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## TAXONOMIC STUDIES ON NEMATODES ASSOCIATED WITH THE RHIZOSPHERE OF FOREST TREES IN INDIA. I. TWO NEW NEMATODE SPECIES OF THE ORDER MONONCHIDA

by  
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**Summary.** Two new species of mononchids are described and illustrated. *Paramylonchulus lapidus* sp. n. resembles *P. mulveyi* Jairajpuri, 1970 and *P. index* Cobb, 1906 but differs from *P. mulveyi* in having a smaller body (L=0.69-0.89 mm), lower «c» value, more anteriorly located vulva (V=74.76) and distinct excretory pore; from *P. index* in having narrow buccal cavity, subventral walls bearing 4 rows of denticles, absence of sphincter and greater 'c' value. *Miconchus elegans* sp. n. is differentiated from the closely related *M. dalhousiensis* Jairajpuri, 1969 and *M. citri* Khan, Ahmad *et* Jairajpuri, 1978 in having a smaller body (L=1.52-1.59 mm), greater tail length and presence of caudal pores.

Two new species of predaceous nematodes, described in this paper, were found during a survey of nematodes associated with forest trees in northern India. The specimens were heat relaxed, fixed in FA (4:1) and mounted in dehydrated glycerine.

*Paramylonchulus lapidus* sp. n.  
(Fig. 1)

### Measurements

Holotype (female): L=0.73 mm; a=26; b=3.2; c=17.0; V=74.3; buccal cavity=16.5  $\mu$ m long, 9.5  $\mu$ m wide; tail=43 $\mu$ m.

15 paratype females: L=0.69-0.89 (0.74) mm; a=22-30 (26); b=3.0-3.4 (3.2); c=17.0-20.0 (18.5); V=74-76 (74.8); buccal cavity=16-18 (17.2)  $\mu$ m long, 8.5-9.5 (8.8)  $\mu$ m wide; tail=40-46 (43)  $\mu$ m.

### Description

Lip region 15-18  $\mu$ m wide, 7-8  $\mu$ m high; amphidial apertures 3-4  $\mu$ m wide, located at about 9-9.5  $\mu$ m from anterior end of body and 11-12  $\mu$ m from base of buccal cavity. Buccal cavity 16-18  $\mu$ m long, 8.5-9.5  $\mu$ m wide, tapering at the base. Dorsal tooth large, its apex at 12-13

$\mu$ m from base. Sub-ventral walls bearing four transverse rows of denticles. Sub-median teeth absent. Nerve ring at 60-65  $\mu$ m from anterior end of body. Excretory pore minute, located at 64-68  $\mu$ m from anterior end of body. Oesophago-intestinal junction non-tuberculate. Reproductive system monoprodelfic; post-uterine sac absent. Sphincter not present at oviduct-uterus junction. Tail exhibits much variation in size and shape, 40-46  $\mu$ m or 2.0-2.2 anal body width long. Caudal glands grouped. Spinneret terminal or subterminal.

**Male:** Not found.

### Type habitat and locality

Soil around the roots of tendu (*Diospyros tomentosa* Roxb.) from New Forests, Forest Research Institute and Colleges, Dehradun, Uttar Pradesh.

### Type material

Collected by the senior author in May, 1984. Holotype (female) and paratypes (5 females) deposited with National Nematode Collection, Division of Nematology, IARI, New Delhi. Other paratypes deposited with Nematology Section, P.Q. Division, NBPGR, New Delhi.

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*Paramylonchulus lapidus* sp. n. resembles *P. mulveyi* Jairajpuri, 1970 (Jairajpuri and Khan, 1982) and *P. index* Cobb, 1906 (Jairajpuri and Khan, 1982). From *P. mulveyi* it differs mainly in having a smaller body, lower c value, a more anterior vulva position and a distinct excretory pore (*P. mulveyi*: L=830-1120  $\mu$ m; c=20-28; V=76-83 and excretory pore not seen). From *P. index* it differs in having a slightly narrower buccal cavity; subventral walls bearing four transverse rows of denticles; absence of sphincter and greater c' value (*P. index*: buccal cavity=8-13  $\mu$ m wide; subventral walls bearing 5 rows of denticles; sphincter present and c'=1).

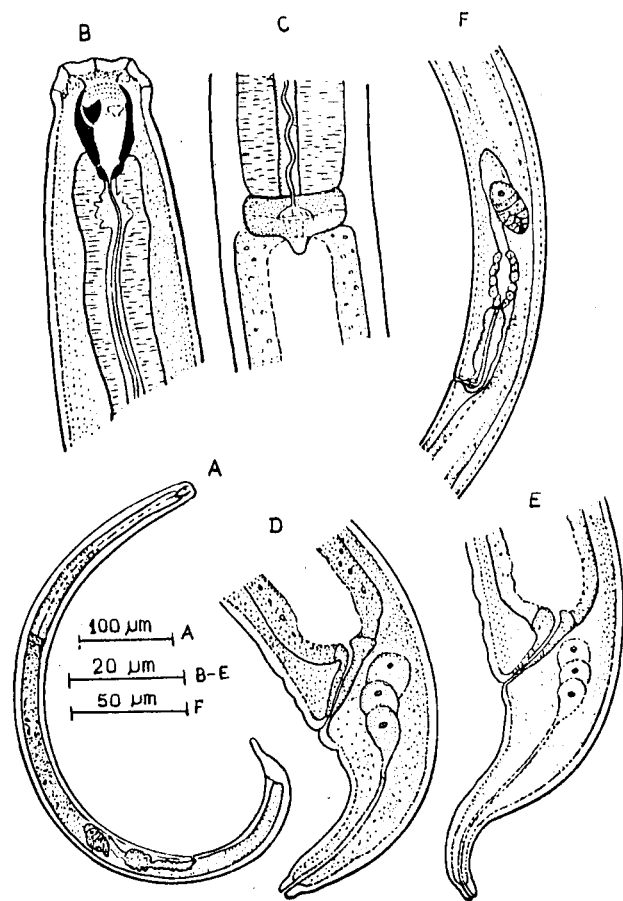


Fig. 1. *Paramylonchulus lapidus* sp. n.: A, entire female; B, female head region; C, female oesophago-intestinal junction; D and E, female tail variations; F, female reproductive system.

### Measurements

Holotype (female): L=1.55 mm; a=23.5; b=3.9; c=9.2; V=62.4; buccal cavity=34  $\mu$ m wide, 44.5  $\mu$ m long; tail=167  $\mu$ m.

15 paratype females: L=1.52-1.59 (1.54) mm; a=21-24 (22); b=3.8-4.2 (4.0); c=9.0-10.2 (9.7); V=61-64 (62.5); buccal cavity=30-34 (32)  $\mu$ m wide, 42-48 (45)  $\mu$ m long; tail=155-170 (160)  $\mu$ m.

### Description

Lip region slightly offset, measuring 40-44  $\mu$ m wide and 18-21  $\mu$ m high. Buccal cavity barrel-shaped, flat-

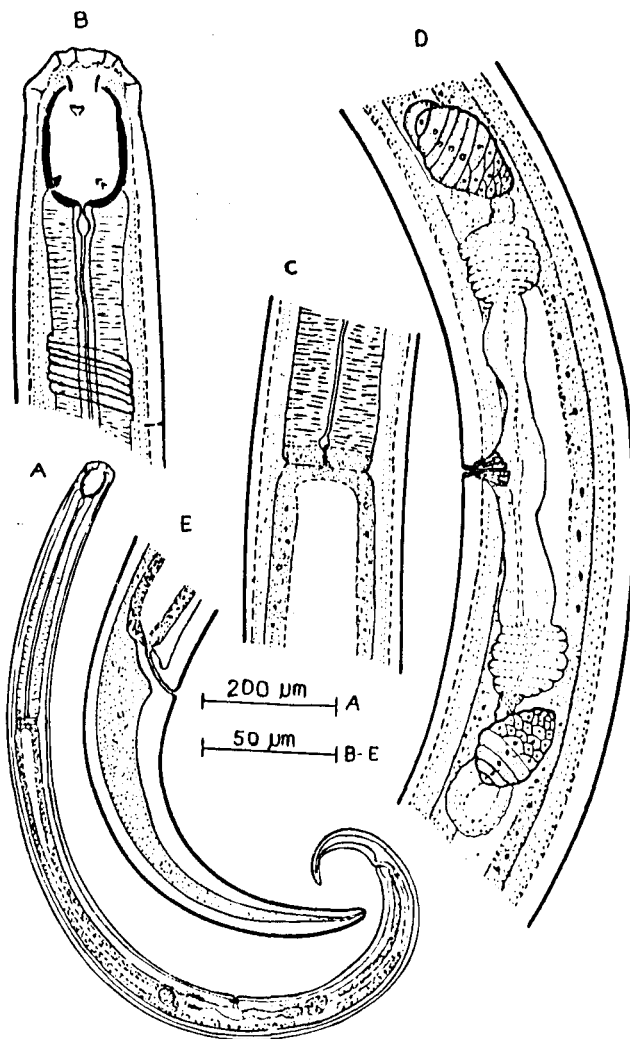


Fig. 2. *Miconchus elegans* sp. n.: A, entire female; B, female head region; C, female oesophago-intestinal junction; D, female reproductive system; E, female tail.

tened at the base, 42-48  $\mu\text{m}$  long, 30-34  $\mu\text{m}$  wide. Apex of dorsal tooth 26-28  $\mu\text{m}$  from the level of amphidial apertures. Subventral walls with two small teeth of identical shape and size, and at same level as dorsal tooth or slightly posterior. Amphidial apertures 5-6  $\mu\text{m}$  wide located at 19.5-21  $\mu\text{m}$  from anterior end of body and 35-38  $\mu\text{m}$  from base of buccal cavity. Nerve ring at 120-125  $\mu\text{m}$  from anterior end of body. Excretory pore located at 130-135  $\mu\text{m}$  from anterior end of body. Oesophago-intestinal junction tuberculate. Reproductive system amphidelphic, ovaries opposed and reflexed. Oviduct opens through a well developed sphincter into long uterus which leads to the short, thick walled vagina. Vulva a transverse slit with prominent cuticularised lips. Vulval papillae not seen. Tail 155-170  $\mu\text{m}$  about 4.8-5.5 anal body width long, conoid. Caudal glands and spinneret absent. Caudal pores present at the middle of tail.

**Male:** Not found.

### **Type habitat and locality**

Soil around the roots of *Pinus* species collected at Forest Nursery, TPRC, FRI and C, Dehradun, Uttar Pradesh.

### **Type material**

Collected by the senior author in May, 1984. Holotype (female) and paratypes (3 females) deposited with National Nematode Collection, Division of Nematology, IARI, New Delhi. Other paratypes deposited at Nematology Section, P.Q. Division, NBPGR, New Delhi.

### **Relationship**

*Miconchus elegans* sp. n. resembles *M. dalhousiensis* Jairajpuri, 1969, and *M. citri* Khan, Ahmad *et* Jairajpuri, 1978. From *M. dalhousiensis* it differs in having a smaller body; lower  $c'$  value; smaller size of buccal cavity; longer tail; greater  $c'$  and presence of caudal pores at middle of tail (*M. dalhousiensis*: L=1.89-2.26 mm;  $c$ =12-14; buccal cavity=50-56  $\mu\text{m}$  long, 35-41  $\mu\text{m}$  wide; tail length=140-160  $\mu\text{m}$ ;  $c'$ =3.5-4; caudal pores absent). From *M. citri* it differs mainly in having a smaller body; anteriorly located vulva; anteriorly located nerve ring and excretory pore; longer tail; greater  $c'$  value and presence of caudal pores (*M. citri*: L=1.8-2.0 mm; V=68-73; N=139-152  $\mu\text{m}$  from anterior end of body; excretory pore indistinct; tail length=104-144  $\mu\text{m}$ ;  $c'$ =2.5-3.5; caudal pores absent).

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