

Communicatio Brevis

On two uncommon structures in nematodes

By

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**Abstract.** To the single known toothless genus of mononchid nematodes (*Nullonchus*, family Anatonchidae) another unarmed genus/species belonging to the family Mononchidae is added. Since only immature animals were found, neither generic nor specific names are proposed.

The small postcardial organ, *organellum ovale*, recently described in an *Orchulus* species and characterized by an unusually large dorsal pore, was observed in *Prismatolaimus dolichurus*.

1. A toothless genus in the family Mononchidae

Members of the superfamily Mononchoidea are generally known as having spacious, strongly sclerotized buccal cavity armed with larger or smaller teeth. At least one large tooth on the dorsal wall of stoma is present. Among the forty known genera of mononchid nematodes, there is an only exception. Siddiqi described a genus from South America, *Nullonchus* Siddiqi, 1984, that lacks any teeth or denticles in the stoma. In having a roomy buccal capsule and a tuberculate type of oesophago-intestinal junction, *Nullonchus* belongs to the family Anatonchidae. Siddiqi described three species each collected in Colombia.

In a soil sample collected also in South America (Chile), I found some specimens of a remarkable mononchid genus of completely unarmed stoma. These specimens clearly distinguish from *Nullonchus*. Unfortunately, all the five animals are juveniles, second-, third- and fourth-stage larvae, therefore, although the genus and species undoubtedly are new to science, I deem it unadvisable to provide them with scientific names. Each immature animal shows the same shape and structure of buccal cavity. This interesting nematode shall be shortly described below, mainly on the basis of a half-mature L4 larva.

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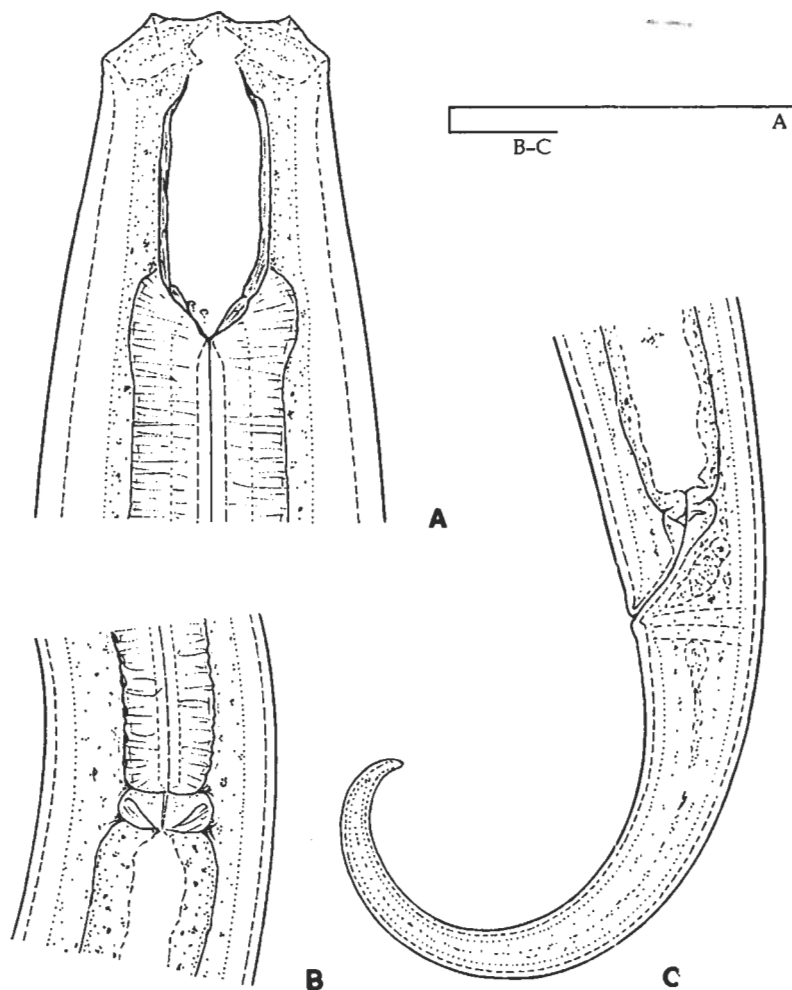


Fig. 1. A semi-adult specimen of a toothless species of Mononchidae from Chile. A: anterior end; B: cardial region; C: tail. (Scale bars 50  $\mu\text{m}$  each)

Fourth-stage larva (L4): L = 3.50 mm; a = 32; b = 5.5; c = 11; c' = 45.

Large nematode, body 110  $\mu\text{m}$  wide on the mid-region. Cuticle smooth, rather thin, 3–4  $\mu\text{m}$ . Head 32  $\mu\text{m}$  wide; body at posterior end of oesophagus 3.2 times wider than head. Sclerotized buccal cavity oblong, comparatively narrow, 38  $\mu\text{m}$  long and 17  $\mu\text{m}$  broad. (Buccal cavity in L3: 32–35  $\times$  13–15  $\mu\text{m}$ ; in L2: 26  $\times$  10  $\mu\text{m}$ .) Stomatal walls rather thin. No teeth or any denticle-like structures, only the so-called geusids (Siddiqi's term: minute foramina in the

basal sector of stoma) are present. Oesophagus 630  $\mu\text{m}$  long. Base of oesophagus non-tuberculate. Posterior part of intestine with two (in L2-L3 larvae with two to four) distinct constrictions. Female genital primordium in 50 % of body length; so it may be supposed that the mature female is amphidelphic. Tail elongate-conoid, 325  $\mu\text{m}$  long, 9 % of entire length of body, strongly bent ventrally with finely rounded tip. Caudal glands or terminal pore absent.

Due to the non-tuberculate cardial region and the slender buccal cavity this species belongs to the family Mononchidae. It can easily be distinguished from *Nullonchus* by having an atuberculate cardia of *Mononchus* type (*vs.* tuberculate, of *Anatonchus* type), a slender buccal cavity (*vs.* large and spacious), no caudal spinneret (*vs.* present), and a large body (3.5 mm *vs.* 1.0–1.9 mm). Besides, the present species is presumably didelphic (*Nullonchus* is mono-prodelphic).

From now on, a toothless genus is known in each family Mononchidae and Anatonchidae.

## 2. Presence of *organellum ovale* in *Prismatolaimus*

In a quite recent paper, I described a new *Oncholaimus* species from Ecuador, *O. dorsalis* Andr assy, 2001. Among others, it was characterised in having a peculiar small organ posterior to the cardia which I named *organellum ovale*. This organ of unknown function opens with an unusually large pore on the dorsal side of body.

Unfortunately, it escaped my attention that Coomans and Raski (1988) and Brzeski (1997) had observed a similar organelle close to the cardia in *Prismatolaimus novoporus* Coomans & Raski, 1988 on the one hand, and in *P. dolichurus* de Man, 1880 and *P. mulcoomus* Brzeski, 1997 on the other hand. What is remarkable, this *organellum ovale* is not to be found in every species of either *Onchulus* or *Prismatolaimus*. Is it present, it does occur in every specimen, both adult and juvenile.

In a recent soil sample originating from Chile, I also observed this *organellum ovale* with its large dorsal pore in a female specimen of *Prismatolaimus dolichurus*. Its short description is as follows.

Female: L = 1.03 mm; a = 43; b = 4.3; c = 2.7; V = 39 %; c' = 24.

A slender nematode with very long tail. Body 24  $\mu\text{m}$  wide on the mid-region. Cuticle finely annulated and provided with thin scattered setae. Head at basis of cephalic setae 12  $\mu\text{m}$  wide. Body at proximal end of oesophagus only 1.8 times wider than head. Cephalic setae 6 + 4, arranged in a one circle. Buccal cavity (from head end measured) 11  $\mu\text{m}$  long. Its proximal end is armed with a fine dorsal toothlet and two minute subventral denticles. Amphid slit-like, 26  $\mu\text{m}$  from anterior body end. Oesophagus 238  $\mu\text{m}$  long,

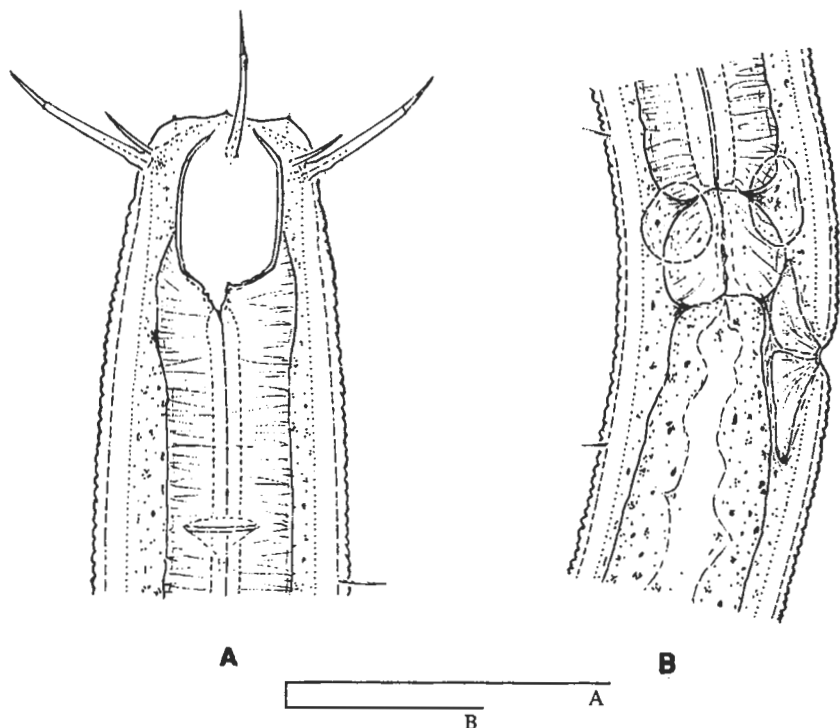


Fig. 2. *Pristmatolaimus dolichurus* de Man, 1880, a female from Chile. A: anterior end; B: post-cardial region with *organellum ovale* and dorsal pore. (Scale bars 20  $\mu$ m each)

cardia large, spheroid. *Organellum ovale* 18  $\mu$ m long, apparently bilobed; dorsal pore conspicuous, located at 17  $\mu$ m posterior to oesophagus. Amphidelphic, anterior gonad 2.6, posterior gonad 3 body diameters long. One egg: 62  $\times$  18  $\mu$ m. Distance vulva-anus 0.6 times as long as tail. Tail 380  $\mu$ m, 37 % of total body length, 24 times as long as anal body width, with a minute claw-like appendage on tip.

In the course of my praxis, I several times expressed the opinion (e.g. in 1963 and 1976) that the genera *Pristmatolaimus* de Man, 1880 and *Onchulus* Cobb, 1920 are closely relatives, and they belong to one and same family, Pristmatolaimidae (syn. Onchulidae). Whereas, Coomans and Raski (1988) disagreed this, in their opinion, the relation was less clear. Nevertheless, the presence of *organellum ovale* in both genera confirms now the supposed relationship between them.

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