

Book Reviews

Insect Neurohormones

Marie Raabe

Plenum Press, New York, 1982.
352 pp.
Price \$51

Although insects and vertebrates appear to have roughly the same number of hormones, those of insects are almost all neurohormones, synthesized in neurosecretory cells distributed throughout the nervous system. Most of the insect neurohormones have been discovered in the last 20 years. Only very recently have biochemists overcome the problems of minute quantities of starting material and succeeded in identifying and synthesizing two insect neurohormones (proctolin and adipokinetic hormone). Marie Raabe's book is an invaluable review of a rapidly expanding field and a most useful background to future biochemical studies.

Following a general chapter on the synthesis, storage and release of neurohormones, the book deals in turn with the various functions in which neurohormones have so far been implicated. These include the control of endocrine glands (prothoracic glands and corpora allata), diapause, reproduction, the functioning of visceral muscles, morphological and physiological colour change, behaviour and rhythms, osmoregulation, metabolism and the control of physiological processes in insect cuticle. The histophysiological emphasis of this book reflects the author's own research interests, and those of many of her French colleagues. Incidentally, the book was written in French, and its very factual style has suffered a little in translation. Its great value, however, lies in the fact that a single author, one of the leaders in the field, has brought together an enormous amount of information, until now scattered through the literature, and written a comprehensive and clear synthesis of insect neuroendocrinology.

The book has been nicely illustrated by Daisy Chervin, with many schematic diagrams of events taking place at the neurohormonal level. Previously published figures have been specially redrawn, resulting in a uniform style of illustration throughout. Numerous clear tables are used to summarize comparative data, and the book contains an exhaustive reference list. An addendum covers papers published between November 1980 and November 1981, after completion of the main text. Inevitably, a review volume of this nature will date rapidly, but this does not detract from its value.

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The Natural History of Nematodes

George O. Poinar, Jr.

Prentice Hall, Inc., New Jersey, 1983
323 pp.
Approximate price R63

In his preface, Dr Poinar says that this book was written as an introduction to the unique group of animals called nematodes. So often a book of this nature runs the risk of presenting its subject, and especially one as extensive as the phylum Nematoda, in a rather superficial manner. The author has to a large extent avoided this pitfall by including at the end of most chapters a list of publications for general reading and selected references containing more detailed information.

The first seven chapters of the book are grouped under the heading 'Nematode Biology' and cover topics such as the origin of nematodes, nematode classification, morphology, reproduction and development. A short chapter is also included on techniques such as sampling, extracting, describing and culturing nematodes. The next group of five chapters is entitled 'Nematode Groupings' and deals with free-living or, as the author terms them microbotrophic nematodes, plant-parasitic nematodes, predacious nematodes and nematodes parasitizing invertebrates and vertebrates. A third section of four chapters under the heading 'Nematodes and the Environment' briefly covers a range of subjects including nematodes as vectors, natural enemies and biological control, host resistance and nematode control. The book concludes with a glossary and two indexes, one based on the scientific names of nematodes and the other on the subject matter.

The half-tone illustrations throughout the book are, in the main, well chosen, although several suffer from indistinct labelling of structures referred to in the legend.

Dr Poinar is well known for his work on entomophagous nematodes, and his enthusiasm for this particular field of research is understandably evident in many of the examples used to illustrate points made in the text. The book is written in a style that is easily readable.

The Natural History of Nematodes can be recommended as an introduction to nematodes as a fascinating group of animals of great economic significance. However, at an anticipated selling price of well over R50, this is hardly the sort of book one would expect every zoology student to purchase. Nevertheless, it does fill a gap between the more specialized books on plant-parasitic nematodes and nematodes of medical and veterinary importance, and the brief mention of nematodes found in most textbooks on general zoology. For this reason alone, this book should find a ready space on the shelves of all zoological libraries.

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