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| VIERAEA | Vol. 40 | 1-18 | Santa Cruz de Tenerife, octubre 2012 | ISSN 0210-945X |
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Seven new records of Xyalids from the Canary Islands (Nematoda: Xyalidae)

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R. RIERA, J. NÚÑEZ & M.C. BRITO (2011). Siete especies de xiálidos recolectadas en las islas Canarias (Nematoda: Xyalidae). *VIERAEA* 40: 1-18.

RESUMEN: Siete especies de xiálidos fueron recolectados en fondos intermareales y submareales someros de naturaleza arenosa de Tenerife, islas Canarias. Estas especies fueron *Ammotheristus* sp., *Amphimonhystera* sp., *Cobbia truncata* Wieser, 1959, *Scaptrella* cf. *cincta*, *Theristus* sp. 1, *Theristus* sp. 2 and *Xyala striata* Cobb, 1920. Se realiza una descripción morfológica de cada una de ellas, y se exponen sus datos merísticos y figuras con los principales caracteres taxonómicos.

Palabras clave: Nematoda, Xyalidae, vida libre, fondos arenosos, Tenerife, islas Canarias.

ABSTRACT: Seven species of Xyalidae were recorded in intertidal and shallow subtidal sandy bottoms of Tenerife, Canary Islands. These species were: *Ammotheristus* sp., *Amphimonhystera* sp., *Cobbia truncata* Wieser, 1959, *Scaptrella* cf. *cincta*, *Theristus* sp. 1, *Theristus* sp. 2 and *Xyala striata* Cobb, 1920. A morphological description, meristic data and figures of each species are provided.

Key words: Nematoda, Xyalidae, free-living, soft-bottoms, Tenerife, Canary Islands.

INTRODUCTION

The family Xyalidae Chitwood, 1951 belongs to the suborder Monhysteroidea and the arrangement of the gonads is unique within the families of this suborder: the anterior gonad lies constantly to the left of the intestine and the posterior constantly to the right. Although, two species (*Hofmaenneria niddensis* and *Steineria pilosa*) deviate from this arrangement (Lorenzen, 1994). However, Meldal *et al.* (2007) concluded that this family appears to be monophyletic. Additional features of the family Xyalidae are: the cuticle is always striated, the 6 outer labial setae and 4 cephalic ones are almost always situated at the same level and the outer labial setae are always longer or equal in length to the 4 cephalic setae and females with a single outstretched anterior ovary. Nicholas & Trueman (2002) recognised 33 genera within the family, although recent genera are incorporated, such as *Arabanema* Turpeenniemi, Nasira & Maqbool, 2001; *Cienfuegia* Armenteros, Vincx & Decraemer, 2009; *Dactylaimoides* Blome, 2002; *Enchonema* Bussau, 1993; *Guitartia* Armenteros, Vincx & Decraemer, 2010; *Manganonema* Bussau, 1993; *Marisalbinema* Tchesunov, 1990; *Paragonionchus* Blome, 2002; *Paramphimonhystrella* Huang & Zhang, 2006; *Parelzalia* Tchesunov, 1990; *Pseudechinotheristus* Blome, 2002; *Sacrimarinema* Shoshin, 2001.

In this study, seven species of Xyalidae are presented: *Ammotheristus* sp., *Amphimonhystera* sp., *Cobbia truncata* Wieser, 1959, *Scaptrella* cf. *cincta*, *Theristus* sp.1, *Theristus* sp. 2 and *Xyala striata* Cobb, 1920. The species *Ammotheristus* sp., *Amphimonhystera* sp., *Scaptrella* cf. *cincta*, *Theristus* sp. 1 and *Theristus* sp. 2 are represented only by juveniles. All species were collected from sandy seabeds on the south coast of Tenerife (Canary Islands).

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). Sediment samples were collected throughout one year basis (May 2000 to April 2001). More details of sampling locations in Riera (2004). 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 mm mesh size, and posteriorly preserved in 70% ethanol. Several 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. The study material is deposited in the collection of the Benthos Lab., Department of Animal Biology, University of La Laguna (DBAULL).

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

Order **MONHYSTERIDA** Filipjev, 1929

Family **XYALIDAE** Chitwood, 1951

Genus *Ammotheristus* Lorenzen, 1977

Cuticle with fine transverse striations, sometimes inconspicuous. Buccal cavity conical and unarmed. Amphids developed, simple and circular. Tail conical, lacking terminal caudal setae. Males with two opposed testes and females with one anterior outstretched ovary.

Ammotheristus sp.

(Fig. 1, Tab. I)

Meristic data and studied material.- Abrigos subtidal: may, 1 female (♀1).

Description.- *Female*: Body tapering towards both ends. Head round and not set off. Cuticle with fine transversal striations, lateral differentiation absent. Amphids are 86% of the corresponding body diameter in width, elliptical and simple, located at 8 µm from the anterior end. Buccal cavity conical, small and unarmed. 6 inner labial setae 6 µm long and 6 outer labial setae 0.6 cephalic diameters long. 10 cephalic setae 1.3 cephalic diameters long, situated at the median part of the head. Pharynx narrow and cylindrical.

Reproductive system not discernible. Vulva located at the level of the 68.5% of the total body length. Tail 3.9 anal diameters long, cylindrical, with truncated posterior tip. Subterminal caudal setae 4 µm long, located at 4 µm from the posterior end. Spinneret developed.

Discussion.- The studied specimen can be differentiated from the two species of the genus: *Ammotheristus helgolandicus* (Riemann, 1967) and *A. subtilis* (Lorenzen, 1972) in the amphid size and the arrangement and length of the labial and cephalic setae, as well as, in the absence of long somatic setae, that characterized the former two species.

Sedimentary characteristics. This species was recorded in medium sands ($Q_{50} = 0.36$), with a very good selection ($S_0 = 0.83$). The organic matter content was 1.68% and 3.08% of carbonates.

Genus *Amphimonhystera* Allgen, 1929

Cuticle finely striated. Amphid developed. Buccal cavity conical, unarmed with a posterior chamber. Terminal caudal setae lacking. Males with one anterior testis and females with one outstretched ovary.

Two species of species of *Amphimonhystera* have been so far described (Guo & Warwick, 2001): *A. anechma* (Southern, 1914) and *A. circula* Guo & Warwick, 2001.

Amphimonhystera sp.

(Fig. 2, Tab. II)

Meristic data and studied material.- Cristianos subtidal: october, 1 juvenile (Juvenile 3), december, 1 juvenile (Juvenile 4), january, 1 juvenile (Juvenile 2), march, 1 juvenile (Juvenile 1).

Description.- *Female*: Body attenuating towards the posterior end. Head round and not set off. Cuticle finely striated. Amphids are 70% of the corresponding body diameter in width, round and simple, located at 13 μm from the anterior end. Buccal cavity small and unarmed, anteriorly expanded and posteriorly conical. Inner labial setae inconspicuous. 6 outer labial setae 2.3 cephalic diameters long and 4 cephalic setae 1 cephalic diameter long, situated in the median part of the head. Subcephalic setae 17 μm long, located at 8 μm from the anterior end. Pharynx narrow and cylindrical.

Reproductive system not developed. Tail 2.6-4.4 anal diameters long, cylindrical and slender with acuminate posterior tip. Caudal setae lacking. Spinneret inconspicuous.

Discussion.- *Amphimonhystera* sp. is characterized by the tail shape, posteriorly acuminate, and the presence of several postcloacal setae. *A. anechma* and *A. circula* present somatic setae, amphids more developed in *A. anechma* (80% cbd in females and 100% cbd in males) and *A. circula* (95% cbd in males). This species was determined to genus level due to the absence of adult specimens.

Sedimentary characteristics.- This species was collected in fine sands ($Q_{50} = 0.15-0.18$), with a very good selection ($S_0 = 0.54-0.73$). The organic matter content ranged from 0.006% to 0.81% and carbonates percentage varied between 19.33% and 27.35%.

Genus *Cobbia* De Man, 1907

Cuticle finely striated. Buccal cavity with three teeth. The setae arrangement is: 6 inner labial setae, 6 outer labial setae and 4 cephalic setae. Tail filiform. Males with one anterior testis and females with one reflexed ovary.

Cobbia truncata Wieser, 1959

(Fig. 3, Tab. III)

Cobbia truncata Wieser (1959): 83, fig. 91.

Meristic data and studied material. Abrigos subtidal: december, 2 females ($\text{♀}1$ and $\text{♀}3$), march, 1 female ($\text{♀}2$).

Description. Males not found. *Female*: Body attenuating towards both ends. Head round and not set off. Cuticle with coarse transverse striations, lateral differentiation absent. Amphids are 23% of the corresponding body diameter in width, round and simple, located at 34 μm from the anterior end. Buccal cavity large, posteriorly conical, with one dorsal and two ventral teeth. 6 inner labial setae 2 μm long and 6 outer labial setae 0.4 cephalic diameters long. 4 cephalic setae 0.9 cephalic diameters long, situated at the median part of the head. Subcephalic setae 12-17 μm long, located at 30-35 μm from the anterior end. Pharynx slender and cylindrical.

The reproductive system is monodelphic with one reflexed ovary. Vulva is located at 59% of the total body length. Tail 5.1 anal diameters long, slender and cylindrical, with truncated posterior tip. 2 subterminal caudal setae 4 μm long, situated at 1 μm from the posterior end. Spinneret poorly developed.

Discussion. *Cobbia truncata* is characterized by having a slender and filiform tail, with truncated posterior tip and by the presence of 2 subterminal caudal setae. Wieser (1953) described specimens of this species with less developed amphids (33% cbd), tail slightly longer (7 anal diameters) and numerous larger cervical setae (36 μm long).

Sedimentary characteristics. This species was recorded in medium ($Q_{50} = 0.28$) and fine sands ($Q_{50} = 0.24$), with a very good selection ($S_0 = 0.73-0.75$). The organic matter content ranged from 0.54% to 0.78% and carbonates varied between 5.47% and 6.32%.

Genus *Scaptrella* Cobb, 1917

Cuticle with fine striations. The setae arrangement is: 6 outer labial setae and 4 cephalic ones. Amphids round and simple. Buccal cavity with 6 jointed teeth, sometimes difficult to discern. Males with number and arrangement of testes unknown. Females with one anterior outstretched ovary.

This genus comprises so far 3 species (Gerlach & Riemann, 1973): *Scaptrella brevicaudata* Gerlach, 1953, *S. cincta* Cobb, 1917 and *S. tenuicaudata* Gerlach, 1956.

Scaptrella cf. cincta Cobb, 1917

(Fig. 4, Tab. IV)

Scaptrella cincta Cobb (1917): 119, fig. 4; Wieser & Hopper (1967): 303, fig. 84 a-c.

Meristic data and studied material. Cristianos subtidal: september, 1 anterior fragment.

Description. Males not found. *Female:* Head slightly round and not set off. Cuticle with coarse transverse striations, lateral differentiation lacking. Amphids are 31% of the corresponding body diameter in width, round and simple, located at 21 μm from the anterior end. Buccal cavity large, anteriorly conical and posteriorly cylindrical, with two noticeable teeth and two cuticularised bars in the stoma. 6 inner labial setae 6 μm long and 6 outer labial setae 1.9 cephalic diameters long. 4 cephalic setae 3 cephalic diameters long, situated at the median part of the head. Subcephalic setae 38 μm long, located at 7 μm from the anterior end. Pharynx wide and slender. Reproductive system and vulva not discernible. Tail cylindrical and posteriorly filiform.

Discussion. The studied specimen agrees well with *Scaptrella cincta* by the presence of developed outer labial and cephalic setae, as well as, a filiform and long tail. The remaining species of this genus: *S. brevicaudata* and *S. tenuicaudata* are characterized by having a shorter tail. Although, the studied specimen can be differentiated from *S. cincta* by the absence of somatic setae, maybe present only in males. The studied specimen has been determined as *S. cf. cincta* due to the absence of complete male specimens.

Sedimentary characteristics. This species was recorded in fine sands ($Q_{50} = 0.15$), with a very good selection ($S_0 = 0.56$). The organic matter content was 0.64% and 25.30% of carbonates.

Distribution. Western Atlantic Ocean (Tietjen, 1969). This species is first recorded in the Canary Islands.

Genus *Theristus* Bastian, 1865

Cuticle with transverse striations. Amphids round and simple. Buccal cavity conical and unarmed. Tail conical without terminal caudal setae. Short spicules. Males with two opposed testes and females with one anterior outstretched ovary.

Theristus sp. 1

(Fig. 5, Tab. V)

Meristic data and studied material. Abrigos subtidal: october, 1 female (♀1).

Description. Males not found. *Female:* Body attenuating towards posterior end. Head round and not set off. Cuticle with slightly marked transverse striations. Amphids inconspicuous. Buccal cavity small and conical. Inner labial setae absent. 6 outer labial setae 0.5 cephalic diameters long and 4 cephalic setae 0.7 cephalic diameters long, situated at the anterior part of the head.

Subcephalic setae lacking. Pharynx wide and cylindrical.

The reproductive system and vulva not discernible. Tail 3.7 anal diameters long, slender with rounded posterior end. Caudal setae absent. Spinneret poorly developed.

Discussion. *Theristus* sp. 1 belong to the species group characterized by having short and dispersed somatic setae. The studied specimen closely resembles *T. modicus* by the presence of somatic setae and cephalic setae length (0.7 cephalic diameters), although differs in the tail size, larger in *T. modicus* (5-6 anal diameters). The studied specimen has been determined to genus level due to the absence of males.

Sedimentary characteristics. This species was recorded in fine sands ($Q_{50} = 0.24$), with a very good selection ($S_0 = 0.73$). The organic content was 0.51% and 4.61% of carbonates.

Theristus sp. 2

(Fig. 6, Tab. VI)

Meristic data and studied material. Abrigos subtidal: december, 1 female (♀1).

Description. Males not found. *Female:* Body attenuating towards both ends. Head round and not set off. Cuticle smooth. Amphids are 43% of the corresponding body diameter in width, round and simple, located at 13 μm from the anterior end. Buccal cavity conical and without noticeable teeth. 6 inner labial setae 3 μm long and 6 outer labial setae 0.6 cephalic diameters long. 4 cephalic setae 1 cephalic diameter long, situated in the median part of the head. Subcephalic setae 15 μm long, located at 32 μm from the anterior end. Pharynx wide and cylindrical.

Reproductive system not discernible. Vulva located at the level of 50.4% of the total body width. Tail 5.1 anal diameters long, slender and cylindrical, with rounded posterior tip. Caudal setae lacking. Spinneret poorly developed.

Discussion. *Theristus* sp. 2 is characterised by having developed somatic (0.5-0.7 cephalic diameters), cephalic and outer labial setae. The studied specimen closely resembles *T. megalaimoides* by the presence of developed cephalic and subcephalic setae, as well as, a truncated tail tip. However, it differs in the amphid size and its arrangement, smaller (30% cbd) and more anteriorly located in *T. megalaimoides* (17 μm from the anterior end), as well as, in the presence of several rows of subcephalic setae in the last species.

Sedimentary characteristics. This species was collected 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.

Genus *Xyala* Cobb, 1920

Cuticle with longitudinal ridges. Amphid round and simple. Buccal cavity unarmed, anteriorly cuticularised and cylindrical, and posteriorly conical. Inner labial papillae setiform. Males with two opposed testes and females with one anterior outstretched ovary.

This genus comprises so far 7 species (Vincx & Furstenberg, 1988): *X. aestuariensis* Vincx & Furstenberg, 1988, *X. clavulatum* (Gerlah, 1957), *X. imparis* Boucher & Helléquet, 1977, *X. litorium* (Cobb, 1920), *X. oxybiotica* Jensen, 1986, *X. psammonalis* Vincx & Furstenberg, 1988 and *X. riemanni* Boucher & Helléquet, 1977.

Xyala striata Cobb, 1920

(Fig. 7, Tab. VII)

Xyala striata Cobb, 1920: 289, fig. 72; Vincx & Furstenberg (1988): 507, fig. 5; Warwick, Platt & Somerfield (1998): 184, fig. 81.

Neotherustys cancellatus Shulz (1938): 115, fig. 4-6.

Meristic data and studied material. Abrigos intertidal: february, 1 male (σ^1); Abrigos subtidal: may, 2 females (φ^2 and φ^3), october, 1 female (φ^1).

Description. *Male:* Body attenuating towards both ends. Head round and slightly set off, with cephalic capsule. Cuticle with coarse transverse bands and longitudinal ridges, lateral differentiation lacking. Amphids are 15% of the corresponding body diameter in width, round and simple, located at 9 μm from the anterior end. Buccal cavity difficult to discern, posteriorly conical and unarmed. 6 inner labial setae 8 μm long and 6 outer labial setae 0.7 cephalic diameters long. 4 cephalic setae 0.6 cephalic diameters long, situated in the posterior part of the cephalic capsule. 6 subcephalic setae 28 μm long, located at 75 μm from the anterior end. Pharynx slender and cylindrical.

Reproductive system diorchid, with two opposed testes. Spicules 0.6 anal diameters long, paired, short and arcuated, with a round capitulum. Gubernaculum 0.3 anal diameters long and tubular, with a dorsoventrally directed apophysis. Precloacal supplements lacking. Tail 3.1 anal diameters long, cylindrical with a truncated posterior tip. Caudal setae lacking. Spinneret developed.

Female: Total body length slightly larger than in males (0.9-1.1 mm), with a longer tail (2.8-3.6 anal diameters) and shorter cephalic setae (0.4 cephalic diameters).

Reproductive system monodelphic with one outstretched ovary. Vulva not discernible.

Discussion. The studied specimens present slight differences compared to those from other geographical areas: amphids larger, spicules wider with a more developed capitulum and a higher degree of cuticularisation (Vincx & Furstenberg, 1988).

Sedimentary characteristics. In the intertidal of Los Abrigos this species was recorded in medium sands ($Q_{50} = 0.32$), with a very good selection ($S_0 = 0.79$). The organic matter content was 0.96% and 6.15% of carbonates. In the subtidal of Los Abrigos was collected 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.

Distribution. East Atlantic ocean (Vincx & Furstenberg, 1988). This species is first recorded in the Canary Islands.

ACKNOWLEDGEMENTS

Authors are grateful to Dr. Paul Somerfield (Plymouth Marine Laboratory, UK) for his advice during our first steps in the study of marine free-living nematodes. We acknowledge Tom Gheskiere and Dr. Magda Vincx (Marine Biology Department, University of Ghent, Belgium) for providing laboratory and bibliographic search facilities during the first author stay.

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TABLES AND FIGURES

| | ♀1 |
|----------------------------|--------|
| Total body length | 1042.9 |
| a | 22.5 |
| b | 2.8 |
| c | 7.6 |
| Cephalic diameter | 15.7 |
| Inner labial setae | 6 |
| Outer labial setae | 10 |
| Cephalic setae | 20 |
| Subcephalic setae | - |
| Buccal cavity diameter | 8.6 |
| Amphid diameter | 21.4 |
| Amphid height | 25 |
| Amphid from anterior | 12.9 |
| Pharynx length | 378.6 |
| Pharynx cbd | 42.9 |
| Maximum body diameter | 46.4 |
| Vulva from anterior | 714.3 |
| % V | 68.5 |
| Spicule length | |
| Gubernaculum length | |
| s' | |
| Tail length | 137.5 |
| Anal body diameter | 35.7 |
| c' | 3.9 |
| Spicule length/Tail length | |

Table I.- Measurements of *Ammotheristus* sp. in μm .

| | Juvenile 1 | Juvenile 2 | Juvenile 3 | Juvenile 4 |
|----------------------------|------------|------------|------------|------------|
| Total body length | 2428.6 | 3061 | 1914.3 | 2614.3 |
| a | 56.7 | 65.1 | 48.7 | 65.4 |
| b | 11 | 9.3 | 11.9 | 12.4 |
| c | 25 | 26.8 | 21.5 | 16.6 |
| Cephalic diameter | 15 | 19 | 15 | 16 |
| Inner labial setae | - | - | - | - |
| Outer labial setae | 24.3 | 27 | 34 | 25 |
| Cephalic setae | 8.6 | 8.6 | 12 | 10 |
| Subcephalic setae | 17.1 | 17.6 | 20 | 17.1 |
| Buccal cavity diameter | 4.3 | 4.3 | 10 | 11.4 |
| Amphid diameter | 12.9 | 7.1 | 7.1 | 15.7 |
| Amphid height | 12.9 | 8.6 | 14.3 | 14.3 |
| Amphid from anterior | 12.9 | 25 | 10.7 | 14.3 |
| Pharynx length | 221.4 | 328.6 | 160.7 | 210 |
| Pharynx cbd | 35.7 | 39 | 32.1 | 36 |
| Maximum body diameter | 42.9 | 47 | 39.3 | 40 |
| Vulva from anterior | - | - | - | - |
| % V | - | - | - | - |
| Spicule length | - | - | - | - |
| Gubernaculum length | - | - | - | - |
| s' | - | - | - | - |
| Tail length | 97.1 | 114.3 | 89.1 | 157.1 |
| Anal body diameter | 29.8 | 37.9 | 33.8 | 35.4 |
| c' | 3.3 | 3 | 2.6 | 4.4 |
| Spicule length/Tail length | | | | |

Table II.- Measurements of *Amphimonhystera* sp. in μm .

| | ♀1 | ♀2 | ♀3 |
|----------------------------|--------|--------|--------|
| Total body length | 1428.6 | 1957.1 | 1642.9 |
| a | 30.8 | 28.8 | 28.8 |
| b | 5 | 7.6 | 5.3 |
| c | 6 | 6.5 | 7.3 |
| Cephalic diameter | 29.7 | 30 | 32.1 |
| Inner labial setae | 4 | 4 | 3.7 |
| Outer labial setae | 13 | 16 | 16 |
| Cephalic setae | 25 | 25.6 | 24 |
| Subcephalic setae | 12 | 14.3 | 14.3 |
| Buccal cavity diameter | 8.6 | 9 | 10 |
| Amphid diameter | 10 | 10 | 10 |
| Amphid height | 11.4 | 11 | 11.4 |
| Amphid from anterior | 48 | 52 | 64.3 |
| Pharynx length | 285.7 | 257.1 | 307.1 |
| Pharynx cbd | 39.3 | 64.3 | 53.6 |
| Maximum body diameter | 46.4 | 67.9 | 57.1 |
| Vulva from anterior | 842.9 | nd | nd |
| % V | 59 | nd | nd |
| Spicule length | | | |
| Gubernaculum length | | | |
| s' | | | |
| Tail length | 239.3 | 302.9 | 225 |
| Anal body diameter | 46.4 | 46.4 | 46.4 |
| c' | 5.2 | 6.5 | 4.8 |
| Spicule length/Tail length | | | |

Table III.- Measurements of *Cobbia truncata* in μm . nd, not discernible.

| | Anterior fragment |
|----------------------------|--------------------------|
| Total body length | 1271.4 |
| a | 29.7 |
| b | 5.7 |
| c | - |
| Cephalic diameter | 17 |
| Inner labial setae | 6 |
| Outer labial setae | 32 |
| Cephalic setae | 51 |
| Subcephalic setae | 38 |
| Buccal cavity diameter | 11.4 |
| Amphid diameter | 10 |
| Amphid height | 10 |
| Amphid from anterior | 25.7 |
| Pharynx length | 221.4 |
| Pharynx cbd | 39.3 |
| Maximum body diameter | 42.9 |
| Vulva from anterior | nd |
| % V | nd |
| Spicule length | |
| Gubernaculum length | |
| s' | |
| Tail length | - |
| Anal body diameter | 32.1 |
| c' | - |
| Spicule length/Tail length | |

Table IV.- Measurements of *Scaptrella* cf. *cincta* in μm . nd, not discernible.

| | ♀1 |
|----------------------------|--------|
| Total body length | 1928.6 |
| a | 58.7 |
| b | 22.5 |
| c | 9.8 |
| Cephalic diameter | 22.9 |
| Inner labial setae | - |
| Outer labial setae | 12 |
| Cephalic setae | 15.7 |
| Subcephalic setae | - |
| Buccal cavity diameter | - |
| Amphid diameter | - |
| Amphid height | - |
| Amphid from anterior | - |
| Pharynx length | 85.7 |
| Pharynx cbd | 57.1 |
| Maximum body diameter | 62.9 |
| Vulva from anterior | nd |
| % V | nd |
| Spicule length | |
| Gubernaculum length | |
| s' | |
| Tail length | 196.4 |
| Anal body diameter | 53.6 |
| c' | 3.7 |
| Spicule length/Tail length | |

Table V.- Measurements of *Theristus* sp. 1 in μm . nd, not discernible.

| | ♀1 |
|----------------------------|--------|
| Total body length | 1757.1 |
| a | 32.8 |
| b | 5.6 |
| c | 9.6 |
| Cephalic diameter | 17 |
| Inner labial setae | 3 |
| Outer labial setae | 10 |
| Cephalic setae | 17 |
| Subcephalic setae | 15 |
| Buccal cavity diameter | 12.9 |
| Amphid diameter | 12.9 |
| Amphid height | 12.9 |
| Amphid from anterior | 10 |
| Pharynx length | 314.3 |
| Pharynx cbd | 39.3 |
| Maximum body diameter | 53.6 |
| Vulva from anterior | 885.7 |
| % V | 50.4 |
| Spicule length | |
| Gubernaculum length | |
| s' | |
| Tail length | 182.1 |
| Anal body diameter | 35.7 |
| c' | 5.1 |
| Spicule length/Tail length | |

Table VI.- Measurements of *Theristus* sp. 2 in μm .

| | ♀1 | ♀2 | ♀3 | ♀4 |
|----------------------------|-------|-------|--------|--------|
| Total body length | 914.3 | 928.6 | 1214.3 | 1085.7 |
| a | 19.7 | 21.7 | 19.3 | 19 |
| b | 4.3 | 4 | 4.8 | 4.4 |
| c | 9.8 | 10.7 | 11.7 | 11.3 |
| Cephalic diameter | 24.3 | 29 | 32.1 | 28.6 |
| Inner labial setae | 8 | 8 | 6 | 6 |
| Outer labial setae | 17 | 18 | 10 | 8.6 |
| Cephalic setae | 14.3 | 12 | 15.7 | 12.9 |
| Subcephalic setae | 29 | 28 | 26 | 30 |
| Buccal cavity diameter | - | 15 | 17.1 | 17 |
| Amphid diameter | 10 | 7.1 | 5.7 | 6 |
| Amphid height | 12.9 | 5.7 | 5.7 | 6 |
| Amphid from anterior | 14.3 | - | - | - |
| Pharynx length | 210.7 | 231.4 | 255 | 245 |
| Pharynx cbd | 32.1 | 39.3 | 25.7 | 32.1 |
| Maximum body diameter | 46.4 | 42.9 | 62.9 | 57.1 |
| Vulva from anterior | | nd | nd | nd |
| % V | | nd | nd | nd |
| Spicule length | 22.9 | | | |
| Gubernaculum length | 10.9 | | | |
| s' | 0.6 | | | |
| Tail length | 92.9 | 87 | 103.6 | 96.4 |
| Anal body diameter | 30 | 25 | 28.6 | 35 |
| c' | 3.1 | 3.5 | 3.6 | 2.8 |
| Spicule length/Tail length | 0.2 | | | |

Table VII.- Measurements of *Xyala striata* in μm . nd, not discernible.

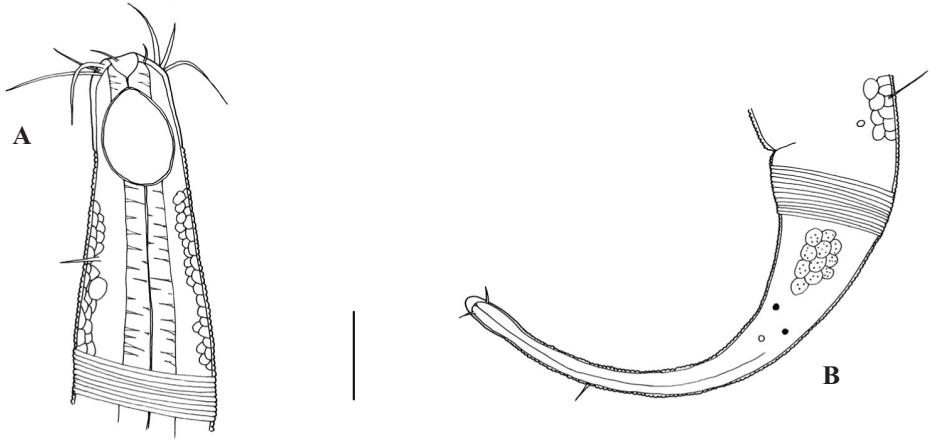


Figure 1.- *Ammotheristus* sp. Female. A. Anterior end. B. Posterior end. Scale A = 25 μ m, B = 35 μ m.

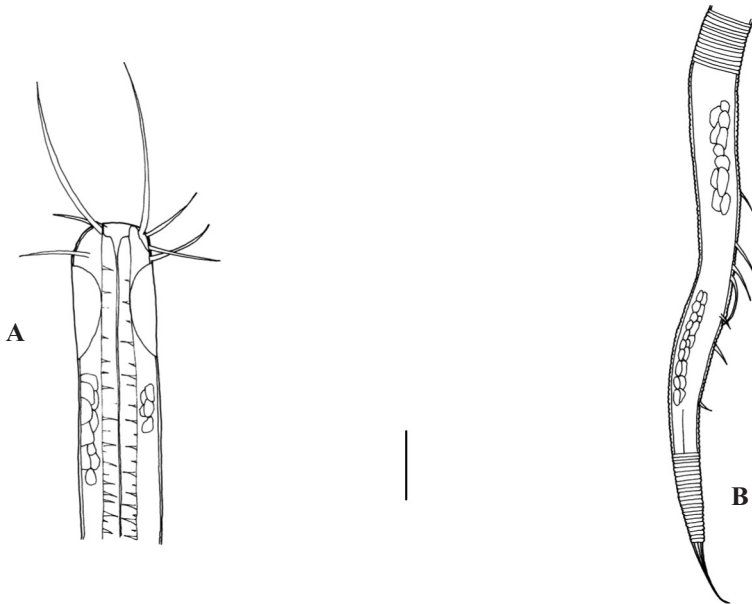


Figure 2.- *Amphimonhystera* sp. Juvenile. A. Anterior end. B. Posterior end. Scale = 17 μ m.

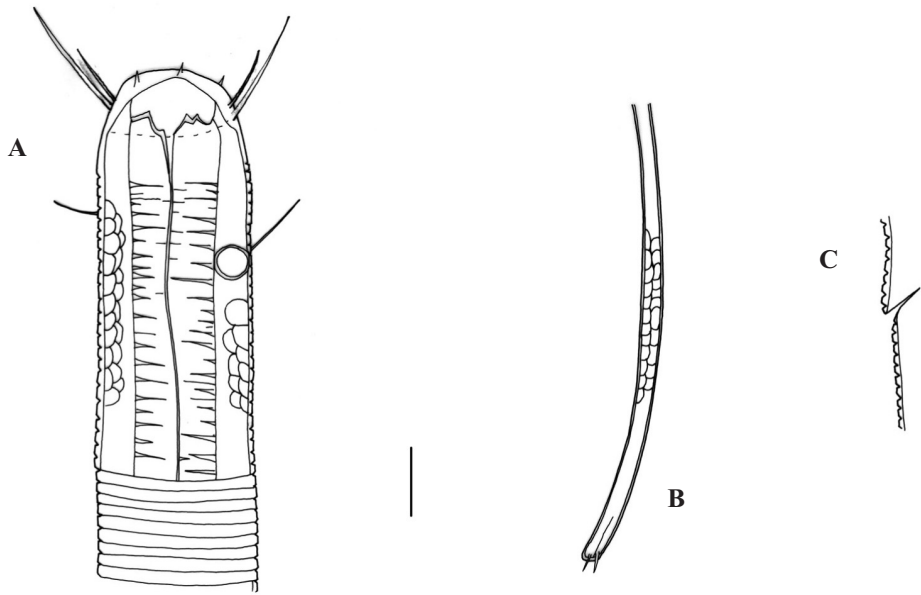


Figure 3.- *Cobia truncata*. Female. A. Anterior end. B. Posterior end. C. Anal region. Scale = 15 μ m.

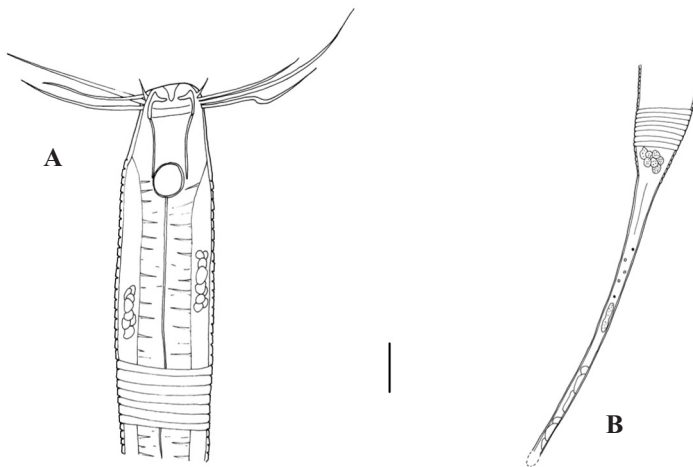


Figure 4.- *Scaptrella* cf. *cincta*. Female. A. Anterior end. B. Posterior end. Scale A = 16 μ m, B = 21 μ m.

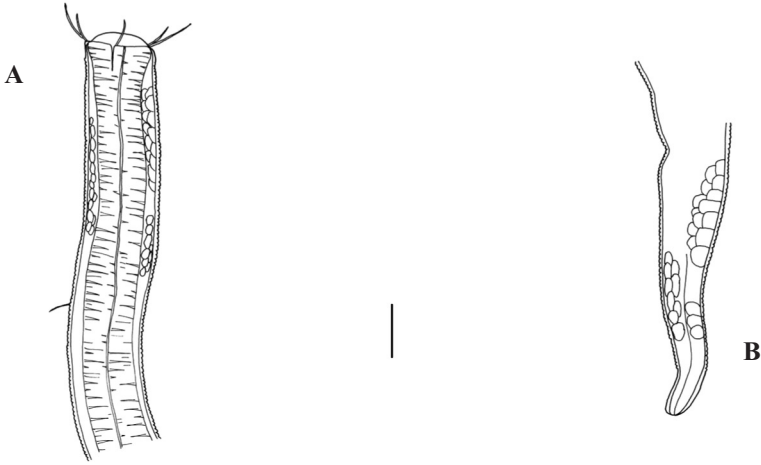


Figure 5.- *Theristus* sp. 1. Female. A. Anterior end. B. Posterior end. Scale A = 15 μ m, B = 45 μ m.

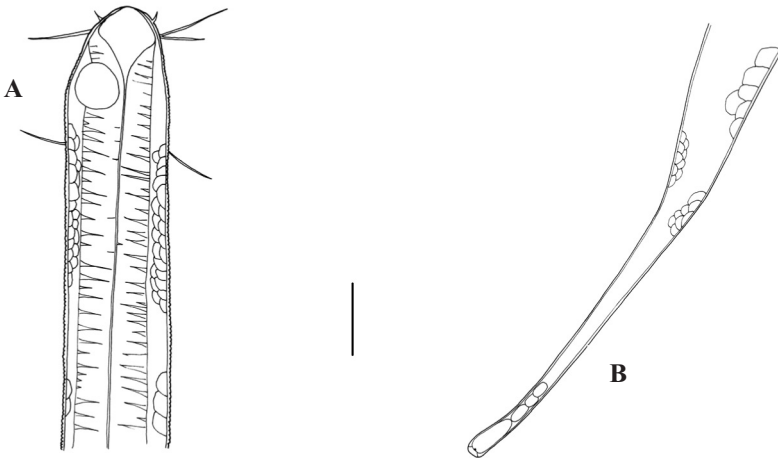


Figure 6.- *Theristus* sp. 2. Female. A. Anterior end. B. Posterior end. Scale = 20 μ m.

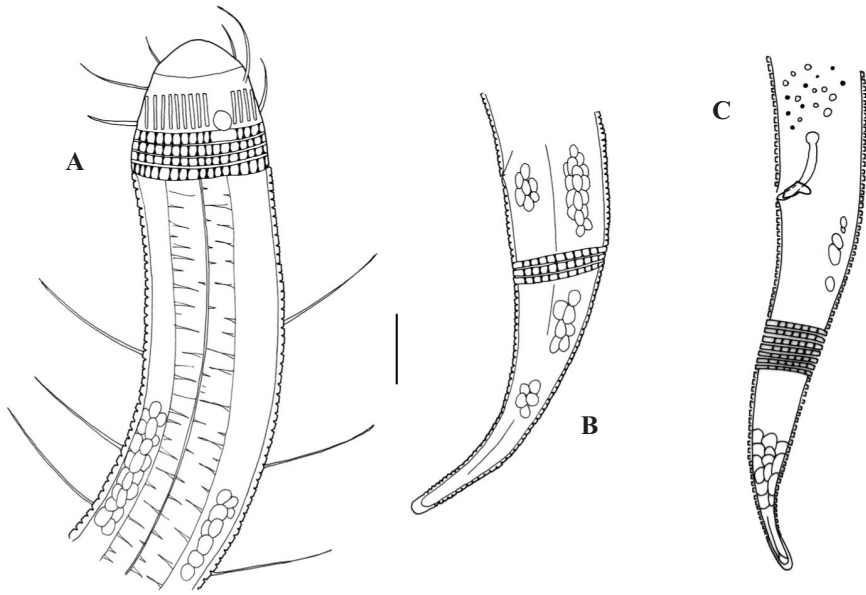


Figure 7.- *Xyala striata*. Female. Anterior end. B. Posterior end. C. Posterior end of a male. Scale A, B = 17 μm , C = 25 μm .