

Occurrence of the parasitoid *Seminota marginata* (Westwood, 1874) (Hymenoptera: Trigonalidae) in a nest of the social wasp, *Apoica* (*Apoica*) *flavissima* (Van der Vecht, 1973) (Hymenoptera: Vespidae)

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The family Trigonalidae is a small group of cosmopolitan, but poorly studied parasitoid wasps. Nearly 100 species in 16 genera have been described. Their body size ranges from 5 to 15 mm in length, although some species are as small as 3 mm (Carmean and Kimsey, 1998). Most species collected in the Americas are hyperparasitoids of Ichneumonidae and Tachinidae that parasitize Lepidoptera or of social wasps (Weinstein and Austin, 1991; Smith, 1996). Some species have been recorded as primary parasitoids of sawflies (Hymenoptera: Pergidae) in Australia (Weinstein and Austin, 1995).

The genus *Seminota* Spinola, 1840 includes six species in the Neotropical Region (Carmean, 2006), two of which have been reported from Brazil, *S. marginata* (Westwood, 1874) and *S. depressa* (De Geer, 1773) (Carmean and Kimsey, 1998). Weinstein and Austin (1991) summarized the association between *Seminota* species and social wasps of the genera *Polistes* Latreille, 1802; *Apoica* Lepeletier, 1836; *Pseudopolybia* Dalla Torre, 1894 and *Parachartegus* Inhering, 1904. Bertoni (1912) was the first to report the association between the parasitoid *S. marginata* and larvae of the following social wasp species: *Polistes versicolor* (Olivier, 1791), *P. cinerascens* (Saussure, 1857), *P. melanossoma* (Saussure, 1853), *P. canadensis* (Linnaeus, 1758) and *Apoica pallida* (Olivier, 1791). For the first time, we report the association of *S. marginata* with *Apoica* (*Apoica*) *flavissima* (Van der Vecht, 1973).

A colony of *Apoica* (*A.*) *flavissima* was collected in the caatinga (dry bushwood), Brejões municipality, Bahia, Brazil (S 13° 04' 18.6" and W 39° 47' 02.2") on July 29th 2010. The material was transported and kept in the laboratory in plastic trays covered with a thin organza fabric. On August 1st 2010, four specimens of *S. marginata* emerged from the nest. The specimens were approximately 14 mm long, with black bodies, partially dark wings, and smooth, shiny heads. The specimens were identified by David R. Smith and are deposited in the entomology collections of

the Insect Biology Laboratory at *Universidade Estadual do Sudoeste da Bahia*, Bahia, Brazil and at the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.

The life cycle of trigonalids is complex. Females usually lay a large number of tiny eggs on leaf surfaces. To initiate their development, these eggs need to be ingested by larvae of phytophagous insects, mainly lepidopterans. Most likely, when social wasps catch infected caterpillars and take them to their nest to feed their immatures, the caterpillar with the trigonalid larvae are ingested by the wasp larvae. The trigonalid endoparasitoid then feeds on the immature wasp, which represents its definitive host (Carmean, 1991; Smith, 1996).

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