BOOK REVIEW

BEDDING, R. A., R. J. AKHURST, AND H. K. KAYA. (eds.). 1993. Nematodes and the biological control of insects. CSIRO; East Melbourne. vi + 178 p. Hardback. ISBN 0-643-05479-0. (Available from ISBS, 5602 NE Hassalo St., Portland, OR 97213-3640 at US $60.00 plus shipping).

Following closely on the heels of the successful (and out-of-print) CRC Press text on entomopathogenic nematodes (Gaugler, R. and H. K. Kaya. 1990. Entomopathogenic Nematodes in Biological Control. CRC Press, Boca Raton, Florida) is this contribution from Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO). Unlike its predecessor, which dealt exclusively with entomopathogenic nematodes in the families Steinernematidae and Heterorhabditidae, this text also contains information on species in the families Phaenopsitylenchidae, Aphelenchoididae, and Mermithidae which are considered insect-parasitic. Some members of these families eventually kill their host and they have been used primarily as classical biological control agents. In contrast, entomopathogenic nematodes kill their hosts rapidly and are used as biological insecticides.

The book's 25 contributors hail from seven nations and they offer a diversity of subject matter. Seven chapters provide case studies of pest insect control with nematodes in Australia, Korea, the United States and China. One chapter each is devoted to Phaenopsitylenchidae, Aphelenchoididae and Mermithidae and the remaining four deal with steinernematids and heterorhabditids. The account of the phaenopsitylenchid *Daledenus siricidicola* and its use as a control agent for woodwasps makes for the most interesting reading of the entire book. This parasitic nematode was the first employed successfully against an insect pest. Its history as detailed here provides insights into the preparation for, and implementation of, a successful biological control project including the selection of correct strains, continued monitoring after release to assess effectiveness, and maintenance of lab colonies to ensure viable control agent stock. Other chapters of note describe the control efforts for the banana weevil borer and for scarab grubs in turf (the latter providing an excellent literature review). Unfortunately, some chapters are superficial and provide very little more information than in a typical scientific journal paper.

The remaining ten chapters pertain to the study and use of steinernematids and heterorhabditids, and cover subjects of a more general nature including post-application biology, ecological genetics, integrated control, and bacterial symbionts. Three chapters are devoted to bacterial symbionts (the "power behind the throne" as one author describes them) which provide the toxin for target hosts and essential nutrients for the nematodes. As with those of case studies, the form and information content of these chapters vary somewhat. Most are engaging and informative, but a few are quite dry, narrow in scope, and almost painful to read.

Due primarily to their increasing importance as commercially-available biological control agents and their relative ease of rearing, research on steinernematids and heterorhabditids has proliferated in the past few years, which explains why the great majority of the book is devoted to them. Much of what is presented was not available or known at the writing of the Gaugler and Kaya text.

The layout of the book is attractive and functional. Each chapter begins with an abstract (summary) and the top of each right-hand page contains the chapter title. The paper is of medium-heavy weight and is semi-glossy. The contributing authors' affiliations are listed as an addendum glued to the last page.

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Moderately priced, this text would be a valuable (and affordable) addition to the library of anyone studying insect-parasitic or entomopathogenic nematodes or those wishing to stay abreast of this increasingly-important group of biological control agents.

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