



Two new species and a new record of Comesomatidae (Nematoda, Araeolaimida) from Southern Hikurangi Margin, New Zealand

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Abstract

We describe two new species and provide one new species record of the family Comesomatidae from a submarine canyon habitat on the Southern Hikurangi margin, New Zealand. *Vasostoma hexodontium* n. sp. is characterized by having an amphideal fovea with three turns, buccal cavity with six teeth and gubernaculum with long and straight caudal apophyses. *Sabatieria dispunctata* n. sp. is characterized by the absence of cuticle punctations, large amphideal fovea with 4.5 turns, pharynx with posterior bulb, absence of pre-cloacal supplements, strongly arcuate and cuticularized spicules, simple gubernaculum with short caudal apophyses, and vulva opening directed posteriorly. *Laimella subterminata* Chen & Vincx, 2000, which was originally described from the Beagle Channel and the Magellan Strait (Chile), is recorded from the Southwest Pacific for the first time.

Key words: Deep-sea nematodes, canyons, Southern Hikurangi margin, *Vasostoma hexodontium* n. sp., *Sabatieria dispunctata* n. sp., *Laimella subterminata*

Introduction

Nematodes are the most abundant and diverse animals in marine sediments (Lambshhead & Boucher 2003; Giere 2009; Moens *et al.* 2014). The geographic coverage of nematode taxonomic studies is very uneven, and the majority of deep-sea nematodes remain undescribed (Miljutin *et al.* 2010). Studies on the taxonomy of free-living marine nematodes in New Zealand are still in relatively early stages, with few deep-sea taxonomic studies conducted until recently (Leduc & Gwyther 2008). The deep-sea nematode fauna in the New Zealand region is diverse (Leduc *et al.* 2012a) and much of this diversity is likely to be new to science.

Comesomatids are among the most abundant nematodes in continental margin sediments (Jensen 1979). A total of 23 species have been described/recorded from New Zealand waters, 15 of which have not been recorded elsewhere (Leduc & Gwyther 2008; Leduc 2012; Leduc *et al.* 2012b; Leduc 2013; Leduc *et al.* 2014). Until this study, one *Vasostoma* and ten *Sabatieria* species have been described from the region. Here, we describe two new species belonging to the genera *Vasostoma* Wieser, 1954 and *Sabatieria* De Rouville, 1903, and provide one new species record of *Laimella* Cobb, 1920 from Hikurangi margin, New Zealand. The Hikurangi margin lies off the east coast of New Zealand's North Island and is characterized by the presence of several distinct habitats such as seamounts, canyons, seeps, and vents (Mountjoy *et al.* 2009; Netzeband *et al.* 2010). Species descriptions were based on specimens obtained from a canyon habitat at 670 and 1350 m water depths.

Material and methods

Samples were collected from two canyon sites on the southern Hikurangi margin during National Institute of Water and Atmospheric Research (NIWA) research cruise TAN1004 on 14–29 April 2010 (Figure 1). Samples were

Reproductive system diorchic, with two outstretched testes. Anterior and posterior testes situated to the right of intestine. Sperm cells small, elongate, 6–13 µm in length. Three large, round ejaculatory glands, in pairs, situated dorsally anterior of the spicules. Spicules short, thick, slightly arcuate, pointed at distal end, strongly cuticularized. Gubernaculum with dorso-caudal apophyses, slightly bent at distal end. Cloacal gland cells present, surrounding almost half of spicules and gubernaculum. Ten minute pre-cloacal supplements. Pre-cloacal seta present.

Tail with conical anterior portion and filiform, gradually tapering posterior portion. Three caudal glands. Short, sparse caudal setae 1–3 µm. No terminal setae.

Female: Similar to male, but with slightly smaller maximum body diameter. Four cephalic setae, 0.6–0.8 cbd. Nerve ring at almost half of pharynx length from anterior. Reproductive system didelphic, with two opposed and outstretched ovaries. Anterior ovary to the left of intestine, posterior ovary to the right of intestine. Vulva position slightly pre-median. Granular vaginal glands and spermatheca present. Short, sparse caudal setae, 3–4 µm.

Discussion

Laimella subterminata was first described by Chen & Vincx (2000) from the Beagle Channel and Magellan Strait, Chile, based on specimens collected from muddy sediment at 255–555 m water depth. The Hikurangi margin specimens were collected from muddy sediment but at greater depths (670–1350 m). This species is distinctive due to the presence of a subterminal mouth opening, a trait not found in any other *Laimella* species. The present specimens agree well with the description by Chen & Vincx (2000), but there are slight differences in body length (1162–1305 µm in the Chilean specimens vs 1423–1439 µm in present specimens), maximum body diameter (25–32 vs 35–42 µm), amphids (4.0 turns; 60–64.7% cbd vs 3.5 turns; 56–61% cbd), spicule length (1.7 vs 1.2 abd), gubernaculum apophyses length (14 vs 10 µm), and number of pre-cloacal supplements (6 vs 10). The location of the testes is also different; in our specimen, the anterior and posterior testes are located to the right of the intestine, but in the Chilean specimens, the anterior testis is located to the left of intestine and the posterior testis to the right of the intestine.

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