

SCIENTIFIC NOTE

First Report of *Elasmus polistis* Burks (Hymenoptera: Eulophidae) Recovered from *Polistes versicolor* (Olivier) (Hymenoptera: Vespidae) Nests in Brazil

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Abstract

The first record of *Elasmus polistis* Burks in *Polistes versicolor* (Olivier) nests in the Rio Grande do Sul state and in Brazil is provided. A total of 173 specimens of *P. versicolor* and 790 specimens of *E. polistis* were collected from two nests from Gramado and Santa Cruz do Sul, RS, Brazil.

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A recent reclassification of Eulophidae based on molecular data and phylogenetic analyses has demonstrated that Elasmidae must now be considered a tribe of Eulophidae (Gauthier *et al* 2000). In such way, the only normally recognized genus of Elasmidae, *Elasmus*, is now classified as pertaining to Eulophinae, tribe Elasmini, representing about 200 described species (Noyes 1998). *Elasmus* is cosmopolitan in distribution, although most abundant in the Old World tropics, and species are characterized by their small size (hardly bigger than 1-3 mm), brown or black to yellow body coloration, widened hind coxae, and hind tibia with wavy lines or patterns in diamond shape.

Elasmus are in their majority parasitoids of Lepidoptera, although some Hymenoptera, particularly Braconidae and Ichneumonidae, are also recorded as hosts (Gibson 1993). There is also a group of species described as parasitoids of *Polistes* wasps (Hymenoptera: Vespidae), such as *Elasmus schmitti* Ruschka and *Elasmus biroi* Erdős in Western Europe, *Elasmus japonicus* Ashmed in eastern Palearctic, and *Elasmus polistis* Burks in North America. These species of *Elasmus* are characterized by the intense yellow

coloration of their bodies, while other species of *Elasmus* are predominantly dark-colored, and by biological peculiarities such as the creation of a transversal partition in the host cell composed by light brown to black pellets around the inner sides of the cell. This partition seals off the parasite from the host remains preventing contamination from *Polistes* meconia and body remnants (Reed & Vinson 1979, Gumovsky *et al* 2007).

Elasmus sp. has been registered in several states of Brazil, such as Mato Grosso, São Paulo and Ceará, but records of species parasitizing hymenopterans are available only for *Elasmus languidus* De Santis on *Apanteles galleriae* Wilkinson (Braconidae) in São Paulo (De Santis 1980), *Elasmus maculatus* Howard on *Apanteles americanus* Lepageletier (De Santis 1979), *A. flaviventris* Cresson, *A. leucostigmus* Ashmead (Thompson 1954), *Iphiaulax* sp. (Braconidae) (Herting 1977) and *Psychidosmicra* sp. (Chalcididae) (De Santis 1979) in Ceará hosts.

In here, we first report the occurrence of *Elasmus polistis* Burks in nests of *Polistes versicolor* (Olivier) in Brazil and in the State of Rio Grande do Sul. This is also

the first record of *E. polistis* on a *Polistes* species in South America. *Elasmus polistis* is a gregarious prepupal or pupal parasitoid which builds a visible black partition in *Polistes* cells (Nelson 1976). *Elasmus polistis* is also reported as a parasitoid of several other *Polistes* species, *Polistes exclamans* Viereck, *P. annularis* (L.) and *P. fuscatus* (F.), *P. major* (Beauvois), *P. metricus* Say (Reed & Vinson 1979) and *P. dorsalis* (F.) (Macom & Landolt 1995), all in North America. There were no records on the occurrence of *E. polistis* associated with any *Polistes* species up until now in South America.

Nests in pre and post emergence stage were collected from all over the State of Rio Grande do Sul, Brazil, as part of a state survey on the fauna of wasps and conditioned in a plastic recipient covered with nylon net on top for adult emergence. Specimens of *Elasmus* were observed in two of the nests collected. The first *Polistes* nest was collected in the municipality of Gramado, RS, Brazil, on March 18, 2006 in a masonry house in the east region of the city, yielding 164 specimens of *P. versicolor* and 509 of *E. polistis* (440 females and 69 males). A second nest was collected in Santa Cruz do Sul, RS, Brazil, on March 24, 2007 also in a masonry in the central region of the city, yielding nine adults of *P. versicolor* and 281 specimens of *E. polistis* (239 females and 42 males).

The specimens of *Elasmus* collected were deposited in the Entomological Collection of Unisc (CESC), and some were sent to Dr. Alex Gumovski, Schmalhausen Institute of Zoology, Ukraine, who identified the specimens as *Elasmus polistis*, and indicated the specimens collected in South Brazil show little intraspecific variation from specimens of *E. polistis* collected from North America and Hawaii.

Therefore, this is the first record of *E. polistis* parasitizing *P. versicolor* in South America, Brazil and in the Rio Grande do Sul State, adding information about the relationship between these two species.

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