



One new genus and two new free-living nematode species (Desmodorida, Desmodoridae) from the continental margin of New Zealand, Southwest Pacific Ocean

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Abstract

One new genus and two new species of the family Desmodoridae are described from the upper continental slope of New Zealand, at 350–1240 m water depths. *Onepunema* **gen. n.** is characterised by a striated head capsule, small buccal cavity without teeth, and presence of two testes. *Onepunema* **gen. n.** can be differentiated from all other genera of the family by the presence of two testes, which is an exception to the holapomorphic character (*i.e.* monorchic males) of the Desmodoroidea. *Onepunema enigmaticum* **gen. et sp. n.** shares characters typical of the subfamilies Spiriniinae (small buccal cavity without distinct teeth) and Desmodorinae (presence of head capsule). *Onepunema* **gen. n.** is placed within the Desmodorinae based on the latter trait, which is never found within the Spiriniinae. The type species, *Onepunema enigmaticum* **gen. et sp. n.**, is characterised by the presence of two laterodorsal and two lateroventral rows of pores with conspicuous ducts, slender pharynx with rounded terminal bulb, presence of two types of cells in intestinal epithelium, and presence of four or five pre-cloacal supplements consisting of thickened areas of cuticle in males. The genus *Pseudonchus* is recorded for the first time from the deep sea (1240 m water depth) and from the New Zealand region. *Pseudonchus virginiae* **sp. n.** is characterised by its stout body, short cephalic setae, monospiral amphideal fovea, short arcuate spicules with capitulum, five regularly-spaced precloacal setae, and short conical tail. A key to all known valid species of the genus *Pseudonchus* is provided.

Key words: Desmodorinae, Spiriniinae, Pseudonchinae, dichotomous key, deep-sea, continental slope, meiofauna, Chatham Rise, Challenger Plateau

Introduction

New Zealand's Exclusive Economic Zone covers over 4 million km² and is among the largest in the world. Recent studies have described high levels of local and regional diversity of free-living nematodes in open slope environments of the region (Leduc *et al.* 2012a b). Only twelve nematode species, however, have been described/recorded so far from New Zealand's deep-sea habitats (> 200 m water depth) (Wieser 1956; Leduc *et al.* 2012c; Leduc 2012).

Species of the family Desmodoridae are not usually common in samples from open slope and abyssal plain environments, but can be abundant in some deep-sea habitats such as seamounts, seeps, and vents (e.g., *Desmodora* spp., Vanreusel *et al.* 2010). There is no known holapomorphy for this family, which shows that the relationships between this and the other two families comprising the superfamily Desmodoroidea (*i.e.*, the Epsilonematidae and Draconematidae) are still incompletely understood (Lorenzen 1981). The Desmodoridae are mainly defined as members of the Desmodoroidea that lack features typical of the Epsilonematidae and Draconematidae, such as adhesion tubes or ambulatory setae. The Desmodoridae comprises six subfamilies, *viz.*, Pseudonchinae, Stilbonematinae, Molgolaiminae, Prodesmodorinae, Spiriniinae, and Desmodorinae (Decraemer & Smol 2006).