Acromyrmex ameliae sp. n. (Hymenoptera: Formicidae): A new social parasite of leaf-cutting ants in Brazil

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Abstract The fungus-growing ants (Tribe Attini) are a New World group of > 200 species, all obligate symbionts with a fungus they use for food. Four attine taxa are known to be social parasites of other attines. *Acromyrmex* (*Pseudoatta*) *argentina argentina* and *Acromyrmex* (*Pseudoatta*) *argentina platensis* (parasites of *Acromyrmex lundi*), and *Acromyrmex* sp. (a parasite of *Acromyrmex rugosus*) produce no worker caste. In contrast, the recently discovered *Acromyrmex insinuator* (a parasite of *Acromyrmex echinatior*) does produce workers. Here, we describe a new species, *Acromyrmex ameliae*, a social parasite of *Acromyrmex subterraneus subterraneus* and *Acromyrmex subterraneus brunneus* in Minas Gerais, Brasil. Like *A. insinuator*, it produces workers and appears to be closely related to its hosts. Similar social parasites may be fairly common in the fungus-growing ants, but overlooked due to the close resemblance between parasite and host workers.

Key words *Acromyrmex*, leaf-cutting ants, social evolution, social parasitism
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Introduction

The fungus-growing ants (Tribe Attini) are a New World group of > 200 species, all obligate symbionts with a fungus they use for food. The Attini are found across the American continents and the West Indies and comprise at present > 200 described species in 13 genera. Two genera, *Atta* and *Acromyrmex*, are called leaf-cutting ants because most species culture their fungus on freshly cut foliage and flowers (Müeller *et al.*, 2001). This particular foraging behavior makes these ants major agricultural pests.

Social parasitism, the exploitation of the nest of another species without contributing to colony maintenance, for example the cultivation of a fungus garden, has been reported occasionally in the attine ants. *Megalomyrmex* species can coexist as social parasites in attine colonies, consuming the fungus garden (Brandão, 1990; Adams *et al.*, 2000). *Gnamptogenys hartmani* is also a specialized agro-predator of *Trachymyrmex* and *Sericomyrmex* fungus-growing ants in Panama (Dijkstra & Boomsma, 2003). Four *Acromyrmex* taxa are known to be social parasites of other *Acromyrmex* species, living in and feeding on their fungus gardens, but not contributing to its maintenance: *Acromyrmex* (*Pseudoatta) argentina argentina* and *Acromyrmex* (*Pseudoatta) argentina platensis* (parasites of *Acromyrmex lundi*), and *Acromyrex (Pseudoatta)* sp. (a parasite of *Acromyrmex rugosus*) produce no worker caste (Santschi, 1926; Bruch, 1928; Gallardo, 1929; Delabie *et al.*, 1993). In contrast, the recently discovered *Acromyrmex insinuator* (a parasite of *Acromyrmex echinatior*) does produce workers (Schultz *et al.*, 1998). Sumner *et al.* (2004) found that *Acromyrmex* (*Pseudoatta*) sp. was not closely related to its host, but *A. insinuator* was closely related to its host, *A. echinatior*. Here, we describe a new species, *Acromyrmex ameliae*, a social parasite of *Acromyrmex subterraneus subterraneus*

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