

lished in a single volume, the size of either of the two, had the publisher used thin paper like that used for some of the standard manuals of the floras of regions and states. This would have made the book easy to carry in the field but would have had the disadvantages inherent in the use of thin paper. Heavy paper makes a book that is easier to use indoors, even though the bulk is greater. Either procedure has its advantages.

This treatise will take its place with the outstanding regional floras and manuals and with the best sourcebooks on ecology and plant geography.

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Nematology

Soil and Freshwater Nematodes. T. Goodey. Rewritten by J. B. Goodey. Methuen, London; Wiley, New York, ed. 2, 1963. xvi + 544 pp. Illus. \$16.

As the author stated in the preface of the first edition, this book is selective with respect to the material covered; the marine nematodes are omitted, and only a few brackish water species, which are also found in brackish soils, are included. This preface also states that symptoms and pathology are covered in the previously published book by T. Goodey, *Plant Parasitic Nematodes and the Diseases They Cause*.

This revised edition follows the general pattern of the first edition, but the class Nematoda is directly divided into ten (included) orders. Evidence of the great recent expansion of nematology is indicated by the inclusion of 2166 species in the present edition, compared with 1299 species formerly listed. These species are distributed in 394 genera, 87 subfamilies, 48 families, and 18 superfamilies. Many new grades are recognized and new combinations abound, but only two new genera and a few new specific names are given. Following the "Contents," "Illustration," and "Prefaces" (pp. i-xvi), there is an eight-page introduction which is subdivided into sections entitled "Plan," "Technique," and "General structure of a Nematode." An outline of the classification of included taxa through subgenera requires 16 pages.

The text begins with the order Tylenchida, followed by lower grades (with brief statements), followed by the

genera. Each genus includes a definition, description, and illustration of type or representative species, a listing of species recognized, with synonyms, and bionomics. Other orders follow. The orders Teratocephalida and Trichosyringida are recognized for the first time, the first having been previously recognized as a family, the second as a suborder. The Trichosyringina Ward, 1917, is listed as a synonym; Ward used the spelling Trichosyringata. No reference is made to the orders Diplogasterata Paramonov, 1952, and Cephalobata Paramonov, 1956, presumably regarded as synonyms of the Rhabditida. Typographical errors are extremely rare for so comprehensive a publication; hence I must mention the consistent citation of *Mononchoides* Rahm, 1928, which is cited as "*Mononchoides* Rahm, 1928/29."

Most users will welcome the inclusion of 87 tabular keys to genera and higher taxa and the list of genera placed in the Mermithidae. The retention of the three-page appendix listing the "Hairworms" of the British Isles, however, seems unnecessary.

Many nemic parasites of invertebrates have free-living stages, and to the extent that they are included, they follow the taxonomic scheme. However, some inconsistency in the genera that are listed may be due to lack of descriptions of free-living stages for members of the Drilonematidae, Ungellidae, Tetradonematidae, Sphaerulariidae, Alantonematidae, and Daubayliinae.

The original plan of the book was so selective and, as a result of the growth in taxonomy, the need for a new edition so urgent that little change was made in the scope. Some attempt might have been made to provide means of obtaining more information on species than names, authors, and dates. Instead, reference is made to the *Zoological Record*, *Helminthological Abstracts*, Stiles and Hassal's (1920) *Index Catalogue of Medical and Veterinary Zoology: Roundworms* (with its accompanying author index), and Tarjan's (1960) *Check List of Plant and Soil Nematodes*. Inclusion of references to descriptions of all species mentioned would have tripled or quadrupled the list of references. This, with a slight expansion in the treatment of Bionomics and an increase in the chapter on general structure of a Nematode might be considered for future editions.

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Entomology

The Insects. Url N. Lanham. Columbia University Press, New York, 1964. 240 pp. Illus. \$6.95 (to be published in May 1964; reviewed from galley).

The author, Url Lanham, has assembled a mass of interesting, significant, and thought-provoking information about insects in general. To grasp the full significance of this compilation, the reader should possess some knowledge about arthropods and know the essential facts about many common insects found among the more important orders and families. For a beginning student in entomology, the author's presentation of this sort of information (in chapter 2, "Diversity of insects") is inadequate and lacks references to the illustrations.

The organization of the 20 chapters, and especially the titles of many chapters, differs from most general textbooks on entomology. This creates for the reader a new look at insects. In some chapters the subject matter is presented in an excellent manner; this is especially true of chapter 1, "The place of insects in nature"; chapter 4, "Flight"; chapter 7, "Sense organs and behavior"; chapter 12, "Insects without wings"; and other chapters. Two chapters, 12 and 16—"Insect life in waters" and "Ancient aquatics"—might have been combined. Chapter 11, "Insects versus insects," presents a brief but an incomplete summary of this important subject.

Many of the significant statements throughout the various chapters come from sources with which most readers are not familiar. For a professional



The clubbed antennae, characteristic of butterflies, are shown in this series of a South American species. These butterflies are called "88's" by commercial collectors. [From U. N. Lanham, *The Insects* (Columbia Univ. Press, New York, 1964)]