



<http://dx.doi.org/10.11646/zootaxa.3821.5.2>

<http://zoobank.org/urn:lsid:zoobank.org:pub:FFC49EBF-2FAF-4F88-BEC9-AACF460C62F7>

Swedish Plectida (Nematoda). Part 6. *Neocamacolaimus parasiticus* gen. n., sp. n.

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Abstract

A new genus *Neocamacolaimus* gen. n., with one new species *N. parasiticus* gen. n., sp. n. is described from the benthic polychaete *Sphaerosyllis* cf. *hystrix* collected in the Skagerrak off the west coast of Sweden. *Neocamacolaimus* gen. n. is placed in the family Camacolaimidae and is particularly characterised by having annulated cuticle with lateral alae; setiform cephalic sensilla located at level with amphids; amphidial fovea ventrally spiral; buccal cavity without armament; pharynx muscular; nerve ring located at base of pharynx; male reproductive system diorchic with outstretched testes; spicules weakly arcuate with straight manubrium; gubernaculum absent; alveolar supplements located in the pharyngeal region; tubular supplements absent; tail conoid; caudal glands and spinneret present. Juveniles of this genus are particularly characterised by their parasitic lifestyle and the following unique morphological features: lips form a dorso-ventrally elongated perioral disc with internal sclerotizations: one midventral and two dorsosublateral (right and left); cephalic sensilla setiform, subventral sensilla are noticeably longer than the subdorsal ones; intestine extends posterior to rectum and anal opening, forming a post-anal pouch.

Key words: Camacolaimidae, endoparasitic, *Neocamacolaimus*, new genus, new species, SEM, Skagerrak, *Sphaerosyllis*, Sweden, taxonomy

Introduction

Despite the fact that polychaete annelids are one of the most common and ubiquitous groups of marine macroinvertebrates and that nematodes are thought to include some of the most adaptable and diverse parasitic taxa, there are only a few records of nematodes infecting marine polychaetes (McClelland, 2005; Peoples, 2013). Most of these parasitic nematodes use polychaetes as intermediate hosts, with the definitive host usually represented by a marine vertebrate animal (Margolis, 1971, 1973; Peoples, 2013). A few known exceptions are listed in Table 1 and include: *i*) ectoparasitic *Theristus polychaetophilus* Hopper, 1966 (Monhysterida), *Harpagonchus averincevi* Platonova & Potin, 1972, *H. similis* Platonova & Potin, 1972 and *Harpagonchoides crassus* Platonova & Potin, 1972 (Chromadorida); and *ii*) endoparasitic *Aborjinia eulagiscae* (Tchesunov & Spiridonov, 1985) Özdikmen, 2010 (Marimermithida), as well as unidentified juveniles of *Aborjinia* spp., *Trophomera* sp. (Benthimermithida) and Camacolaimidae gen. sp. (Plectida).

Extensive sampling in the marine habitats off the west coast of Sweden performed as part of the project “Taxonomy and distribution of free-living nematodes of the order Plectida in Sweden” led to the discovery of a previously unknown nematode that infests benthic polychaetes of the genus *Sphaerosyllis* Claparède, 1863. This nematode species is described below as *Neocamacolaimus parasiticus* gen. n., sp. n.

Material and methods

Bottom sediment samples were collected in several locations in the southern part of the Skagerrak off the west coast of Sweden. All samples were collected with a bottom dredge and further sieved in the lab. Nematodes were extracted from samples using a decanting and sieving method. Fresh water was used during sieving to induce

parasiticus **gen. n., sp. n.** Late stage juveniles were observed penetrating the body wall and causing significant damage to the host. Males were found free-living in the sediment, whilst females were neither found inside the host organism nor free-living. Based on our observations of life habits of males and juveniles, we assume that the juveniles of *Neocamacolaimus parasiticus* **gen. n., sp. n.** develop inside the host and its adults are free-living. This life cycle is similar to other groups of nematodes parasitic in marine invertebrates, such as Marimermithida and Benthimermithida (Miljutin, 2014a, 2014b).

Females of *Neocamacolaimus parasiticus* **gen. n., sp. n.** could not be found despite extensive repeated sampling in the same locality. It might be possible that females are "seasonal", however, presence of males in the samples and presence of juveniles of different developmental stages (unsynchronized development) does not support this suggestion. Further studies are needed to find and describe females and to determine the life cycle of this species.

Acknowledgments

This research was supported by a grant from the Swedish Taxonomy Initiative. Sampling in Skagerrak was conducted using vessels ("Skagerak" and "Oscar von Sydow") and facilities of the Sven Lovén Centre for Marine Sciences in Kristineberg. The authors are grateful to Michel Clément for his assistance in collecting marine nematodes during sampling in Skagerrak and Gullmarn Fjord in August 2011, and to Drs. Kennet Lundin and Stefan Agrenius for the identification of the host *Sphaerosyllis* cf. *hystrix*.

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