



Three new species of free-living marine nematodes from East China Sea

YUZHEN CHEN & YUQING GUO¹

Key Laboratory of Marine fishery resources and Ecological Environment of Fujian Province, Fisheries College, Jimei University, Xiamen 361021, China

¹Corresponding author. E-mail: guoyuqing@jmu.edu.cn

Abstract

Three new species of free-living marine nematodes from intertidal sands in Xiamen, Fujian province are described and illustrated. *Bathylaimus denticulatus* sp. n. can be distinguished by a relatively small buccal cavity with its second part armed with two distinct teeth, short 2–3 µm labial and 12–16 µm cephalic setae and amphids of 0.8–0.9 turns. *Oncholaimus minor* sp. n. is characterized by its relatively small body size and the sexual dimorphism in tail shape. *Oncholaimus xiamenense* sp. n. is identified by pronounced sexual dimorphism in tail shape, the location of postcloacal tubercle (3/4 of the distance from cloaca to tip of tail), the location of female ovary as well as the demanian system (on the right side of the intestine), the number of circumanal genital setae (12). The types are deposited in the Third Institute of Oceanography, SOA, Xiamen.

Key words: free-living marine nematodes, new species, *Bathylaimus denticulatus* sp. n., *Oncholaimus minor* sp. n., *Oncholaimus xiamenense* sp. n., taxonomy, intertidal zone, East China Sea

Introduction

In the past few years, in order to monitor and assess the water quality of bathing beaches in the intertidal zones in Xiamen, East China Sea, sediment samples were collected at Gulangyu and Huangcuo coasts. Two sampling transects were set within every sampling area, and along every transect three stations, i.e. high, mid and low tidal levels were sampled. On the Gulangyu coast, annual average abundance of meiofauna was 190 ind/10cm². The most dominant group was Copepoda, accounting for 52.73%, with free-living marine nematodes second, accounting for 31.93%. The highest abundance was observed in June (322.4 ind/10cm²); the lowest abundance was in January (62.29 ind/10cm²). On the Huangcuo coast, annual average abundance of meiofauna was 183 ind/10cm². The most dominant group was free-living marine nematodes, accounting for 52.02%, and Copepoda was next, accounting for 23.94%. The highest abundance was observed in August (381.63 ind/10cm²); the lowest abundance was in December (56.51 ind/10cm²). The present paper describes three species of free-living marine nematodes, one of which belongs to the genus *Bathylaimus* Cobb, 1894; the other two belong to the genus *Oncholaimus* Dujardin, 1845.

Material and methods

Meiofaunal samples were collected in intertidal sediments at Gulangyu coast (118°04' E, 24°26' N) and Huangcuo coast (118°09' E, 24°26' N) of Xiamen, East China Sea, using a sawn-off syringe with a 2.9 cm inner diameter pushed into the sediment to a depth of 20 cm. Characteristics of surface sediments are summarized in Table 1. Samples were fixed with 5% formalin in filtered seawater. In the laboratory, samples were stained with 0.1% rose Bengal for more than 24 hours. All samples were extracted from the sediment by decantation and/or Ludox centrifugation (Higgins & Thiel 1988). Each sample was washed into a lined Petri dish through two sieves (mesh

TABLE 4. Individual measurements of *Oncholaimus xiamenense* sp. n. (in μm).

Characters	Holotype	Paratypes					
	♂1	♂2	♂3	♂4	♂5	♀1	♀2
Body length	2805	2553	2480	3012	2981	2707	2813
Head diameter	25	23	26	25	25	26	27
Length of longer cephalic setae	8	8	9	8	8	8	8
Length of shorter cephalic setae	8	7	7	7	7	7	7
Amphid distance from anterior end	20	18	18	19	21	18	20
Amphid diameter	10	10	11	11	11	10	9
Excretory pore from anterior end	100	94	93	88	105	112	104
Excretory pore cbd	39	32	33	33	37	32	31
Nerve ring from the anterior end	216	203	197	209	209	220	220
Nerve ring cbd	45	36	34	34	38	36	36
Pharynx length	432	411	399	425	415	428	430
Pharynx cbd	49	37	33	35	39	36	36
Maximum body diameter	50	40	34	37	40	37	45
abd	32	26	26	27	30	37	38
Tail length	70	66	67	71	74	78	96
c°	2.2	2.6	2.6	2.7	2.5	2.1	2.5
Spicule length as chord	44	51	48	50	48	–	–
Spicule length as arc	44	51	49	52	49	–	–
V'	–	–	–	–	–	1849	1909
vbd	–	–	–	–	–	37	38
V (%)	–	–	–	–	–	68.3	67.9
a	56.5	63.5	73.3	80.7	74	72.2	62.7
b	6.5	6.2	6.2	7.1	7.2	6.3	6.5
c	39.8	38.5	37.1	42.3	40.4	34.6	29.3

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