





Notes and Comments

Predation of neotropical social wasp nests by ants

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Ants are among the main predators of social wasps constituting an important agent of selective pressure in the evolution of nest architecture (Jeanne, 1975), defense behaviors (Milani et al., 2021), and selection for nesting sites of these insects (Corbara et al., 2009).

The main interest of ants when preying on wasp colonies seems to be to plunder their pupae and larvae (O'Donnell and Jeanne, 1990). This was reported for *Labidus praedator* (Smith, 1858) (Hymenoptera: Formicidae) preying on colonies of *Polybia platycephala* (Richards, 1978) (Hymenoptera: Vespidae) (Maciel et al., 2016) and that ant attacks being the main cause of nest abandonment by *Polistes fuscatus* (Fabricius, 1793) (Hymenoptera: Vespidae) and *Polistes simillimus* Zikán, 1951 (Hymenoptera: Vespidae) (Henderson and Jeanne, 1989). Ants do not just prey on small wasp colonies, but also those with thousands of individuals, such as *Agelaia yepocapa* (Richards, 1978), whose larvae and pupae were preyed upon by *Eciton burchelli* (Westwood, 1842) (O'Donnell and Jeanne, 1990).

Social wasps (Hymenoptera: Polistinae) act in the pollination of several plant species (Brock et al., 2021) are efficient predators, and their diet includes insects harmful to agriculture, and act in the trophic balance of ecosystems (Richter, 2000; Prezoto et al., 2019), which justifies the study of trophic relationships between these insects and ants.

The aim of the present work is to report the predation of *Polybia jurinei* (Saussure, 1854) colonies by the ant *Crematogaster* sp. and of *Polybia occidentalis* (Olivier, 1791) by the ants *Camponotus* (*Myrmobrachys*) sp. and *Labidus praedator* (Smith, 1858) (Hymenoptera: Formicidae).

Three occurrences of predation and occupation of *P. occidentalis* colonies (Figure 1A), with two attacked by *Camponotus* (*Myrmobrachys*) sp., and one by *L. praedator* (Figure 1B), in deciduous forest in Mata Seca State Park (14.8695 °S, 44.0009°W), in May 2021; and one of *P. jurinei* by *Crematogaster* sp. (Figure 1C) in a cerrado area in Barroso (21.1880° S, 43.9760° W), Center-South of Minas Gerais state, Brazil in October 2003, are presented. Specimens of social wasps, still with active nests, and ants were collected and identified using dichotomous keys (Richards, 1978; Carpenter and Marques, 2001)

or by the taxonomists Dr. Orlando Tobias da Silveira (Emílio Goeldi Museum, Belém, Pará) and Dr. Rodrigo M. Feitosa (Laboratory of Systematics and Biology of Ants, Federal University of Paraná). The material is deposited in the biological collection of IFSULDEMINAS Campus Inconfidentes, Minas Gerais state, Brazil.

The colony of *P. jurinei*, recorded in the Cerrado, nested in a arboreal substrate at 1.7 m from the ground, was found active on October 7, 2003, and six days later, predation of eggs, larvae and pupae was recorded by the ant *Crematogaster* sp. (Figure 1C), without the presence of adult wasps in the nest. The three *P. occidentalis* nests (Figure 1A) in deciduous forest also used arboreal substrate, nesting at 1.8, 1.9 and 2.0 meters from the ground, two of which were preyed upon by *Camponotus* (*Myrmobrachys*) sp. and one by *L. praedator* (Figure 1B). The record of the attack of these ants occurred three to four days after the record of the active colony of the social wasp in the field. Predation of pupae and larvae by ants was observed in the three nests, similar to what happened with *P. jurinei*,

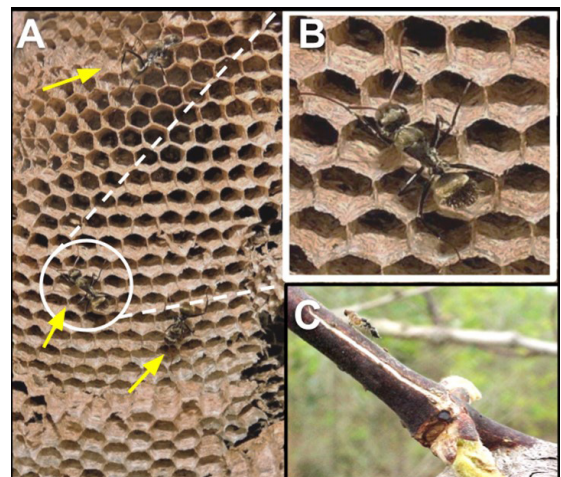


Figure 1. Nest of *Polybia occidentalis* (A) attacked by *Labidus praedator* (B) and *Crematogaster* sp. preying on *Polybia jurinei* larvae (C).

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without the presence of adult wasps. Therefore, in none of the cases it was possible to inform if the ant attack dislodged the adult wasps, or if the predation occurred after abandoning the nest.

The lack of adult wasps in the nests prevented ethological records between ants and wasps, but this wasp defends its colony by trying to bite the ants (Chadab, 1979) that can behave as opportunists, plundering the offspring without necessarily confronting adult wasps (Jeanne, 1991). When all defensive tactics fail to repel a predator, it may be in the interest of the colony for the adults to abandon the nest and their brood, to return to nest elsewhere (Detoni et al., 2021).

The ant genera *Crematogaster* Mayr, 1862, *Camponotus* (Myrmobrachys) Lund, 1831 and *Labidus* Jurine, 1807 are included in a group of Neotropical predators with a generally nomadic habit and foraging in groups (Schneirla, 1971). *Labidus praedator* creates small trails on the surface of the soil and hunts mainly other ant species, in addition to wasps and lepidopteran larvae (Schneirla, 1971). Species of the genus *Camponotus* are opportunistic in terms of nesting and foraging (Silvestre et al., 2003). On the other hand, species of the genus *Crematogaster* feed on different arthropods and extrafloral nectar (Hölldobler and Lumsden, 1980).

The records presented add information on trophic relationships between Neotropical social ants and wasps.

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