

Species of *Pheidole* Westwood (Hymenoptera: Formicidae) established in New Zealand

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Abstract Three species of the genus *Pheidole* Westwood are known to be established in New Zealand: *P. megacephala* (Fab.), *P. rugosula* Forel, and *P. vigilans* (Smith). All appear to be restricted to the northernmost regions of Auckland and Northland, except *P. rugosula*, which is also found in the Waikato area. An illustrated key is provided to major and minor workers of these three species. The subspecies *P. variabilis rugosula* Forel is raised to full species status after examination of type material.

Keywords *Pheidole megacephala*; *P. rugosula* (= *P. variabilis rugosula*); *P. vigilans*; distribution; subspecies; key

INTRODUCTION

New Zealand's ant fauna is strikingly depauperate, in sharp contrast to that of Australia, which is rich at both the generic and the specific levels. Only about

one-quarter of the Australian species have been described (Taylor 1991), but Naumann (1991) estimates that the continental species tally—around 3000 species—may be the largest in the world. For New Zealand, Brown (1958) listed 23 species; Taylor (1987) accounted for 37 species in a checklist of Australasian ants; Green (1992) estimated the New Zealand ant fauna as “about 38”, including the newly established Argentine ant, *Linepithema humile* (Mayr); and Don (unpubl. 1994) lists 40 species including 11 considered to be endemic. Valentine & Walker (1991) record 40 species of ants and consider nine to be endemic. Some records of introduced species are open to doubt according to Green (1992), perhaps never having been seen or collected since their first occurrence. It is also possible that some records are based on misidentifications which have made their way into the literature.

The genus *Pheidole* Westwood is of interest owing to its status as a threat to the endemic fauna of Hawaii (see Discussion). *Pheidole* occurs in all zoogeographic zones of the world except Antarctica (Hölldobler & Wilson 1990). The genus is large, with a total of 902 described species and subspecies (Bolton 1995); however, in some areas it is very poorly known. Valentine & Walker (1991) record three established species in New Zealand: *P. megacephala* (Fab.), *P. variabilis* Mayr, and *P. vigilans* Smith. Examination of specimens in the New Zealand Arthropod Collection (NZAC) shows that, in part, these records have been based on misidentifications.

The aim of this paper is to list the species of *Pheidole* established in New Zealand, to update their distribution data, and to provide a key to enable accurate specific identification.

Conventions

I. Repositories

AMNZ Auckland Institute and Museum, Private Bag, Auckland

CGNZ Dr Chris J. Green, 40 Preston Ave, Henderson, Auckland 8 (private collection)
NZAC New Zealand Arthropod Collection,