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Phylogenetic analysis of nematode nuclear 18S rDNA sequences indicates the genus *Tripylina* Brzeski, 1963 (Nematoda: Tripylidae de Man, 1876) should be placed in Enoplida

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Abstract

We have made an extensive study of New Zealand representatives of nematodes from the family Tripylidae de Man, 1876. Based on SSU DNA sequence data and phylogenetic analysis, the genera *Tripylina* Brzeski, 1964 and *Trischistoma* Cobb, 1913 are not closely related to *Tripyla* Bastian, 1865, the type genus of the family Tripylidae de Man 1876. The genus *Tripylina* is sister to *Trischistoma* and *Trefusia* de Man, 1893 and is more closely related to Enoplida than to Triplonchida. Our phylogenetic results indicate that *Tripylina* should be placed in Enoplida.

Key words: *Tripylina*, Tripylidae, Triplonchida, Enoplida, 18s SSU rDNA

Introduction

In the last decade, DNA sequencing and genomics have brought substantial change to nematode taxonomy (Aleshin *et al.* 1998; Blaxter *et al.* 1998; De Ley & Blaxter 2002, 2004.; Holterman *et al.* 2006; Meldal *et al.* 2007). Based on nematode ribosomal RNA small subunit (SSU) phylogenetic trees, Triplonchida and Enoplida are the two sister-orders forming the Enoplia (De Ley & Blaxter 2004; Holterman *et al.* 2006; Meldal *et al.* 2007). However, the relationships of suborders within the two orders remained unresolved. For example, Meldal *et al.* (2007) found that three species that were previously not reliably placed in Enoplia were consistently found in this clade: *Alaimus* sp. (formerly Dorylaimia or Triplonchida), *Campydora demonstrans* (formerly Dorylaimia or Enoplia), and *Trischistoma monhystera* (formerly Triplonchida).

The molecular phylogenetic study of Meldal *et al.* (2007) confirmed that 1) the Triplonchida is an order within Enoplia, consistent with Siddiqi (1983) but contrary to many earlier classifications that were based on morphological data alone and placed part of this group among the Dorylaimia (Thorne 1939; Clark 1961; Siddiqi 1961, 1973; De Coninck 1965; Coomans & Loof 1970); 2) within Triplonchida, the Diphtherophoroidea were well supported as monophyletic; 3) contrary to morphological classifications, *Trischistoma monohystera* appears to be more closely related to Enoplida than to Triplonchida as the latter order forms a well supported clade excluding *T. monohystera*.

The phylogenetic tree of the phylum Nematoda inferred by De Ley & Blaxter (2004) shows that the family Tripylidae de Man, 1876 belongs to the superfamily Tripyloidea, the suborder Triyplina and the order Triplonchida. Nematodes of the family Tripylidae mainly occur in fresh water and soil. The genera *Tripylina* Brzeski, 1963, *Tripyla* Bastian, 1865 (= *Promononchus* Micoletzky, 1923, *Paratripyla* Brzeski, 1963), *Tripylella* Brzeski & Winiszewska-Ślipińska 1993, *Trischistoma* Cobb, 1913 and *Tobrilia* Andrássy, 1967 are included in the family Tripylidae *sensu* Andrássy (2007). To date, there are six valid species in *Tripylina*, twenty four in *Tripyla*, three in *Tripylella*; four in *Trischistoma* and two in *Tobrilia* (Tsalolikhin 1983; Brzeski

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