A New Species of the Genus *Helicotylenchus* (Nematoda: Hoplolaimidae) Attacking Sugarcane

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INTRODUCTION

Examinations of soil samples collected from around the roots of sugarcane at different localities throughout the Island of Puerto Rico, reveal the presence of large numbers of plant-parasitic nematodes. Spiral nematodes of the genus *Helicotylenchus*, are among those most frequently encountered.

Recently the author was called upon to make a study of the nematode population present in the sugarcane fields at Central Soller, San Sebastián, P.R. The soil and root samples collected at this locality revealed very high populations of different nematode genera, of which specimens of *Helicotylenchus* were the most numerous. Our attention was attracted by a form which undoubtedly represents a new species of this group of spiral nematodes. Its description is here presented.

HELICOTYLENCHUS CONCAVUS N.Sp.

MATERIAL 16 females

MEASUREMENTS L = 0.63–0.78 mm.; a = 26.6–32.7μ; b = 5.9–8.6μ; c = 40.4–52.4μ; V = 58–66 percent; stylet 28–29μ; phasmids at 32–40μ from tail end; dorsal pharyngeal gland opening at 13–14μ from base of stylet.

DESCRIPTION Body tapering at both extremities, anteriad of intestine and posteriad of anus. Head marked by 4 annules, continuous with body contour. Cuticle plainly annulated; annules broad and convex, interrupted by the lateral fields which have 4 incisures, the 2 internal ones joining together at the 9th to 10th annule behind anal opening; incisures beginning slightly behind base of stylet, ending in front of tail end, central strip slightly wider than edging ones. Phasmids variable in position, but always located anteriad to the latitude of the anal opening at 32 to 40μ from tail end. Cervical papillae not seen. Tail with broadly rounded terminus, and annulation following tail contour; slightly concave dorsally as shown in figure 1, D. Hemizonid 3 annules in front of excretory pore. Excretory canal with a collaret as shown in figure 1, A. Head narrower than body. Cephalic

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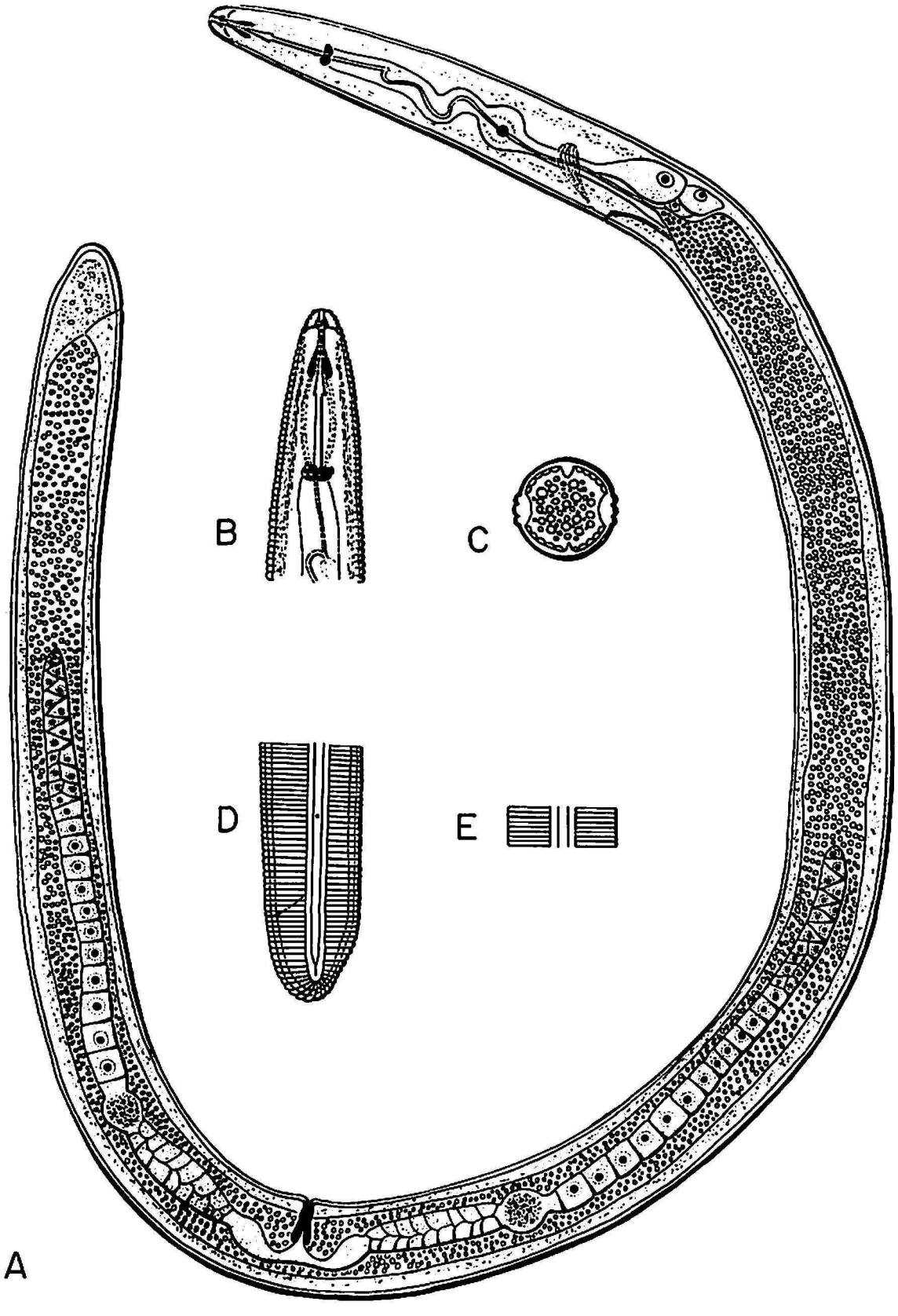

FIG. 1.—*Helicotylenchus concavus:* A, Female; × 540; B, head end, × 720; C, cross section of body at a region posteriad of pharyngeal glands and anteriad of right ovary, × 720; D, tail end, × 720; E, lateral field, × 720.

framework prominent. Buccal stylet of adult 28 to 29μ long, its knobs slightly concave anteriorly. Protrudor muscles of stylet attached to vestibulum framework. Median pharyngeal bulb ovoid to spherical, with a conspicuous valvular apparatus. Nerve ring at about center of isthmus. Glandular lobe of pharynx variable in size, but always overlapping intestine. Outlet of dorsal pharyngeal gland 13 to 14μ behind stylet (*i.e.* about half the length of the stylet). Intestine granulated. Vulva a transverse slit at 58 to 66 percent of total length, without lateral flaps. Vagina with cuticularized reinforcement in the wall. Ovaries outstretched on either the right or left side of intestine, but always on the same side. Oocytes in single file except for a short region close to the distal end. Conspicuous spermathecae present.

HOLOTYPE Female collected on April 8, 1961, in the sugarcane fields at Central Soller, San Sebastián, Puerto Rico. Slide No. 1 author's collection.

MALE Not known.

PARATYPES Slides Nos. 2, 3, 4, and 5 author's collection, also vial No. 1 deposited in the collection of the Section of Nematology, Department of Entomology, of this Station.

TYPE LOCALITY Sugarcane fields at Central Soller, San Sebastián, P.R.

TYPE HOST Sugarcane, *Saccharum officinarum* L.

DIAGNOSIS *Helicotylenchus concavus* n.sp. resembling *Helicotylenchus platyurus*, Perry, 1959, but different by smaller size (only 0.63 to 0.78 mm. as compared to 0.85 to 0.94 mm. in *H. platyurus*), a shorter stylet (only 28 to 29μ as compared to 30 to 34μ in *H. platyurus*), and by a slight concavity at the dorsal side of tail. It is different from all other species of the genus by the fusion of the two internal incisures of the lateral fields at the 9th to 10th annule posteriad of anus, further by a collaret in the wall of the excretory canal close to its opening, and by cuticularized reinforcement in the wall of the vagina.

Helicotylenchus concavus derives its specific name from its characteristically slight concavity on the dorsal side of tail.

SUMMARY

Sugarcane in Puerto Rico is attacked by high populations of plant parasitic nematodes, of which specimens belonging to the genus *Helicotylenchus* are among the most numerous. A new species of this genus was found at Central Soller, San Sebastián, P.R. A description of the nematode, as well as a plate illustrating the same are given in this article.

RESUMEN

Gran número de nematodos parasíticos atacan la caña de azúcar en Puerto Rico, de los cuales las especies del género *Helicotylenchus* son de las

más numerosas. Una nueva especie de este género se encontró en Central Soller, San Sebastián, Puerto Rico. Aquí en este artículo se describe y se ilustra esta especie.

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