



Note

New records of five free-living marine nematodes from an artificial mangrove of India

G. Chinnadurai and Olivia J. Fernando

Centre of Advanced Study in Marine Biology, Annamalai University, Parangipettai-608 502, Tamil Nadu, India
Email: chinnacas@yahoo.com

Abstract

Five species of free-living marine nematodes are recorded from intertidal sediments of an artificial mangrove environment at Parangipettai, southeast coast of India for the first time.

During the course of an ecological study on marine free-living nematodes of intertidal sediments from the Parangipettai artificial mangroves (11° 29'N; 79° 46'E) along the southeast coast of India, five new species were recorded for the first time from Indian waters. The substratum is silt and clay in nature. Identification to species level was done using the pictorial keys of Platt and Warwick (1983, 1988) and Warwick *et al.* (1998).

Taxonomic Account

Order: Enoplida

Family: Anoplostomatidae

Anoplostoma viviparum (Bastian, 1865) (Figs. 1 & 2)

Material: Six females and four males collected on 30 Jan. 2002.

Description: Body broadest in middle and attenuated at anterior and posterior ends, 0.9-1.1mm in length. Cuticle smooth; somatic setae absent; six labial papillae; six 4µm cephalic setae situated just anterior to four shorter setae (3µm). Amphids cup-shaped, 4-5µm wide. Buccal cavity cylindrical; no teeth. Oesophageal tissue does not surround the buccal cavity. Oesophagus increases in width posteriorly but no bulb. Nerve ring at 50-60% of oesophagus length. Tail long and tapering, 8-10.8 a.b.d. Two opposed, reflexed ovaries.

Distribution: Falmouth, Blyth Estuary, Essex Coast, Exe Estuary, West Scotland, Strangford Lough, Northern Ireland and Southampton waters.

Remarks: The material examined conforms well to the earlier description, except for minor variation in the relative measurements of the body. The total body length described varied between 1.3-2.1mm and tail 5-10 a.b.d. The body length of the present specimen studied is lesser

being 0.9-1.1mm and tail 8-10.8 a.b.d.

Order: Chromadorida

Family: Comesomatidae

Dorylaimopsis punctata Ditlevsen, 1918 (Figs. 3 & 4)

Material: Five females and three males collected on 30 Jan. 2002.

Description: Body length 2.2-2.6mm. Maximum diameter of body 45-52µm. Cuticle punctate with lateral differentiation beginning just posterior to amphids, extending halfway down tail length and consists of two files of dots. Six short and four longer (5µm) cephalic setae. Amphids spiral, of 3 turns, 6-8µm wide. Buccal cavity cylindrical with three conspicuous pointed teeth at the anterior end. Oesophagus widens posteriorly, but without a bulb. Tail conico-cylindrical, 5.0-5.4 a.b.d. Ovaries paired.

Distribution: Loch Nevis, West Scotland; Loch Striven, West Scotland; Arran Island, West Scotland; North Sea; Northumberland Coast, North East England; Celtic Sea and British Isles.

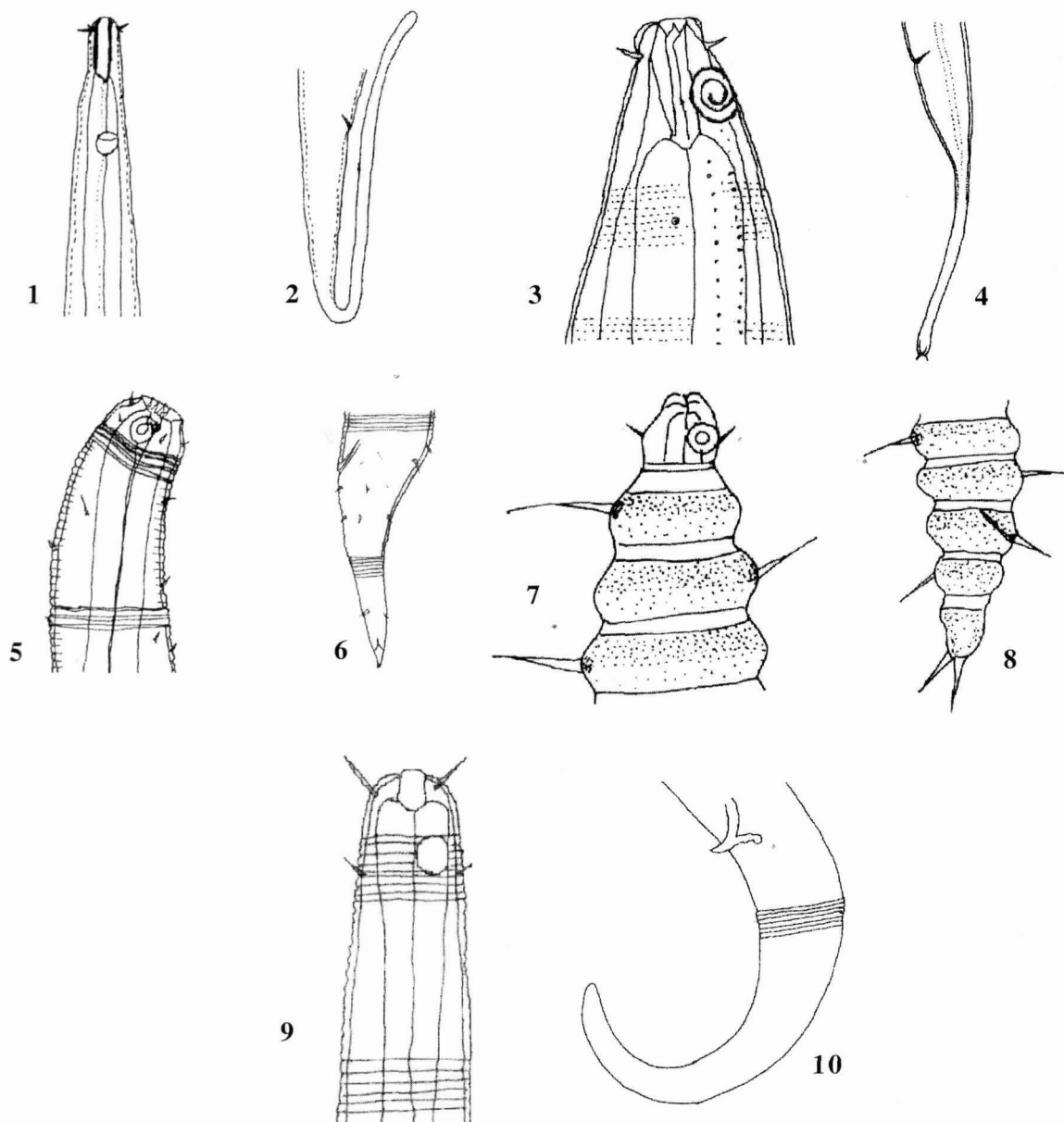
Remarks: The specimens agree well with earlier description, except for minor variation in the relative body measurements. The total body length described varied between 2.4-2.7mm and tail 3.4-4 a.b.d. The body length of the present specimen is 2.2-2.6mm, but tail was longer 5.0-5.4 a.b.d.

Family: Desmodoridae

Desmodora (Pseudochromadora) pontica Filipjev, 1922 (Figs 5 & 6)

Material: Six females and two males collected on 30 Jan. 2002.

Description: Body length 0.4-0.5mm. Maximum diameter



Figs.1&2. *Anoplostoma viviparum* (Female); Figs.3 & 4. *Dorylaimopsis punctata* (Female); Figs. 5 & 6. *Desmodora (P.) pontica* (Female); Figs. 7&8. *Desmoscolex falcatus* (Female); Figs. 9&10. *Metalinhomoeus typicus* (Male); Figs. 1,3,5,7&9: Anterior region; Figs. 2,4,6,8,10: Posterior region; Scale bars: 1&3-17 μ m; 2&9-22 μ m; 4-82 μ m; 5&6-35 μ m; 7-13 μ m; 8 & 10-42 μ m

of body 33-35 μ m. Cuticle transversely striated without additional ornamentation. Cephalic capsule in two sections; an anterior truncated cone and a broader basal section separated by a prominent groove. Six conical labial papillae; six short and four longer cephalic setae, all on the anterior section of the cephalic capsule; a pair of short setae behind each amphid on the posterior section of the cephalic capsule. Amphids 6-7 μ m wide, a single open loop occupying most of the length of the posterior section of the cephalic capsule. Anterior portion of buccal cavity with a circle of small pointed cuticularisation and more posteriorly a prominent dorsal and two smaller subventral teeth. Oesophagus with posterior bulb. Tail conical with unstriated terminal portion, 2.4-2.7 a.b.d.

Distribution: Northumberland Coast, Northeast England; Exe Estuary, Southwest England and British Isles.

Remarks: The specimens examined agree well with earlier description, except for smaller body size. The total body length described varied between 1.8-2.2mm and tail 2.5-3.6 a.b.d. The body length of the present specimen is lesser being 0.4-0.5mm and tail 2.4-2.7 a.b.d.

Family: Desmoscolecidae

Desmoscolex falcatus Lorenzen, 1972 (Figs. 7 & 8)

Material: Six females and one male collected on 30 Jan. 2002.

Description: Body 17 symmetrical oval desmen separated by wide clear striated zone of cuticle, 0.3 μ m in length. Amphids circular, 3-4 μ m in length.

Somatic setae formula:

Subdorsal	1	3	5	7	9	11	13	17	16
Subventral	2	4	6	8	10	12	14	15	

The subventral setae on desmen 10 and 12 are longer than others.

Distribution: Tamar Estuary, South West England and British Isles

Remarks: The material examined conforms to the earlier description by previous workers. Krishnamurthy *et al.* (1984) has previously recorded *Desmoscolex* genera from Pichavaram mangroves, Southeast coast of India, however the species was not identified.

Order: Monhysterida

Family: Linhomoeidae

Metalinhomoeus typicus De Man, 1907 (Figs. 9 & 10)

Material: Two males collected on 30 Jan. 2002.

Description: Body length 1.5-1.9mm. Maximum width of body 19-21 μ m. Six small cephalic papillae. Four 8 μ m cephalic setae and four 3 μ m cervical setae situated in level with the amphids. Cuticle faintly striated. Buccal cavity cup-shaped with a well cuticularised base. Amphids circular, 6 μ m diameter. Oesophagus relatively short, with a small posterior bulb. Tail tapering throughout its length, 5.4-5.5 a.b.d. Spicules 27-29 μ m as curve. Gubernaculum small, 16 μ m dorsal apophysis with round cephalate ends.

Distribution: Plymouth, Exe Estuary, South West England; Skippers Island, Essex, South East England and Loch Etive, West Scotland.

Remarks: The specimens examined agree well with the earlier description of the species, except for the smaller body size. The total body length described was 2.1mm and tail 6.3 a.b.d. The body length of the present specimen studied is lesser being 1.5-1.9mm and tail 5.4-5.5 a.b.d.

Acknowledgement

We thank the Director, C.A.S. in Marine Biology, Parangipettai for facilities provided.

References

- Krishnamurthy, K., M.A. Sultan Ali and M.J.P. Jeyaseelan. 1984. Structure and dynamics of the aquatic food web community with special reference to nematodes in mangrove ecosystem. In: Soepadmo, E., A.N. Rao and D.J. MacIntosh (Eds.), *Proc. As. Symp. Mangr. Env. -Res. & Manag.*, University of Malaya, Kuala Lumpur. p. 429-452.
- Platt, H.M. and R.M. Warwick. 1983. Free-living marine nematodes. Part I: British Enoplids. *Synopses of the British Fauna (New Series) No. 28*, Cambridge University Press. 307pp.
- _____ and _____. 1988. Free-living marine nematodes. Part II: British Chromadorids. *Synopses of the British Fauna (New Series) No. 38*, Brill, E.J., Leiden, 501pp.
- Warwick, R.M., H.M. Platt and P.J. Somerfield. 1998. Free-living marine nematodes. Part III: *British Monhysterids. Synopses of the British Fauna (New series) No. 53*, Shrewsbury: Field Studies Council, 296pp.

Accepted: 30 May 2006