

Hexamermis dactylocercus sp. n. (Mermithidae : Nematoda), a parasite of *Aeneolamia varia* (Cercopidae : Homoptera) in Venezuela

George O. POINAR, Jr and Blas LINARES

Division of Entomology and Parasitology, University of California,
Berkeley, Ca 94720, USA and Estacion Experimental, Araure, Acarigua, Venezuela

SUMMARY

Hexamermis dactylocercus n. sp. (Mermithidae) is described from the homopteran *Aeneolamia varia* (Cercopidae) in Venezuela. Rates of parasitism in this economically important pest of sugar cane reached 50 % in some fields. The characteristic digit-like appendage on the tails of the adults of *Hexamermis dactylocercus* n. sp. separates this species from previously described members of the genus.

RÉSUMÉ

Hexamermis dactylocercus sp. n. (Mermithidae : Nematoda),
parasite de *Aeneolamia varia* (Cercopidae : Homoptera) au Venezuela.

Description est donnée de *Hexamermis dactylocercus* provenant de *Aeneolamia varia* (Cercopidae) originaire du Venezuela. Cet insecte économiquement dangereux pour la canne à sucre est parasité à des taux pouvant atteindre 50 % dans certains champs. L'appendice digité caractéristique situé à l'extrémité de la queue sépare cette espèce de toutes celles décrites antérieurement dans le genre.

Relatively few mermithid parasites of members of the homopteran family Cercopidae have been reported (Poinar, 1975). The first such record was made by Kershaw (1913) when an unidentified mermithid was found parasitizing *Tomaspis saccharina* Dist. in Trinidad. Subsequent findings were made by Weber (1930) who reported an unidentified mermithid in the European spittlebug, *Aphrophora salicis* (Degeer) and Weaver and King (1954) who identified *Agamermis decaudata* parasitizing *Philaenus spumarius* (L.) in Ohio. Records of mermithid parasitism in the cercopid genus *Aeneolamia* have been reported by Lloyd (1959) in Mexico and by Guagliumi (1962) in Venezuela. Both of the above authors identified the nematode as belonging to the genus *Hexamermis* Steiner, 1924 but no description was provided.

A mermithid was discovered parasitizing nymphs of *Aeneolamia varia* in the Portuguesa state of Venezuela (western central region of the country). Such parasitized nymphs were collected from May 10 to September 1, 1981 and from May to June, 1982. Nematodes were heat killed, fixed in formalin, and processed to glycerin. The rate of infection reached 32 % from May 10 to September 1, 1981 (n = 1982) and 50 % from May 1 to June 1, 1982 (n = 1982). Since the host is an important pest of sugarcane, interest was expressed in the identity of the parasite. The present study describes this nematode as

a new species of the genus *Hexamermis*. It is quite likely that this is the species referred to by Guagliumi (1962).

Hexamermis dactylocercus n. sp.

Fig. 1

MEASUREMENTS

Females (n = 8) : L = 7.14 cm (4.7-8.8); greatest diameter = 274 μ m (192-352); distance from head to nerve ring = 309 μ m (265-378); V = 39 (30-45); length of vagina = 201 μ m (174-269); distance from end of trophosome to tail tip = 274 μ m (202-504).

Males (n = 10) : L = 4.4 cm (2.2-6.3); greatest diameter = 182 μ m (128-224); distance from head to nerve ring = 284 μ m (233-334); spicules = 158 μ m (114-206); tail = 204 μ m (152-240); body diameter at cloaca = 160 μ m (111-206).

Holotype (female) : L = 8.0 cm; greatest diameter = 392 μ m; distance from head to nerve ring = 346 μ m; V = 42 %; length of vagina = 199 μ m; distance from end of trophosome to tail tip = 504 μ m.

Allotype (male) : L = 5.0 cm; greatest diameter = 192 μ m; distance from head to nerve ring = 290 μ m;

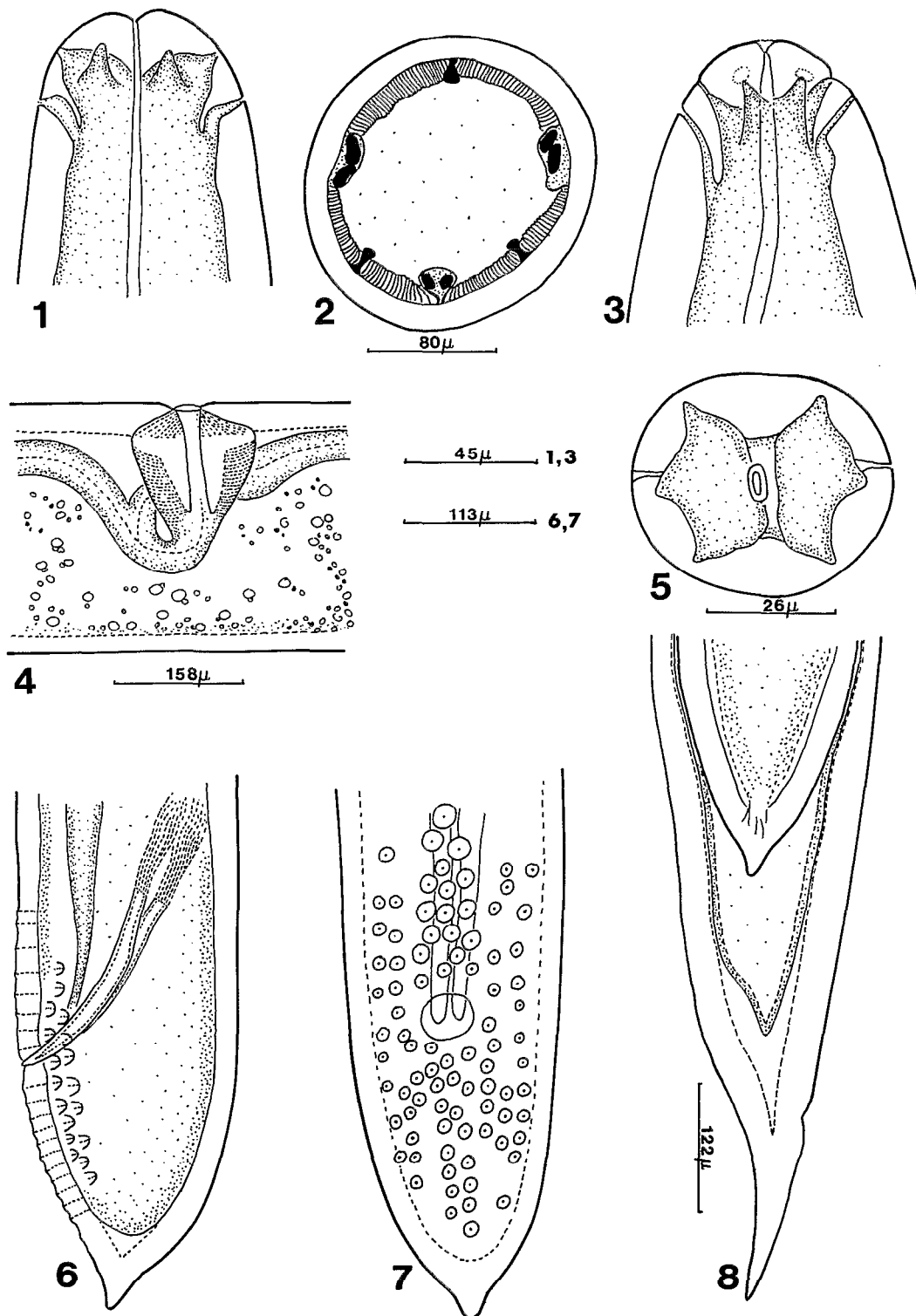


Fig. 1. *Hexameris dactylocercus* sp. nov. 1 : dorsal view of male head; 2 : cross-section of male at mid-body; 3 : dorsal view of female head; 4 : lateral view of vagina; 5 : « en face » view of female; 6 : lateral view of male tail; 7 : ventral view of male tail; 8 : lateral view of tail of a molting female showing the two shed cuticles.

spicules = 206 μm ; tail = 212 μm ; body diameter at cloaca = 190 μm .

DESCRIPTION

Mermithidae Braun, 1883. *Hexameris* Steiner, 1924 as characterized by Rubstov (1978).

Adults : Medium sized nematodes with a relatively thick cuticle (16-38 μm thick) possessing distinct cross fibers; body narrowing slightly in the head region, six hypodermal cords at mid-body, the lateral and ventral cords possessing two rows of nucleated cells; six head papillae arranged in one plane, however the head is slightly bilobed with each lobe bearing three cephalic papillae : mouth opening terminal; amphids located behind the lateral cephalic papillae, openings small and pore-like; proximal portion of vagina lined with thick layers of cuticle, narrowed distal portion roughly equal in length to the proximal portion but bent in various directions, giving the vagina a J, V or rarely a modified S-shape; vulva opening circular; vulvar lips absent. Spicules paired, separate, equal, pointed at tips, nearly straight, slightly shorter than, equal to or slightly longer than the body width at the cloaca; genital papillae arranged in six or seven broken rows, variable in number and location. Some females possess a vestigial anal opening at 189-208 μm from the posterior end; tails of both sexes with a thick digit-like cuticular projection.

Postparasitic juveniles : With a thick cuticle (9-12 μm) also possessing cross fibers; tail terminus bearing a distinct appendage, 41 μm (37-48) long. Molts twice (simultaneously) after leaving host to become an adult.

TYPE HOST AND LOCALITY

Aeneolamia varia Fab. (Cercopidae : Homoptera), at Guanare Estate Portuguesa, Venezuela.

TYPE SPECIMENS

Holotype (female) and allotype (male) deposited in the Nematology Collection, University of California,

Davis, California. Paratypes are in the author's (GOP Jr) collection.

DIAGNOSIS

The characteristic digit-like appendage on the tails of the adults of *H. dactylocercus* n. sp. separates this species from previously described members of *Hexameris*. Other mermithids described from Hemiptera include *H. microamphidis* Steiner, 1925 from *Helopeltis antonii* in Indonesia and *Agameris unka* Kaburaki & Imamura, 1932 described from leafhoppers in Japan. *H. dactylocercus* n. sp. differs from the former species by having longer spicules and from the latter by having a tail appendage on the postparasitic juveniles. It differs from both by the cuticular projection on the adult tails.

REFERENCES

- GUAGLIUMI, P. (1962). *Las plagas de la caña de Azúcar en Venezuela*. Vol. II., Venezuela, Minist. Agric. y Cria. Centro de Investigaciones Agronómicas, Maracay : 568-569.
- KABURAKI, T. & IMAMURA, S. (1932). Mermithid-worm parasitic in leaf-hoppers, with notes on its life history and habits. *Proc. imp. Acad. Japan*, 8 : 139-141.
- KERSHAW, J. C. (1913). Trinidad Dept. Agric., Special Circ. No. 5, 8 p. Lloyd, D.C. (1959). *Report on Aeneolamia investigations in Eastern Mexico, April-October, 1959*. Mexican Govt. (unpubl. rep.).
- POINAR, Jr. G. O. (1975). *Entomogenous nematodes*. Leiden, E.J. Brill, 317 p.
- RUBSTOV, I. A. (1978). [*Mermithida, Classification, importance and use*]. Leningrad, « Nauka », 207 p. (In russian).
- STEINER, G. (1925). Mermithids parasitic in the tea bug (*Helopeltis antonii* Sign.). *Mededell. Proefst. Thee*, 44 : 10-16.
- WEAVER, C. R. & King, O. R. (1954). Meadow spittlebug. *Ohio Agr. Exp. Sta. Bull.*, 741, 99 p.
- WEBER, H. (1930). *Biologie der Hemipteren. Eine Naturgeschichte der Schnabelkerfe*. Berlin, Springer Verlag, 543 p.

Accepté pour publication le 21 février 1985.