

## CD-ROM REVIEW

Mites in Soil: an interactive key to mites and other soil microarthropods, by D.E. Walter and H.C. Proctor (2001). CD-Rom. CSIRO Publishing, Collingwood, Vic 3066. ISBN 0 643 06790 6.

How have soil mites been identified in Australia? The answer is that they mostly haven't. But it has been possible to place many Australian mites into families by skipping between various old books and perhaps unpublished keys. However the amount of page flipping required for even common mite identifications threatens to discourage all but the most taxonomically inclined students. Thus a publication that synthesises identification and biological information for a broad grouping of Australian mites is very welcome. This CD contains a lot more than just mites or just Australian taxa however.

The master key on this CD is for soil microarthropods. It enables the user to identify 30 major groups of soil microarthropods including six major groupings of mites. For finer mite identification the user then opens the Mites in Soil key which winnows taxa down to orders, suborders and cohorts. Three keys (Prostigmata, Endeostigmata and Parasitiformes) then provide family-level identification. Prostigmata are well covered with 45 families. Twelve families of the often-overlooked Endeostigmata are keyed, several of these have only recently been recorded from Australia and three of these are non-Australian. Parasitiformes are thoroughly reviewed (46 families) including three recently described and seven non-Australian families plus three new family records from Australia to boot. In fact there are quite a few new records from this CD that will now need to be added to Australian checklists. There are also other groups that can now be newly but less formally recorded. Some come with sobering comments such as 'These mites are common in Australian soils but no species have yet been described.'

There are some groups for which family level identifications are not provided. The Oribatida, a singularly important soil mite group, are identified to cohorts. However they are dealt with in another CD publication (Hunt *et al.* 1998). Astigmatids (excluding Oribatida) receive a brief treatment and no key to families, but then few astigmatid mites occur in soil. Erythraeoidea (2 families), 'Trombidina' (13 Australian families) and the Uropodina (12 Australian families recognised thus far) are not identified further which partly reflects the authors' interests but also the state of mite taxonomy. These are large and important groups that require much work.

Scanning electron micrographs (by Dave Walter) and line drawings (mostly by Catherine Harvey) are used liberally to illustrate mite morphology. The images are well labelled, clear and beautifully executed. The specimen preparation section contains a lot of useful advice especially on funnel extraction. Uniquely, common names are provided for prostigmatan families. I wasn't expecting to like mite common names but ones like 'feather-footed mites' or 'pincushion mites' are catchy.

There is some redundant use of terms; thus genital papillae are also called genital suckers or genital acetabula, and prodorsal sensilla are also called prodorsal trichobothria. Some descriptive terms such as holooid, ptychoid, macropyline are left undefined. There are minor mistakes such as the "overview" link for Parasitengona which gives text meant for the Parasitidae. These are minor criticisms. My major criticism of this work is that it is not clearly referenced. Users may be left guessing

whether information comes from a listed reference or the authors' observations. For many reports of feeding behaviour it will certainly be the latter.

The price is very reasonable given the amount of detail condensed into this package. Aside from its exceptional value as an identification tool and its stunning images, it also contains a wealth of taxonomic, biological and ecological information that is otherwise unavailable or widely scattered. It is sure to become essential for anyone working with mites or soil ecosystems worldwide. In addition the microarthropod key is highly recommended for undergraduate classes.

### Reference

HUNT, G., COLLOFF, M.J., DALLWITZ, M., KELLY, J. and WALTER, D.E. 1998. *An interactive key to the Oribatid mites of Australia*. CSIRO Publishing, Collingwood, Victoria.

Matthew Shaw

Department of Zoology and Entomology

University of Queensland