

NEMATODES FROM WEST BENGAL (INDIA)
XV. ON THE SPECIES OF SOME RARE GENERA HAVING
NARROW ODONTOSTYLE OF THE SUPERFAMILY
DORYLAIMOIDEA (DORYLAIMIDA)

By

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ABSTRACT

Lenonchium oryzae Siddiqi, 1965 and *Cephalodorylaimus papillatus* Jairajpuri, 1967 are being reported from Burdwan and 24-Parganas districts respectively. *Kochinema longicaudatum* sp. n. and *Chrysonemoides distinctus* sp. n. are described from Midnapur district (W. Bengal). *Kochinema longicaudatum* sp. n. 0.90-0.97 mm long, has a lip region marked by a constriction, odontostyle 9-10 μm long, odontophore 15-17 μm long, guiding ring about 1/2 lip region-width from anterior end and female tail 12-14 anal body-widths long. *Chrysonemoides distinctus* sp. n. 0.94-1.00 mm long, has a wider lip region than adjoining body, odontostyle 10-11 μm long, odontophore 14-16 μm long, guiding ring about 1/2 lip region-width from anterior end and female tail 6.6-7.1 anal body-widths long.

INTRODUCTION

This fifteenth paper of the series on the nematodes from West Bengal (India) reports two known and two new species of rather rare genera of the superfamily Dorylaimoidea. *Lenonchium oryzae* Siddiqi 1965, the type and only species, is being reported from district Burdwan. *Cephalodorylaimus papillatus* Jairajpuri 1967, also a type and only species, is reported from district 24-Paraganas. *Kochinema longicaudatum* sp. n. and *Chrysonemoides distinctus* sp. n. are being described from around roots of Cashew nut, Midnapur district, West Bengal.

MATERIALS AND METHODS

All the type specimens have been registered and deposited with the National

Zoological Collection, Zoological Survey of India. *K. longicaudatum* : Holotype female on slide W. N. 493 (a) and four paratype females on slide W. N. 493 (b). *C. distinctus* : Holotype female on slide W. N. 494 (a) and five paratype females on slide W. N. 494 (b).

The specimens were fixed in hot 4% formalin and mounted in anhydrous glycerine.

Lenonchium oryzae Siddiqi, 1965

(Fig. 1, A-D)

Measurements : Female (1) : L = 2.22 mm ;
a = 48 ; b = 6.7 ; c = 9.0 ? ; V = 154614.

Male (1) : L = 2.18 mm ; a = 52 ; b = 6.2 ;
c = 14.6 ; T = 62.

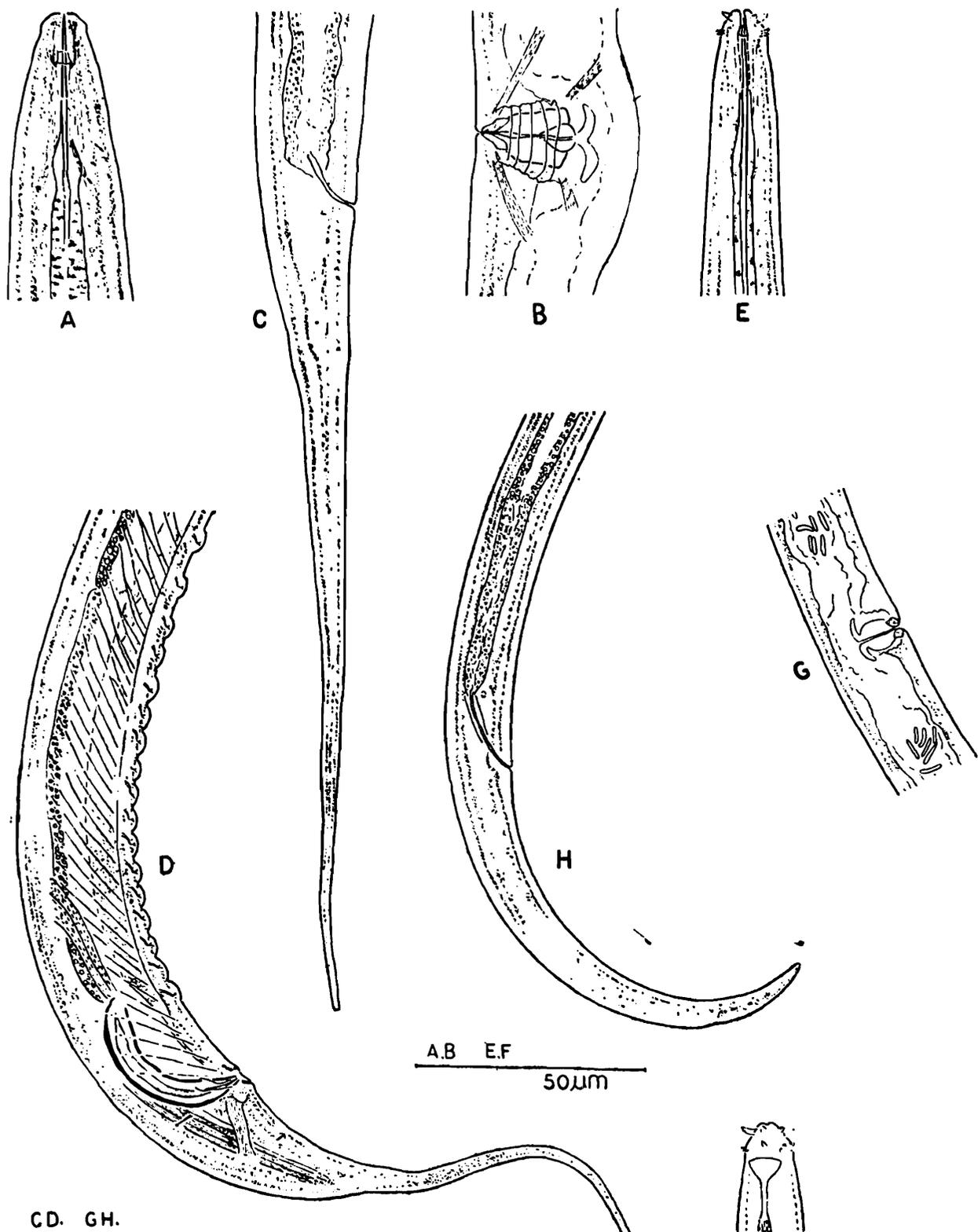


Fig. 1. A—D. *Lenonchium oryzae* Siddiqi, 1965 : A—Anterior end, B—Vulva region, C—Female tail, D—Posterior region of male. E—F. *Cephalodorylaimus papillatus* Jairajpuri, 1967 : E—Anterior end, F—Head end (surface view), G—Vulva region, H—Female tail.

DESCRIPTION

Female : Body slightly ventrally curved. Cuticle loose, finely striated transversely. Lateral chords about $\frac{1}{3}$ rd of the corresponding body-width near middle. Lip region marked by a constriction. Amphids stirrup-shaped ; apertures about 6 μm wide. Odontostyle 18-19 μm long. Guiding ring 11-12 μm from anterior end. Odontophore 18-19 μm long. Basal expanded part of oesophagus occupies 55-60% of the neck region. Vulva a transverse slit ; vagina about 22 μm long with two moderately sclerotized pieces at the distal region. Female reproductive system amphidelphic. Prerectum obscure. Tail elongate-filiform, about 4.5 ? (tip broken) anal body-widths long. Caudal pores not seen.

Male : Similar to female in general shape and morphology except the more ventrally curved posterior region and male reproductive system. In addition to an adanal pair, 14 contiguous and the last four slightly spaced ventromedian supplements present. Spicules 56 μm in length along the curved median line. Lateral guiding pieces 12 μm long. Prerectum about four anal body-widths long. Tail elongate-filiform with a rounded terminus, about 5 anal body-widths long, with one caudal pore on each side.

Habitat and locality : Soil around roots of paddy, *Oryza sativa* L. at Panchra, district Burdwan.

Cephalodorylaimus papillatus Jairajpuri, 1967

(Fig. 1, E-H)

Measurements : Female (1) : L = 1.33 mm ; a = 50 ; b = 4.8 ; c = 9.3 ; V = 1247^{13} .

DESCRIPTION

Female : Body tapering towards both ends and ventrally more curved in posterior region. Cuticle marked by very fine striations. Lateral chords about $\frac{1}{4}$ th of body-width near middle. Lip region amalgamated, elevated, and slightly offset from body. Amphids stirrup-shaped, apertures more than 7 μm wide. Odontostyle thin, 16 μm long. Guiding ring about 6 μm from anterior end. Odontophore cuticularised, 17 μm long. Basal expanded part of oesophagus occupies about 44% of the neck region. Vulva transverse ; vagina 15 μm long with sclerotized distal region. Female reproductive system amphidelphic, typical. Sperms present in the uteri, elliptical, 5-7 μm long. Prerectum about four anal body-widths long. Tail ventrally arcuate, elongate-conoid, about 8 anal body-widths long. Caudal pores not visible.

Habitat and locality : Soil around roots of coconut, *Cocos nucifera* at Lakshipur, district 24-Parganas.

Kochinema longicaudatum sp. n.

(Fig. 2)

Measurements : Female (Holotype) : L = 0.95 mm ; a = 43 ; b = 4.6 ; c = 5.5 ; V = $7.7_{43}7.0$

4 ♀♀ (Paratypes) : L = 0.90-0.97 mm ; a = 39-44 ; b = 4.1-4.6 ; c = 5.1-5.5 ; V = $6.7-7.7_{42-44}7.0-7.9$

DESCRIPTION

Female : Body ventrally curved upon fixation and gradually tapering towards both

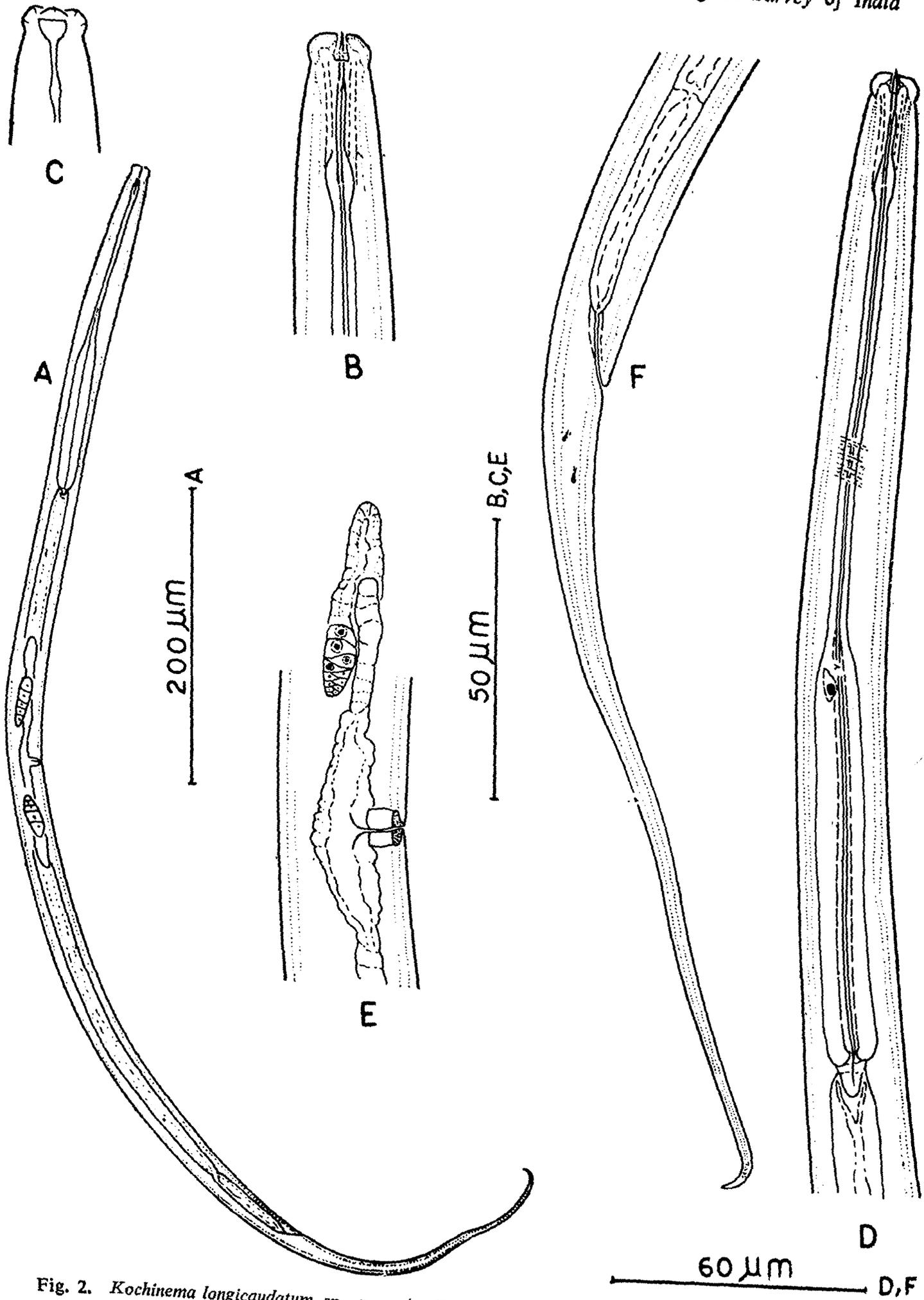


Fig. 2. *Kochinema longicaudatum* sp. n.: A—Entire female, B—Anterior end, C—Head end (surface view), D—oesophageal region, E—Anterior sexual branch, F—Posterior region of female.

ends. Cuticle transversely striated; its thickness 2-3 μm (thickest at tail). Lateral chords granular, 1/2.3-1/2.1 of the body-width near middle. Dorsal, ventral and lateral body pores indistinct.

Lip region offset by a constriction, wider than adjoining body, and about half of the body-width at base of oesophagus. Amphids typically labial in position, stirrup-shaped; apertures 5-6 μm wide or about half of the corresponding body-width and about 2 μm from anterior end. Sensillar pouches 12-13 μm from amphidial slits.

Odontostyle 9-10 μm or 1.2-1.3 head-width long; aperture 4.0-4.5 μm or 44-46% of the odontostyle length. Guiding ring 5 μm or about 1/2 lip region-width from anterior end. Odontophore simple rod-like, 15-17 μm or 1.6-1.7 times the odontostyle length. Basal expanded part of oesophagus occupies 44-46% of the neck region. Locations of the oesophageal gland nuclei and their orifices obscure.

Nerve ring at 70-77 μm or 31-36% of the neck region from anterior end. Cardia tongue-shaped, 7-9 μm long, enveloped by intestinal tissue. Oesophago-intestinal disc present. Prerectum 42-55 μm or 3-4 anal body-widths long. Rectum 17-21 μm or 1.2-1.5 anal body-width long.

Vulva a transverse slit. Vagina 7-9 μm , extending 35-40% of the corresponding body-width, sclerotized distally. Female reproductive system amphidelphic. Uterus and oviduct not distinctly separated. Ovaries reflexed; oocytes arranged in a single row except the region of multiplication.

Tail filiform with rounded terminus, 167-

188 μm or 12-14 anal body-widths long, with 2-3 caudal pores on each side.

Male : Not found.

Differential diagnosis : *Kochinema longicaudatum* sp. n. differs from the only existing species *K. proamphidium* Heyns, 1963 in having shorter odontostyle, unequal length of odontostyle and odontophore, anteriorly situated vulva, and filiform tail (odontostyle twice the width of lip region, odontostyle and odontophore equal in length, $V=56-59$ and tail convex-conoid in *K. proamphidium*).

Remarks : Darekar and Khan (1979) proposed the genus *Indokochinema* and distinguished it from *Kochinema* Heyns, 1963 in having the following characters: Shorter odontostyle with wider lumen, monopisthodelphic reproductive system and sclerotized vulva-vagina junction (odontostyle 2 head-widths long, didelphic reproductive system and vulva-vagina junction not sclerotized in *Kochinema*). Interestingly, the present new species, *K. longicaudatum*, shares the characters of both the genera, i.e., slender odontostyle and didelphic reproductive system like *Kochinema* while shorter odontostyle length and sclerotized vulva-vagina junction like *Indokochinema*. However, we prefer to place the new species under *Kochinema* because of slender odontostyle and didelphic reproductive system.

Type habitat and locality : Soil around roots of cashew nut, *Anacardium occidentale* L., at Hinari, block Ramnagar, district Midnapur, W. Bengal.

Chrysonemoides distinctus sp. n.

(Fig. 3)

Measurements :

Female (Holotype) ; L = 0.96 mm ; a = 48 ;
b = 4.1 ; c = 11 ; V = $\frac{10.3}{49.5} \frac{7.7}{7.7}$

5 ♀ ♀ (Paratypes) : L = 0.94-1.00 mm ;
a = 48-54, b = 4.1-4.2 ; c = 11.0-11.6 ;
V = $\frac{7.9-9.3}{46-49} \frac{6.7-9.9}{6.7-9.9}$.

DESCRIPTION

Female : Body ventrally curved upon fixation and tapering gradually towards both ends. Cuticle finely striated transversely ; its thickness 1-2 μm thick (thickest at tail). Lateral chords 1/2.6-1/2.4 body-width near middle. Dorsal, ventral and lateral body pores inconspicuous. Lip region wider than adjoining body, 1/1.6-1/1.4 body-width at base of oesophagus. Amphids stirrup-shaped ; apertures 4-5 μm wide or 36-40% of the corresponding body-width and about 5 μm from anterior end. Sensillar pouches 13-14 μm from amphidial slits.

Odontostyle 10-11 μm or 0.8-1.0 head-width long ; aperture about 2.5 μm or 22-25% of the odontostyle length. Guiding ring 5-6 μm or about 1/2 lip region-width from anterior end. Odontophore rod-like, 14-16 μm or 1.4-1.6 times the odontostyle. Basal expanded part of oesophagus occupies 45-48% of the neck region. Locations of oesophageal gland nuclei and their orifices are not clearly visible, except in a single specimen (Fig. 3, D) which are as follows :

DO = 58.8	S ₁ N = 72.6	S ₂ N = 85.9
DN = 62.8		S ₂ O = 87.8
DO-DN = 4.0		

Nerve ring at 84-92 μm or 35-39% of the neck region from anterior end. Cardia tongue-shaped, 6-8 μm long, enveloped by intestinal tissue. Oesophago-intestinal disc present. Prerectum 50-65 μm or 4-5 anal body-widths long. Rectum 14-17 μm 1.0-1.3 anal body-width long.

Vulva a transverse slit. Vagina 8-10 μm long, extending 45-55% of the corresponding body-width and sclerotized distally. Female reproductive system amphidelphic. Uterus and oviduct are not distinctly separated. Ovaries reflexed ; oocytes arranged in a single row except in the region of multiplication.

Tail ventrally curved, elongate-conoid with rounded terminus, 84-88 μm or 6.6-7.1 anal body-widths long, with 2-3 caudal pores on each side.

Male : Not found.

Differential diagnosis : *Chrysonemoides distinctus* sp. n. comes close to *C. holsaticus* (Schneider, 1925) and *C. limigenus* Siddiqi, 1970. From the former the present new species differs in having shorter body length and differently shaped lip region (L = 1.3-2.6 mm ; lip region distinctly offset from the body with angular lips in *C. holsaticus*). From *C. limigenus* it differs in having shorter body length, odontostyle and odontophore (L = 2.4-3.0 mm ; odontostyle = 13-14 μm and odontophore = 23-25 μm long in *C. limigenus*).

Type habitat and locality : Soil around roots of cashew nut, *Anacardium occidentale*, from Hinari, Block Ramnagar, district Midnapur, W. Bengal.

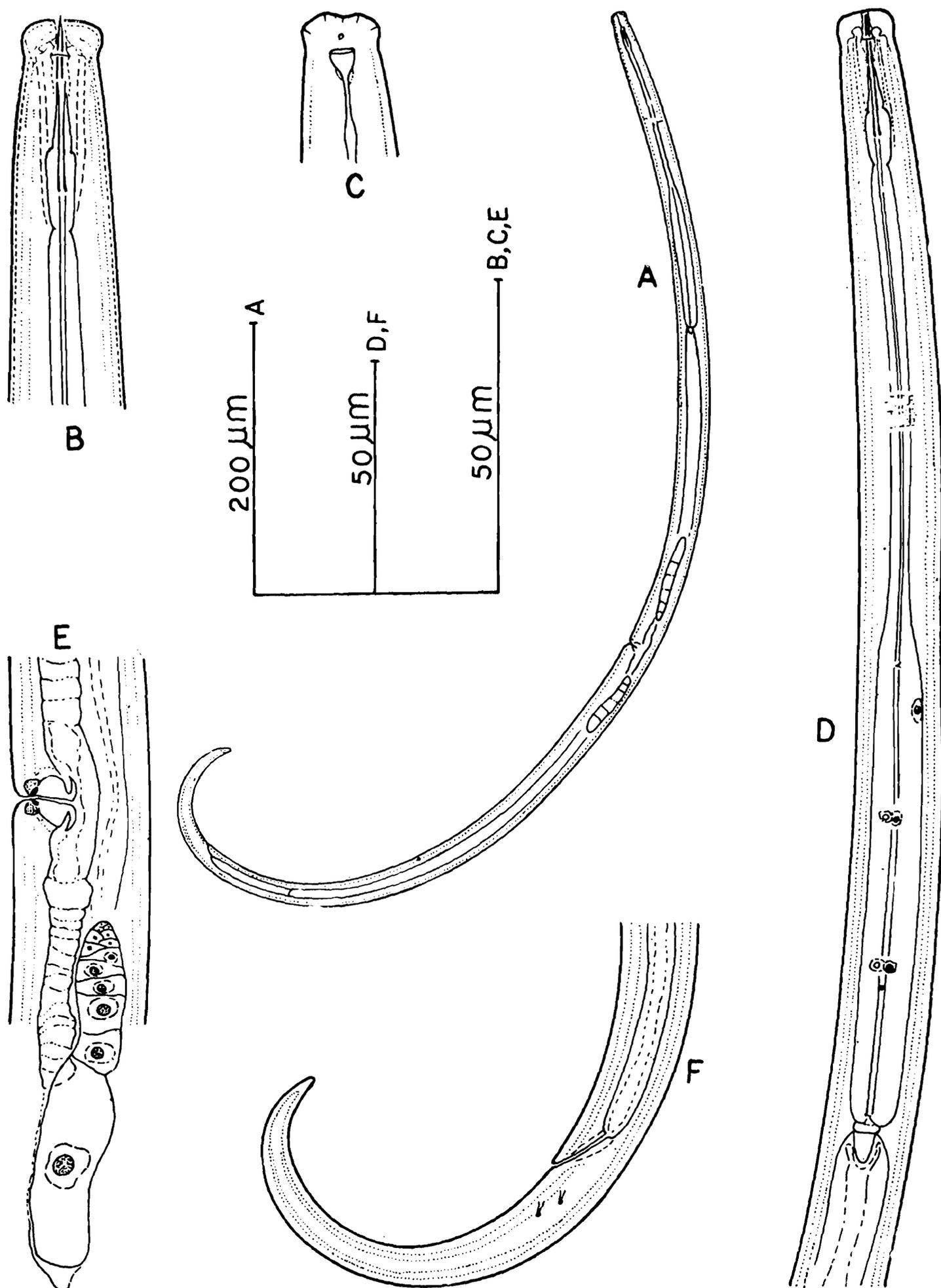


Fig. 3. *Chrysonemoides distinctus* sp. n. A—Entire female, B—Anterior end, C—Head end (surface view), D—Oesophageal region, E—Posterior sexual branch, F—Female tail.

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