



<http://dx.doi.org/10.11646/zootaxa.3947.4.8>

<http://zoobank.org/urn:lsid:zoobank.org:pub:62BE1BBE-FD7C-4697-8B0A-EBDE4FF9CA3B>

## Description of *Sectonema septentrionale* sp. n. (Nematoda: Dorylaimida: Aporcelaimidae) from Northern Iberian Peninsula

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### Summary

A new species of the genus *Sectonema*, collected from natural forests in the Spanish provinces of León and Palencia, is described and illustrated with line drawings and LM pictures. *Sectonema septentrionale* sp. n. is characterized by its 5.59–6.90 mm long body, lip region 25–29 µm broad and offset by deep constriction, mural tooth 18–19 µm long at its ventral side and occupying most of the stomatal lumen, pharyngeal expansion 618–926 µm long or 60–73% of total neck length, uterus tripartite and 370–493 µm long or 2.9–4.3 times the corresponding body diameter,  $V = 48–52$ , tail short and rounded (40–62 µm,  $c = 108–146$ ,  $c' = 0.6–0.8$ ), spicules 100–145 µm long, and 5–11 irregularly spaced ventromedian supplements with hiatus. It is very close to *S. demani*, but differs both in the nature of the mural tooth and of the uterus.

**Key words:** Dorylaims, morphology, native forests, Spain, taxonomy

### Introduction

The genus *Sectonema* Thorne, 1930 is an interesting, free-living nematode taxon, which is characterized among other features by its very large size, the body reaching 10 mm long, combined with a remarkable reduction of its stomatal protruding structure. Its representatives are very active predators, often feeding on small annelid oligochaetes, (Thorne 1930, Peña-Santiago & Álvarez-Ortega 2014a) and occur worldwide (Andrássy 2009). The Iberian fauna of dorylaims is appreciably rich (Peña-Santiago *et al.* 2003, Jiménez-Guirado *et al.* 2007), but the available information regarding *Sectonema* species is rather poor as it consists only of the record of *Sectonema cf. heynsi* Altherr, 1968 by Liébanas *et al.* (2002) and the later description of *S. barbatooides* Heyns, 1965 by Murillo-Navarro & Jiménez-Guirado (2006), both from the southern Iberian Peninsula.

Several specimens of *Sectonema* were collected during a nematological survey conducted in northern Spanish provinces twenty years ago. Their study has now revealed that they belong to a non-described species of this genus. The aim of this contribution is the characterization and description of this species.

### Material and methods

**Nematodes.** Nematodes were collected in natural areas of Northern Iberian Peninsula during several nematological surveys conducted in the last three decades. They were extracted from soil samples using the methods of Baermann (1917) and Flegg (1967), somewhat modified, then relaxed and killed by heat, fixed in 4% formaldehyde, and processed to anhydrous glycerine following Siddiqi's (1964) technique. Finally, the specimens were mounted on permanent glass slides to allow handling and observation under LM.

**Light microscopy.** Nematodes were measured using a light Olympus BH-2 microscope equipped with differential interference contrast (DIC). Morphometrics included de Man's indices and most of the usual measurements. The location of the pharyngeal gland nuclei is expressed according to Loof & Coomans (1970) and spicule terminology follows Peña-Santiago *et al.* (2014). Some of the best preserved specimens were photographed

**Relationships.** *Sectonema septentrionale* sp. n. is very similar to *S. demani* Altherr, 1965 (see re-description by Peña-Santiago & Álvarez Ortega 2014a), from which it can be easily distinguished in its more robust mural tooth (occupying nearly whole *vs ca* 60% of the stomatal lumen), longer (370–493 µm long or 2.9–4.3 times the corresponding body diameter *vs* 248–270 µm long or 2.1–2.2 times the corresponding body diameter) and tripartite (with *vs* without a muscular intermediate region) uterus, and males as frequent as females (*vs* male unknown).

The new species also resembles *S. paramonovi* (Eliava, 1966) Eliashvili, Aliev & Eliava, 1977 (= *Nygolaimus paramonovi* Eliava, 1966), a poorly known species described on the basis of only one male, but it differs from this in its rounded tail (*vs* nearly conical and bearing a distinct dorsal concavity) and larger spicules (100–145 *vs* 88 µm long).

**Type locality and habitat.** Northern Iberian Peninsula, León province, Pontón Pass, elevation 1280 m above sea-level, in association with a beech-oak mixed forest and Panderrueda Pass, elevation 1450 m a.s.l., in association with a beech-holly mixed forest. Collected on 16 December, 1994.

**Other locality and habitat.** Northern Iberian Peninsula, Palencia province, Piedrasluengas Pass, elevation 1355 m a.s.l., in association with a beech-holly mixed forest. Collected on 16 December, 1994.

**Type material.** Female holotype and one female and six male paratypes deposited in the nematode collection of the Nematology Laboratory at the University of Jaén, Spain. One female and one male paratypes deposited with USDA Nematode Collection, Beltsville, Maryland, USA.

**Etymology.** The specific epithet is a Latin term meaning ‘northern, from the North’ and refers to the geographical origin of this new species, which dwells in forest soils in the Northern Iberian Peninsula.

**Remarks.** Together with *S. demani*, *S. septentrionale* sp. n. forms part of a group of species within the genus *Sectonema* that differ from the type species of the genus, *S. ventrale* Thorne, 1930 (see recent re-description by Peña-Santiago & Álvarez-Ortega 2014b), in the nature of their stomatal protruding structure: a mural tooth *vs* a reduced odontostyle. The case of *S. septentrionale* sp. n. is rather peculiar as the mural tooth is comparatively thick or robust, occupying most of the stomatal lumen, but its dorsal side is distinctly longer than the ventral one, somewhat sigmoid and does not join the stomatal dorsal wall.

## Acknowledgements

The authors are especially grateful for the financial support received from the project entitled *Aporcelaimidae Mundi: Revisión de la familia Aporcelaimidae Heyns, 1965 (Nematoda, Dorylaimida)* (ref. CGL2012–33239; co-financed FEDER). The second author is a postdoctoral researcher at the University of Jaén, originally supported by a programme of the University of Jaén and now by the above project.

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