

TWO NEW ENIGMATIC *MELOPHORUS* SPECIES (HYMENOPTERA: FORMICIDAE) FROM AUSTRALIA

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Abstract.—Two new species of the Australian ant genus *Melophorus* are described. *M. majeri* new species is morphologically very distinct from all the other species with spines on the propodeum, and the worker caste extremely elongate. It has so far only been collected at two localities in Western Australia in heath vegetation. *M. anderseni* new species was found once in the backyard of the CSIRO labs in Darwin. It displayed a perplexing behavioral pattern, with hugging and rubbing intimately the worker of the meat ant *Iridomyrmex sanguineus*, rushing into their nest and carrying out their larvae without being interrupted by the hosts. A possible reaction of the meat ant might be the blocking of the nest entrance of the robbers by piling up little stones over their nest entrance.

Melophorus is one of the more specious and dominant ant genera in Australia. The 21 currently known species (Bolton, 1995) are quite an underestimate of the total number of species which will certainly exceed the number of 100 species (Agosti, unpubl.). *Melophorus* ants are endemic to Australia, and their main radiation was in the arid to hyper arid ecosystems, from open forested land to almost barren desert, where they are often found foraging during the hottest hours of the day, with surface temperature above 60°C (Christian and Morton, 1992; Andersen, 1997), and reports on nocturnal activities could not be confirmed (Taylor and Brown, 1985). Nests are found even in the driest habitats such as between sand dunes or in salt pans, where they are one of the main food sources for lizards (Brown, 1955). Almost all the species are diurnal, and forage usually individually, but recruiting to food sources is possible as well (Agosti, unpubl.).

Various food sources are used, from harvesting seeds (e.g., Buckley, 1982), scavenging, exploiting extrafloral nectaries to lestopiosis (see below). One species group with such aberrant species as *M. fulvihirtus* with a very stout body, short, bristle like hairs and appendages, is known to live on or near nests of the large *Iridomyrmex purpureus* group (Greenslade, pers. comm.; Hölldobler and Wilson, 1990). It is thought that the often extreme life style of *Melophorus* ants is due to the competition with the dominant *Iridomyrmex* species (e.g., Andersen and Patel, 1994).

Nests are mostly small, normally with one queen, and in the ground. Mating flights take place in form of swarms few meters above ground, with the female and male in cupola falling on the ground. The female then starts immediately to dig a whole into the ground, which is closed from inside within a few hours (Observed for six species, including *M. bagoti* north of Alice Springs in January 1991 after heavy rainfall (Agosti, unpubl.)).

In many respects, the biology of *Melophorus* is very similar to the vicariant genera in the deserts on other continents, whereby the genus *Melophorus* seems to have the