

TREFUSIIDS (NEMATODA, TREFUSIIDA) FROM THE CANARY ISLANDS

R. Riera^{1*}, J. Núñez² & M.^a del C. Brito²

¹ Centro de Investigaciones Medioambientales del Atlántico (CIMA SL)

C/Arzobispo Elías Yanes, 44, 38206 La Laguna, Tenerife

* email: rodrigo@cimacanarias.com

² Benthos Laboratory, Department of Animal Biology, Faculty of Biology, University of La Laguna
38206 La Laguna, Tenerife, Canary Islands, Spain

ABSTRACT

Two species belonging to suborder Trefusiida, *Rhabdocoma americana* Cobb, 1920 and *Trefusia* aff. *pseudolitoralis* Vitiello, 1970 were collected in soft-bottoms on the south coast of Tenerife, Canary Islands. Descriptions, figures and meristic data are presented for each species, as well as, autoecological data are reported.

Key words: Nematoda, Trefusiida, *Rhabdocoma*, *Trefusia*, soft-bottoms, Tenerife, Canary Islands.

RESUMEN

Dos especies pertenecientes al suborden Trefusiida, *Rhabdocoma americana* Cobb, 1920 y *Trefusia* aff. *pseudolitoralis* Vitiello, 1970 fueron recolectadas en fondos blandos de la costa sur de la isla de Tenerife. Descripciones, figuras y datos merísticos de los ejemplares examinados se ofrecen en el presente trabajo.

Palabras clave: Nematoda, Trefusiida, *Rhabdocoma*, *Trefusia*, fondos blandos, Tenerife, islas Canarias.

1. INTRODUCTION

Lorenzen [3] erected the order Trefusiida. This order is not monophyletic since it is not characterized by any character that can be considered apomorphic for that taxon. Five families are recognized within the Trefusiida Lorenzen, 1981: Simpliconematidae Blome & Shrage, 1985, Trefusiidae Gerlach 1966, Onchulidae Andrassy, 1963, Laurathonematidae Gerlach, 1953 and Xenellidae De Coninck, 1965.

Two species that belong to the order Trefusiida were collected during an ecological study of the soft-bottoms from two stations on the south coast of Tenerife. These species were *Rhabdocoma americana* Cobb, 1920 and *Trefusia* aff. *pseudolitoralis* Vitiello, 1970.

2. MATERIAL AND METHODS

Samples were collected in the intertidal and shallow subtidal, at 3 m deep, soft-bottoms of Los Abrigos (SE Tenerife) and Los Cristianos (SW Tenerife). PVC cores of 4,5 cm of inner diameter were taken to a depth of 30 cm in the sediment. These samples were fixed with 10% formaldehyde in seawater for one day and decanted through a sieve of 63 μ m 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.

3. SYSTEMATICS

Phylum NEMATODA

Subclass ENOPLIDA Pearse, 1942

Order TREFUSIIDA Lorenzen, 1981

Family TREFUSIIDAE Gerlach, 1966

Genus *Rhabdocoma* Cobb, 1920

The genus *Rhabdocoma* is defined by having a cup-shaped and unarmed buccal cavity. Amphid round. 6 cephalic setae jointed. Subcephalic setae located anteriorly or at amphid level. Males with two opposed testes and females with one posterior ovary. Vulva located at the anterior half of the body.

Rhabdocoma americana Cobb, 1920

(Fig. 1; Tab. 1)

Rhabdocoma americana Cobb [1]: 252, fig. 32; Vincx & Vanreusel [5]: 218, fig. 3 a-i.

Rhabdocoma riemanni Jayasree & Warwick [2]: 299, fig. 7 a-d.

Rhabdocoma sp1 Riemann [4], 1966: 73, fig. 14 a-e.

Meristic data and studied material.- Abrigos intertidal: may, 1 juvenile (Juvenile 1).

Description.- Males and females not found.

Body slender, attenuating on posterior end. Head slightly round and not set off. Cuticle smooth. Amphids inconspicuous. Buccal cavity conical and small, without noticeable teeth. Inner labial setae lacking. Outer labial setae in papilla. 6 cephalic setae 1.1 cephalic diameters long, 3-article jointed and situated at the median part of the head. Subcephalic setae 9 μ m long, located at 29 μ m from anterior end. Pharynx slender and cylindrical. Ventral gland and nerve ring not seen.

Reproductive system not developed. Tail 7.2 anal diameters long, slender and cylindrical with round tail tip. Caudal setae absent. Spinneret developed.

Discussion.- This species is characterized by having subcephalic setae located at amphid level, double contorn and round amphid and a slender tail. Amphid was inconspicuous in the studied specimen.

Ecology.- This species was collected in medium sands ($Q_{50} = 0.34$), with a very good selection ($S_0 = 0.83$). The organic matter content was 1.33% and 5.30% of carbonates percentage.

Distribution.- Amphiatlantic (Vincx & Vanreusel [5]). This species is first recorded in the Canary Islands.

Genus *Trefusia* De Man, 1893

The genus *Trefusia* is defined by lacking buccal cavity. Amphid cup-shaped with a posteriorly enlarged fovea. 6 outer labial setae jointed. Males with two opposed and outstretched testes. Females with two reflexed ovaries.

Trefusia aff. *pseudolitoralis* Vitiello, 1970 (Fig. 2; Tab. 2)

Trefusia pseudolitoralis Vitiello [6]: 169, fig. 25 a-i.

Meristic data and studied material.- Abrigos subtidal: december, 3 juveniles (Juvenile 2, Juvenile 3 and Juvenile 4); Cristianos subtidal: august, 1 juvenil (Juvenile 1), october, 1 juvenil (Juvenile 5).

Description.- Males and females not found

Juvenile: Body slender, tapering towards both ends. Head round and not set off. Cuticle smooth. Amphids 32% of the corresponding body diameter in width, simple and round, located at 14 μ m from the anterior end. Buccal cavity absent. Inner labial setae 2 μ m long and 6 outer labial setae 0.8 cephalic diameters long and jointed. Subcephalic setae 9 μ m long, situated at 13 μ m from the anterior end. Pharynx slender and cylindrical. Ventral gland and nerve ring not seen.

Reproductive system not developed. Tail 21-25 anal diameters long, slender and filiform in most of its length. Caudal setae lacking. Spinneret poorly developed.

Discussion.- This species is closely related to *Trefusia pseudolitoralis* Vitiello, 1970 in amphid and tail shape, slender and cylindrical. Canarian specimens are determined to *T. aff. pseudolitoralis* due to the absence of adults in the studied material. Juveniles of this species lack important taxonomical structures to specific identification, such as, number of articles of the outer labial setae and spicules length.

Ecology.- In the subtidal of Los Abrigos this species was recorded in medium sands ($Q_{50} = 0.28$), with a very good selection ($S_0 = 0.75$). The organic matter content was 0.78% and 5.47% of carbonates percentage. In the subtidal of Los Cristianos was collected in fine sands ($Q_{50} = 0.15-0.17$), with a very good selection ($S_0 = 0.56-0.69$). The organic matter content varied between 0.02% and 0.64% and carbonates percentage ranged from 22.56% to 25.30%.

Distribution.- Mediterranean sea (Vitiello [6]) and eastern Atlantic. This species is first recorded in the Canary Islands.

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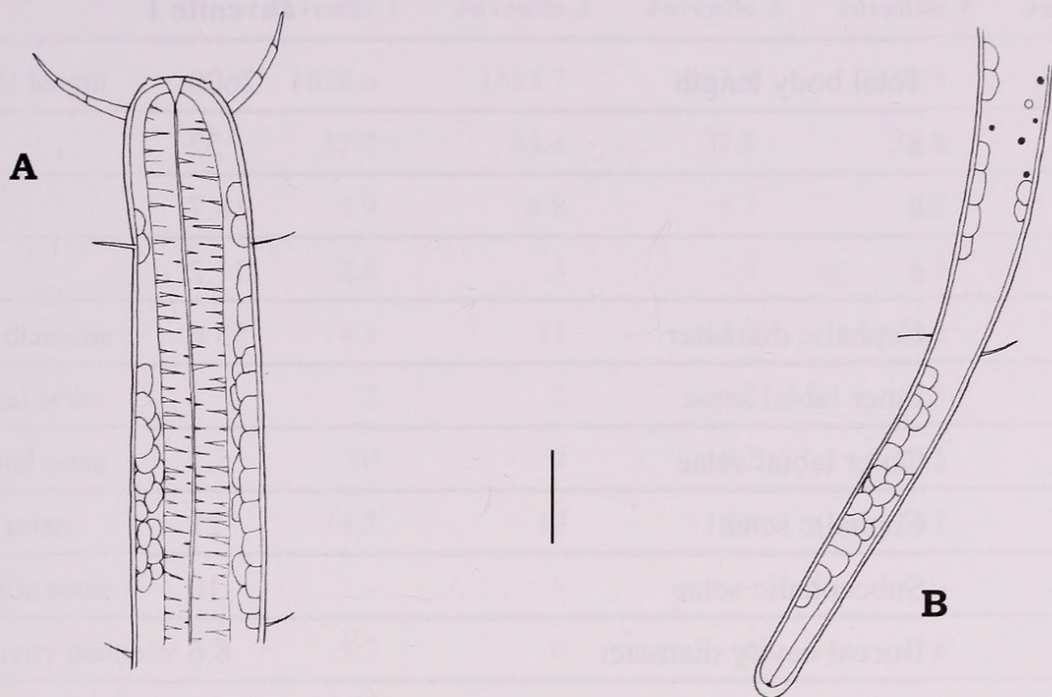


Figure 1.- *Rhabdocoma americana*. Juvenile. A. Anterior end. B. Posterior end. Scale = 20 μ m.

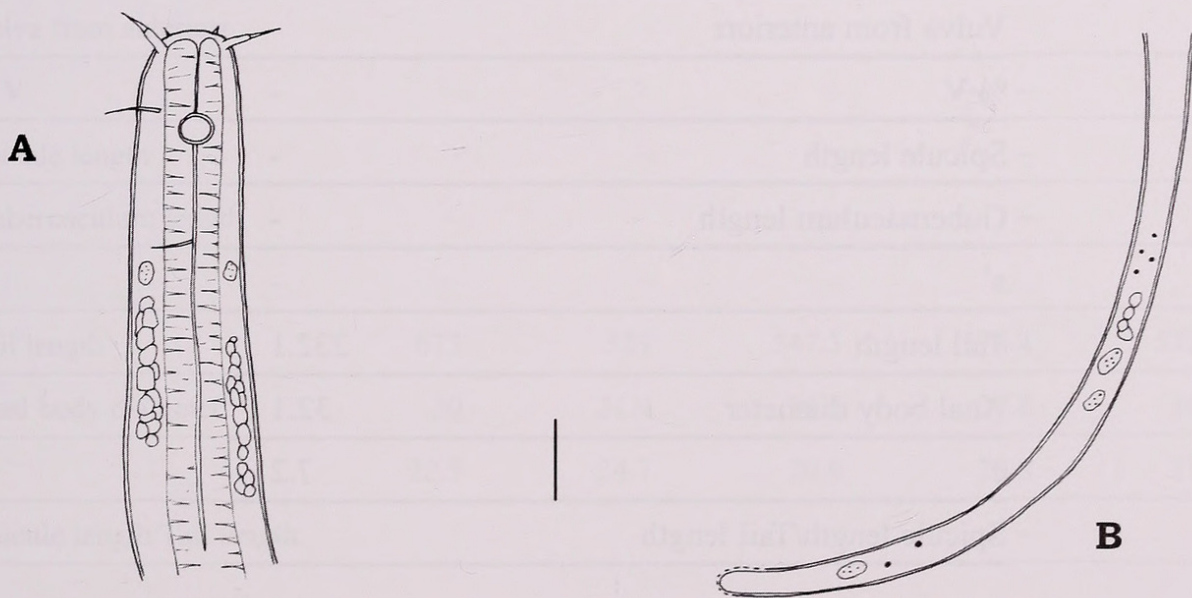


Figure 2.- *Trefusia* aff. *pseudolitoralis*. Juvenile. A. Anterior end. B. Posterior end. Scale = 15 μ m.

	Juvenile 1
Total body length	2600
a	52
b	18.7
c	11.2
Cephalic diameter	53.6
Inner labial setae	-
Outer labial setae	5.7
Cephalic setae	21
Subcephalic setae	10
Buccal cavity diameter	8.6
Amphid diameter	7.1
Amphid height	7.1
Amphid from anterior	22.9
Pharynx length	139.3
Pharynx cbd	35.7
Maximum body diameter	50
Vulva from anteriorr	-
% V	-
Spicule length	-
Gubernaculum length	-
s'	-
Tail length	232.1
Anal body diameter	32.1
c'	7.2
Spicule length/Tail length	-

Table 1.- Measurements of *Rhabdocoma americana* in μm .

	Juvenile 1	Juvenile 2	Juvenile 3	Juvenile 4	Juvenile 5
Total body length	1628.6	1585.7	1587.9	1665.3	1602.9
a	37.7	44.4	37.9	38.8	38.3
b	5.9	6.8	5.7	5.8	5.9
c	2.4	3	2.9	2.9	2.8
Cephalic diameter	14.3	11	13.5	14.2	12.9
Inner labial setae	2	2	2	2.3	2.1
Outer labial setae	10	9	10.2	10.1	10.3
Cephalic setae	14.3	13	13.8	14.1	14
Subcephalic setae	—	—	—	—	—
Buccal cavity diameter	5.7	6	6	6	5.9
Amphid diameter	7.1	7.1	7.3	6.8	7
Amphid height	5.7	5.7	6.5	5.6	6.6
Amphid from anterior	21.4	15.7	18.6	17.9	20.8
Pharynx length	274.9	232.1	278.3	287.5	271.2
Pharynx cbd	28	25	26.5	27.5	26.5
Maximum body diameter	43.2	35.7	41.9	42.9	41.8
Vulva from anteriorr	—	—	—	—	—
% V	—	—	—	—	—
Spicule length	—	—	—	—	—
Gubernaculum length	—	—	—	—	—
s'	—	—	—	—	—
Tail length	675	529	547.3	578.4	577.3
Anal body diameter	30	21.4	26.5	27.8	26.8
c'	22.5	24.7	20.6	20.8	21.5
Spicule length/Tail length	—	—	—	—	—

Table 2.- Measurements of *Trefusia* aff. *pseudolitoralis* in μm .



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a del Carmen, and Fraga, Jorge Núñez. 2010. "Trefusiidi (Nematoda, Trefusiida) from the Canary Islands." *Revista de la Academia Canaria de Ciencias* 22, 103–109.

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