

Proleptonchoides southindiae n. gen., n. sp., a New Leptonchoid from South India¹

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Abstract: *Proleptonchoides southindiae* n. gen., n. sp. (Dorylaimida: Leptonchidae), is described from soil around false tobacco (*Lobelia excelsa*) and cardamom (*Elettaria cardamomum*) in South India. *P. southindiae* is prodelphic, has a short constricted esophageal bulb and flanged odontophore, and is phylogenetically close to *Proleptonchus*. *Key Words:* taxonomy, Nematoda, Dorylaimida, Leptonchidae, *Proleptonchus*.

During September-November 1976, one of us (ACK) collected nematodes as a part of a survey around the Coffee Research Station of the Central Coffee Research Institute (C.C.R.I.), Chikmagalur District, Karnataka, South India. In one locality a new leptonchoid was found in substantial numbers associated in soil with roots of *Lobelia* (false tobacco), a plant which grows widely in the area in loamy soils of pH 5.6-6.6. The collection site is at latitude 13°22' N and longitude 73°28' E at an elevation of 853 m above mean sea level. Annual rainfall averages 2540 mm, with most rainfall between March and November. In subsequent sampling in the spring of 1977, adults were not found again until after the March rains. Mean annual temperature of the area is 26.8°C (range 17.8-35). In the spring of 1978 the new leptonchoid was collected in

large numbers at an additional site in the same general area, from soil around the roots of *Elettaria cardamomum* Maton. (cardamom). It is not known whether this leptonchoid is plant-parasitic, although the large numbers recovered suggest that it might be.

Proleptonchoides n. gen.

Type species: *Proleptonchoides southindiae* n. sp.

Differential diagnosis: *Proleptonchoides* can be distinguished from *Proleptonchus* Lordello, 1955, by the flanged spear extension (odontophore) and the digitate-spicate tail. The thick sclerotized stoma is similar to that of *Proleptonchus*, although more columnar and less distinctly flask-shaped.

Description: Leptonchidae. Body cylindrical, slightly arcuate. Cuticle with distinct transverse striations; subcuticle coarsely striated, loose. Refractive elements in cuticle abundant. Lip region slightly set off, lips distinct. Stoma thick, sclerotized, nearly cylindrical. Spear slender, spear extension flanged. Esophageal bulb short and

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constricted. Vulva transverse; ovary single, prodelphic.

Proleptonchoides southindiae n. sp.

(Figure 1)

Type: Holotype female on slide labeled *Proleptonchoides southindiae*, K-I/1, in Purdue Nematode Collection (PNC). Collected September 1976 from soil around roots of *Lobelia excelsa* Leschen. near C.C.R.I., Balehonnur, Chikmagalur District, Karnataka, South India.

Paratypes: Females (35) and juveniles (5) on slides labeled *Proleptonchoides southindiae*, K-I/2-14, in PNC; also, females (5) on slide L4, C.C.R.I. nematode collection.

Measurements: Holotype female: L = 0.96 mm; a = 37.5; b = 5.6; c = 27.4; V =

61%; G₁ = 13%; width = 25.6 μm; esophagus = 170 μm; esophageal bulb = 35 μm; prerectum = 131 μm; tail = 35 μm.

Paratype females (mean, standard deviation, and range): L = 0.94 ± 0.03 (0.90–0.99); a = 35.8 ± 1.8 (33–38.6); b = 5.5 ± 0.1 (5.3–5.7); c = 27.8 ± 1.5 (25.6–30); V = 59.3% ± 1.0 (58–60.6); G₁ = 14.7 ± 1.7 (13–18); width = 26.1 μm ± 1.3 (24–28.8); esophagus = 168.6 μm ± 5.5 (163–177); esophageal bulb = 35.3 μm ± 1.2 (33.6–37); prerectum = 148.2 μm ± 14.5 (128–160); tail = 33.7 μm ± 2 (30–37); spear = 13 μm ± 0.8 (11.2–14); spear extension = 6.8 μm ± 0.6 (6.4–8); esophageal bulb/esophagus (%) = 20.8 ± 0.9 (19–22); prerectum/anal body width = 8.6 ± 1.1 (6.7–10); tail/anal body width = 1.9 ± 0.1 (1.7–2.2).

Holotype female: Body slightly arcuate. Cuticle with distinct striations; subcuticle coarsely striated, somewhat loose and ir-

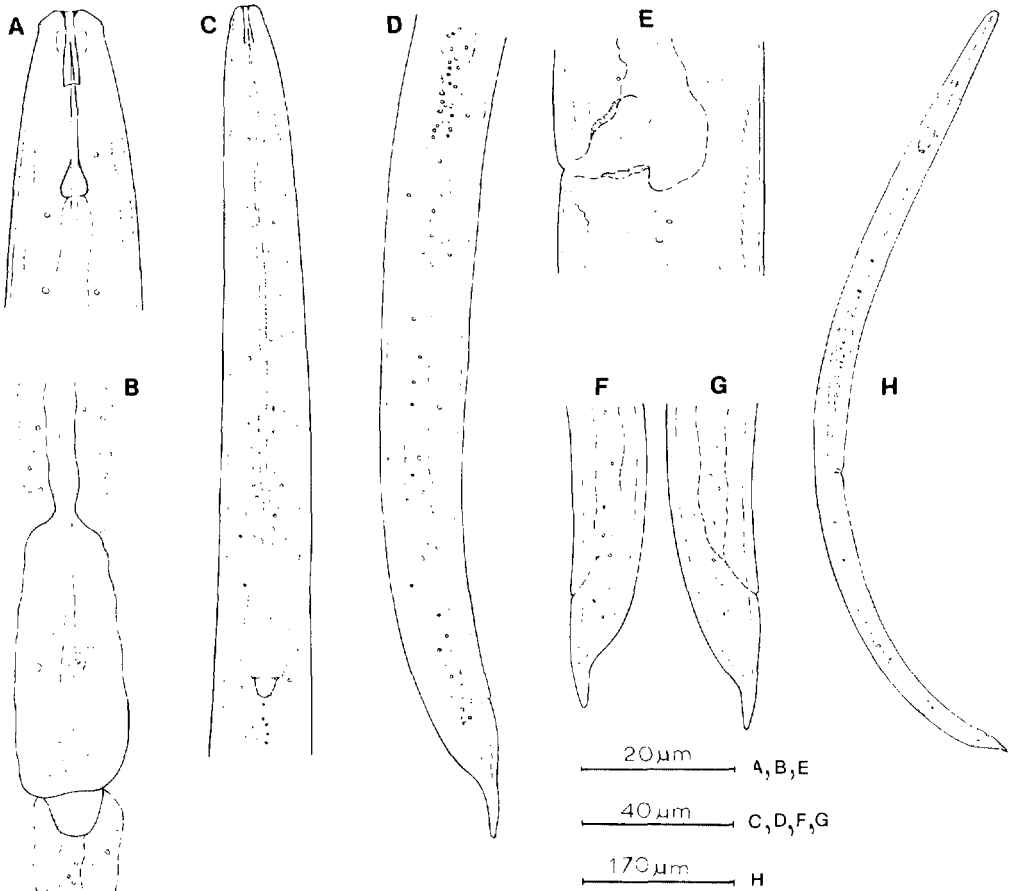


FIG. 1. *Proleptonchoides southindiae* n. gen., n. sp. A, head; B, esophageal bulb; C, anterior portion of body; D, posterior portion of body; E, vulval region; F, G, female tails; H, female.

regular. Lateral cords 8 μm wide; lateral pores distinct. Refractive elements in cuticle abundant. Lip region slightly set off, 8 μm wide; liplets and papillae distinct. Oral opening lined with thick, sclerotized refractive material. Stoma 9 μm long, thick, sclerotized, wider at base; guiding ring distinct. Amphids cup-shaped, about 4 μm wide. Spear 13.6 μm long, slender, distinctly refractive. Spear extension about 6.4 μm long, flanged. Anterior esophagus slender, cylindroid; posterior bulb muscular, constricted, 37 μm long, about 21% esophageal length. Cardia 7.2 μm long, rounded. Nerve ring located about half-way along esophagus. Vulva transverse; vagina about 14 μm long, extending about 50% across body width; circular muscles distinct. Anterior gonad normal, 13% body length; posterior gonad absent. Prerectum distinct, 131 μm long (= 8 anal body widths long). Tail digitate to spicate, 35 μm long (= 2 anal body widths); single caudal papilla on each side.

Male not seen, and mature females did not contain sperm.

Distribution and habitat: This species has been found only in South India. The original collections from the type habitat were part of a survey (by ACK) near the Coffee Research Station, C.C.R.I., and *P. southindiae* appeared at first to be associated only with *Lobelia*. In subsequent collecting in the same general area, it was found associated in larger numbers with *Elettaria cardamomum*.

Discussion: We consider *Proleptonchoides* to be phylogenetically closely related to *Proleptonchus*, possibly a sister group. Both genera have a short constricted esophageal bulb, prodelphic ovary, slender spear, slightly set off lip region, and cuticular refractive elements. The flanged spear extension is a characteristic also of *Xiphinemella* Loos, 1964 and *Loncharionema* Goseco, Ferris and Ferris, 1974. Although we formerly placed *Loncharionema* in Xiphinemellinae (2), and *Proleptonchus* in Leptonchinae (1), we now believe that *Loncharionema* shares a common ancestor with *Proleptonchus* and *Proleptonchoides*. (*Proleptonchus* probably lost the flanges secondarily.) *Proleptonchus* species are also found in India as well as many other parts of the world (1).

LITERATURE CITED

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