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First records of Tripyloidinids (Nematoda, Tripyloidina) from the Canarian Archipelago

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RESUMEN: Se recolectaron tres especies de nematodos pertenecientes al suborden Tripyloidina: *Bathylaimus australis* Cobb, 1894, *Rhabdodemanía imer* Warwick & Platt, 1973 y *Rhabdodemanía* sp. En el presente trabajo se exponen las descripciones, figuras y datos merísticos y de autoecología. Palabras clave: Nematoda, Tripyloidina, *Bathylaimus*, *Rhabdodemanía*, fondos blandos, Tenerife, islas Canarias.

ABSTRACT: Three nematode species belonging to the suborder Tripyloidina were collected, *Bathylaimus australis* Cobb, 1894, *Rhabdodemanía imer* Warwick & Platt, 1973 and *Rhabdodemanía* sp. Descriptions and drawings of each species are reported, as well as, meristic and autoecological data are presented.

Key words: Nematoda, Tripyloidina, *Bathylaimus*, *Rhabdodemanía*, soft-bottoms, Tenerife, Canary islands.

INTRODUCTION

There is no known holapomorphy with which to establish the holophyly of the Tripyloidina De Coninck, 1965, but in contrast to the suborder Enoplina Chitwood & Chitwood, 1937, is defined by the following plesiomorphic features: cervical glands extend into the postpharyngeal region of the body, caudal glands always lie completely in the tail and cephalic capsule is absent (Lorenzen, 1994). This suborden comprises 6 families: Pandolaimidae, Rhabdodemaniidae, Tobrilidae, Triodontolaimidae, Tripylidae and Tripyloididae.

During an ecological study of the soft-bottoms on the south coast of Tenerife, several specimens belonging to the suborder Tripyloidina were collected. A more detailed study revealed that they belonged to three species: *Bathylaimus australis* Cobb, 1894, *Rhabdodemaniania imer* Warwick & Platt, 1973 and *Rhabdodemaniania* sp.

MATERIAL AND METHODS

Samples were collected in the intertidal and shallow subtidal, at 3 m deep, soft-bottoms of Los Abrigos (SE Tenerife). PVC cores of 4.5 cm of inner diameter were taken to a depth of 30 cm in the sediment. Samples were fixed with 10% formaldehyde in seawater for one day and decanted through a sieve of 63 μm mesh size, and posteriorly preserved in 70% ethanol. All specimens were mounted in glycerine gel and drawings of these were done using a camera lucida on a Leica DMLB microscope equipped with Nomarski interference contrast. All measurements are in micrometers and curves structures are measured along the arc.

Abbreviations used in the text are: a, body length divided by maximum body diameter; b, body length divided by pharyngeal length; c, body length divided by tail length; c', tail length divided by anal body diameter; cbd, corresponding body diameter; s', spicule length divided by anal body diameter; %V, position of vulva as a percentage of body length from anterior.

SYSTEMATICS

Phylum NEMATODA

Order ENOPLIDA Chitwood, 1933

Suborder TRIPYLOIDINA De Coninck, 1965

Family TRIPYLOIDIDAE Filipjev, 1928

Genus *Bathylaimus* Cobb, 1894

This genus is characterized by having cuticle smooth. Amphid simple and circular. Buccal cavity large, divided in two chambers. Cephalic setae jointed. Gubernaculum developed. Males with one anterior testis and females with two reflexed ovaries.

Bathylaimus australis Cobb, 1894

(Fig. 1; Tab. 1)

Bathylaimus australis Cobb (1894): 409, fig. 9 I-IV; Wieser & Hopper (1967): 250, fig. 7 a-e.

Bathylaimus assimilis De Mann (1922): 119, fig. 2-2e.

Bathylaimus ponticus Filipjev (1922): 107, fig. 6 a-b.

Meristic data and studied material.- Abrigos intertidal: July 2000, 1 juvenile (Table 1).

Description.- Males not found.

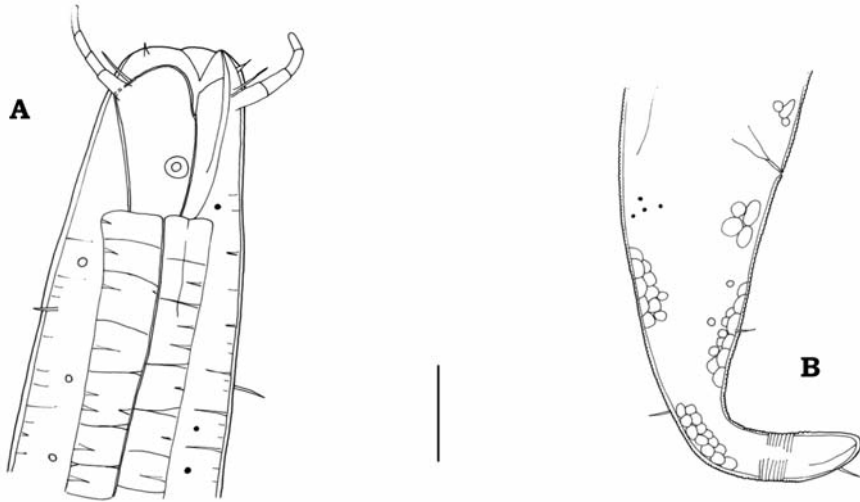


Figure 1.- *Bathylaimus australis*. Juvenile. A. Anterior end. B. Posterior end. Scale = 20 μ m.

	Juvenile		Juvenile
Total body length	1771.4	Pharynx length	500
a	18.4	Pharynx cbd	60.7
b	3.5	Maximum body diameter	96.4
c	8.9	Vulva from anterior	-
Cephalic diameter	46.4	% V	-
Inner labial setae	10	Spicule length	-
Outer labial setae	15.7	Gubernaculum length	-
Cephalic setae	32.1	s'	-
Subcephalic setae	-	Tail length	200
Buccal cavity diameter	28.6	Anal body diameter	57.1
Amphid diameter	5.7	c'	3.5
Amphid height	5.7	Spicule length/Tail length	-
Amphid from anterior	22.9		

Table 1.- Measurements of *Bathylaimus australis* in μ m.

Female: Body slender, attenuating on both ends. Head slightly round and not set off. Cuticle smooth. Amphids 13% of the cbd in diameter, simple and round, located at 25 μ m from the anterior end. Buccal cavity developed, with round subventral teeth. 6 inner labial setae 5 μ m long and 4 outer labial setae 0.3 cephalic diameters long. 6 cephalic setae 0.9 cephalic

diameters long, jointed (4 articles). Pharynx slender and cylindrical. Ventral gland and nerve ring not seen.

Reproductive system not developed. Tail 2.7 anal diameters long, short and cylindrical, with round tail tip. Caudal setae 5 μm long, located at 5 μm from posterior end. Spinneret poorly developed.

Discussion.- The most important taxonomical characters of this species are: tail not filiform with round posterior tip, amphid poorly developed ($\leq 25\%$ of the cbd) and lips bearing conspicuous setae.

Ecology.- This species was collected in medium sands ($Q_{50} = 0.42$), with a very good selection ($S_0 = 0.98$). The organic matter percentage was 1.03% and 5.81% of carbonates content.

Distribution.- Cosmopolitan (Wieser & Hopper, 1967). This species is first recorded in the Canary Islands.

Family RHABDODEMANIIDAE Filipjev, 1934

Genus *Rhabdodemia* Baylis & Daubney, 1926

This genus is characterized by lacking head capsule, buccal cavity with three noticeable teeth, in some species (*Rhabdodemia imer* among others) absent. Two caudal glands. Tail cylindrical with conspicuous spinneret. Males with one anterior testis and females with two reflexed ovaries.

Rhabdodemia imer Warwick & Platt, 1973

(Fig. 2; Tab. 2)

Rhabdodemia imer Warwick & Platt (1973): 136, fig. 12 a-c; Platt & Warwick (1983): 282, fig. 130 a-f.

Meristic data and studied material.- Abrigos subtidal: May 2000, one anterior fragment (Table 2).

Description.- This species is only represented by one anterior fragment. Body slender, tapering towards anterior end. Head not set off. Cuticle smooth. Amphids inconspicuous. Buccal cavity conical, without noticeable teeth. 6 inner labial setae in papilla. Outer labial setae not discernible. 6 cephalic setae 1.2 cephalic diameters long, situated in the posterior half of the head. Pharynx narrow and slender.

Discussion.- This species is characterized by having an unarmed buccal cavity. *Rhabdodemia imer*, *R. coronata* Gerlach, 1952 and *R. illgi* Wieser, 1959 have cephalic setae longer than one cephalic diameter. *R. coronata* differs from *R. imer* in having outer labial and cephalic setae equal. *R. illgi*, only described with females, is a larger species, with a developed buccal cavity.

Ecology.- This species was recorded in medium sands ($Q_{50} = 0.31$), with a very good selection ($S_0 = 0.78$). The organic matter content was 1.31% and 5.13% of carbonates percentage.

Distribution.- East Atlantic (Warwick & Platt, 1973). This species is first recorded in the Canary Islands.

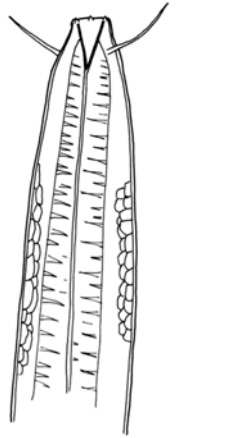


Figure 2.- *Rhabdodemia imer*. Anterior end. Scale = 22 μ m.

	Anterior fragment		Anterior fragment
Total body length	2171.4	Pharynx length	332.1
a	55.3	Pharynx cbd	25
b	6.5	Maximum body diameter	39.3
c	-	Vulva from anterior	-
Cephalic diameter	14.3	% V	-
Inner labial setae	-	Spicule length	-
Outer labial setae	-	Gubernaculum length	-
Cephalic setae	16	s'	-
Subcephalic setae	-	Tail length	-
Buccal cavity diameter	10	Anal body diameter	-
Amphid diameter	-	c'	-
Amphid height	-	Spicule length/Tail length	-
Amphid from anterior	-		

Table 2.- Measurements of *Rhabdodemia imer* in μ m.

***Rhabdodemanina* sp.**

(Fig 3; Tab. 3)

Meristic data and studied material.- Abrigos subtidal: June 2000, 1 juvenile (Table 3).

Description.- Males and females not found.

Juvenile: Body slender, tapering towards both ends. Head round and not set off. Cuticle smooth. Amphids 22% of cbd in diameter; "U inverted"-shaped, located at 5 μ m from anterior end. Buccal cavity double, conical and developed, without noticeable teeth. Inner labial setae lacking. 6 outer labial setae 1 μ m long and 4 cephalic setae 0.7 anal diameters long, situated in the median part of the head. Subcephalic setae 4 μ m long, located at 19 μ m from the anterior end. Pharynx slender and cylindrical. Ventral gland and nerve ring not seen.

Reproductive system not developed. Tail 3.9 anal diameters long, cylindrical with round posterior tip. Caudal setae lacking. Spinneret developed.

Discussion.- *Rhabdodemanina* sp. was determined to genus level because was only represented by one juvenile in poor conditions. The specimen has outer labial setae shorter than *R. imer* Warwick & Platt, 1973 and subcephalic setae, absent in the latter species.

Ecology.- This species was collected in medium sands ($Q_{50} = 0.26$), with a very good selection ($S_0 = 0.75$). The organic matter content was 1.54% and 6.84% of carbonates percentage.

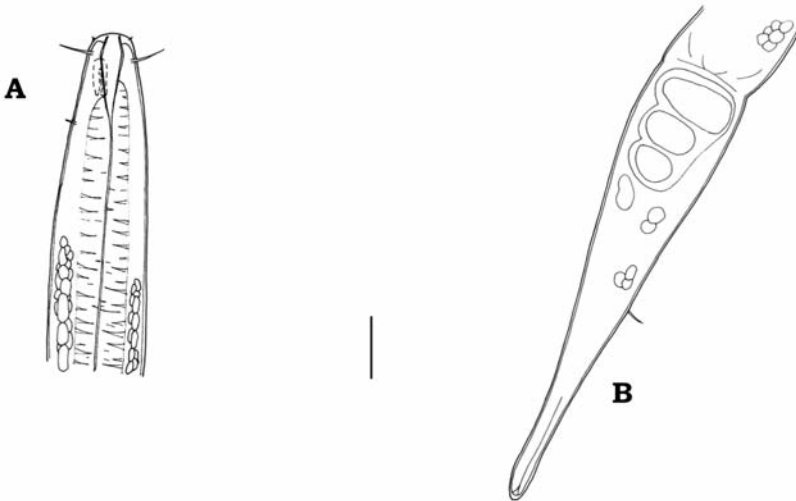


Figure 3.- *Rhabdodemanina* sp. Juvenile. A. Anterior end. B. Posterior end. Scale = 11 μ m.

	Juvenile		Juvenile
Total body length	1185.7	Pharynx length	160.7
a	22.1	Pharynx cbd	42.9
b	7.4	Maximum body diameter	53.6
c	7.7	Vulva from anterior	-
Cephalic diameter	11	% V	-
Inner labial setae	-	Spicule length	-
Outer labial setae	1	Gubernaculum length	-
Cephalic setae	8	s'	-
Subcephalic setae	4	Tail length	153.6
Buccal cavity diameter	7.1	Anal body diameter	39.3
Amphid diameter	5.7	c'	3.9
Amphid height	11.4	Spicule length/Tail length	-
Amphid from anterior	10		

Table 3.- Measurements of *Rhabdodemanía* sp in μm .

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