

Establishment and spread of another exotic ant *Pheidole proxima* Mayr (Hymenoptera: Formicidae) in New Zealand

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Another exotic ant was discovered to be established in New Zealand in February/ March 2004 during the Red Imported Fire Ant (RIFA) *Solenopsis invicta* (Hymenoptera: Formicidae) incursion response at the Port of Napier. The ant was identified as *Pheidole proxima* Mayr (Fig. 1) by the CSIRO ant taxonomist Steve Shattuck, assigning one more species into the New Zealand fauna of big-headed ants.

Pheidole proxima Mayr is known from Northern Queensland. They produce large nests and are attracted to protein and sugar baits. *Pheidole proxima* is the smallest of the big-headed ants in New Zealand. Major workers are about 3 mm long and minor workers only about 1.5 mm long. Colour and some morphological characters are similar to the already established and widespread big-headed ant species *Pheidole rugosula*, described by Berry *et al.* (1997).



Figure 1. Major and minor workers of *Pheidole proxima* lateral view, showing difference in body proportions.

At the end of the RIFA delimiting survey in April 2004, ants were discovered in residential properties in the Napier area. The most distant detection at that time was Taradale (15 km south-west of Napier Port). Survey results and the number of public enquires resulting from the local RIFA awareness programme, showed *P. proxima* to be widely distributed and well established in the Napier - Hastings area.

Pheidole proxima was again found during the more recent RIFA response at Whirinaki, 11 km north of Napier Port in June 2006. Another recent submission of *P. proxima* from the Dairy factory in Morrinsville in September 2006 by Hugh Oliver, provides evidence of further northward establishment of the ant. Nuptial flights occur in the *Pheidole* genus, and natural dispersal by winged and mated queens takes place. The most likely spread to other parts of the country is by human-mediated transport, such as movement of soil or potted plants.

Ants in the genus *Pheidole* usually nest in the soil, often under paving stones, wooden logs or slabs, or out in open grass and lawn areas. From local observations, nest excavation activities produce tiny conical mounds of sandy or grainy material above ground near the nest entrance. The size of the mounds varies with soil type, with mounds as small as 5 mm high by 200 - 300 mm in diameter. Minor and major workers ('soldiers') forage together, with the soldiers being distinctive by their disproportionately large head. They can survive very well in areas disturbed by human activities, and may invade buildings, being attracted to both sweet and savoury foods. High numbers recruited to baits at the port and residential areas during the 2004 RIFA response (Gunawardana D, Green OR, Bennett SJ, Ashcroft TT, unpublished). Reports often arise of big-headed ants foraging on the remains of pet food (particularly where cats and dogs are fed outside), outdoor barbeque remains, and wind-fallen fruit on the ground during the late summer and autumn. Foraging trails are small and insignificant until they recruit to a food source where several hundred ants may be found together.

Repositories

Specimens are deposited in PANZ (Plant Health and Environment Laboratory, Investigation and Diagnostic Centre - Tamaki), PCNZ (Plant Health and Environment Laboratory, Investigation and Diagnostic Centre - Tamaki) and NZAC (New Zealand Arthropod Collection Landcare Research, Auckland).

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References

Berry JA, Green OR, Shattuck SO. 1997. Species of *Pheidole* Westwood (Hymenoptera: Formicidae) established in New Zealand. *New Zealand Journal of Zoology* 24:25-33.