



Australian ants of the genus *Aphaenogaster* (Hymenoptera: Formicidae)

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Abstract

The Australian species of the myrmicine ant genus *Aphaenogaster* Mayr are revised. Eight species are recognised, four of which are described as new. The species include *barbara* sp. n., *barbigula* Wheeler (for which a lectotype is designated), *kimberleyensis* sp. n., *longiceps* (Smith) (with its newly recognised synonym, *flava* Emery), *mediterrae* sp. n., *poultoni* Crawley, *pythia* Forel (for which a neotype is designated) and *reichelae* sp. n. *Aphaenogaster* is widely distributed across eastern and southern Australia (except Tasmania), with isolated populations in northern Northern Territory and northern Western Australia. Species occur in a range of habitats from rainforests through open woodlands and can be of significant economic importance because of damage caused by their nests.

Key words: Australia, Formicidae, Hymenoptera, new species, lectotype, neotype, *Aphaenogaster*

Introduction

The distinctive nests of Australian *Aphaenogaster* ants are often the first indication of their presence. These nests can be very dense and when in sandy soils, individual entrances can be large, deep cones or bores (up to 4 cm in diameter and 30 cm deep) with large mounds of loose dirt. This style of nest has resulted in these ants being known as “funnel ants.” In some cases nests can be so dense and extensive that they severely affect soil structure, resulting in a loose and fragile surface which easily collapses under foot. When this occurs in situations such as golf courses, pastures and unsealed airstrips damage can be severe and these ants can become a serious problem. Although not aggressive, workers will defend their nests when disturbed, emerging from entrances in small numbers to attack intruders.

While nests can contain large numbers of workers, few workers are usually seen on the surface, and then most are found near the entrance; they are rarely seen foraging any distance from nests. It is known that these ants tend aphids on the roots of plants (Saunders 1967) and that arthropod fragments are often found in the upper portions of their nests. It is possible that the tended aphids provide much of the food needed by the nest, and that the funnel-shaped entrances act as traps for surface foraging arthropods. These factors may combine to reduce or eliminate the need to forage on the surface of the ground.

The nomenclatural history of the Australian species of *Aphaenogaster* is complex, especially given the small number of names involved. Much of the early confusion resulted from the poor quality of Smith's (1858) original description of *A. longiceps* and the lack of direct examination of this material by subsequent authors. Early workers (Mayr, Emery and Forel) did their best to assign material to Smith's name, but often missed badly. Forel (1915) was so uncertain that he proposed a provisional new name (*pythia*) in case some of the earlier identifications proved incorrect. Unfortunately the material Forel's name was based on (that of Mayr 1862) had been destroyed a few years earlier, leaving only Mayr's (1862) description. To confuse things even further, Mayr's material was from four widely distributed locations and likely represented more than one