authors are to be congratulated on their ability to rise above this. The serious students of Lepidoptera (current and future) who will make fundamental contributions toward understanding the natural world will thank the authors for this handbook.

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THE GEOMETRID MOTHS OF EUROPE, VOLUME 1, INTRODUCTION, ARCHIEARINAE, ORTHOSTIXINAE, DESMOBATHRINAE, ALSOPHILINAE, GEOMETRINAE, by Axel Hausmann. 2001. Apollo Books. Stenstrup, Denmark. 282 pp., 8 color plates. 17 cm by 24 cm. ISBN: 87-88757-35-8. Retail cost DKK 490,00 (approximately

USD 61.00). Hard cover. A 10% discount is offered to subscribers of the series when ordered from Apollo Books.

Before the 1968 reprint of Holland's *Moth Book* by Dover Press, it was not easy for many average persons in the U.S.A. to study moths, beyond the *Golden Nature Guide*. Shortly following Dover's 1968 reprint, Ronald W. Hodges (1971) gave us the first, *Sphingidae*, of several volumes in the exquisite *Moths of America North of Mexico* series. Charlie Covell's eagerly awaited *Field Guide to Eastern Moths* in 1984 was aimed at a general audience.

My fellow moth-enthusiast acquaintances often mention their awe at which the Europeans publish smartly produced, high quality, pithy, and easy to use books on moths, not only of a general nature, but also for the specialist. Such are two new books from Apollo Books; *The Geometrid Moths of Europe Volume 1*, and *The Sesiidae of Europe*. This is a review of the former.

Wow!! What a book! This is terrific. My first impression was "They did it again" or to be more specific "Peder Skou did it again." Skou's Apollo Books, long a publishing house of high quality scientific books is here again with another tome—one that will be referenced for many years to come. The European users of this book will have much more to say about the nomenclature and systematics. As a general volume on Geometridae, it is terrific. As a general volume on moths it is terrific. As a general volume on much of Lepidoptera, it is terrific.

Axel Hausmann, the author of Volume 1 is the Editor-in-Chief of a project planned to cover 6 volumes. Volume 1 is full of general information and an appeal for assistance with the remaining volumes.

When I first looked at this book I liked it. Then I scanned and began to see the goodies. Then I read it in detail, and I was overwhelmed. This is a must read for all persons interested in Geometridae anywhere. The introductory sections are an extremely valuable important read for all persons interested in Lepidoptera.

There are many reasons why I am so enthusiastic:

1. The distribution maps provide two sets of data simultaneously. Black dots show the exact sites of specimens examined for this publication. Gray shading shows where the species might be seen. The gray shading represents extrapolated distributions based on ideal habitats, known dispersal patterns, and previously published distributions.

2. The introductory sections provide information on many ancillary subjects, of interest to persons studying

Lepidoptera, but most often available only in more specialized publications. Do you want to know more about “r-strategists,” “K-strategists,” and the “r-K-continuum” of “bionomic strategy?” Information can be found here.

Do you want to know more about the dynamics of Zoogeography including areal expansions and areal regressions? Do you want to know more about morphology (structures) with definitions and illustrations of the areole, connate and anastomosis veins, sexual and seasonal dichroism, ommatidium, chaetosema, flagellum, tergum, sternum, papillae anales, colliculum, hypognathous, holometabolism, and cremaster without the need for several other books? It's all here.

3. The concept of cladistic analysis, with its own jargon (three examples are monophyly, paraphyletic, and plesiomorphic), often appears in journals and at meetings of Lepidopterists. For the initiated, including most persons with an avocational interest in butterflies and moths, the strange language is impenetrable for understanding. Not any more. Hausmann provides a dictionary of many common terms and their meanings followed by the application of the concept to the phylogeny of the Geometridae. This is not a course on cladistics, but it provides often-used terms in a context providing quick overview. These few paragraphs can be indispensable for understanding what the authors of more complicated papers are saying.

4. Hausmann explains the concepts of variation, seasonal variation, sexual variation, normal variation, all of which are richly illustrated with color photos.

5. A combination of photographs and drawing are used to illustrate structural features of adults, antennae, legs, genitalia, larvae, pupae, eggs, and other morphological characters. We often look at drawings because we understand a picture is worth 1000 words. Hausmann provides all methods of explaining and interpreting important features of Lepidoptera and Geometridae.

6. The concepts of species, subspecies, clines, hybrids, and normal variations are discussed.

7. I really like the sections on Taxonomy and Nomenclature. The taxonomy of the subfamilies of

Geometridae is given followed in a few pages with a brief lesson on nomenclature and the Code of Zoological Nomenclature (1999). Hausmann refers to the newest version of the code and defines terms such as synonymy, homonymy, priority, invalid names, availability of names, and the different kinds of types. We often see and use these terms. Here they are defined for quick reference. The caution that all is not always as it seems is also given in a few Problematic cases.

You can have all this for the low price of \$61.00 USD, but wait, there's more. The first 79 pages of the book are worth the purchase price, but when you buy this book you also get 130 pages of very well prepared species accounts, eight color plates, 18 pages of genitalia drawings, a systematic checklist, 20 pages of bibliography, and two indices, an Index to subjects and taxa, and an Index to Scientific Names. Hausmann doesn't miss anything. The text is full of literature citations for persons wanting more information. He individually credits each photographer and artist for the excellent text illustrations. It's all here.

The only thing missing is keys. I like well-prepared keys, and this book has no keys. The well-prepared diagnoses and discussions of similar species are a good replacement for the keys.

Overall the volume is pleasingly and expertly constructed. The decorative cloth cover is attractive, and the book is Smythe sewn. A Smythe sewn book has threads through the folds of the paper on the inside margin. A Smythe sewn book lies flat when open, and individual pages never fall out. The insides are clean, and clearly written with a comfortable typeface and large font. The color illustrations are very sharp. The production of the book is consistently very high quality.

I highly recommend this book for all persons interested in Lepidoptera. For persons studying Geometridae the taxonomy presented here is required. For all other persons, this is a great example of the qualities of a very good book. The information within is very valuable. This book is very good value.

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