

Williams, D. J., Watson, G. W., 1990: *The Scale Insects of the Tropical South Pacific Region, Part 3. The Soft Scales (Coccidae) and Other Families*. C.A.B. International Institute of Entomology, Wallingford, Oxon, UK, 256 pp, 71 figs. ISBN 0 85198 659 5. Price UK£26.00.

This is the third volume in the series of taxonomic treatments of the scale insects of the tropical South Pacific. It follows the volumes on armoured scales (Diaspididae) and mealy bugs (Pseudococcidae) and, together with these 2 volumes, forms the first comprehensive documentation, description and illustration of all the scale insects known from this area.

Approximately 10,000 specimens were examined from the families Margarodidae, Ortheziidae, Eriococcidae, Dactylopiidae, Coccidae (the most numerous), Cerococcidae, Lecanodiaspididae, Kerridae, Asterolecaniidae, Conchaspidae and Halimococcidae. Fifteen new species are described bringing the total number of species treated in the 3 volumes to 297. The area covered, as in the previous volumes, is Melanesia, Polynesia, Kiribati, Irian Jaya, Lord Howe Island and Norfolk Island.

The text begins with an introduction outlining the scope of the text and recording deposition of specimens, including a large proportion of those resulting from the UNDP/FAO Regional Survey of Agricultural Pests and Diseases in the South Pacific region which are deposited at the New Zealand Arthropod Collection, DSIR, Auckland. The next section gives brief notes on the occurrence, known biological control and effects on the host plant for 17 economically important species in the region, as well as a summary of coccoid classification. The taxonomic section begins with keys to the families of Coccoidea found in the tropical South Pacific. Keys to 42 genera and 81 species are given. In addition 35 lectotypes are designated. Each family treatment begins with a general description of key taxonomic features and general comments about family position, biology, natural enemies etc. Then follows a key to the genera, a generic diagnosis including synonymies and references and a key to the species. Each species treatment comprises lists of synonymies, a description and material examined (with details of locality, nomenclature, anatomy, distribution records, economic importance and natural enemies. A detailed illustration is given with every species description. The keys work well, I have already used my review copy many times to identify scales from the Pacific Islands.

A comprehensive systematic list of the host plants of the Coccidae and other families of the tropical South Pacific is given, as well as a useful index to plant genera in plant families. The extensive bibliography includes over 350 entries.

The book is well organised and presented and the diagrams accompanying each species description are clear. It is an essential text not only for the reliable identification of scales by non-specialist entomologists involved in pest control and in quarantine inspection of plant produce, but also for taxonomists interested in the scale insects from this area of the world.

The 3 volumes in this series are the definitive identification manual and reference resource for those entomologists involved in plant protection, biological control, quarantine of plant produce and systematics of scale insects in the tropical South Pacific. The authors are to be congratulated on completing this monumental work.

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