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# *HEXAMERMIS COCHLEARIUS* SP. N. (NEMATODA: MERMITHIDAE) A PARASITE OF *DICHROPLUS ELONGATUS* GIGLIO-TOS (ORTHOPTERA: ACRIDIIDAE) IN ARGENTINA

by
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**Summary**. *Hexamermis cochlearius* sp. n. (Nematoda, Mermithidae) was found parasitizing nymphs of *Dichroplus elongatus* Giglio-Tos, 1894 (Orthoptera: Acridiidae) in Argentina. The species is characterized by the presence of a spoon-like concavity in the tip of each spicule.

*Hexamermis* Steiner, 1924 is a well represented genus of Mermithidae in Argentina. *Hexamermis cochlearius* sp. n. is described from *Dichroplus elongatus* Giglio-Tos, 1894 (Orthoptera: Acridiidae).

## Material and methods

During December, 1989, nymphs of *Dichroplus elongatus* were collected with a sweepnet in the pasturelands of Brandsen (Buenos Aires, Argentina). They were placed in cages containing plastic dishes with moist soil. After emerging from the host, the juvenile nematodes migrated into the moist soil where they matured to adults.

Adults and postparasitic juvenile nematodes were observed alive and then killed by immersion in 60°C distilled water for 2 minutes, fixed in TAF and processed to glycerol by Seinhorst's method for taxonomic studies (Curran and Hominick, 1980). Drawings and measurements were made from live and fixed specimens with a camera lucida microscope, and a micrometer in a Zeiss light microscope.

## Hexamermis cochlearius sp. n. (Fig. 1)

Description: Large nematodes, 52-144 mm. Guticle with crisscross fibres. Head homocephalic. Six cephalic papillae surrounding the mouth. Amphids small, pore like. Mouth terminal and central. Six hypodermal chords: lateral chords containing two rows of cells; the subventral and ventral chords containing one row of cells, along the length of the body. Vulva a slit, perpendicular to long axis of body. Vagina "J" shaped, situated transversally near the middle of the body, with two twists forming an "8" in a plane parallel to body axis, and joining the anterior and posterior uteri. Spicules equal and paired, sligthly curved with a concavity in the internal face of the tip forming a receptaculum. Six rows of genital papillae; a double row of ventrolateral papillae: the external row with 10 papillae and the internal one with 6 papillae; median ventral rows with a single preanal papilla, two single ones situated in each side of the anus, and 7 pairs of post-anal papillae. Post-parasitic juveniles with a short cauda and thin tail appendage. Measurements are for holotype male and allotype female and for paratypes the range in parenthesis.

Male: (n = 16); total length 63 mm (52-83); head diameter: 59 µm (42-66); greatest width: 149 µm (122.5-202); diameter nerve ring: 98 µm (69.5-102); diameter at anus: 143 µm (136-162.5); distance anus to tail: 160.5 µm (142-182); distance from anterior end to nerve ring: 230 µm (144-388); length spicules: 115.5 µm (108-136); width spicules: 6 µm (4.7-6.2); length and width of amphids: 10 µm x 8 µm.

Female: (n = 18); total length: 114 mm (100-144); head diameter: 72.5 µm (60-90); greatest width: 310 µm (262-440); diameter nerve ring: 190 µm (108-250); distance from anterior end to nerve ring: 430 µm (390-560); position vulva (% body length): 39% (34.5-41); length vagina: 280 µm (169-388); width vagina: 44 µm (33.5-81); length and width of amphids: 12 µm x 10 µm.

Type host: nymphs of *Dichroplus elongatus* Giglio-Tos, 1894 (Orthoptera: Acridiidae).

Type locality: Brandsen, Province of Buenos Aires, Argentina.

Type specimens: Deposited in the Helminthological collection at CEPAVE.

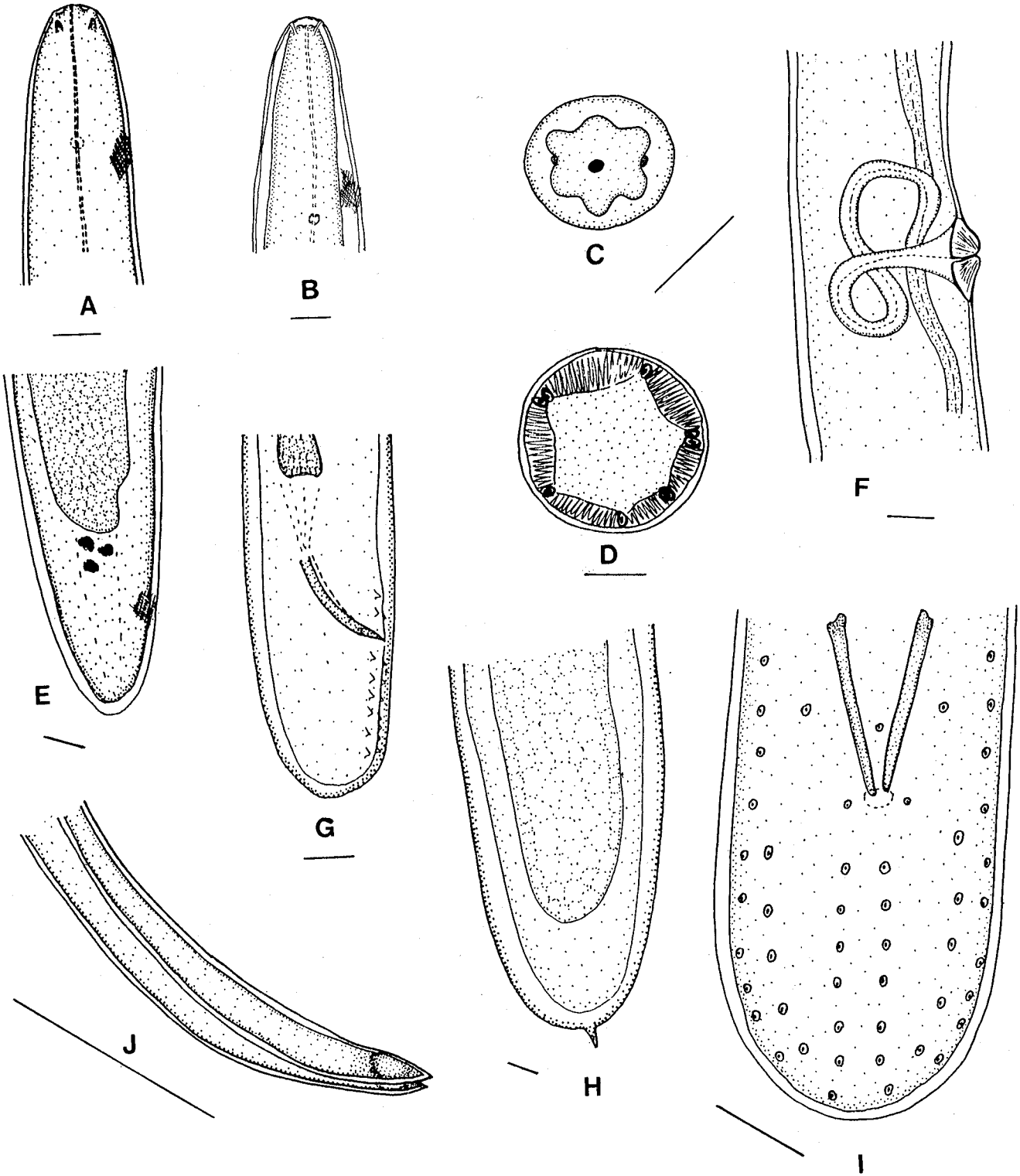


Fig. 1 - *Hexamermis cochlearius* sp. n. A, lateral view of female head; B, lateral view of male head; C, en face view of female head; D, cross section at midbody; E, lateral view of female tail; F, vagina; G, lateral view of male tail; H, lateral view of post-parasitic juvenile tail; I, ventral view of male tail; J, spicule (Bars = 50 µm).

## Discussion

*Hexamermis cochlearius* sp. n. shares the morphology of its vagina (J-shaped) with the following species of the genus *Hexamermis* Steiner: *H. albicans* (Seibold, 1848) Polozhentsev *et* Artyukhovsky, 1959, from Europe, Asia and America; *H. brevis* (Hagmeier, 1912) Polozhentsev *et* Artyukhovsky, 1959, from Europe; *H. cathetospiculae* Poinar *et* Chang, 1985, from Malaysia; *H. dactylocercus* Poinar *et* Linares, 1985 from Venezuela; *H. elongata*, *H. incisura* and *H. lineata* Kaiser, 1977, from Europe; and *H. ovistriata* Stock *et* Camino, 1992.

*H. albicans* differs from the new species in the arrangement of the genital papillae in the male: 4-8 pre-anal and 5-9 post-anal papillae.

*H. brevis* has very short spicules (50-130 µm) and the post-anal papillae are placed in several rows of triplets.

*H. cathetospiculae* differs from *H. cochlearius* sp. n. in the size of the spicules (289-334 µm) and the genital papillae which have three broken (double) rows; lateral double rows containing 20-32 papillae each, extending anteriorly past the cloacal opening, but only half the length of the spicules median double row of 20-25 papillae.

*H. dactylocercus* differs in having a head slightly bilobed with each lobe bearing three cephalic papillae. The spicules are larger than in *H. cochlearius*; and the genital papillae are arranged in six or seven broken rows, variable in number and location.

*H. elongata* can be distinguished from our new species in the size of the spicules (180 µm), and the genital papillae have four rows: the lateral ones with 6-15 papillae, and the median rows with 6-17 pre-anal papillae and 4-17 post-anal papillae.

*H. incisura* differs in the size of the spicules (110 µm) and the arrangement and number of the genital papillae: 11 lateral papillae; the median rows with 8 pre-anal and 9 post-anal papillae.

*H. lineata* differs from *H. cochlearius* sp. n. in the size of the spicules (220 µm) and the arrangement of the genital papillae: 8-25 lateral papillae, and 8-17 pre-anal and 8-17 post anal papillae in the median rows.

*H. ovistriata* differs in the position and number of the genital papillae in the male: 6 pairs and 2 singles are pre-anal; 2 triplets, 5 pairs and 2 single papillae are post-anal.

*Hexamermis cochlearius* is characterized by the size and shape of its spicules and the arrangement of the genital papillae in the male.

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