



A taxonomic review of the ant genus *Megalomyrmex* Forel (Hymenoptera: Formicidae) in Central America

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Abstract

The ant genus *Megalomyrmex* is known only from the Neotropics, where some of the species are specialized parasites or predators of Attini. A taxonomic review and a key to species is provided for the fauna of Central America and southern Mexico. The following **new species** are described: *M. adamsae*, *M. mondaboroides*, *M. nocarina*, *M. reina*.

Key words: Myrmicinae, Attini, Neotropics

Introduction

The genus *Megalomyrmex* Forel is a distinct Neotropical taxon with 34 described species (Brandão 1990, 2003). It is difficult to characterize morphologically. Bolton (2003) placed it in the tribe Solenopsidini, but with multiple exceptions to the diagnostic characters for the tribe. The tribal characters include a bicarinate clypeus and a median clypeal seta. Most *Megalomyrmex* species have a smoothly convex clypeus with no trace of the bicarinate condition, and most have abundant clypeal setae with no distinct or differentiated median seta. In Bolton's (1994) key to genera, *Megalomyrmex* keys in multiple places because of variability in mandibular dentition. Nevertheless, the genus has a distinctive habitus: the antenna is 12-segmented with a 3-segmented club; the general integument is smooth and shiny without coarse sculpture or dull areas; the promesonotum is evenly arched, without promesonotal groove; the propodeum is usually smoothly curved between dorsal and posterior faces, at most with blunt, broad-based tubercles, and never with spines; and the hind tibial spur is simple. In short, the workers look like a *Solenopsis* with *Pheidole* antennae. The mandibular dentition varies from a simple set of 5 similar teeth on the masticatory margin, gradually diminishing in size basally, to a condition with 2 large apical teeth followed by up to 12 small denticles.

Although widespread in the Neotropics, from southern Mexico to northern Argentina, *Megalomyrmex* species are never abundant. They occur in low to middle elevation wet to dry forest habitats. Some species are free-living with large diffuse nests in the soil (e.g. *modestus*) or small nests in dead wood (e.g. *drifti*) (Brandão 1990, 2003). Others are specialized social parasites or predators of Attini (e.g. *mondabora*, *symmetochus*, *wettereri*; Wheeler 1925, Weber 1941, Kempf & Brown 1968, Adams *et al.* 2000, Adams & Longino 2007). Some species have unusual alkaloids (Jones *et al.* 1991a; Jones *et al.* 1991b; Jones *et al.* 1999).

Brandão (1990) was the last comprehensive revision of the genus, with updates and additional species descriptions by Fernández and Baena (1997) and Brandão (2003). Coverage of the Central American fauna was limited due to the paucity of collections from the region. Since then, large-scale biodiversity inventory projects in Costa Rica (Project ALAS, TEAM) and elsewhere in Central America (Project LLAMA) have greatly increased the number of specimens available for study. In addition, Rachele Adam's work on the attine-associated *Megalomyrmex* of Panama and Costa Rica has yielded abundant new material for study and evidence for cryptic species. The new material and Adam's discoveries allow an update and key to the *Megalomyrmex* fauna found from Panama to Mexico.