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A NEW SPECIES OF THE GENUS *BATHYMERMIS* DADAY, 1911 (NEMATODA: MERMITHIDAE) PARASITIZING BLACKFLY LARVAE (DIPTERA: SIMULIIDAE) IN ARGENTINA

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ABSTRACT: The mermithid nematode *Bathymermis simuliae* n. sp., a parasite of *Gigantodax fulvescens* (Blanchard) (Diptera: Simuliidae) found in Rio Negro Province, Argentina, is described and illustrated. This is the first report of the genus *Bathymermis* Daday, 1911 found in Argentina. Diagnostic characteristics of this new species include cuticle with criss-cross fibres, pocket-shaped medium amphids, mouth terminal, six cephalic papillae, barrel-shaped vagina, two medium spicules, three rows of genital papillae with 4 pre-anal and 3 post-anal papillae, and post-parasitic juveniles with a short, conic tail appendage.

KEY WORDS: Nematoda, Mermithidae, *Bathymermis simuliae* n. sp., Diptera, Simuliidae, Argentina.

INTRODUCTION

The parasitizing of simulids (Diptera: Simuliidae) by mermithids in Argentina shows at the present 6 genera of nematodes: *Mesomermis* Daday, 1911; *Isomermis* Coman, 1953; *Gastromermis* Micoletzky, 1923; *Octomyomermis* Johnson, 1963; *Ditremamermis* Camino et Poinar, 1988; and Bathymermis Daday, 1911.

In this paper we report for the first time from Argentina the presence of the genus *Bathymermis*, with the new species *B. simuliae* n. sp., found in Rio Negro Province, Argentina, parasitizing larvae of *Gigantodax fulvescens* (Blanchard).

MATERIAL AND METHODS

Larvae of *Gigantodax fulvescens* were found with mermithids in Playa Bonita, Bariloche, Río Negro, Argentina. They were kept in containers with dechlorinated tap water and an airpump at 8° C ± 2. Adults and post-parasitic juveniles were observed alive and then killed, applying 60° C distilled water for 2 minutes, fixed in TAF and processed to glycerol by Seinhorst's method for taxonomic studies. Transversal sections for longitudinal chord determination were made by hand and prepared in glycerine jelly.

RESULTS

Bathymermis simuliae n. sp.

Type host: larvae of *Gigantodax fulvescens* (Blanchard) (Diptera: Simuliidae).

Type locality: Playa Bonita, San Carlos de Bariloche, Río Negro Province, Argentina.

Type material: Types deposited in the CEPAVE, Division Entomonematodes, Argentina. Series numbered M2081-M2108.

Description

Medium nematodes in size (Fig. 1). Cuticle with visible criss-cross fibres. Six cephalic papillae. Medium amphids, pocket-shaped. Six longitudinal chords: the lateral ones with 4 rows of cells, the dorsal chord has 3 rows of cells, the subventral chords with only one row of cells and the ventral one has 2 rows of cells. Mouth terminal and central. Vulva not protruding, vulval lips not developed. Vagina barrel-shaped. Male with 2 medium spicules with pointed tip. The genital papillae arranged in 3 rows: the medium ventral row has 4 pre-anal and 3 post-anal papillae, the lateral ventral rows with 5 papillae each. Post-parasitic juveniles with short, and conic tail appendage.

The following measures concern the holotype male and the allotype female. The ranges in parenthesis concern paratypes.

Male: Ranges based on the measurement of n=10 paratype specimens. Body length 9 mm (8-11 mm); width of head at level of cephalic papillae 87 μm (77-105 μm); body width at level of nerve ring 188 μm (171-192); greatest body width 272 μm (223-272); width of body at level of anus 186 μm (150-209); distance from head to nerve ring 366 μm (333-387); distance from anus to tail 180 μm (164-202); spicule length 465 μm (376-520); width of spicules in the middle 10 μm (9-11); length/width of amphids 8,2/9,4 μm.

Female: Ranges based on the measurement of n=18 paratype specimens. Body length 18 mm (15-19 mm); width of head at level of cephalic papillae 119 μm (108-131 μm); width of body at level of nerve ring 230 μm (206-258); greatest body width 411 μm (368-437); width of body at level of vulva 437 μm (378-481); width of body at level of posterior end of trophosome 263 μm (244-282); distance from head to nerve ring 493 μm (465-592); %

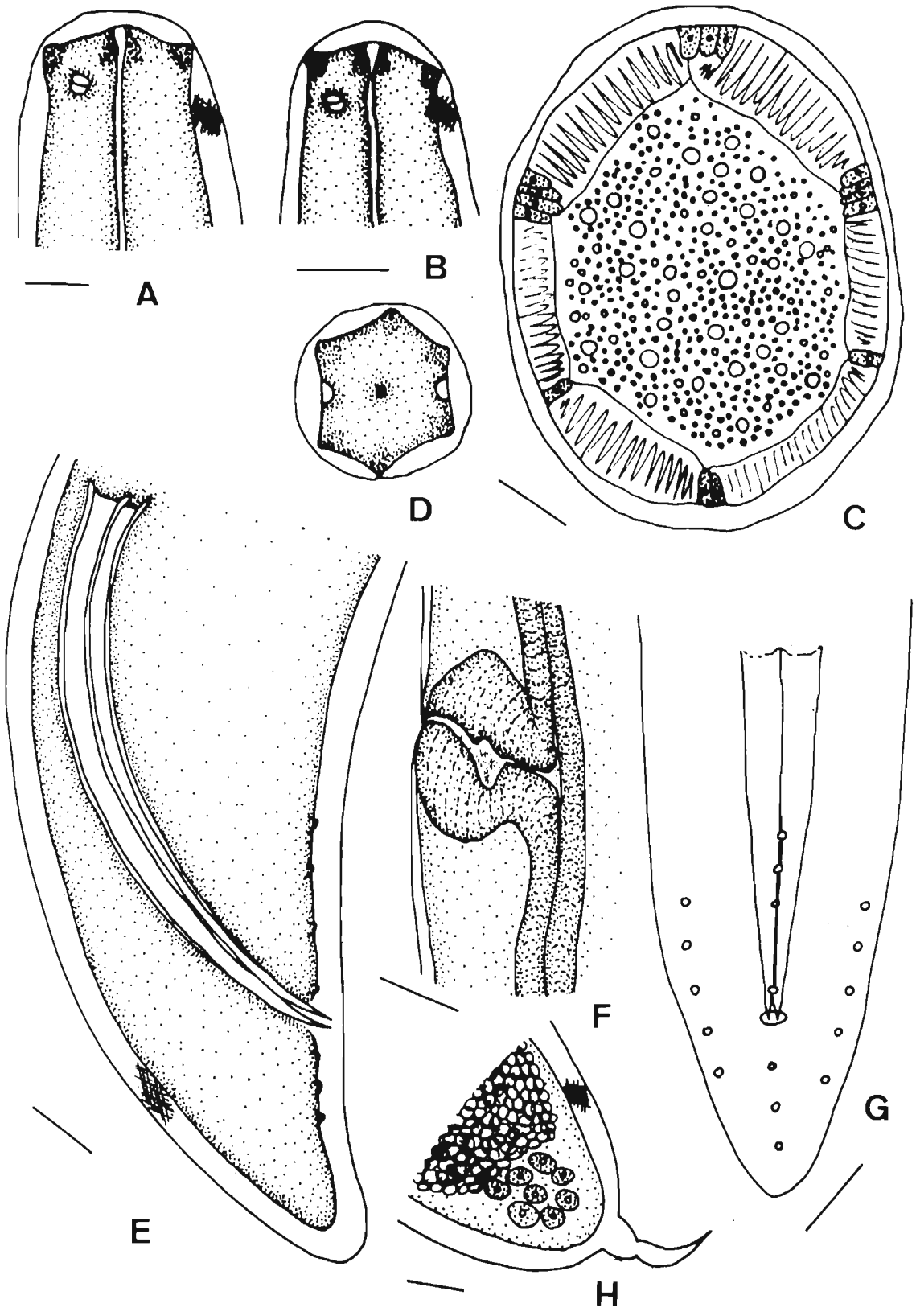

Fig. 1.— *Bathymermis simuliae* n. sp.: A) head of the female in lateral view; B) head of the male in lateral view; C) cross section at mid-body; D) apical view of the male's head; E) lateral view of male tail; F) vagina; G) ventral view of male tail showing the genital papillae; H) post-parasitic juvenile tail. Scale bar: 50 μm.

vulva 49 (48,50-50); vagina length 84 μm (70-98); mean vagina width 98 μm (84-105); length/width of amphids 11,7/14,1 μm.

Post-parasitic juveniles: Dimensions as in adults. Tail appendage short and conic, mean length 66 μm (58-75 μm).

DISCUSSION

At present 7 species belong to the genus *Bathymermis* Daday, 1911, cited from Switzerland, Central Asia and old USSR, all of them with unknown host.

DADAY (1911) described two species from Switzerland, *B. fuhrmanni* and *B. helvetica*. The former differs from *B. simuliae* n. sp. in having large amphids (30 μm), the spicules are short (320 μm) and the medium row of the genital papillae has 14 pre-anal and 7 post-anal papillae. The second species is not described because the author established the species considering only the females. Therefore it cannot be compared with any species of the genus.

POLOZHENTSEV & ARTYUKHOVSKI (1959) redescribed and situated correctly the species *B. paludicola* from Central Asia. This is the species that DADAY (1913) incompletely decribed and the same one that LINSTOW (1898) described as *Mermis explicans*.

B. paludicola can be separated from our new species in having long spicules (1,3 mm) and by presenting 9 preanal and 11 post-anal papillae.

KHARTSCHENKO (1966) established 3 species from the USSR, *B. arnoldi*, which is briefly described, *B. inundata*, that is distinguished from other species of the genus by the wide and straight cut head and the conically pointed tail, and *B. latebrosis*, that we separate from *B. simuliae* by the numerous cuticular papillae distributed all over the body.

RUBZOV (1972) described *B. brevicauda* from the USSR. This species cannot be compared with *B. simuliae* n. sp. because the author described and established the species with only one male.

In the USA, SHAMSUDDIN (1966) is the only author who cited *Bathymermis* sp. as a species of the Mermithidae family, parasitizing larvae of tabanids (Diptera: Tabanidae).

Due to the inadequate or nonexistent descriptions of the species of the genus *Bathymermis* and the lack of knowledge of its presence in South America, Africa and Australia to corroborate the geographical distribution, we adventure to consider *B. simuliae* as a new species, characterized by the cuticle with criss-cross fibres, six cephalic papillae, pocket-shaped medium amphids, mouth terminal, barrel-shaped vagina, two medium spicules with pointed tip, with 3 rows of genital papillae, the midventral row with 4 pre-anal and 3 post-anal papillae and the lateral ventral rows with 5 papillae each, and the post-parasitic juvenile with short, conic tail appendage.

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