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## ***Mudwigglus* gen. n. (Nematoda: Diplopeltidae) from the continental slope of New Zealand, with description of three new species and notes on their distribution**

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### **Abstract**

Three new free-living nematode species belonging to the genus *Mudwigglus* gen. n. are described from the continental slope of New Zealand. The new genus is characterised by four short cephalic setae, fovea amphidialis in the shape of an elongated loop, narrow mouth opening, small, lightly cuticularised buccal cavity, pharynx with oval-shaped basal bulb, and secretory-excretory pore (if present) at level of pharyngeal bulb or slightly anterior. *Mudwigglus* gen. et sp. n. differs from other genera of the family Diplopeltidae in the combination of the following traits: presence of reflexed ovaries, male reproductive system with both testes directed anteriorly and reflexed posterior testis, and presence of tubular pre-cloacal supplements and pre-cloacal seta. *Mudwigglus patumuka* gen. et sp. n. is characterised by gubernaculum with dorso-caudal apophyses, vagina directed posteriorly, and short conical tail with three terminal setae. *M. macramphidum* gen. et sp. n. is characterised by long fovea amphidialis, cylindrical buccal cavity, gubernaculum without apophyses, vagina at right angle to body surface, and conico-cylindrical tail without terminal setae. *M. plebeius* gen. et sp. n. is characterised by cylindrical buccal cavity with cuticularised ring, gubernaculum with dorso-caudal apophyses, females with vagina directed posteriorly, and conico-cylindrical tail with two terminal setae. *Diplopeluta nellyae* Vincx and Gourbault, 1992 is transferred to *Mudwigglus* gen. n. based on observations of paratypes from New Caledonia, and of specimens from the New Zealand continental slope, which both show the presence of two testes facing anteriorly. *M. macramphidum* gen. et sp. n. was restricted to a single site on Chatham Rise crest (350 m water depth), whereas *M. patumuka* gen. et sp. n. was recorded from six sites on western Chatham Rise (350–2800 m). *M. plebeius* gen. et sp. n. was recorded from 13 sites on Chatham Rise and two sites on Challenger Plateau (264–2300 m). *Mudwigglus nellyae* comb. n. was restricted to two Challenger Plateau sites. All *Mudwigglus* gen. n. species appear to be restricted to subsurface sediments.

**Key words:** Chatham Rise, Challenger Plateau, species distribution, new genus, benthos

### **Introduction**

The order Araeolaimida De Coninck, 1965 comprises four families: Axonolaimidae Filipjev, 1918, Comesomatidae Filipjev, 1918, Coninckiidae Lorenzen, 1981, and Diplopeltidae Filipjev, 1918 (De Ley and Blaxter, 2004). The Diplopeltidae are almost exclusively marine (Muthumbi and Vanreusel, 2006) and are typically well represented in deep-sea samples (e.g., Busseau, 1993, Miljutin *et al.* 2010). Only four Diplopeltidae species are known from New Zealand waters so far, *viz.*, *Araeolaimus elegans* de Man, 1888, *Diplopeltis cirrhatus* (Eberth 1863) Cobb, 1891, *Diplopeltula cylindricauda* (Allgén 1932) Gerlach, 1950, and *Southerniella simplex* Allgén, 1932 (Leduc and Gwyther, 2008). All these species records were based on specimens from shallow water environments. The present study describes three new species of the genus *Mudwigglus* gen. n. from the continental slope of New Zealand. *Diplopeluta nellyae* Vincx and Gourbault, 1992 is transferred to *Mudwigglus* gen. et sp. n. based on observations of the type specimens from Loyalty basin, New Caledonia, and specimens collected from the New Zealand continental slope.