

## *Micatonchus reversus* gen. n., sp. n. (Mononchida: Anatonchidae), a unique mononch from Korea

M. Shamim Jairajpuri\*, Qudsia Tahseen\*\*, Young Eoun Choi\*\*\*

\*Maulana Azad National Urdu University, Sabza, Tolichowki, Hyderabad- 500 008, India

\*\*Department of Zoology, Aligarh Muslim University, Aligarh – 202002, India

\*\*\*Department of Agricultural Biology, College of Agriculture, Kyungpook National University, Taegu 701-702, Korea

**Abstract.** *Micatonchus reversus* gen. n., sp. n. is 2.18-2.20 mm. long; teeth 3 anatonchoid, dorsal tooth pointing anteriorly, subventral teeth posteriorly, reversal of subventrals taking place only after 4<sup>th</sup> and final moult, i.e., in L5 stage; buccal cavity 45-47×35-40 µm; cardia with tubercles; female gonads amphidelphic; tails 237-245 µm long, conoid, ventrally arcuate; and caudal glands and spinneret present.

**Keywords.** *Micatonchus* gen. n., *M. reversus* sp. n., Mononchida, Korea.

### INTRODUCTION

While screening the samples from Korea an interesting species of a new genus of mononchs was found which had in its buccal cavity an anteriorly directed dorsal tooth but posteriorly directed or retrorse subventral teeth, one on each vertical wall, a condition so far not reported in any species of the Order Mononchida Jairajpuri, 1969.

### MATERIALS AND METHODS

The nematodes collected from soil under *Pinus thunbergii* Parl. at Jinhae, Kyngsangnam province, Korea were fixed in hot (70°C) F G 4:1 and dehydrated by Seinhorst's rapid glycerine method. Measurements were taken and drawings made using a drawing tube attachment.

#### *Micatonchus* gen. n.

**Diagnosis:** Anatonchidae. Body large. Labial papillae prominent. Buccal cavity barrel-shaped, slightly longer than wide. Dorsal tooth triangular, situated in posterior half of buccal cavity with its apex directed forward. Subventral teeth slightly longer, claw-like, retrorse (posteriorly directed), placed a little anterior to dorsal tooth but tips of three teeth almost at same level. Oesophago-intestinal junction prominently tuberculate. Gonads amphidelphic, ovaries reflexed. Tails long, cylindroid-conoid with terminus rounded. Caudal glands present with spinneret. Males not found.

**Differential diagnosis and relationship:** The new genus

*Micatonchus* is characterized by its peculiar buccal cavity with dorsal tooth differing in shape, orientation and level of origin from the subventrals. It, therefore, seems to represent an intermediate form between *Anatonchus* Cobb, 1916 and *Miconchus* Andrassy, 1958 and hence the name *Micatonchus* is proposed for it. It resembles *Anatonchus* in the shape of buccal cavity and teeth; *Truxonchus* Siddiqi, 1984 in the posterior location of these teeth but differs from them in having anteriorly directed dorsal tooth which also differs in shape (triangular vs. claw-like). The new genus resembles *Miconchus* in shape and orientation of the dorsal tooth but differs in the shape and orientation of the subventrals (retrorse and claw-like in *Micatonchus* vs. anteriorly directed and triangular in *Miconchus*).

**Type Species:** *Micatonchus reversus* gen. n., sp. n.

#### *Micatonchus reversus* gen. n., sp. n.

##### Measurements

**Female (Holotype):** L=2.20 mm; a=26; b=4.2; c=9; c'=5.5; V=67; G1=22; G2=15.

**Female-young (Paratype):** L=2.18 mm; a=27; b=4.2; c=9; c'=5.9; V=65; G1=17; G2=14.

**Female:** Body large, ventrally curved on fixation, 80-82 µm wide. Cuticle smooth, lateral body pores prominently present on tail. Hypodermal chords with hypodermal glands. Musculature in anterior region well-developed. Lip region slightly demarcated, 47-52 µm wide and 15 µm high, labial papillae prominent. Amphids cup-shaped with oval apertures, 18-19 µm from anterior end. Buccal cavity

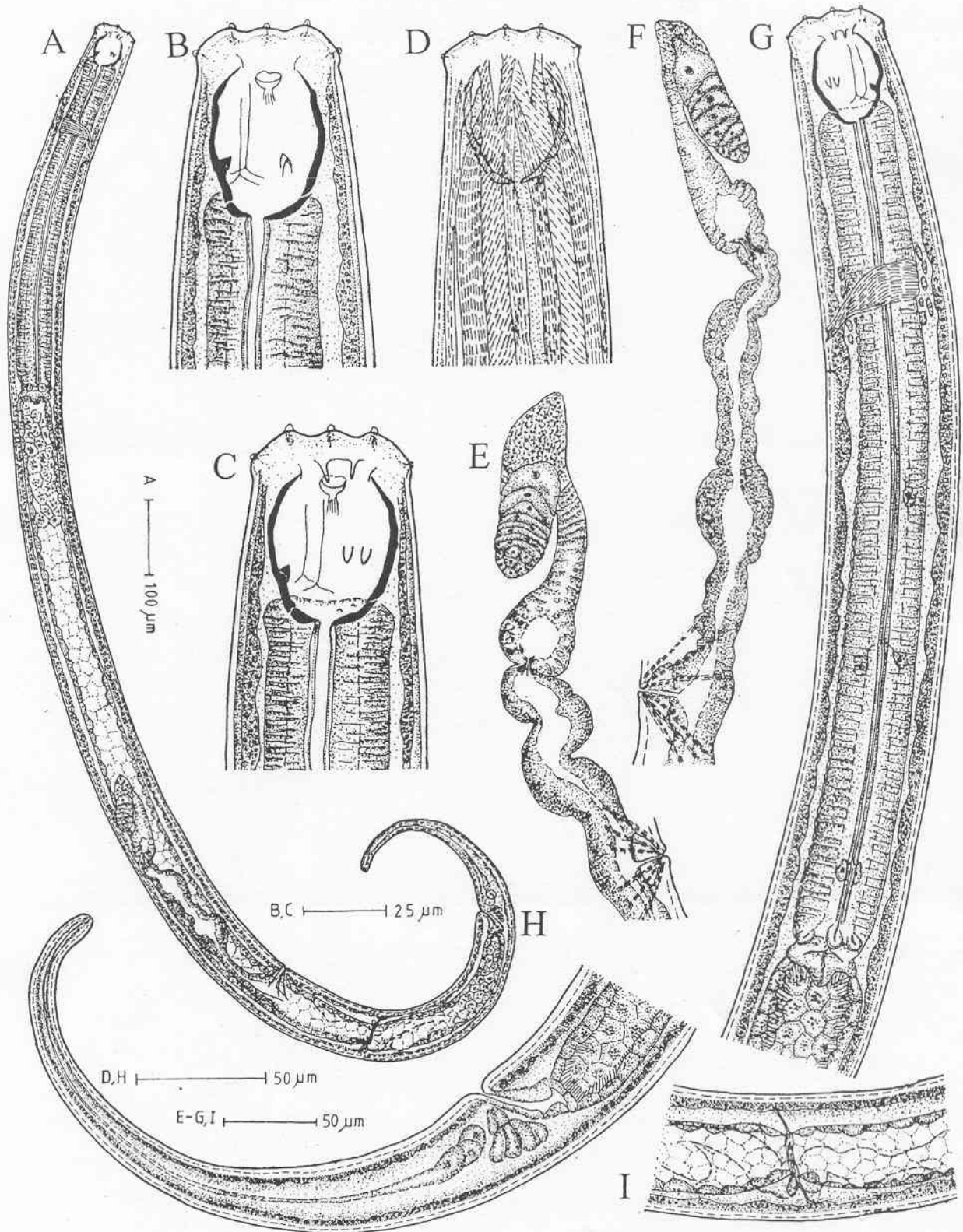


Fig. 1. *Micatonchus reversus* gen. n., sp. n. A: Female entire, B: Anterior end with buccal cavity showing subventral teeth in process of inversion, C: Anterior end with buccal cavity showing anteriorly directed dorsal tooth and fully inverted subventral teeth, D: Anterior end musculature, E & F: Sexual branches, G: Oesophageal region, H: Tail, I: Intestinal constriction..

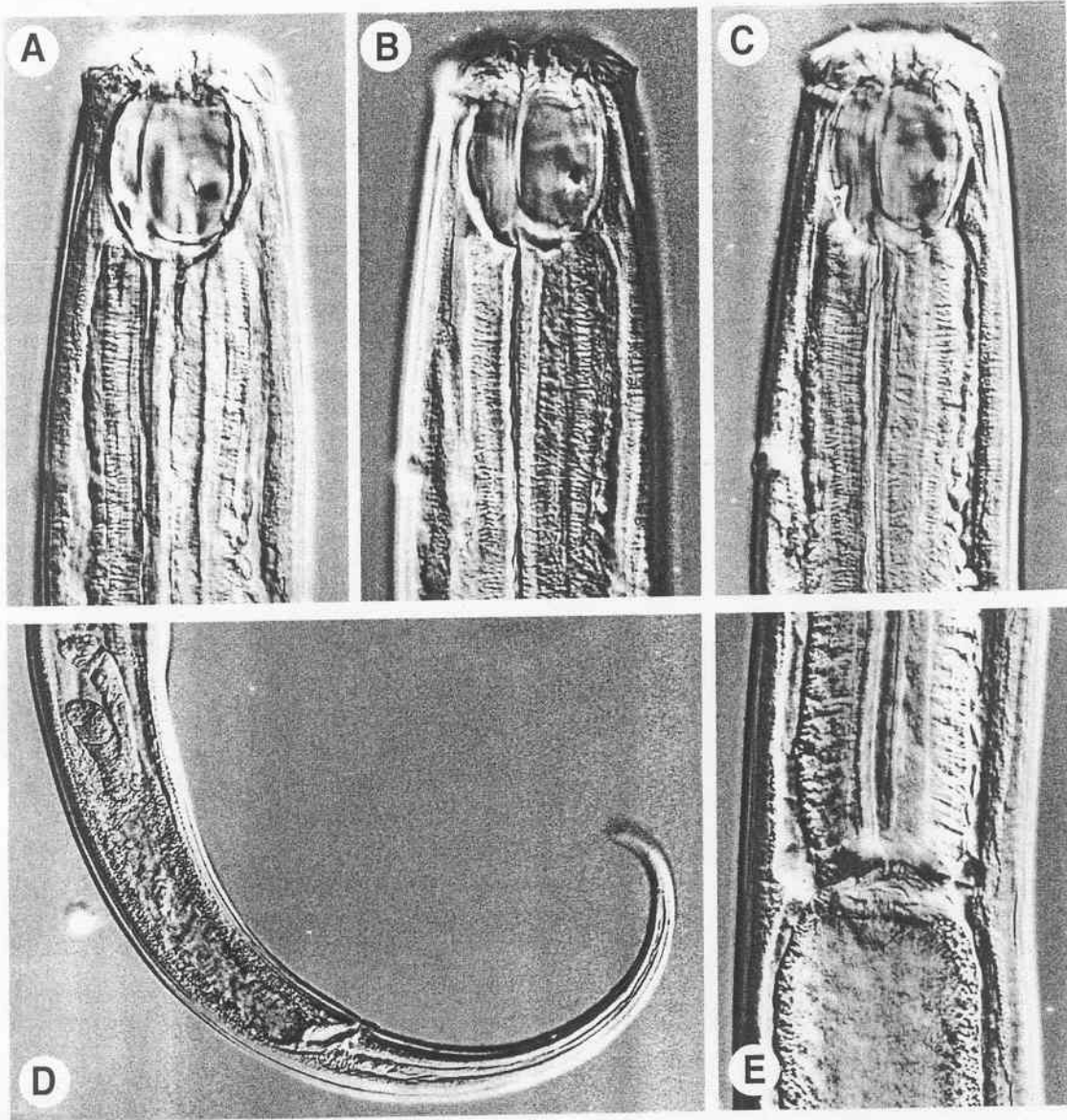


Fig. 2. *Micatonchus reversus* gen. n., sp. n. A, B, C: Anterior end with buccal cavity showing subventral teeth posteriorly directed, D: Tail, E: Oesophago-intestinal junction.

fairly wide, barrel-shaped,  $45\text{--}47 \times 35\text{--}40$   $\mu\text{m}$  in dimensions, strongly sclerotized. Dorsal vertical wall bearing a triangular tooth ( $3\text{--}4$   $\mu\text{m}$  long) with apex directed forward, located at  $28$   $\mu\text{m}$  from anterior end of buccal cavity. Subventral teeth ( $5$   $\mu\text{m}$  long) borne on subventral walls, one on each, retrorse (posteriorly directed) and claw-like, hinged,  $23\text{--}24$   $\mu\text{m}$  from anterior end of buccal cavity with tips lying at level of dorsal tooth apex. Oesophagus cylindrical,  $519\text{--}522$   $\mu\text{m}$  long, expanded at basal part of stoma. Nerve ring located at  $150\text{--}155$   $\mu\text{m}$ , obliquely connected with hemizonid at  $170\text{--}175$   $\mu\text{m}$  from anterior end of body. Excretory pore faint, located at  $190\text{--}195$   $\mu\text{m}$  from anterior end. Dorsal oesophageal gland opening at  $250\text{--}255$   $\mu\text{m}$  while orifices of first and second pair of subventral glands at  $353\text{--}363$   $\mu\text{m}$  and  $473\text{--}497$   $\mu\text{m}$  from anterior end respectively. Oesophageo-intestinal junction with prominent tubercles. Intestine with wide lumen,

epithelium comprising of hexagonal/polygonal cells,  $6\text{--}8$  in cross section, filled with dark granules. The innermost layer of intestine with long fine cilia-like cytoplasmic processes, more prominent in anterior and posterior regions. Intestine has a prominent constriction at level of mural commissure (Fig. 1), about two body-widths or more posterior to vulva. Rectum  $27\text{--}30$   $\mu\text{m}$  long, rectal glands present. Tail  $237\text{--}245$   $\mu\text{m}$  long, ventrally arcuate, gradually tapering to a rounded terminus. Three caudal glands lying in a row with their ducts leading to a small but prominent spinneret. Gonads amphidelphic, ovaries reflexed. Anterior genital branch longer, oviduct with narrow distal and enlarged proximal parts, each subterminally connected to an ovary, a complex sphincter with powerful muscles present. Vulva rather small, a transverse slit, with cuticularised lips. Vulval papillae not observed. Vagina short, provided with radiating muscles.

### Remarks

The two specimens under study were examined thoroughly in the light of studies made by Coomans and Lima (1965). Our study showed that all the three teeth are originally upright in position. While the dorsal tooth apex does not change its direction and remains anteriorly directed, the subventrals get inverted/retrorse in later stages and the replacement inverted teeth showed a relative anterior position than the upright replaced teeth. Keeping these facts in view, it seemed that the process of inversion continued in the present genus until the L5 stage, i.e., young adult. At this stage the upright subventrals occupying a posterior position start showing inversion and as a result of this shift anteriorly with their tips lying at the same level as that of dorsal. But the dorsal tooth does not invert at all. This indicates a dimorphic nature of the teeth in the buccal cavity of this rather unique new genus, *Micatonchus*.

**Type locality and habitat:** Jinhae, Kyungsangnam province, forest soil around roots of *Pinus thunbergii* Parl.

**Type Specimens:** Holotype and a paratype female on slide Forest 676-4 deposited in the nematode collection of the Department of Agricultural Biology, College of Agriculture, Kyungpook National University.

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