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Book review

MCARTHUR, A. 2010: A guide to *Camponotus* ants of South Australia

South Australian Museum, Adelaide, 121 pp; Paperback, ISBN 9780980729108, Price: AUD 25.00 at the South Australian Museum bookshop

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There are too few keys to Australian ants and this one to *Camponotus* – the largest genus there – was eagerly anticipated.

There are over 1500 species of *Camponotus* worldwide and at least 128 in the whole of Australia. The South Australian Museum has an exceptionally rich ant collection, so identification of the 70 species recorded in the State is the central subject of this guide. John GREENSLADE's 1979 guide to the Ants of South Australia was inspirational for this present work, but in comparison is a very brief introductory account. Maps of records for the whole of Australia are included, but these are only for the species found in South Australia.

Camponotus is a particularly interesting genus in Australia where species have diversified to parallel the ecological lifestyles of *Formica* species and other large ants elsewhere. For example, they include honeypot ants as well as carpenter ants, seed collectors and tenders of sap-sucking insects. Some of these honeydew collectors are nocturnal and not present in daylight to defend their food sources from parasites and predators. *Camponotus consobrinus* (ERICHSON, 1842) is an example of a nocturnal forager which would be worth investigating further – perhaps it shares its sap-sucking insects with diurnal ants. *Camponotus aeneopilosus* MAYR, 1862 forages in daylight and can be observed "group foraging" with intermittent contact between a dozen workers and no clear leader – reminiscent, to a European observer, of the slave raids of *Formica sanguinea* LATREILLE, 1798, but they appear to be foraging for food only. Complex interdependencies between ant species which are seen elsewhere, including temporary social parasitism and slave-making, have apparently not yet been recorded in Australia. HASKINS' quoted record (1922: Psyche 99: 31-3) of 23 years of life of a *Camponotus* queen in a captive

nest should not be used as evidence of long fertility in the wild where far more progeny are produced more rapidly, but they are potentially very long-lived insects.

This work provides two types of dichotomous identification key: the main one is, unusually, based on colour photographs while the second one is a very much shortened verbal summary using 69 simple couplets. The full key gives descriptions, distribution maps and, where appropriate, synonyms and etymology of names. It is also usable by computer, on loading the provided table of characters and the filter facility of Microsoft Excel. A magnification of 20 - 80 times is advised for examination of specimens.

Testing a new key without any comparable one, or repeating the author's work, presents a problem. Therefore it was necessary to re-identify some specimens named for me by Archie several years ago and also some unnamed ones collected in southern Australia in 1991 - 1995, when making an ecological study of coexisting ant species (PONTIN 1997: Entomologist's Monthly Magazine 133: 1-8).

The keys start with a key to formicine genera using full-face view and side view colour photographs which become standard illustrations throughout for the species key as well. The genus is subdivided using rather subjective features such as "squat" mesosoma and in another couplet "top of eyes within half eye length of corners", but these become clearer than expected when the specimens are aligned to give the same angle of view as shown in the photographs. One might expect many diagnostic details to need the usual line diagrams (there are a few in a final appendix), but familiarity with use of the photographs proves their usefulness and the keys run easily as confidence in the identification builds up.

New discoveries and splitting of species may be expected to increase the real number of them, but it is also likely that genera will be split when the divisions described in this key are used. Of course this would produce a deplorable avalanche of name changing with world wide repercussions which users of the names would wish to avoid.

In conclusion, this work lives up to the eager anticipation of a new key to a group which was inadequately catered for. We need more keys like this.