



## A review of the genus *Trischistoma* Cobb, 1913 (Nematoda: Enoplida), with descriptions of four new species from New Zealand

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### Abstract

*Trischistoma* contains four accepted species. In this paper four more new species are added to the genus. Morphologically, these four new species can be briefly characterized as follows: *T. triregius* sp. nov. by having a pair of lateral cervical setae; *T. otaika* sp. nov. by having a post-vulval uterine sac and a prominent dorsal tooth; *T. waiotama* sp. nov. by having a single ventro-median cervical seta; *T. tukorehe* sp. nov. by having two prominent dorsal teeth and long body length. Molecularly, *T. triregius* sp. nov., *T. otaika* sp. nov., *T. waiotama* sp. nov. and one published species, *T. monohystera* can be differentiated by SSU & LSU analysis. Among the four previously described species, the main distinguishing feature for *T. pellucidum* and *T. gracile* is the absence of a postvulval uterine sac, which differentiates them from *T. monohystera*, and *T. equatoriale*. All previously described species also can be differentiated by: body length and values of De Man's Indices *a*, *b*, *c*, *c'* and *V*. A key is provided for all eight species of the genus.

**Key words:** New Zealand, new species, morphology, molecular, Nematoda, Enoplida, Tripylidae, *Trischistoma*, key, classification

### Introduction

Nematodes of the genus *Trischistoma* Cobb, 1913 are found in soil and limnic habitats. *Trischistoma* was proposed as a genus by Cobb in 1913 with *T. pellucida* Cobb, 1913 as the type, and later Schneider (1939) placed it as a subgenus under *Tripyla* Bastian, 1865 in the family Tripylidae de Man, 1876. Since then, *Trischistoma* has been extensively discussed and reviewed, along with its family Tripylidae (Goodey 1951, 1963; Meyl 1960; Clark 1961; Brzeski 1963, 1965; De Coninck 1965; Khera 1970; Gerlach & Riemann 1974; Tsalolikhin 1983; Andr ssy 1985, 2007; Brzeski & Winiszewska-Ślipińska 1993; Zullini 2006).

*Trischistoma* was considered a synonym of *Tripyla* by Goodey (1951, 1963), supported by Meyl (1960), Clark (1961) and De Coninck (1965). Brzeski (1963) considered *Trischistoma* to be a genus *inquirendum* because of the inadequate description of the type species *T. pellucida* by Cobb (1913) and proposed *Tripylina* Brzeski, 1963 as a new genus for the family Tripylidae. However, Hopper and Andr ssy drew Brzeski's attention to two versions of Cobb's (1913) paper, one of which was published with drawings and another without. Consequently, Brzeski (1965) concluded that *Tripylina* was a junior synonym of *Trischistoma*. De Coninck (1965) proposed two subfamilies for Tripylidae: Tripylinae for the genus *Tripyla* only and Tobriliinae for numerous other genera. Andr ssy (1976) accepted this concept of two subfamilies for Tripylidae, but considered *Trischistoma* as a valid genus with *Tripyla*, *Paratripyla* Brzeski, 1964 and *Abunema* Khera, 1971 in Tripylinae. Tsalolikhin (1983) partially accepted Andr ssy's (1976) action and included *Trischistoma*, *Tripyla*, *Paratripyla* and *Tripylina* in Tripylidae. Brzeski & Winiszewska-Ślipińska (1993) removed *Trischistoma* from Tripylidae because it has a simple cardia and spicules not surrounded entirely by a muscle pouch, but they did not propose an alternative place for the genus. Zullini (2006) largely accepted the classification of Brzeski and Winiszewska-Ślipińska (1993), also provisionally including *Trischistoma*, *Tobrilia* Andr ssy, 1967 and *Abunema* in the family Tripylidae because they had not been alternatively placed. More recently, Andr ssy (2007) argued that the family Tripylidae should comprise three subfamilies (Trischistomatinae Andr ssy, 2007, Tripylinae de Man, 1876, and Tobriliinae Andr ssy, 2007) and proposed placing *Trischistoma* into Trischistomatinae.