

A New Species of Deep-sea Nematode, *Micoletzkyia mawatarii* sp. nov. (Nematoda: Enoplida: Phanodermatidae) from Northern Japan

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A new species of free-living marine nematode, belonging to the genus *Micoletzkyia* Ditlevsen, 1926 (Phanodermatidae Filipjev, 1927), is described from the deep sea off the coast of Hokkaido, northern Japan. *Micoletzkyia mawatarii* sp. nov. resembles *M. magna* Vitiello, 1970 and *M. longispicula* Huang and Cheng, 2012 in the shape of the tail and gubernaculum, but differs from the former in body width and in length of the cephalic setae, and from the latter in body length, proportional length of the tail, position of the nerve ring, and shape of the preloacal supplement. *Micoletzkyia mawatarii* sp. nov. also resembles *M. parelegans* Allgén, 1954 in its large body size, but differs from it in esophagus length, shape of the gubernaculum, size and position of the preloacal supplement, and in having a longer tail.

Key Words: Nematoda, marine, deep sea, benthos, new species.

Introduction

The free-living marine nematode family Phanodermatidae Filipjev, 1927 is characterized mainly by the presence of a head capsule, a characteristic cellular structure in the esophageal region, and elongate spicules (cf. Filipjev 1927; Inglis 1964; Lorenzen 1981; Platonova 1984). The genus *Micoletzkyia* Ditlevsen, 1926 differs from the other genera of this family in having a large body size (most species are 5–10 mm long), a constriction separating the head region from the cervical region, a weak cephalic capsule, a tubular preloacal supplement, and a conico-cylindrical tail (cf. Ditlevsen 1926; Allgén 1954a; Huang and Cheng 2012). By 2012, nine valid species of *Micoletzkyia* [twelve nominal species are known, but three of them were recently judged invalid by Huang and Cheng (2012), whom we follow in the present paper] had been described from the bottom at depths of 25 to 580 m in European waters (Ditlevsen 1926; Stekhoven 1946; Allgén 1954b, c, 1959; Vitiello 1970; Gagarin 2009) and the Yellow and South China Seas (Huang and Cheng 2012).

During a cruise in 2009 to northern Japan by the R/V *Soyo-Maru* (National Research Institute of Fishery Science, NRIFS), several specimens of free-living nematode were collected. From this material, we here described a new species of *Micoletzkyia*.

Material and Methods

All specimens examined were collected at two deep-sea sites in the Sea of Okhotsk and the Sea of Japan off the

coast of Hokkaido, northern Japan, during a survey by R/V *Soyo-Maru* (31 July to 12 August 2009). Muddy sediment samples were floated from the bottom and caught with small plankton nets fixed inside a larger beam trawl (benthos net). Sediment samples were washed in seawater, then sieved with a plankton net (450 µm in mesh size) to collect small animals. Nematode specimens were sorted under a stereomicroscope and fixed in DESS solution (Yoder *et al.* 2006) containing DMSO (dimethyl sulphoxide), EDTA (ethylenediaminetetraacetic acid, disodium salt), and saturated sodium chloride. Nematodes were transferred into 10% glycerin in 30% ethanol, then placed in a thermostatic chamber for 48–72 hours at 45°C. After evaporation, nematodes were mounted individually in anhydrous glycerin on glass slides before observation with an Olympus BX51 differential interference contrast microscope. Other specimens were dried in a critical-point dryer, sputter-coated with Au, and observed and imaged with a Hitachi S-3000N scanning electron microscope (SEM). All specimens examined were deposited in the Hokkaido University Museum, Sapporo, Japan, catalogued with the acronym ZIHU representing the former Zoological Institute, Hokkaido University.

Abbreviations related to measurements presented in the descriptions are: L, total body length; abd, body diameter at anus (in females) or cloaca (in males); mbd, maximum body diameter.

De Man's ratios are: a, body length divided by maximum body diameter; b, body length divided by esophagus length; c, body length divided by tail length; V, position of vulva as a percentage of body length from anterior end [all after Hooper (1986)].