

## BOOK REVIEWS

Nentwig, W. (Ed.) 1987. *Ecophysiology of Spiders*. Springer-Verlag; Berlin, Heidelberg, New York and Tokyo. 448 pp. 133 figs. (price \$149.00).

In compiling this book consisting of 28 chapters focusing on specific aspects of physiology and ecophysiology in spiders, Nentwig has done a valuable service for those interested in the biology of this remarkable taxon. There has been explosive growth in these areas over the past 20 years, thus creating the need to take stock of what has been done as-well-as to point out problems for future study. Such discourse is also important in that a much more complete interpretation of the data and hypotheses can be provided than is possible in primary reports. Arachnologists and other biologists will find that *Ecophysiology of Spiders* admirably meets these goals. This text is a welcome and valuable complement to other recent books devoted to specialized areas of spider biology (Witt and Rovner 1982; Barth 1985; Shear 1986).

The book is organized into five sections, each containing from three to eight chapters. Each chapter is authored by a specialist. The list of authors is international and thus represents the cosmopolitan nature of research in arachnid biology. The text, in English, does not suffer from this international flavor.

The main divisions are diverse which is consistent with the editor's rather broad definition of ecophysiology. They include "Cuticle, Temperature and Respiration"; "Glands, Silk and Webs"; "Feeding Ecology"; "Parasites"; and "Environment and Life History". Although the scope of individual chapters varies, ranging from the short but elegant and insightful discourse by Nakamura on hunger and starvation (9 pp.) to Putz's extended and comprehensive discussion of thermal and water relationships (30 pp.), each provides a fairly complete account of the subject in question.

Despite the focus on autecology, this text is the most authoritative treatise available concerning cuticle morphology and the physiology of silk production, excretion, circulation, digestion, respiration, and molting hormones. The chapters dealing with these and other subjects are put in perspective by comparison with other chelicerates, insects, and in some cases, other taxa. As such, the book's value is extended to a wider audience of biologists. Workers who concentrate their efforts in the laboratory will be impressed by the rich diversity of behaviors and other elements of the natural history of spiders described in various chapters. This feature is of inestimable value in providing a more valid consideration of the significance of their findings relative to the ecology of this complex group.

The three chapters devoted to parasites of spiders present an intriguing picture of an often overlooked aspect of spider biology. Their scope is somewhat more limited than in other chapters, given the limitations of available information, yet they provide valuable and stimulating insights as to the potential value of future research in this area *vis-à-vis* spider evolution and population biology.

One can always take issue with the choice of subjects treated in such a text. One might argue, for example, that the chapter "Spider Venoms and their Effects" by Maretic is too clinical to be included in this volume, given its stated purpose. Be that as it may, this specific chapter contains a wealth of information

that can be of value to practicing araneologists in providing answers to questions often asked by the general public. As such, I welcome its inclusion in what will prove to be a landmark publication on spiders. One can also argue that this text does not cover all areas of spider physiology: this is not a serious limitation given the subject matter discussed in other recent texts cited earlier in this review.

References are listed at the end of the text, as is usual in books of this type instead of at the end of each chapter. This method will frustrate some who need to credit specific citations but is very convenient for those who use the list for general reference. This list is comprehensive and up-to-date, with the latest publications listed from 1986. Important papers and review articles are specially marked. An annotated appendix is provided, with citations, to give a brief summary of spider systematics, a feature of value for those with a non-taxonomic background. The index is extensive and workable. The figures are of excellent quality and are provided with clearly written figure legends. The text is well edited, with few noticeable errors. Most are typographical and not likely to cause problems. Others are minor but irritating: the inconsistent use of both a comma and period as a radix mark (p. 147); the ambiguous use of more than one solidus, (/), to represent products or quotients of two or more physiological dimensions. A slightly more serious error appears on page 71: in the context of the sentence, *Mitopus morio* would be considered an insect or a mite by one not familiar with arachnids when in fact it is a daddy-long-legs in the order Opiliones.

The high price will probably force many to use a library to gain access to this fine text; one hopes a lower priced (soft-cover) edition will become available.

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