

BOOK REVIEWS

CAMERON, P. J., R. L. HILL, J. BAIN AND W. P. THOMAS (Eds.). 1989. A Review of Biological Control of Invertebrate Pests and Weeds in New Zealand 1847 to 1987. CAB International Institute of Biological Control (CIBC) Technical Communication No. 10. CAB International, Wallingford, Oxon. UK. xiii + 424 pp. \$92.50. ISBN 0 85198 645 5

This is the first comprehensive review of the importation, release, evaluation and management of organisms imported for the biological control of invertebrate pests and weeds in New Zealand. In the introduction the editors briefly describe the geography and climate of New Zealand and indicate changes in agriculture and forestry which have led to the increase of pests, to the development of integrated pest management and renewed interest in biological control. They outline the historical development of biological control and provide a summary table which indicates that of the 70 organisms targeted for biological control 321 agents have been introduced for their control, 225 of these were released, 70 became established and 24 have had some level of impact on their hosts.

Forty-three contributors, all scientists currently or formerly involved in biological control and IPM, deal with 70 pests or pest complexes assembled under six categories; (1) pasture pests, 8: (2) field crop and vegetable pests, 17: (3) fruit crop pests, 18: (4) forestry pests, 10: (5) weeds, 13 and (6) nuisance pests, 4 groups. Each of the 6 categories contains an introductory section summarizing the main pests and biological control efforts. A separate chapter is allotted for each pest complex. As stated by the editors all biological control programs are not covered in similar detail. Where the information has already been published the chapters may provide only brief summaries with appropriate literature citations. Each chapter starts with a section on pest status, continues with sections on background, importations, releases and recoveries, evaluation, and ends with one on conclusions. The section on conclusions at the end of each chapter is of particular value for future biological control practitioners; although concise it summarizes the current status of control and recommends, where required, what further action should be taken. The literature, cited conveniently at the end of each chapter, includes numerous unpublished reports, some of them of early vintage, indicating the great effort expended to document, as fully as possible, all introductions.

New Zealand is a pioneer in the field of classical biological control and has a long history commencing with the deliberate introduction of *Coccinella undecimpunctata* in 1874 from England, the first of several species of coccinellids imported for the control of aphids. A remarkable amount of information has been condensed into the various chapters. For example we are reminded (thrice) that Albert Koebele obtained most of the specimens of *Rodolia cardinalis* for introduction into California in 1889 for the biological control of cottony cushion scale, not from Australia as commonly reported in biological control books, but from New Zealand. It is drawn to our attention that larvae of the green looper *Chrysodeixis eriosoma* parasitized by the polyembryonic encyrtid *Copidosoma floridanum* consume 72.9% more leaf area than unparasitized larvae, in contrast to those parasitized by *Apanteles ruficrus* which consume 72.6% less food than unparasitized ones. These as well as other factors require consideration when developing economic thresholds in IPM programs. Native as well as adventive pests have been targeted for biological control. In fact the most introductions (36) for a single pest were made against the native pest *Costelytra zealandicus*. The final chapter gives an account of the ongoing program for the control of the wasps *Vespula germanica* and *V. vulgaris*, a pioneering biological control program which is of considerable interest to other countries with similar wasp problems.

This volume, the 10th of a series of regional reviews of classical biological control initiated by the Commonwealth Institute of Biological Control (now the International

Institute of Biological Control) in 1960, is a welcome addition as it completes coverage of the British Commonwealth countries. Others in the series, which also include several non-Commonwealth countries, cover biological control in Australia and Papua New Guinea (two volumes, the first a review of biological control in the region and the second Australia as a source of natural enemies for other parts of the world); Canada (three volumes, the first covering introductions up to 1957, the second from 1958 to 1968, and the third from 1969 to 1980); the Ethiopian (now Afrotropical) Region of Africa; Western and Southern Europe; South-East Asia and the Pacific Region; and the Commonwealth Caribbean and Bermuda. The editors and authors have done an excellent job in compiling this book which should be of major interest to biological control workers throughout the world.

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Jamaica Naturalist.—ed. by PETER VOGEL. Volume 1, issue no. 1, January 1991. An annual subscription (2 issues per year, at US\$15.00) available from: Margaret Johnson, Treasurer, Natural History Society of Jamaica, Department of Zoology, University of the West Indies, Mona, Kingston 7, Jamaica, W.I.

This is a new, glossy, natural history magazine with an 8.5" x 10.75" format, whose publication begins on the 50th anniversary of the Natural History Society of Jamaica. It supersedes the society's mimeographed *Natural History Notes*. The first issue has 44 pages, of which approximately 6 are taken up by whole-page or partial-page commercial advertising. In the remaining 38 pages are an editorial, a statement about the society, 5 fully-fledged Articles, one article on the subject of forestry under the heading Ecotrends, 3 brief articles under the heading Research News, one article under the heading Natural History Notebook, and a section of book reviews.

The 5 Articles deal with: the effects of Hurricane Gilbert (1989) on Jamaica's bird populations; Jamaica's precinctive ("endemic") bromeliad-inhabiting crab *Metopaulias depressus*; the Jamaican hutia (*Geocapromys brownii*), a large precinctive rodent popularly termed coney; the fossil fauna of Dominican amber (with a list of insect family-level taxa discovered in it); and an appraisal of the endangered flora of Jamaica. These articles are written by residents of Jamaica (2), Germany, Ireland, and Florida. The front cover is illustrated by a superb photograph of the red-billed streamertail, Jamaica's national bird. The photograph is available as a poster from the society. The back cover has the first picture of the rare Jamaican iguana photographed in the wild. The body of the text has 4 other colored prints, 4 black and white photographs, and 4 drawings.

Occasional articles on natural history appeared in *Jamaica Journal*, a magazine of larger format, born in the mid-1960s as the quarterly journal of the Institute of Jamaica, and fading in the 1970s. Without paid advertising, that magazine seems to have encountered financial problems. I hope that *Jamaica Naturalist* has the right formula for financial success. It will need support, in terms of contributed manuscripts, from Jamaican and foreign biologists, and it will need subscriptions from abroad as well as from Jamaica. Next to being in Jamaica, reading *Jamaica Naturalist* is the easiest way to experience a taste of Jamaican natural history.

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