

TWO NEW NEMATODE SPECIES OF THE GENUS HELICOTYLENCHUS  
IN CUBA (NEMATODA: HOPLALAIMIDAE)

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Nematodes of the genus Helicotylenchus are widely distributed plant parasites. The range of host plants of this group of nematodes is extremely wide and includes the majority of agricultural crops. On Cuba this is the third case of finding new species of nematodes of the given genus.

Helicotylenchus orientalis sp. n., province of Oriente. Female (n = 4) L = 480.5-505.4 (493.0)  $\mu$ m; a = 20-22 (21); b = 3.9-4.1 (4); b' = 3.7-3.9 (3.8); c = 34-37 (35.5); v = 64-66 (65)%. Stylet = 25-27 (26)  $\mu$ m; m = 49-51 (50); o = 49-50 (49.5). Males unknown.

Characterized by a semicircular head bearing 3-4 indistinct cuticular annules; anterior part of knob, the basal part of the stylet, concave. Body spiral and twisted. Lateral field with 4 incisures. Hemizonid well marked and found above the excretory pore. Orifice of the dorsal gland of the esophagus opens into its lumen at a distance of 13.1-13.6  $\mu$ m from the base of the stylet knobs.

Spermatheca not apparent and without sperm. Phasmids situated 2-3 cuticular annules beneath the anal orifice. The tail consists of 10-12 cuticular annules on the ventral side; the big part of the curvature of the tail is on the dorsal side. The tip of the tail is rounded and there is an indentation in the middle.

Differential diagnosis. H. orientalis sp. n. is the closest with respect to proportions and the indentation in the tail to H. holguinensis sp. n., H. crenacauda and H. sacchari. It differs from H. holguinensis through its smaller proportions (493  $\mu$ m against 656.5  $\mu$ m), by the smaller index "c" (35.5 against 49.7), by the semicircular head (H. holguinensis has a head that is tapered and bluntly rounded), by the presence of a concavity at the anterior part of the knobs of the base of the spear (H. holguinensis has knobs that are rounded or flattened), by the position of the phasmids 2-3 annules lower than the anus (the phasmids of H. holguinensis are 6-7 annules higher than the anus), and by the rounded tail (H. holguinensis has a blunt protuberance). It differs from H. crenacauda by its smaller index "a" (20-22 against 24-29), by the greater coefficient "o" (49-50 against 29-39), by the presence of a convex curvature in the anterior part of the knobs of the base of the spear (H. crenacauda has knobs that are rounded), by the positions of the phasmids 2-3 annules lower than the anus (the phasmids of H. crenacauda are 4-6 annules higher than the anus), and by the rounded tail (H. crenacauda has a sharply pronounced pointed protuberance). It differs from H. sacchari by its greater index "c" (35.5 against 30.2), by the longer stylet (26  $\mu$ m against 22), and by the presence of an indentation on the tip of the tail (H. sacchari has no indentation on the tail).

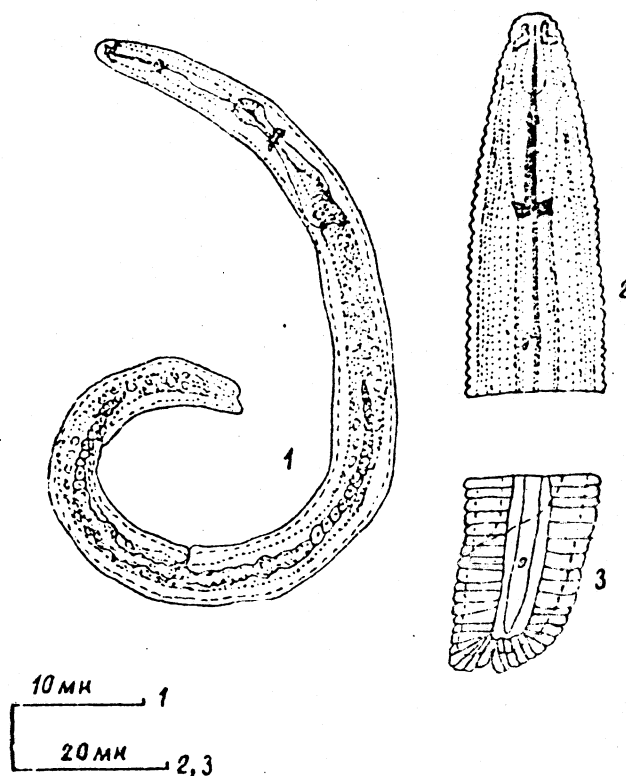


Fig. 1. Helicotylenchus orientalis sp. n.

Female: 1. General view. 2. Head. 3. Rear end of the body.

Host plants. On Cuba H. orientalis was observed June 21, 1977 in the roots of a kenaf plant and in the surrounding soil (sown in a monoculture more than 5 years continuously) in Jobabo, Tunas.

Holotype female.  $L = 493 \mu\text{m}$ ;  $a = 21$ ;  $b = 4$ ;  $b' = 3.8$ ;  $c = 35.5$ ;  $V = 65\%$ ;  $m = 51$ ;  $O = 50$  -- preparation No. 1 in glycerine. It is preserved in the nematode laboratory of the Branch of the Institute for Plant Protection in the city of Holguin. The type is named in honor of the Cuban province Oriente.

Helicotylenchus holguinensis sp. n., city of Holguin.

Female ( $n = 6$ )  $L = 643-670$  (656.5)  $\mu\text{m}$ ;  $a = 20-25.6$  (22.8);  $B = 4.4-4.7$  (4.5);  $b' = 4.2-4.4$  (4.3);  $c = 48-51.5$  (49.7);  $v = 65-67.8$  (66.4)%. Stylet  $26-27.5$  (26.7)  $\mu\text{m}$ ;  $m = 50-52$ ;  $O = 48-60$ . Males unknown.

The anterior end of the nematode tapers gradually without abrupt changes, head portion bluntly rounded and bearing 4-5 cuticular annules. The knobs at the base of the spear are anteriorly rounded or flattened. Body coiled up in shape of an open spiral. Lateral field with 4 incisures, hemizonid well-marked and above the excretory pore. The orifice of the dorsal gland of the esophagus opens into its lumen at a distance of  $16.0-16.5 \mu\text{m}$  from the base of the spear knobs. Spermatheca easily seen with spermatozoa round in shape.

Phasmids situated 6-7 cuticular annules above anal orifice, the tail consists of 12-13 cuticular annules from the ventral side; the big part of the curvature of the tail is on the dorsal side. The tip of the tail has a small protuberance on the ventral side and has a notched groove in its middle.

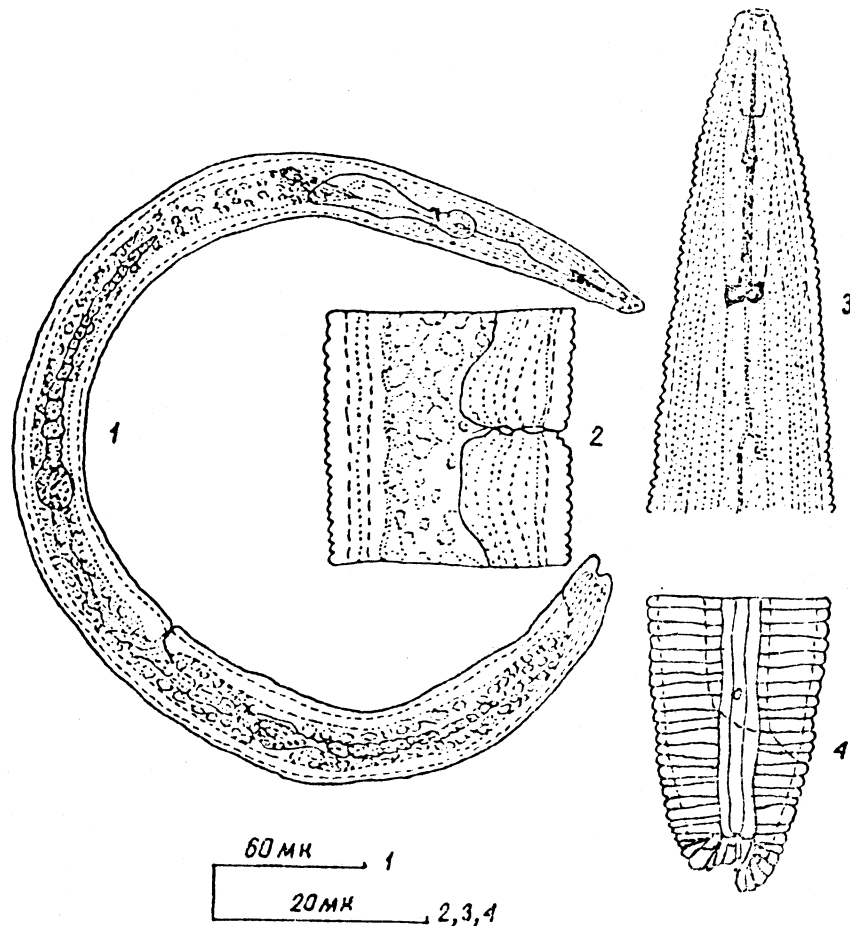


Fig. 2. Helicotylenchus holguinensis sp. n.

Female: 1. General view. 2. Vulva, lateral view. 3. Head. 4. Rear end of body.

Differential diagnosis. H. holguinensis sp. n. differs from the other species by its peculiar caudal terminus. It is very close to H. orientalis sp. n. and H. crenacauda. All the differences between H. holguinensis and H. orientalis sp. n. are given above (see differential diagnosis of H. orientalis sp. n.).

H. holguinensis differs from H. crenacauda by its greater coefficient "O" (48-60 against 29-30), by the much lower position of the vulva (66 against 61), by the blunt protuberance on the tip of the tail (H. crenacauda has a sharply pointed protuberance on the tail).

Host plants and distribution.

On Cuba H. holguinensis sp. n. was discovered December 1977 on the farm Urbano Noriz, Holguin in the roots and surrounding soil of sugar cane.

Holotype female.  $L = 644 \mu\text{m}$ ;  $a = 24.3$ ;  $b = 4.5$ ;  $b' = 4.2$ ;  $c = 49.5$ ;  $v = 66.4\%$ ;  $m = 52$ ;  $O = 60$ .

Preparation No. 21 in glycerine. It is preserved in the nematode laboratory of the Branch of the Institute for Plant Protection in the city of Holguin. The species is named for Holguin.

#### Literature

1. Razzjivin A. A., O'Relly, J. P. & Péres Millan, J. R. 1973. Nuevas especies de nemátodos (Nematoda: Dorylaimidae y Hoplolaimidae) parásitos de la caña de azúcar en Cuba. Poeyana Instituto de Zoología, Cuba, n.108, 12 pp.
2. Sher, S. A. 1966. Revision of the Hoplolaiminae (Nematoda). VI: Helicotylenchus Steiner, 1945. Nematologica 12(1): 1-56.