

**CABIKEY to the worker castes of soil-dwelling termites of Africa and the Middle East.** By W.A. Sands (Wallingford: CAB International, 1998). Price £195/US\$320.

The identification of worker termites to genus has remained for many years. Termitologists have relied on drawings of termite mandibles (Ahmad, 1950) supplemented by Dr Sands' previous publication in 1972 on the soldierless termites of *Termites of Africa* along with comparisons of collected material and a few guestimates.

Dr Sands is to be congratulated on producing a means by which over a hundred different soil-dwelling worker termites can now be identified down to genus. The new CD-ROM is the culmination of many years' hard work and is an essential tool for those working with termites. The terminology and methods used are adequately outlined in the help menu with drawings to reinforce and distinguish between the characters used. Some of the figures on styli and cerci and measurements across the compound eyes may not be immediately apparent but the relevant text soon sorts this out. The visual descriptions on how to uncoil the digestive tract to obtain the enteric valves and the photos of the different cushions and spine arrangements are excellent. For some of the more complex labelled diagrams it may be useful to print these out even though these can be readily referred to when using the key.

The key itself is easy to use. It suggests a few basic characters to check on (e.g. colour, mandible teeth) (list 1) followed by a second longer list which, when the possibilities

are fewer are presented one by one. Once an identification has been made, a full description of characters can be checked through with figures if needed, and, if still not happy, genera close to this identification can be compared to confirm a final outcome. One good thing about the key is that one can skip one or more of the questions asked (labelled uncertain) and still arrive at an identification. This is especially useful for damaged specimens, e.g. where segments of antennae are missing or teeth are broken off.

This CD-ROM is a must for termite taxonomists. It may not be as useful for those working in pest control or for those working with a narrow range of a few common genera where soldier keys are adequate, but for anyone studying the biodiversity and changes occurring within an area, especially where large numbers of mixed genera are collected over numerous sample points at different times, then to have this key available will save a lot of time and money and enable results to be processed much more quickly. The ability to distinguish workers may also encourage more ecological studies where previously some results were abandoned as soldiers were absent from the samples.

*Mike Pearce*

#### Reference

- Ahmad, M. (1950) The phylogeny of termite genera based on imago-worker mandibles. *Bulletin of the American Museum of Natural History* **95**, 37–86.