

First record of *Desmoscolex falcatus* (Nematoda: Adenophorea: Desmoscolecida: Desmoscolecidae) from Rushikulya estuary, Odisha, India

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Desmoscolex falcatus (Nematoda: Adenophorea: Desmoscolecida: Desmoscolecidae) is reported for the first time from Rushikulya estuary.

[**Keywords:** *Nematode, microzooplankton, habitat, sediment*]

Introduction

Nematodes are one of the most abundant communities in marine environment. Marine nematodes are found in polluted as well as unpolluted sediments ranging from highly tolerant to sensitive species with a short generation period¹. They are sensitive to many toxicants² and regarded as excellent ecological indicators of benthic environment³. Studies on marine nematode communities of Indian coast^{4,5,6,7,8,9,10} as well as Odisha coast^{11,12,13,14,15,16} are very limited. The present paper reports first record of a nematode, *Desmoscolex falcatus* in the Rushikulya estuary (Lat. 19° 22' to 19° 24' N and Long. 85° 21' to 85° 5' E) of Odisha coast (Fig. 1).

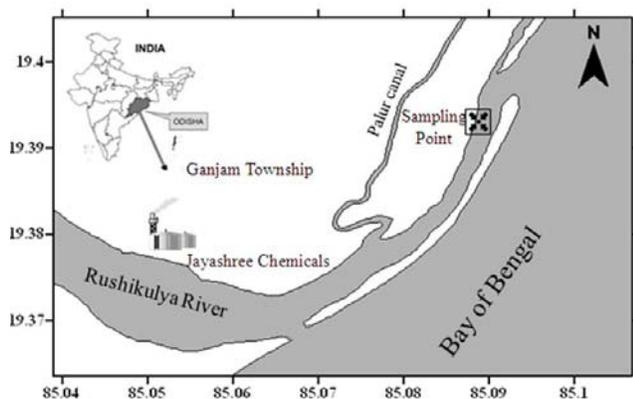


Fig. 1—Sampling location of *Desmoscolex falcatus* in Rushikulya estuary

The estuary has its international recognition as Rushikulya rookery for mass nesting of Olive Ridley sea turtles besides as an eco-sensitive area (CRZ-I) under Coastal Regulation Zone (CRZ)-Notification 2011. Large scale erosion, river mouth shift and dredging activity of adjacent Gopalpur port alter the geomorphology and sediment pattern of the area¹⁷.

Materials and Methods

The newly recorded species was isolated from mixed microzooplankton sample collected by horizontal hauling through a zooplankton net (20 μ mesh size) from Rushikulya estuary (15 km north of Gopalpur) and subsequently preserved in 5% formaldehyde. The said nematode (coll. 17 April 2013) was identified following the standard literature^{18,19} and NeMys online identification key²⁰.

SYSTEMATICS

Phylum NEMATODA Diesing, 1861
Class ADENOPHOREA von Linstow, 1905
Order DESMOSCOLECIDA Filipjev, 1929
Superfamily DESMOSCOLECOIDEA Shipley, 1896
Family DESMOSCOLECIDAE Shipley, 1896
Desmoscolex Claparede, 1863
Desmoscolex falcatus Lorenzen, 1972
(Fig. 2)



Fig. 2—Newly recorded nematode, *Desmoscolex falcatus* from Rushikulya estuary

Results and discussion

Diagnostic Characters

Body spindle shaped, curved ventrally. Body 17 symmetrical oval desmen separated by wide clear striated zone of cuticle. The subdorsal setae on desmen 13 and 17 are displaced laterally and are longer than the others (Fig. 2). The habitat of this particular species is not limited to a particular aquatic environment as this was also reported earlier from continental shelf⁷ and mangrove area^{4,21}. Chinnadurai and Fernando (2006)²¹ have recorded this species for the first time from Indian waters during the course of an ecological study on marine free living nematodes. *Desmoscolex falcatus* was found in the areas covered with mangrove plant *Rhizophora apiculata*⁴. This species have been recorded in 30-50 m depth range from the continental shelf region of the Southeast Coast of India⁷. They are also reported in European waters, Indian waters, North Atlantic, North Sea, United Kingdom Exclusive Economic Zone, Tamar Estuary, South West England and British Isles.

Conclusion

The species is reported for the first time from Rushikulya estuary. This record stands as first report of *Desmoscolex falcatus* in zooplankton samples from Indian coast. Grainger *et al.*²² also reported occurrence of few nematodes in zooplankton samples. Occurrence of this species in surface water may be due to dispersion via the water column²³ through high turbulence²⁴ or due to their suspension characteristics²⁵. Some ecologists¹⁹ have reported the presence of concretion rings in any species belonging to genus *Desmoscolex* helps in increasing mechanical effects of the undulations on ubiquitous microbial populations residing in the ambient sediment

particles. Members of the family Desmoscolecidae derives the nutritional benefit from increased microbial production¹⁹.

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