Book Review

ARNETT, R. H., JR. 1970. Entomological Information Storage and Retrieval. The Bio-Rand Foundation, Inc., Baltimore. xii + 210 pp., 1 plate, 10 text Fig., c. 237 refs. $7.95.

This interesting little book is a guide to sources of entomological information, and an introduction to current information storage and retrieval theories, problems, and accomplishments as they relate to entomology. The book is intended not only as peripheral reading material, but as a student text. Accordingly, each chapter except the first contains suggested assignments, optional assignments, and a series of review questions. The writing is clear, the printing quality is good, and the illustrations are pertinent and well reproduced.

Arnett's book has a rather complex organization, with 11 text chapters, a glossary, four appendices, and subject and author indices, in addition to preface, postface, and colophon. Chapter one contains introductory observations, chapters two through eight deal with original information, and the closing three chapters deal with secondary information. Chapter two is of particular importance, since it concerns information storage and retrieval theory, the main subject of the book. In chapters three, four, and five Arnett discusses stored information, and original documents and their preparation for storage. Chapter six concerns the preparation of these documents for information retrieval. The remaining five chapters, which are more general and to some extent superficial, concern search resources, abstracts and indices, synthetic literature, popular literature, and societies, institutions, and personnel. The four appendices are: a bibliography of basic types of entomological literature; a selected list of commercial publishers and dealers in this literature; a list of entomological equipment and supply companies; and a list of major North American entomological libraries.

The arrangement of the references, or bibliography, is unfortunate. This bibliography contains 237 entries, at least one being a repetition. As a key to various types of literature, its organization by chapter and subject headings is quite suitable. Perhaps, though, the many additional text references to serials, and to other works such as the Zoological Record, should be included in it. As a key to references cited, however, this bibliography leaves much to be desired. Some citations repeated in two or more text chapters are not listed accordingly in the bibliography, and thus are not readily located (retrieved?). For example, there is in chapter four a reference to the Conference of Biological Editors, but this is listed in the bibliography under the heading of chapter five. I suggest that, if a second edition of this book is published, there should be a separate section for references cited.

Several acronyms used repeatedly in the text add to the complexity of the book, and any reader unfamiliar with these acronyms should turn first to the glossary and learn their various meanings. The information boxes used in numerous places are useful to summarize main points and to supply ancillary information, but some seem to me to detract from the book. I wonder, for instance, if the list of purposes of publication on page 66 is really needed; if this list is to be included, then I think each of its elements needs further discussion.

These criticisms are minor, but relate to the information storage and retrieval features of the book itself!

I strongly recommend that student entomologists, in particular, acquire and use this book as a guide. Many will find that the last several chapters will help reduce the time required for, and increase the efficiency of, any literature searches they may need to do. Regrettably, the book is somewhat regional in scope, and as a guide will be of limited use outside of North America.

However, the book is especially timely and pertinent to the information explosion problems of the present decade. Chapters two through six are of especially great importance to all entomologists, since procedures for the preparation and dissemination of entomological information are already beginning to undergo some radical changes and will continue to do so in the near future. Indeed, in terms of its information storage and retrieval concerns, Arnett hopes that his book will introduce entomologists to those changes now in progress, and that by so doing it will help accelerate its own obsolescence. For the professional entomologist, therefore, the time to read this book is now.

Donald R. Whitehead
Department of Entomology
University of Alberta
Edmonton 7, Alberta

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MATSUDA, R. 1970. Morphology and Evolution of the Insect Thorax. Memoirs of the Entomological Society of Canada. Ottawa. No. 76. 431 pp., 172 Fig., 24 tables, 744 references, subject and author indices. (Memoirs are included in the subscription price for the Canadian Entomologist.)

This is the second in a series of monographs by Matsuda analyzing structural evolution in insects. He began this project to organize the large quantity of published information which had accumulated since the appearance of Snodgrass' textbook on the subject in 1935. Perusal of the bibliography supports his rationale: of 744 references only 186 appeared before 1935. There are 424 references in English, 180 in German, 79 in French and 61 in other languages chiefly Russian and Italian. As the German and French contributions have importance out of proportion to their numbers the appearance of a review in English is of great value to English-speaking entomologists.

This book deals with the thorax but considers the wings and legs only briefly. Matsuda's conclusions are based largely on his reading, interpretation, and digestion of published works although he contributes original information where required to fill in gaps.

The book is divided into two parts: a discussion of general topics on 87 pages, and a discussion on 314 pages which treats in detail selected representatives of each insect order. For most biologists the first part is of greater use. In it Matsuda establishes the primitive organization of the pterygote thorax. This necessitates a summary of his conclusions from part II. He discusses the neck, tergum, sternum, intersegmental regions, pleuron and aspects of the wings, coxae and spiracles, comments on their embryological and evolutionary origins, analyzes the various theories proposed to explain their evolution, and emphasizes the strengths and weaknesses of each theory. Finally, he presents his own conclusions, synthesizing a theory of homology from descriptive and experimental embryology, postembryonic development, genetics, comparative morphology, paleontology and phylogeny.

In his discussion of wings Matsuda concentrates on their origin, a subject which has intrigued many workers as evidenced by the plethora of theories published to explain their presence. His most interesting discussion here concerns the validity of separating the pterygotes into the Paleoptera and Neoptera. Matsuda concludes that this separation is phylogenetically unsound since the wing mechanism of the Ephemeroptera is very much like that of most neopterous pterygotes, while that of Odonata is not.