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## BOOK REVIEW: *SOIL BIOLOGY GUIDE*

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## BOOK REVIEW

**SOIL BIOLOGY GUIDE.** Daniel L. Dindal, Editor. New York: John Wiley & Sons. 1990. xviii+1349 p. \$99.95. ISBN 0-471-04551-9.

Under the skillful direction of Professor Dindal of Syracuse University, the work of 54 authors, 11 years in the making, is blended into one large, useful volume treating the systematics and biology of all organisms involved in the soil ecology of North America, north of Mexico. The separate authors treat their special groups following a similar format throughout, covering the biology, taxonomy, and ecology of each soil biotic group. The amount of data presented varies with the extent of knowledge of the group treated. The 43 chapters cover all taxa from soil bacteria through the insects. The insects are covered in 384 pages.

Although insects are of primary interest to the readers of this journal, we should point out some of the details of the coverage of other groups. The terrestrial Gastropoda includes a detailed key to the families followed by a treatment of each family which usually includes a key to the genera and information on some species.

The terrestrial Annelida are treated in detail in a series of chapters that bring together in one place the latest review of the taxonomy of these groups. A key to the genera of Tardigrada, still poorly known animals, is given in chapter 15. Chapters 16 and 17 are sketchy, treating many terrestrial arthropods. A detailed review of the genera of Pseudoscorpionida with an illustrated key is a very useful contribution. The Phalangida are keyed to species, thus providing the most useful review of the harvestmen yet published. The Acarina comprise 221 pages of keys to the genera, and discussion of their position in soil biology, almost an entire book on these important soil inhabitants. There follows chapters on the remaining terrestrial arthropods.

The remaining third of the book is of most interest to us. The soil insects, starting with the wingless orders, Protura, Microcoryphia, Thysanura, Diplura, and Collembola, are reviewed in great detail. Each order has keys to the families and genera, and in most, the species are included. This is the most complete treatment of the Apterygotes for North America now in print.

The termites, as presented by W. L. Nutting, are keyed to species, the most complete now in print. This alone makes the book indispensable for

the pest control industry. All species north of Mexico are included.

The Psocoptera are relatively poorly known. The review of the species of this group includes only those known to or reported as occurring in soil. Hence, the keys are only guides. More detailed literature will need to be examined before identifications can be made.

The following reviews complete the treatment of insects. Coleoptera: Carabidae, Ptiliidae, Silphidae, Agyrtidae, Leiodidae, Staphylinidae, Pselaphidae, and Scarabaeidae (larvae). Each of these reviews are comprehensive and represents the most complete work immediately available. The key to the Carabidae genera is complete for America, north of Mexico, as is the key to the genera of Ptiliidae. Peck's review of the families Silphidae and Agyrtidae includes all known species, and all genera and many species of Leiodidae. Of necessity, the review of the soil Staphylinidae is limited. It would be impossible to include all genera in a work of this sort. This guide is useful only to the specialist. The references to the literature is helpful and must be used for specific identifications. Chandler's key to the genera of Pselaphidae is the best now available. The treatment of the scarab larvae is limited to a key to the subfamilies and six pest species.

The key and classification of adult Diptera is based entirely on the new "Manual of Diptera" as a start for adult identification. This is followed by a larval key to the major soil Diptera.

The last group discussed is the ants with a key to the 74 genera known to occur in the Nearctic Region

This book will be the standard work for a long time to come. No doubt errors have crept into a work of this size. None are obvious. Pointing this out is the job of the specialists as corrections for possible new editions and enlargement.

In summary, one can only congratulate the editor for seeing to completion this very important work. Not only is it required by all soil biologists, but many sections must be in the library of systematists. Entomologists may overlook this book because of its title. We hope this review will reach those who will profit from its use. – **Ross H. Arnett, Jr.**