



## A new genus and three new species of Drilonematidae (Rhabditida, Drilonematoidea) from earthworms

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### Abstract

A new genus and three new species of Drilonematidae (Rhabditidae, Drilonematoidea) from earthworms deposited in the collection of Natural History Museum, Smithsonian Institution are described and illustrated. *Paradicelis bursata* gen. et sp. n. is closely related to other Dicelinae genera, namely *Dicelis* Dujardin, 1845 and *Adieronema* Timm 1966, but is differentiated from both by the presence of a bursa and by whip-like copulatory sensilla. From *Dicelis* the new genus differs further by the excretory pore being situated in front of the nerve ring. *Dicelis eudrillii* sp. n. is the first African member of a predominantly Palearctic genus and also shares similarity with *Adieronema*, but clearly differs from this genus by the eggs lacking a bipolar corona. *D. eudrillii* is distinguished from other members of *Dicelis* by having a narrow, conoid tail; prominent excretory pore; nerve ring being situated around the intestine in both adults and juveniles; very long spicules; and by a well-developed spermatheca. *Pharyngonema chinense* sp. n. is distinguished from the only other member of the genus, *Ph. mekongianum*, by the shape of the head end with its minute apical tip; smaller circular lateral organs situated at mid-pharyngeal length; larger, slightly bent spicules with blunt, hooked distal process; and smaller, proximally broadened, club-shaped gubernacula. A specimen of *Ph. chinense* is described with the distal portion of testis forked. Keys to the genera of subfamily Dicelinae and species of *Dicelis*, *Adieronema*, *Paradicelis* and *Pharyngonema* are presented.

**Key words:** Dicelinae, *Dicelis eudrillii* sp. n., earthworm parasites, Eudrilidae, Lumbricidae, Megascolecidae, *Paradicelis bursata* gen. n., sp. n., *Pharyngonema chinense* sp. n.

### Introduction

Study of earthworms deposited in the collection of Natural History Museum, Smithsonian Institution revealed a number of nematode species parasitic in body cavity of oligochaetes. Descriptions of two new genera and four species of Drilonematoidea were published earlier (Ivanova and Hope 2000, 2004). All species described here belong to the family Drilonematidae: *Paradicelis bursata* gen. n., sp. n. and *Dicelis eudrillii* sp. n. to Dicelinae and *Pharyngonema chinense* sp. n., to Pharyngonematinae.

The Drilonematidae is composed of 6 subfamilies, with Dicelinae retaining the most primitive features (Spiridonov and Ivanova 2005). It includes the *Dicelis*, the only genus so far known to be parasitic in non-tropical oligochaetes, namely lumbricids. It is quite common in lumbricids but never recorded in other oligochaete hosts. The representative of the new genus described here, *Paradicelis bursata* gen. et sp. n., was dissected from the megascolecoid oligochaete, *Pheretima longicauliculata* Gates 1931, the latter already known to be a host for several drilonematid species (Timm 1966a, 1966b, 1967). The new species of *Pharyngonema* is only the second representative of this rarely-found genus and a first record of a drilonematid parasite in the peregrine earthworm *Pheretima guillelmi* (Michaelsen 1895) Michaelsen 1900.