

A third species in the rare Australian ant genus *Peronomyrmex* Viehmeyer (Hymenoptera: Formicidae)

STEVEN O SHATTUCK

CSIRO Entomology, GPO Box 1700, Canberra, ACT 2601, Australia
E-mail: Steve.Shattuck@csiro.au

Abstract

A single specimen of the third species in the rare Australian ant genus *Peronomyrmex*, a member of the subfamily Myrmicinae, has been located in the collections of the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts. This specimen was thought to have been lost and its species-level identification was uncertain. It is now known to represent a third species, here named *P. greavesi*, and confirms the presence of this genus in northern Queensland. The genus is now known from four specimens stretching from Victoria northwards to northern Queensland, a distance of over 2000 km.

Key words: Australia, Formicidae, Hymenoptera, new species, *Peronomyrmex*

INTRODUCTION

The Australian ants of the genus *Peronomyrmex* Viehmeyer (subfamily Myrmicinae) are some of the world's rarest ants. They are known from only five specimens from four scattered localities along the east coast of Australia, and two of the species have been collected only once. The specimen described here was originally collected in 1937 by Tom Greaves and subsequently sent to W. L. Brown for study (Shattuck 1999). After its initial examination it was apparently placed in the Museum of Comparative Zoology (MCZ) where it sat quietly until its "rediscovery" by B. Heterick in late 2004 (B. Heterick, pers. comm.). R. Taylor (pers. comm.), in preparing the first detailed study of this genus (Taylor 1970), had contacted Brown asking of the location of this specimen and had been told that it had been returned to Australia. However, examination of various Australian collections failed to locate it. It appears that the specimen had been carefully curated, labelled as a *Peronomyrmex* and placed safely in the MCZ, readily accessible to anyone taking the time to look for it (although one would need to understand the tribal classification of the myrmicines

and the placement of *Peronomyrmex* within this system, as the collection is organised by tribes). None of those studying this unique genus (Taylor 1970, Shattuck and Hinkley 2002), nor the various curators of the MCZ, had noticed this. We are grateful to B. Heterick for alerting us to its presence.

Historically, the first known specimen of *Peronomyrmex* was described by Viehmeyer (1922) in the newly established genus *Peronomyrmex* as *P. overbecki* with the species *P. bartoni* recently described by Shattuck and Hinkley (2002). The taxonomic placement of *Peronomyrmex* within the subfamily Myrmicinae was discussed by Brown (1948, 1949) and Bolton (1994, 2003), and Taylor (1970) redescribed and illustrated *P. overbecki* and reviewed its probable relationships. In this paper the third species of the genus is described under the name *P. greavesi* and a key is provided to separate the known species.

PERONOMYRMEX Viehmeyer

Diagnosis. Myrmicine ant with antennae 11-segmented; in side view, petiole and postpetiole with high, conical, pointed nodes, the shape of which is unique among the ants (Bolton 1994, Shattuck 1999). For additional characters see Taylor (1970).

Key to Species of *Peronomyrmex* based on Workers

1. Sculpturing on dorsum of head consisting of distinct longitudinal rugae..... *bartoni*
- Sculpturing on dorsum of head essentially absent, limited to small, scattered punctures or superficial reticulations 2
2. Antennal scrobes relatively well developed, with distinct rugae along inner margins; posterior face of postpetiole essentially flat; area between humeral angles convex.....
.....*overbecki*
- Antennal scrobes little more than shallow troughs, lacking rugae along their margins; posterior face of postpetiole broadly concave; area between humeral angles flat.....
.....*greavesi*

***Peronomyrmex bartoni* Shattuck and Hinkley (Figs 1, 2, 7)**

Peronomyrmex bartoni Shattuck and Hinkley 2002:104.

Types. Holotype worker, Inglewood Flora Reserve, 36°32'25"S 143°51'47"E, approximately 4 km north of Inglewood, Victoria, (Museum Victoria, examined); one paratype worker, Wehla State Forest, 36°38'49"S 143°36'35"E, approximately 24 km WSW of Inglewood, Victoria (Australian National Insect Collection, examined).

Comments. This species is immediately recognisable by the presence of well developed longitudinal rugae on the dorsum of the head and mesosoma. It is still only known from type material.



FIGURES 1, 2. Holotype worker of *Peronomyrmex bartoni*. Fig. 1, head; Fig. 2, lateral view.

***Peronomyrmex overbecki* Viehmeyer (Figs 3, 4, 7)**

Peronomyrmex overbecki Viehmeyer 1922:213.

Types. Holotype worker, Trial Bay, New South Wales (Australian National Insect Collection, examined).



FIGURES 3, 4. Holotype worker of *Peronomyrmex overbecki*. Fig.3, head; Fig. 4, lateral view.

Comments. A second specimen of this species was recently (November, 2003) collected in Brisbane by Chris Burwell of the Queensland Museum (pers. comm.). He hand collected the specimen at night, apparently from a tree trunk (although the specific collecting details were not recorded). This nocturnal habit, combined with its likely arboreal foraging and nesting, helps explain why these ants are so infrequently encountered. See below for notes on separating this species from the similar *P. greavesi*.

***Peronomyrmex greavesi* sp. n. (Figs 5–7)**

Types. Holotype worker, Clohesy River, near Mareeba, Queensland, 15 June 1937, T. Greaves (Australian National Insect Collection).

Diagnosis. This species can be separated from others in this genus by the absence of distinct sculpturing on the dorsum of the head, the broadly concave posterior face of the postpetiole and in having the area between humeral angles flat. This is also the northernmost species known in this genus.



FIGURES 5, 6. Holotype worker of *Peronomyrmex greavesi*. Fig.5, head; Fig. 6, lateral view.

Description. Total length 3.4 mm; maximum head length 0.81 mm; maximum head width (behind eyes) 0.73 mm; maximum diameter of eye 0.20 mm; scape length 0.60 mm; cephalic index (HW/HLx100) 90; scape index (SL/HWx100) 82; width across pronotal humeri 0.55 mm; Weber's length of mesosoma 1.07 mm; dorsal petiole width 0.19 mm;

maximum petiole height 0.36 mm; dorsal postpetiole width 0.21 mm; maximum postpetiole height 0.28 mm. Head capsule (Fig. 5) shiny, with a very fine network of microsculpture. Dorsal surface of mesosoma (Fig. 6) with weak longitudinal rugae which are more abundant laterally, absent centrally, underlying surface with indistinct, irregular weakly formed punctations. Lateral regions of mesosoma similar to dorsal surface but with longitudinal rugae shorter and less well defined. Petiole and postpetiole with smooth and weakly sculptured areas. Gaster smooth, shiny and with microreticulate sculpturing. Entire body covered with suberect, bluntly pointed hairs (those on gaster narrowly pointed rather than blunt). Colour chestnut-brown, dorsal areas slightly darker, lateral areas slightly lighter.

Comments. This species is known from a single specimen collected in 1937 by Tom Greaves. Despite extensive collecting in the area since this species has yet to be found again. As with other species in this genus, this is likely caused by its arboreal and nocturnal habits.

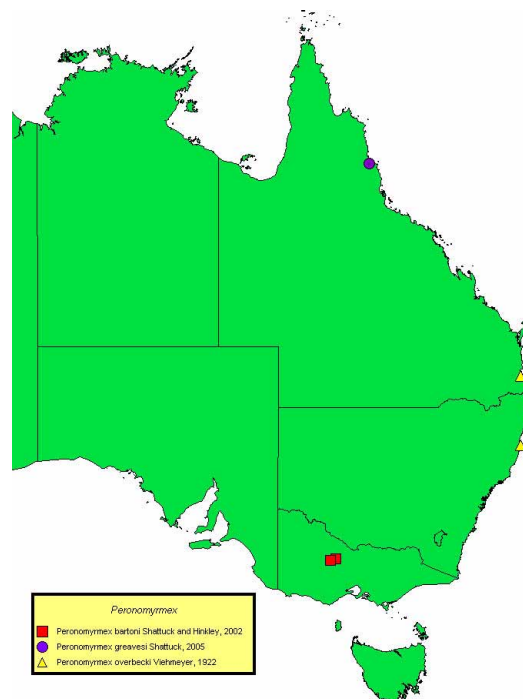


FIGURE 7. Distribution of specimens examined during this study.

Conclusion

Peronomyrmex is now known from three species which are widely distributed along the

east coast of Australia. The little biological information available suggests they are nocturnal and arboreal. These habits at least partially explain their infrequent collection. It seems unlikely the species described here will be the last in the genus. With three taxa known from only four collecting events it is clear that we are a long way from understanding these curious ants. We know nothing of their nesting habits and little about other aspects of their biology. It is unclear whether their infrequent encounter is caused by true rarity or by cryptic habits, or (more likely) a combination of these factors. Only further field work will answer these questions.

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