

SOME OBSERVATIONS ON THE GENUS *PARAXONCHIUM*
(DORYLAIMIDA) WITH DESCRIPTION OF A NEW SPECIES
FROM MANIPUR, INDIA

BY

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The systematic position of the genus *Paraxonchium* Krall, 1958 is discussed. *Paraxonchinae* n. subfam. is proposed under the family Qudsianematidae Jairajpuri, 1965 for this genus. Members of this genus have a typical robust body which is extremely narrow in the fore-part; the odontostyle is usually somewhat bent and asymmetrical; the odontophore is simple but unusually long; the cardia has three distinct gland cells. *Paraxonchium parvus* sp. n. from Manipur, India has 0.59-0.81 mm long body and resembles *P. shamimi* and *P. rhampionus*, differing from both in the shape of odontostyle, presence of guiding ring and a dorsally recurved elongate conoid tail. A key to the species of *Paraxonchium* is given.

The genus *Drepanodorus* was described by Altherr (1954) for the type species, *D. leptcephalus* and was placed under Dorylaimidae de Man, 1876. Later, Krall (1958) described *Paraxonchium* for *P. striatum* in the family Belonidiridae Throne, 1939. Meyl and Andrassy (1960) transferred *Dorylaimus laetificans* Andrassy, 1956 to *Drepanodorus*. Clark (1961) synonymized *Paraxonchium* with *Drepanodorus* and assigned it to Dorylaiminae. Loof (1964), Brzeski (1964) and Jairajpuri (1966) added one species each to *Drepanodorus*. Altherr (1968) proposed a new name *Drepanophorus* for the preoccupied generic name *Drepanodorus* Altherr, 1954. Siddiqi (1969) included *Drepanodorus* under the subfamily Aporcelaiminae of the family Aporcelaimidae Heyns, 1965 which was also accepted by Andrassy, 1976. Altherr & Loof (1969) pointed out that according to the rules of Zoological Nomenclature, *Drepanophorus* is a subjective junior synonym of *Paraxonchium*; and further considered *P. striatum* Krall, 1958 a synonym of *P. laetificans* Andrassy, 1956. Ferris (1971) doubtfully placed *Paraxonchium* in Dorylaiminae.

Paraxonchium shows some affinities with members of the family Aporcelaimidae, Dorylaimidae and Qudsianematidae. From members of Aporcelaimidae, *Paraxonchium* differs by having a somewhat bent odontostyle and unusually long odontophore. Similarly, *Paraxonchium* cannot be placed under Dorylaimidae because of the character of its body cuticle, odontostyle, odontophore and tail

shape which are similar in the two sexes. The genus though appears to fit well under Qudsianematidae but its peculiar shape of body, odontostyle, odontophore, presence of cardiac glands, etc, warrant the erection of a new subfamily.

PARAXONCHINAE N. SUBFAM.

Diagnosis : Qudsianematidae. Body robust, 0.5-2.5 mm long; extremely narrow in forepart. Odontostyle symmetrical or asymmetrical; odontophore simple, unusually long. Oesophagus entirely muscular. Cardia with three cardiac gland cells. Gonads single or paired. Spicules dorylaimoid; lateral guiding pieces present. Ventromedian supplements numerous. Tail of both sexes similar, usually conoid to subdigitate.

Type and only genus : *Paraxonchium* Krall, 1958 Syn. *Drepanodorus* Altherr, 1954 *Drepanophorus* Altherr, 1969.

Paraxonchium parvus sp. n. collected from Manipur is described hereunder. A key to the species of the genus is also provided.

PARAXONCHIUM PARVUS SP. N.

(Fig. 1, A-F)

Dimensions :

6 ♀♀ (*paratypes*) : L=0.6-0.8 mm; a=23-27; b=2.7-3.1; c=16-18; c'=2-3; V=66-70; G₁=7-9; G₂=7-11; odontostyle=15-18 μm; odontophore=39-53 μm.

Holotype (female) : L=0.67 mm; a=23; b=3; c=18; c'=2; V=69; G₁=9; G₂=11; odontostyle=18 μm; odontophore=45 μm.

Description :

Body ventrally curved upon fixation, tapering suddenly anteriorly to a narrow lip region, posteriorly ending in a conoid tail. Sub-cuticle finely striated. Lateral chords distinct, about one-third of body-width at mid-body; dorsal, ventral and lateral body pores indistinct.

Lip region rounded, set off from the body contour by a distinct constriction, 6-7 μm or about one-fifth of body-width at base of oesophagus. Amphids large, stirrup-shaped, 4-5 μm or about two-thirds of corresponding body-width. Odontostyle 15-18 μm long, asymmetrical, gradually tapering anteriorly then suddenly curved dorsally, spear aperture small. Guiding ring very faint, situated in lip region, or 3-4 μm from oral aperture. Odontophore simple, rod-like. Nerve ring 95-105 μm from anterior end of body. Cardia conoid, 12-15 μm or about half of body-width long, with three distinct gland cells. The basal expanded

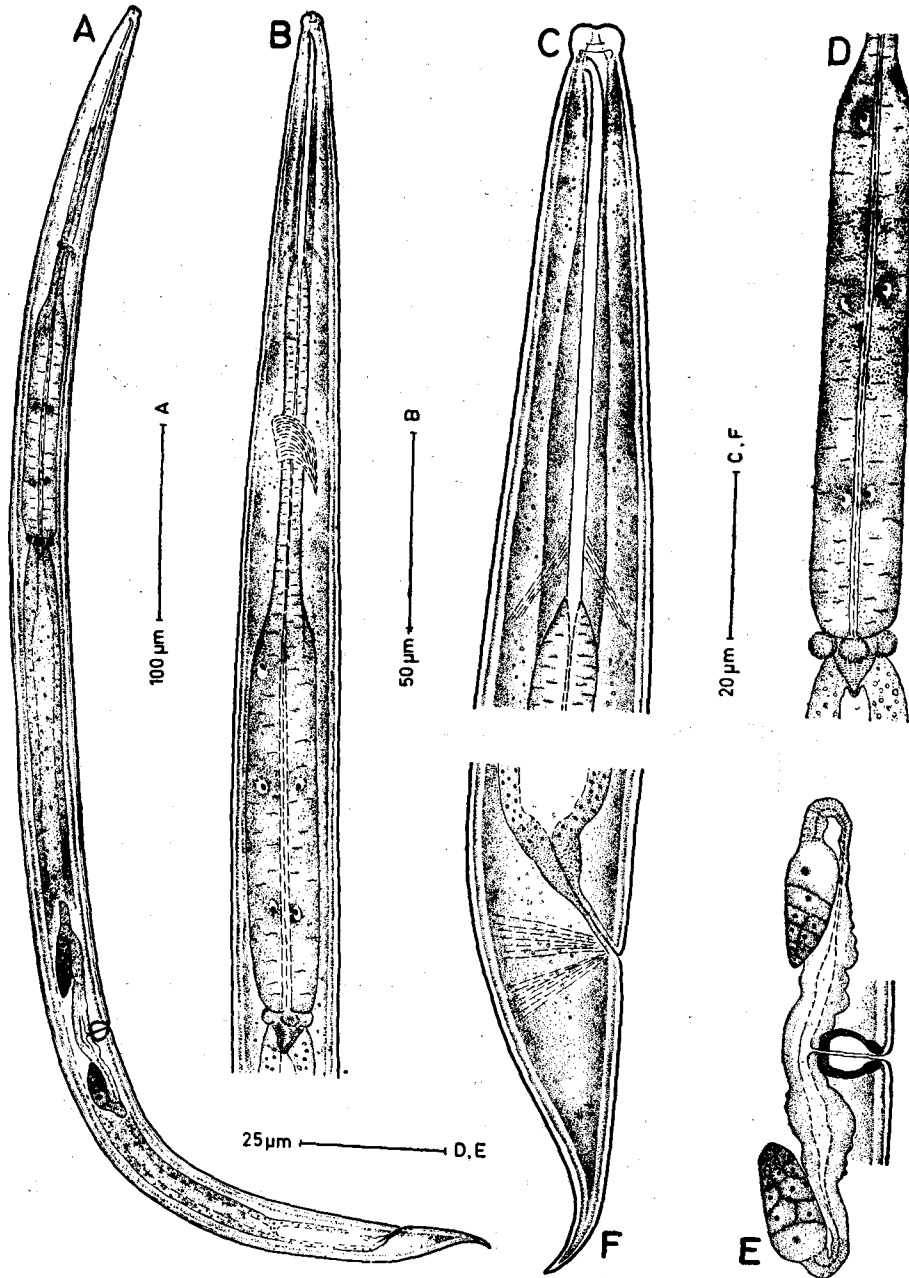


Fig. 1, A-F. *Paraxonchium parvus* sp. n.

A—Female, entire; B—Oesophageal region; C—Anterior region;
 D—Expanded part of oesophagus; E—Female genital branch
 and F—Tail.

portion of oesophagus occupying 40-43% of total oesophageal length. Oesophageal lumen about one-fourth of the width of basal expanded portion of oesophagus. The location of oesophageal gland nuclei and their orifices as given below :

DO=61-63; $S_1N_1=71-75$; $S_2N=84-86$;

DN=63-66; $S_1N_2=74-77$; $S_2O=86-88$;

DO-DN=2-3.

Vulva transverse. Vaginal walls continuous with cuticle, about one-third of corresponding body-width. Cuticularized pieces present near the vulva. Reproductive system amphidelphic. Oviduct and uterus not distinctly separated. Ovary with few oocytes. Prerectum 45-68 μm or three to four anal body-widths long. Rectum 15-18 μm or about one anal body-width long. Tail conoid, 35-49 μm long slightly recurved dorsally. A pair of caudal pores present on each side of tail.

Male : Not found.

Type habitat and locality : Soil around roots of pine tree, *Pinus* sp. from Bishenpur hill, Manipur State.

Type specimens : Collected in December, 1977. Holotype on slide *Paraxonchium parvus* sp. n./1; paratypes on slides *Paraxonchium parvus* sp. n./2-5; deposited in the nematode collection Zoology Department, Aligarh Muslim University.

Diagnosis and relationship : *Paraxonchium parvus* sp. n. comes close to *P. rhamphionus* Jairajpuri, 1966 and *P. shamimi* Suryawanshi, 1972. From *P. rhamphionus*, it differs in having a shorter and narrower body, shape of odontostyle, presence of guiding ring, more posterior vulva, shorter prerectum and longer tail ($L=1.0-1.2$ mm; $a=20-21$; beak-shaped odontostyle; $V=62-64$; prerectum 5-6 anal body-widths long and $c=36-38$ in *P. rhamphionus*). From *P. shamimi*, it differs in having a slender body, shape of lip region, presence of guiding ring, a smaller expanded part of oesophagus, presence of cuticularized pieces in the wall of the vagina and in having a longer prerectum and differently shaped tail, ($a=20-23$; lip region narrower than adjacent body, expanded part of oesophagus about half of oesophagus, no cuticularized pieces in the wall of vagina, and prerectum two and a half anal body-widths long in *P. shamimi*).

KEY TO SPECIES OF *PARAXONCHIUM*

(Modified after Jairajpuri, 1966)

1. Ovary single.....
- monohystera* (Brzeski, 1964) Altherr & Loof, 1969
- Ovary paired 2

2. Odontostyle straight, its aperture more than half the odontostyle length..... 3
 Odontostyle curved, its aperture minute, about one-seventh of odontostyle length..... 5
3. L=0.56-0.70 mm..... *orthodon* (Loof, 1964) Altherr & Loof, 1969
 L=1.30-1.50 mm..... 4
4. Odontostyle=15 μ m, bent, asymmetrical; cardia elongate disc-like
 *magnidens* Thorne, 1975
 Odontostyle=11 μ m, slightly bent anteriorly; cardia small
laetificans (Andrassy, 1956) Altherr & Loof, 1969.
5. L=over 2 mm; odontostyle sickle-shaped *leptocephalus*
 (Altherr, 1954) Altherr & Loof, 1969
 L=below 1.2 mm; odontostyle not sickle-shaped..... 6
6. L=1.0-1.2 mm; c=36-38..... *rhamphionus* (Jairajpuri, 1966) Altherr
 & Loof, 1969
 L=0.59-81 mm; c=16-18..... 7
7. Lip region narrow; cuticularized pieces in vagina absent.
 *shamimi* Suryawanshi, 1972
 Lip region wide; cuticularized pieces in vagina present.....
 *parvus* n. sp.

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