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BOOK REVIEWS

GRIFFITHS, G.C.D. (Editor). Flies of the Nearctic Region. E. Schweizerbart'sche Verlagsbuchhandlung (Nägele u. Obermiller) Stuttgart, 1980.

The above gives editor, title, and publisher of a new series about classification and identification of the dipterous fauna of the New World (including Greenland, but excluding Iceland), from arctic North America south to the Isthmus of Tehuantepec excepting the Mexican coastal lowlands, and including Bermuda but not the other islands of the West Indies. This series was conceived and organized by the editor, Graham C. D. Griffiths, and is intended to be a counterpart of the monumental Palaearctic series "Die Fliegen der paläarktischen Region." Like the latter work, "Flies of the Nearctic Region" will be multi-authored, and will appear in numbered issues, organized in a hierarchy of Volume, Part, and Number. The sequence of numbering is based on a reconstructed phylogeny of the Order Diptera, with volume I to deal with general aspects. The taxonomic section is scheduled to appear in volumes II to IX, and each issue will treat a particular supraspecific taxon and its members. Numbers will be published in the sequence in which they are prepared, and subsequently can be grouped for binding, as Parts and Volumes are completed.

The first two issues are dated 1980, and I will review them after a few general comments. The paper covers are attractively rendered in two colors, with white and black print, and with an illustration of the head of a muscoid fly, apparently the logo of the series. Also included on the front cover is the logo of the publisher. The paper seems to be of good quality, but it is not high gloss. This, plus a clear, simple style of type, with justified right edge and generous margins, gives each page a pleasing appearance. Overall, one is left with the impression that printing matters are in the hands of master craftsmen. Indeed, one can agree with a quotation from Thucydides that appears on page V, following the Foreword in Volume I: "This is composed more as a possession for ever than as a prize piece for immediate listening".

Volume I. Handbook. Part 1. History of Nearctic Dipterology, by A. Stone. XIII + 62 pp.

In the Foreword, the great master dipterist, Erwin Lindner gives a brief synopsis of his efforts to organize "Die Fliegen der paläarktischen Region", and extends his best wishes to G. C. D. Griffiths in his plans to produce a counterpart for the Nearctic Region. This brief salutation is followed by a fine photograph of Dr. Lindner, with a statement dedicating the new series to him, on his 91st birthday.

The Preface, by Dr. Griffiths, acknowledges Lindner's work, and expresses the hope that the Nearctic counterpart will be completed by the year 2000. A map indicates the southern limits of the area covered, and a "List of Abbreviations for denoting locations of specimens" concludes the preface. I think it would have been desirable to include here the "Outline of proposed volume structure" that was published in an advertisement for the series.

In 60 pages, Alan Stone provides a remarkable array of historical data, focussed on study of the Nearctic fauna. In a section treating publications, he describes contributions by various authors to morphological, systematic, physiological, genetic, and economic aspects of flies. The "History of the Families" is a thumbnail sketch of progress made with study of each family, including for each, number of valid (and invalid) genera and species. This treatment of families, complete with bibliography, is followed by brief biographical sketches arranged

chronologically by date of birth, of 56 “leading dipterists”, from Fabricius (1745) to Saether (1936). In this context, “leading dipterist” means one who has described 100 species or more of Nearctic flies. Words are well chosen, and statements are succinct. Overall, the presentation is descriptive rather than analytical or critical.

Dr. Stone suggests that these workers, though different from one another in many ways, probably shared in common “a boyhood interest in nature”. Grouping them in quarters, he points out that “the first fourth, chronologically, proposed names for Nearctic Diptera in an average of 41 families;...the second fourth, 20 families;...the third fourth, 16 families; and the last fourth, 6 families”. He identifies this as a trend to specialization that will probably continue, and that although application of new techniques might radically change entomology, “the enthusiastic naturalist turning a pinned specimen will long be needed”.

Although Dr. Stone’s treatment of historical aspects is rich and varied in detail, it lacks elements of association, that, if considered, would have provided the sense of continuity that history should convey. He acknowledges that “history ... includes the background and training of the scientist”, but he does not draw attention to professor-student lineages. Perhaps none exist among dipterists, but if not, even this deserves comment. Nor does he consider explicitly, impacts of generalizing ideas on study of flies; for example, evolution, biological species concept, sympatric speciation, phylogenetic systematics as expounded by another master dipterist, Willi Hennig, vicariance biogeography, cytology, and so on. Be that as it may, the information he provides can be used by future workers, and the histories they write will be better because they will be able to build on the work of Alan Stone. Indeed, his contribution is a worthy beginning for “Flies of the Nearctic Region”.

Volume V. Homeodactyla and Asilomorpha Part 13, Number 1. Bombyliidae, by J. C. Hall and N. Z. Evenhuis, pp. 1-96.

Included in this issue is an introduction to the Nearctic Bombyliidae, with keys to subfamilies and to the genera of Bombyliinae, and a taxonomic treatment of *Bombylius* and its 59 Nearctic species and subspecies. The key to these lower-ranking taxa follows the descriptive section.

Treatments of species include: synonymy; discussion of type material; description of structural features of adults; data about life history; and geographical distribution. The succinct descriptions are supplemented by good line drawings of male genitalia and spermathecae of females, and of wings of selected species. Illustrations are located near the descriptions that they are intended to supplement, and thus spread through the text.

No attempt is made by the authors to seek patterns of relationship. In fact, the treatments are arranged alphabetically by first letter of the specific epithets, so that one cannot infer anything from the sequence. A range map is provided for only one species (*B. anthophoroides* Evenhuis). Otherwise, one must attempt to visualize distribution patterns from a list of states from which each species has been recorded. Geographical variation is not mentioned, so the descriptions take on a rather typological air. The authors explain in the introduction that these and related topics will be considered at some future time. For the present, presumably, workers must be satisfied with what seems to be a rather uninspiring treatment, of interest mainly to specialists and to those who want to name their collections of bee flies.

I hope that future issues will provide treatments that have more general significance, but that retain the excellent style of presentation of Hall and Evenhuis.

Each of these numbers is costly: \$38.50 for Part 1, and \$44.40 for V.13.1, in U. S. dollars. But, recalling the introductory quotation from Thucydides and considering that one good meal

with good wine and served in a good restaurant, for one person can cost \$25.00 (and up!), the issues of the "Flies of the Nearctic Region" are not unreasonably priced. Furthermore, their value is likely to increase with the passage of time. Certainly, dipterists must have the series, and entomological bibliophiles who wish to own fine publications will want it, too. For the rest of us, it might be a toss-up between buying various issues or investing in some other worldly pleasure. However, this series is worth having, and publisher, editor, and authors of the first parts are to be congratulated for their efforts.

G. E. Ball

HOWDEN, H. F. and O. P. YOUNG. 1981. Panamanian Scarabaeinae: Taxonomy, distribution and habits (Coleoptera, Scarabaeidae). Contributions of the American Entomological Institute, 18 (1): 204 pp., 216 figures. (Separates available from the senior author, for \$15.00, U.S.).

According to the authors, this publication is a "review" rather than a "revision", for the taxa are described in terms of Panamanian material, only, and types of previously described species were not studied in detail. The stated justification for publication at this time is to provide a volume that will serve a need for identification of dung beetles by ecologists, ethologists, and economic entomologists who are or who might become interested in way of life of these animals. Scarabaeine adults exhibit complex behavior patterns in relation to use of dung, and are therefore of interest to many biologists. The unstated justification for this publication is the senior author's intense interest in and enthusiasm for the heavily armored, bumbling, horned monsters with disgusting alimentary habits, that are included in the Scarabaeinae.

In the taxonomic part of the paper, 22 genera and their 113 species are keyed, diagnosed, compared and described. Illustrations are included toward the end of the publication. Most are SEM photographs. They are adequate rather than elegant.

This paper contains a useful gazetteer providing for each locality mentioned in the text latitude and longitude, elevation (in meters), and relation to nearest major feature, so that a particular place can be located by those who have at their disposal only rather general maps of the area.

Figure 1 is an outline map of the Republic of Panamá, with provinces labelled and their boundaries indicated. Fig. 260 is a map showing elevations and Fig. 261 illustrates distribution of forest types of life zones in Panamá. Thus, geographical aspects of this study are very well portrayed.

In a few pages, the authors provide insights about behavior patterns of some species and draw attention to aspects of behavior that require further investigation. These notes summarize the wealth of information that the authors were able to gather in two man years of collecting and observing in Panamá. This field work has enlarged and enriched their knowledge of tropical scarabaeines, and has given them insight that is denied to systematists who confine their activities to study of preserved specimens housed in museum drawers.

Distribution patterns of the scarabaeine fauna of Panamá are considered against a background of topographical and geological changes during Tertiary time. The species are