

# Nematodes of high altitudes in India.

## X. Two new species of *Drepanodorylaimus* Jairajpuri, 1966 from Manipur, India

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### SUMMARY

Two new species of nematodes belonging to the genus *Drepanodorylaimus* Jairajpuri, 1966 are described from

24-26  $\mu\text{m}$  long, prerectum about two and half anal body widths long and tail filiform about eight anal body widths long. A key to the species of the genus *Drepanodorylaimus* is provided.

### RÉSUMÉ

*Nématodes des hautes altitudes en Inde. X. Deux nouvelles espèces de Drepanodorylaimus Jairajpuri, 1966 découvertes à Manipur, Inde*

Deux nouvelles espèces de *Drepanodorylaimus* Jairajpuri, 1966, provenant de Manipur, Inde, sont décrites et illustrées. *D. maqsoodi* n. sp. a les caractères suivants : L = 1,40-1,64 mm, région labiale tronquée avec papilles en relief, ouvertures amphidiennes larges, odontostyle long de 33-35  $\mu\text{m}$ , prérectum long d'environ trois diamètres anaux, queue filiforme ( $c' = 6-7$ ). *D. similis* n. sp. a les caractères suivants : L = 1,54-1,65 mm, odontostyle = 24-26  $\mu\text{m}$ , prérectum long d'environ deux diamètres anaux et demi, queue filiforme ( $c' = 8$ ). Une clé des espèces de *Drepanodorylaimus* est proposée.

Two new species of nematodes belonging to the genus *Drepanodorylaimus* Jairajpuri, 1966 were

***Drepanodorylaimus maqsoodi* n. sp.**  
(Fig. 1)

from the high regions of Manipur, India. Both species share some typical characters of the genus, viz., the odontostyle is long, asymmetrical and somewhat bent in the middle; the anterior slender part of oesophagus expands very gradually and almost imperceptibly to form the posterior expanded portion; the cardia is elongate-conoid; the tail is long and filiform; and males are absent. A key to species of *Drepanodorylaimus* is provided.

Measurements and observations were made on specimens mounted in dehydrated glycerine after being killed in hot 4% formalin and dehydrated by the slow method.

*Paratype females* (9) : L = 1.40-1.64 mm ; a = 37-43 ; b = 3.3-3.6 ; c = 10-12 ;  $c' = 6-7$  ; V = 52-56 ;  $G_1 = 11-13$  ;  $G_2 = 11-13$  ; odontostyle = 33-35  $\mu\text{m}$  ; odontophore = 36-39  $\mu\text{m}$ .

*Holotype, female* : L = 1.55 mm ; a = 40 ; b = 3.6 ; c = 11 ;  $c' = 6$  ; V = 53 ;  $G_1 = 13$  ;  $G_2 = 12$  ; odontostyle = 34  $\mu\text{m}$  ; odontophore = 36  $\mu\text{m}$ .

### DESCRIPTION

*Female* : Body ventrally curved upon fixation, tapering slightly anterior to base of oesophagus,

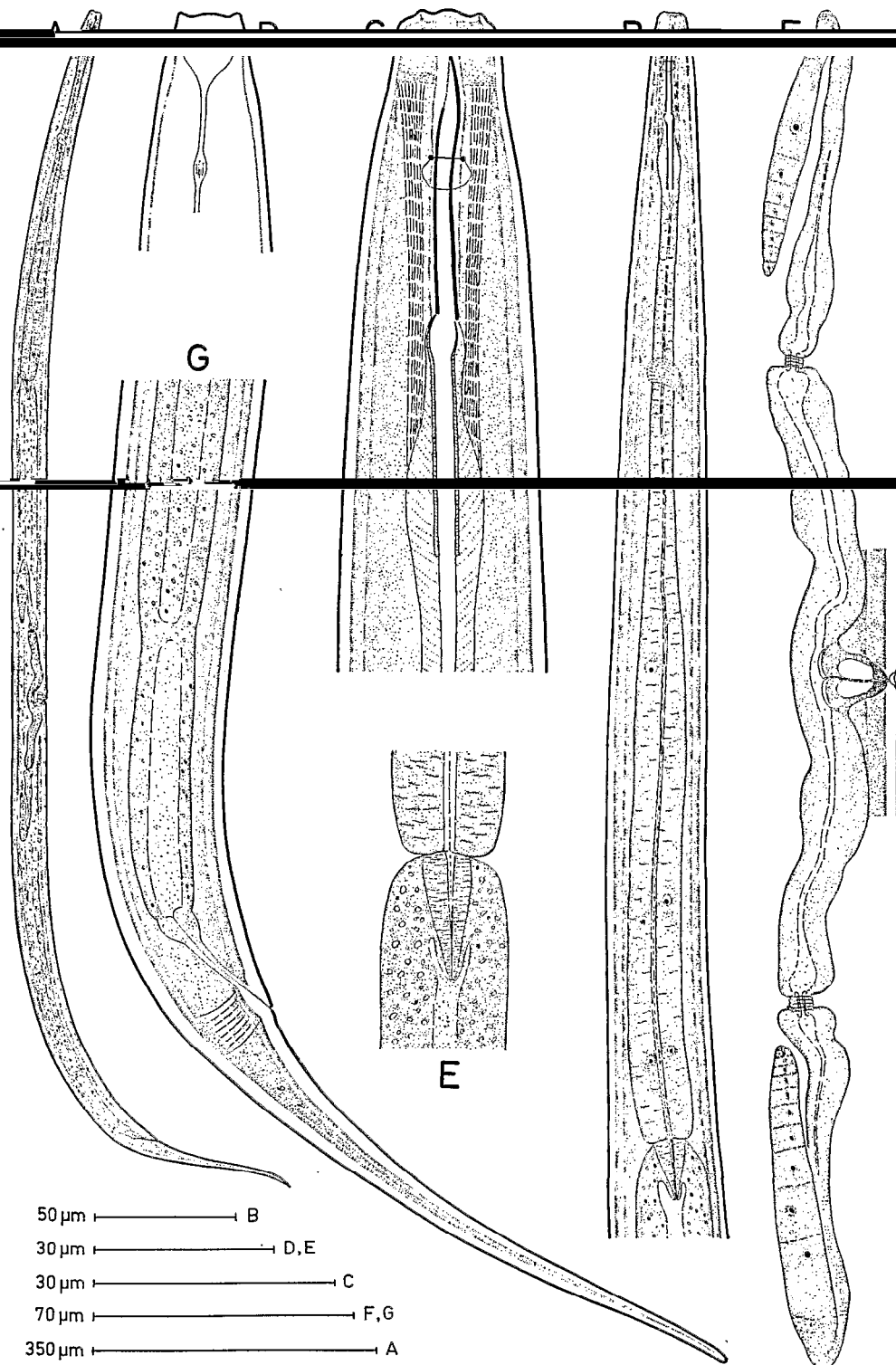


Fig. 1. *Drepanodorylaimus maqsoodi* n. sp. A : Entire female ; B : Oesophageal region ; C : Anterior end ; D : Anterior region showing amphid ; E : Oesophago-intestinal junction ; F : Gonad ; G : Posterior region.

posteriorly ending in a filiform tail. Cuticle with faint transverse striations. Lateral chords distinct, about one-fifth of body width at midbody. Dorsal, ventral and lateral body pores indistinct.

Lip region truncated, almost continuous with body contour, 13-15  $\mu\text{m}$  or about one-third of body width at base of oesophagus. Labial papillae projecting above contour of lip region. Amphids cup-shaped, apertures 7-9  $\mu\text{m}$  or about two-thirds of corresponding body width. Sensillar pouches 15-17  $\mu\text{m}$  below amphidial slits. Odontostyle arcuate and asymmetrical, 33-35  $\mu\text{m}$  or about two lip widths long, apertures about 3-5  $\mu\text{m}$ . Guiding ring at 22-25  $\mu\text{m}$  from anterior end. Odontophore simple, rod-like, 36-39  $\mu\text{m}$  or slightly longer than odontostyle; junction with oesophageal lumen surrounded by faint swelling. Oesophagus almost cylindroid; separation between anterior slender part and posterior expanded portion not clear-cut. Nerve ring at 135-207  $\mu\text{m}$  from anterior end of body. Basal expanded portion of oesophagus occupying 43-45% of total oesophageal length. Cardia elongate-conoid, 21-23  $\mu\text{m}$  or about one-half body width long. Location of oesophageal gland nuclei and their orifices as follows:

DO = 54-59; DN = 58-63; DO-DN = 3-4; S<sub>1</sub>N<sub>1</sub> = 66-79; S<sub>1</sub>N<sub>2</sub> = 67-81; S<sub>2</sub>N = 87-88; S<sub>2</sub>O = 88-90.

Vulva transverse. Vagina with thick walls, 20-23  $\mu\text{m}$  or about half of the corresponding body width long. Reproductive organs amphidelphic. Oocytes few, arranged in single row, except at tip. Uterus separated from oviduct by distinct sphincter.

Prerectum 75-90  $\mu\text{m}$  or 3-4 anal body widths long. Rectum 35-38  $\mu\text{m}$  or 1.5-1.7 anal body widths long. Tail long filiform, 142-150  $\mu\text{m}$  or 6-7 anal body widths long. A pair of caudal pores present on each side of tail.

*Male*: Not found; no spermatozoa were seen in uteri.

#### TYPE HABITAT AND LOCALITY

Soil around roots of unidentified wild plants from Sanjanbung hills, Tamenglong, Manipur, India.

#### TYPE SPECIMENS

Collected October 1978. Holotype female on slide MNP/*Drepanodorylaimus maqsoodi* n. sp./1; paratypes on slides MNP/*Drepanodorylaimus maqsoodi* n. sp./2-4; deposit in the nematode collection of Zoology Department, Aligarh Muslim University, Aligarh. A single female paratype deposited at Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

#### DIFFERENTIAL DIAGNOSIS

*Drepanodorylaimus maqsoodi* n. sp. resembles *D. flexus* (Thorne & Swanger, 1936) Andrassy, 1969 and *D. renwicki* (Van der Linde, 1938) Andrassy, 1969. From *D. flexus* it differs in having a short slender body, a thinner odontostyle, a longer oesophagus, posteriorly located vulva and shorter tail (L = 1.8-2.3 mm; a = 31; b = 4.1; c = 7.1; V = 51 in *D. flexus*). From *D. renwicki* it differs in having a short slender body, longer odontostyle and oesophagus, more posteriorly located vulva, longer prerectum and a shorter tail (L = 1.9 mm; a = 34; odontostyle = 30  $\mu\text{m}$ ; b = 4.1; V = 50; prerectum less than one anal body width long and c = 6.1 in *D. renwicki*).

The new species has been named after Dr. Maqsood Ahmad of this Department in recognition of his work on the dorylaim nematodes of India.

#### *Drepanodorylaimus similis* n. sp.

(Fig. 2)

#### DIMENSIONS

*Paratype females* (3): L = 1.54-1.65 mm; a = 40-42; b = 4.0-4.4; c = 8-9; c' = 8-9; V = 47-50; G<sub>1</sub> = 7-8; G<sub>2</sub> = 4-8; odontostyle = 24-26  $\mu\text{m}$ ; odontophore = 30-32  $\mu\text{m}$ .

*Holotype, female*: L = 1.56 mm; a = 38; b = 4.0; c = 8; c' = 8; V = 46; G<sub>1</sub> = 9; G<sub>2</sub> = 5; odontostyle = 26  $\mu\text{m}$ ; odontophore = 30  $\mu\text{m}$ .

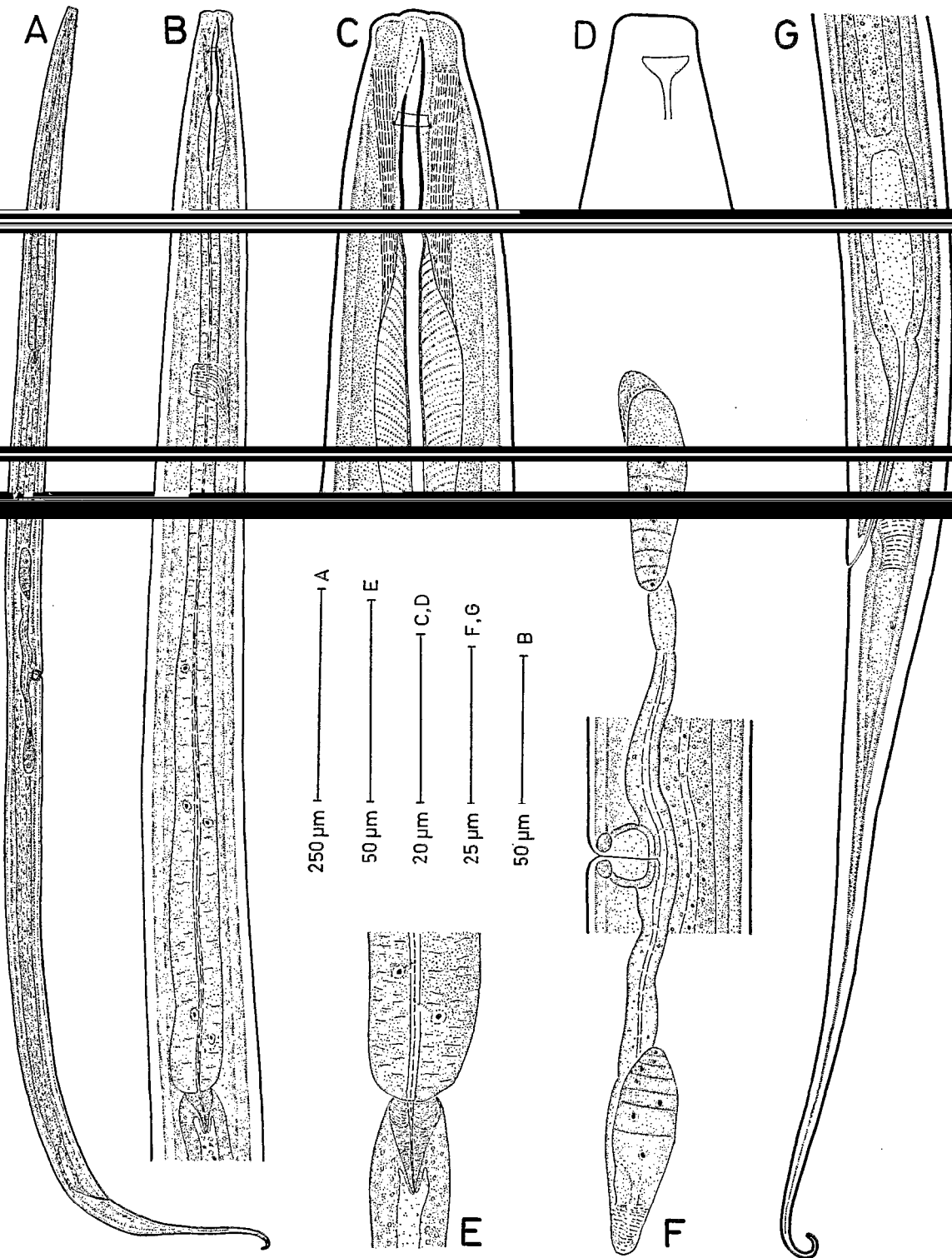


Fig. 2. *Drepanodorylaimus similis* n. sp. A : Entire female ; B : Oesophageal region ; C : Anterior end ; D : Anterior region showing amphid ; E : Oesophago-intestinal junction ; F : Gonad ; G : Posterior region.

## DESCRIPTION

*Female*: Body slightly ventrally arcuate upon fixation, tapering anterior to base of oesophagus. Cuticle with faint transverse striations. Lateral chords about one-fifth of body width at mid-body. Dorsal, ventral and lateral body pores indistinct.

Lip region truncated, almost continuous with body contour, 10-11  $\mu\text{m}$  or about one-third of body width at base of oesophagus. Labial papillae not projecting above contour of lip region. Amphids cup-shaped, apertures 5-6  $\mu\text{m}$  or about one-half of corresponding body width. Sensillar pouches not visible. Odontostyle arcuate and asymmetrical, 24-26  $\mu\text{m}$  or about two and one-half lip widths long; apertures about 4-6  $\mu\text{m}$ . Guiding ring at 18-20  $\mu\text{m}$  from anterior extremity. Odontophore simple, rod-like, 26-30  $\mu\text{m}$  or nearly equal to odontostyle length. Oesophagus almost cylindroid, separation between anterior slender part and posterior expanded portion not clear-cut. Nerve ring at 130-140  $\mu\text{m}$  from anterior end of body. Basal expanded portion of oesophagus occupying 35-40% of total oesophageal length, cardia elongateconoid, 13-18  $\mu\text{m}$  or one-third body width long. Location of oesophageal gland nuclei and their orifices as follows:

DO = 62-63; DN = 63-65; DO-DN = 1-2;  
 $S_1N_1$  = 74-76;  $S_1N_2$  = 76-78;  $S_2N$  = 90-92;  
 $S_2O_2$  = 94-95.

18-20  $\mu\text{m}$  or about one-half of corresponding body width long. Reproductive organs amphi-

uterus-oviduct junction.

Prerectum 56-60  $\mu\text{m}$  or about two and a half anal body widths long. Rectum 45-53  $\mu\text{m}$  or about two anal body widths long. Tail long filiform, 180-203  $\mu\text{m}$  or about eight anal body widths long, distal part of tail recurved dorsally. A pair of caudal pores present on each side of tail.

*Male*: Not found; no spermatozoa were seen in uteri.

TYPE HABITAT AND LOCALITY: Soil around roots of unidentified grasses from Chingmeirong hills, Imphal, Manipur, India.

TYPE SPECIMENS: Collected October 1978. Holotype female on slide MNP/*Drepanodorylaimus similis* n. sp./1; paratypes on slides MNP/*Drepanodorylaimus similis* n. sp./2-3; deposited in the nematode collection of Zoology Department, Aligarh Muslim University, Aligarh. A single female paratype deposited at Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

DIFFERENTIAL DIAGNOSIS: *Drepanodorylaimus similis* n. sp. resembles *D. flexus* (Thorne & Swanger, 1936) Andrassy, 1969; *D. brevicaudatus* Andrassy, 1970 and *D. maqsoodi* n. sp. From *D. flexus* it differs in having a short slender body, a smaller odontostyle, and in having shorter prerectum and tail ( $L = 1.8-2.3$  mm;  $a = 31$ ; odontostyle = 30-35  $\mu\text{m}$ : prerectum about four anal body widths long and  $c = 7$  for *D. flexus*). From *D. brevicaudatus* it differs in having a long slender body, smaller amphidial apertures, a longer oesophagus and prerectum, and in having the tail tip recurved dorsally ( $L = 1.15-1.28$  mm;  $a = 26-29$ ; amphidial apertures about two-thirds of corresponding body width;  $b = 3.3-4.0$ ; prerectum less than one anal body width long and tail tip straight in *D. brevicaudatus*). From *D. maqsoodi* n. sp. it differs in having a smaller odontostyle, oesophagus and cardia and smaller amphidial apertures, more anterior vulva, a longer rectum and smaller and differently shaped tail (odontostyle = 33-

the corresponding body width;  $b = 3.3-3.6$ ; cardia = 21-23  $\mu\text{m}$  long;  $V = 52-56$ ;  $c = 10-12$  and tail tip straight in *D. maqsoodi*).

Key to species of *Drepanodorylaimus*

1. Tail 11-20 anal body widths long ( $c = 4-6$ ) . . . . . 2  
 Tail 5-10 anal body widths long ( $c = 6-12$ ) . . . . . 5
2. Mouth distinctly sunken; lip region with depression . . . . . *picardi* (Altherr, 1963) Monteiro, 1970  
 Mouth flat, not sunken; lip region continuous . . . . . 3
3. Body length 1.15-1.28 mm; vulva longitudinal . . . . .  
 . . . . . *arganoi* Zullini, 1973  
 Body length 1.4 mm or more; vulva transverse . . . . . 4
4. Odontostyle 28  $\mu\text{m}$  long; guiding ring behind middle of odontostyle; amphidial apertures about one-half head width wide . . . . .  
 . . . . . *szekessyi* (Andrassy, 1960) Andrassy, 1969  
 Odontostyle 21-24  $\mu\text{m}$  long; guiding ring at middle of odontostyle; amphidial apertures about three-

- fourths head width wide .....  
 ..... *fliformis* Jairajpuri, 1966
5. Prerectum less than one anal body width long . . . 6  
 ..... *brevicaudatus* Andrassy, 1970
6. Body length 1.9 mm ; odontostyle 30 µm long ; tail  
 Body length 1.29-1.33 mm ; odontostyle 23-25 µm  
 long ; tail shorter (c = 8-9) .....  
 ..... *macramphidius* Andrassy, 1971
7. Amphidial apertures nearly one head width ; pre-  
 rectum more than five anal body widths long . . . . .  
 ..... *maqsoodi* n. sp.
8. Amphidial apertures less than one head width ;  
 prerectum less than four anal body widths long . . . 8  
 Amphidial apertures about two-thirds head width ;  
 tail shorter, tip straight (c = 10-12) .....  
 ..... *flexus* (Thorne & Swauger, 1936) Andrassy, 1969
9. Body length 1.8-2.3 mm (a = 31) ; prerectum about  
 four anal body widths long .....  
 Body length 1.5-1.7 mm (a = 38-42) ; prerectum  
 about two and one-half anal body widths long . . . . .  
 ..... *similis* n. sp.

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