



NOTA BREVE:

New records of the family Mermithidae (Nematoda) as parasitoids of spiders (Arachnida: Araneae) in Brazil and Peru.

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Abstract

We present new records of spiders being parasitized by roundworms of the family Mermithidae in Brazil and Peru. The specimens studied were three juveniles of the family Salticidae from Brazil and two lycosid males of the species *Prolycosides amblygyna* from Peru. Mermithid species could not be identified, since the speci-mens did not survive to adulthood.

Key words: Nematoda, Araneae, Mermithidae, Salticidae, Lycosidae, Brazil, Peru.

Nuevos registros de la familia Mermithidae (Nematoda) como parasitos de arañas (Arachnida: Araneae) en Brasil y Perú.

Resumen

Presentamos nuevos registros de arañas parasitadas por nemátodos pertenecientes a la familia Mermithidae en Brasil y Perú. Los ejemplares estudiados fueron tres juveniles de la familia Salticidae de Brasil y dos lycosidos adultos de la especie *Prolycosides amblygyna* de Perú. Las especies de los mermítidos no pudieron ser identificadas, puesto que murieron antes del final de la muda a la edad adulta.

Palabras clave: Nematoda, Araneae, Mermithidae, Salticidae, Lycosidae, Brasil, Peru.

To date, two main groups of internal parasites of spiders have been described: acrocerid larvae and nematodes (Eason et al., 1967; Poinar, 1987). Acrocerids comprise a large number of fly species which larvae are internal parasites of numerous spider species (Eason et al., 1967). The nematodes known as spider parasitoids are rhabditoids and mermithids (Poinar, 1987). As rhabditoids have been observed parasitizing spiders only under laboratory conditions, the mermithids comprise the most relevant nematode parasitoids of spiders (Poinar, 1987). In its life cycle, the juvenile mermithid enters the host's abdomen, feeding on its tissues (Foelix, 1996). During its emergence, still at a juvenile stage, the nematode kills its spider host (Poinar 1987).

The occurrence of mermithid parasitism of spiders has been known for over a century, and at present over 50 species of spiders have been recorded as hosts. These species span a wide taxonomic range and a variety of foraging habits (Foelix, 1996; Poinar, 1987). The first record of a mermithid as a spider parasitoid in South America was the description of the species *Mermis brasiliensis* von Linstow, 1898. This specimen was obtained from an unidentified spider from Rio Grande do Sul, southern Brazil (von Linstow, 1898). Recently, Camino & Villalobos (1998) reported that an un-identified *Lycosa* from Cordoba, Argentina was parasitized by mermithids. These specimens died a few days after emerging from the host, still as immatures, rendering its identification impossible.

In April 29th 2001, 6 mature and 5 juvenile salticid specimens (Salticidae) were captured in “Parque Nacional da Serra do Cipó”, southeastern Brazil, by the second and third authors, and were kept alive in individual glass tubes, under laboratory conditions. These specimens (and other too small juvenile specimens spotted but not kept) were captured on shrubs near a stream, and showed no external signs of parasitism. Mermithids emerged from three of them: one *Thiodina* sp, one *Frigga* sp and one not identifiable to species and genus. Two of the spiders remained alive for a few days after the emergence of the parasitoids, but the mermithids died directly after emergence, before they could be noticed by the authors and kept in appropriate conditions for their rearing, as specified by G. O. Poinar Jr. (personal communication). As the spiders and the mermithids died still as juveniles, it was impossible to determine species designations for any of the specimens. It is likely that the mermithids belong to the genus *Aranimermis* Poinar & Benton, 1986 by the presence of body cross fibers, slightly ventral mouth opening, a series of cephalic papillae and small tail papillae. They may even possibly represent *Aranimermis brasiliensis*.

Unfortunately, this can only be speculated, given that a definitive identification requires adults. These specimens are deposited in the collection of Laboratório de Aracnologia, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil (LAMG, Mário De Maria).

More recently, during a taxonomic study of lycosid spiders from Peru, the second author found two adult males of *Prolycosides amblygyna* (Mello-Leitão, 1942) with mermithids inside their abdomens. *P. amblygyna* is a medium sized lycosid species (females range from 10 - 18 mm) that occurs widely in South America, from Colombia to Argentina. Although the ecology of this species is unknown, some individuals have been captured in open areas near aquatic habitats in Brazil and Paraguay (Éder Álvares, unpublished data). The parasitized specimens from Peru did not present morphological changes other than swollen abdomens. Together with these parasitized individuals, 15 other non-parasitized specimens from the same locality were examined. These

specimens are deposited in the arachnid collection of Instituto Butantan, São Paulo, Brazil (IBSP, Antonio Brescovit).

These are new records of mermithid parasitoids found in spiders in Brazil, and also constitute the first recorded occurrence of these parasitoids in Peru. This is also the first record of species of *Thiodina* Simon, 1900 and *Frigga* C. L. Koch, 1850 and the species *P. amblygyna* being parasitized by mermithids. It is possible that mermithid parasitism is actually widespread in all South America, since a great variety of spiders have been noted as mermithid hosts from other regions (Poinar, 1985; 1987). However, the low interest in and knowledge of this group, the need for adult stages (especially of adult males for identification), and the difficulties in rearing mermithids to the adult stage comprise the most important problems in the study of the diversity of mermithid parasitoids of spiders in South America.

MATERIAL EXAMINED.

BRAZIL. *Minas Gerais*: Santana do Riacho, Parque Nacional da Serra do Cipó, Travessão, Rio do Peixe, 19° 20' S, 43° 31' W, 900m alt., three unidentified mermithid juveniles, emerged from three juvenile species of Salticidae, one *Thiodina* sp, one *Frigga* sp and one unidentified genus, 29.IV.2001, E.S.S. Álvares & E.O. Machado leg. (LAMG 1423, 1424). PERU. *Lima*: San Vicente de Cañete, Valle de Mala, Santa Enriqueta, two unidentified mermithid juveniles, inside two adult males of the lycosid species *Prolycosides amblygyna*, 18.XI.1997, M.A. B. Pino leg. (IBSP 14913).

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