

Marine free-living nematodes of the subfamily Stilbonematinae (Nematoda, Desmodoridae): taxonomic review with descriptions of a few species from the Nha Trang Bay, Central Vietnam

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Abstract

Five nematode species of the subfamily Stilbonematinae (Desmodorida, Desmodoridae) found in the Bay of Nha Trang (Central Vietnam) are described. *Catanema dambayensis* sp. n. differs from *C. exile* Cobb, 1920, the only other species of *Catanema*, by slightly shorter body (2368–2669 μm vs. 3400 μm in males) and absence of a midventral preanal supplementary organ. *Eubostrichus africanus* Muthumbi et al., 1995 has been found for the first time after its original description in Kenya mangroves. *Stilbonema smurovi* sp. n. differs from *S. annulatum* Gerlach, 1963 and *S. majum* (Cobb, 1920) by notably lesser body length and lesser index *a*, and from *S. brevicolle* Cobb, 1920 in character of body annulations, longer cephalic setae and two versus three circles of subcephalic setae on the cephalic capsule. *Laxus* sp. and *Robbea* sp. are briefly described but not identified because of absence of males. Emended diagnoses of all valid genera of Stilbonematinae together with annotated lists of all valid species are provided. Some questionable species identifications are discussed. *Eubostrichus phalacrus* Greeff, 1869, *Laxus contortus* Cobb, 1894 and *Laxus septentrionalis* Cobb, 1914 are qualified as species inquirendae because of incompleteness of their descriptions. Species composition of certain genera is changed and generic diagnoses emended in accordance with their type species. New combinations *Laxus gerlachi* (Hopper & Cefalu, 1973) comb. n. (= *Catanema gerlachi* Hopper & Cefalu, 1973), *Laxus sigma* (Gerlach, 1963) comb. n. (= *Leptonemella sigma* Gerlach, 1963), *Robbea macintyreii* (Platt & Zhang, 1982) comb. n. (= *Catanema macintyreii* Platt & Zhang 1982), *Robbea porosum* (Hopper & Cefalu, 1973) comb. n. (= *Catanema porosum* Hopper & Cefalu, 1973), *Robbea smo* (Platt & Zhang, 1982) comb. n. (= *Catanema smo* Platt & Zhang, 1982) are suggested.

Key words: *Catanema*, *Eubostrichus*, *Laxus*, *Robbea*, *Stilbonema*

The Stilbonematinae are known primarily because of their remarkable association with ectosymbiotic bacteria. These sluggish nematodes are known to be especially numerous in carbonate sands of tropical shallow waters and can be quickly iden-

tified even at low magnification of a binocular microscope owing to very long and thread-like body with some swollen anterior end, and bright snow-white appearance in reflected light. An unusual feature of many Stilbonematinae is

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multicellular sensory-glandular organs arranged in longitudinal rows along the body. Obviously, these organs participate in maintaining association with bacteria (Nebelsick et al. 1992, Bauer-Nebelsick et al. 1995, Nussbaumer et al. 2004, Bulgheresi et al. 2006). The symbiotic prokaryotes are inserted in the slime film issued by these sensory-glandular organs. The symbionts look different in different genera; often the bacteria are large and cover densely the entire nematode body except mouth region and tail tip: they may make the nematode appearance very odd. These symbionts are proved to be chemolithoautotroph organisms which build up organic compounds using energy of chemical bonds which is releasing at oxidizing of sulphides (Ott & Novak 1989, Ott et al. 1991). Possibly, the Stilbonematinae mainly live at expense of primary production of bacterial chemosynthesis, like pogonophorans, vestimentiferans and vesicomyid bivalves. Usually, the Stilbonematinae inhabit sheltered intertidal and subtidal sediments where these nematodes are concentrated at the interface between the surface oxidized layer and the deeper anoxic sediment zone, since the stilbonematines need both oxygen for their respiration and reduced compounds for

chemosynthesis of their symbionts.

Stilbonematinae nematodes are well studied in aspects of their ecology and symphysiology with bacterial ectosymbionts (Schiemer et al. 1990; Hentschel et al. 1999; Ott 1995; Ott et al. 2004a,b). However, the diversity of Stilbonematinae is now not well classified, diagnoses and boundaries of taxa are not clearly defined, species are often transferred from one to another genus, many species in experimental papers are indicated as undescribed species of a genus. History of some genera and species is tangled. Thus, the genus *Robbea* was erected by Gerlach (1956) and he considered the buccal muscular bulb as a peculiar structure distinguished the taxon from other related genera. Further, Gerlach (1963) synonymized *Catanema* Cobb, 1920 with *Eubostrichus* Greeff, 1869 and supposed that *Laxus* Cobb, 1894 also can prove to be identical to *Eubostrichus*. Hopper and Cefalu (1973) decided to maintain *Catanema* and pointed out the buccal muscular bulb as its main feature. Platt and Zhang (1982) synonymized *Robbea* and *Catanema*. According to Lorenzen (1994) there are six valid genera belonging to the subfamily Stilbonematinae Chitwood, 1936: *Eubostrichus* Greeff, 1869 (with *Catanema*

Table 1. Differential diagnostic characters of genera of Stilbonematinae.

Genera	Somatic cuticle	Cephalic cuticle	Amphideal fovea	Anterior pharynx (procorpus)
<i>Adelphos</i>	fine annulated	thickened, annulated	lateral, large, rounded, coiled in 1.5 turns	slightly gradually widened
<i>Catanema</i>	very fine annulated	not thickened, annulated	apical, small, usually with protruding corpus gelatum	swollen and distinctly separated from the isthmus
<i>Eubostrichus</i>	very faint annulated	not thickened, annulated	lateral, large, rounded, coiled in 1.5 or more turns; often indistinct	slightly gradually widened
<i>Laxus</i>	fine annulated	thickened and modified	lateral but close to the apex small, coiled in about 1.5 turns	slightly gradually widened
<i>Leptonemella</i>	fine annulated	smooth, punctuated or reticulated, set off the body	apicolateral, small, may be with protruding corpus gelatum	slightly gradually widened
<i>Parabostrichus</i>	very faint annulated	not thickened, annulated	lateral, large, rounded, coiled in 1.5 or more turns; indistinct	slightly gradually widened
<i>Robbea</i>	fine annulated	annulated or smooth	lateral, large, rounded, coiled in 1.5-2.5 turns	swollen and distinctly separated from the isthmus
<i>Squanema</i>	fine annulated	thickened, consists of plates	lateral, large, rounded, coiled in 1.5 turns	slightly gradually widened
<i>Stilbonema</i>	thick, coarsely annulated	smooth or punctuated, set off the body	apical, small, usually with protruding corpus gelatum	slightly gradually widened

Cobb, 1920 as junior synonym), *Laxus* Cobb, 1894, *Leptonemella* Cobb, 1920, *Robbea* Gerlach, 1956, *Squanema* Gerlach, 1963, *Stilbonema* Cobb, 1920. *Laxonema* Cobb, 1920 is mentioned by Lorenzen as a doubtful genus of the Desmodoridae. Ott et al. (1995) have transferred *Catanema cobbi* Inglis, 1967 to *Laxus* and presented a new definition to this genus. The same authors commented that several species of *Catanema*, *Eubostrichus*, *Laxus* and *Leptonemella* are inadequately described.

The main object of this paper is therefore a critical reappraisal of generic composition and unification of generic diagnoses. Composition of species diagnosis of every genus is based here on characters of the type species. An additional ground for the paper appeared from finding of a few Stilbonematinae species in Nha Trang area, where these nematodes were not known before.

Material and methods

Samples of sediments were collected by a cylinder of 3 cm² area during the low tide in mangroves or with a scoop by diving in upper sublittoral zone, and fixed in situ with 4 % formaldehyde solution on sea water. The meiofauna stained by Bengal rosa was isolated by decantation and filtration

through a sieve of 70 µm mesh size. The nematodes were extracted and put into watch glasses with Seinhorst's solution I (ethanol-glycerin-water mixture in proportion 29:1:70) and the ethanol and water were allowed to evaporate slowly. Specimens were mounted into permanent glycerin slides with a paraffin ring, glass bead separators and Glyceel seals. These slides were then studied with Leica DM5000 light microscope.

Abbreviations

a – body length divided by maximum body diameter;
 am.w. – width of the amphideal fovea, in µm;
 b – body length divided by pharyngeal length;
 bulb l. – length of posterior pharyngeal bulb, in µm;
 bulb w. – width of posterior pharyngeal bulb, in µm;
 c – body length divided by tail length;
 c' – tail length, expressed in anal diameters;
 c.s. – length of cephalic setae, in µm;
 diam.am. – body diameter at the level of amphideal fovea, in µm;
 diam.ani – anal body diameter, in µm;
 diam.ca. – body diameter at the level of cardia, in µm;
 diam.midb. – midbody diameter, in µm;

Male's anterior structures	Male's posterior structures	Dorso-caudal apophysis of the gubernaculum	Symbiotic cells
sound spike-like setae in ventral row posterior to the cardia	sound spike-like lateroventral setae on the tail	present	elongate crescent-like
enlarged midventral glands with tiny setae	thick spike-like setae on the tail	present	short bacilla
no	sound spike-like setae on the tail (porids)	absent	elongate crescent-like
no	no	absent	coccoid to short bacilla
may be series of stout setae	stout subventral setae	absent	coccoid to short bacilla
no	short subventral setae on papilloid projections	present	elongate crescent-like
cup-shaped supplementary organs may be present	not differentiated	present	various
no	no	absent	elongate crescent-like
cup-shaped supplementary organs may be present	not differentiated	absent	not observed

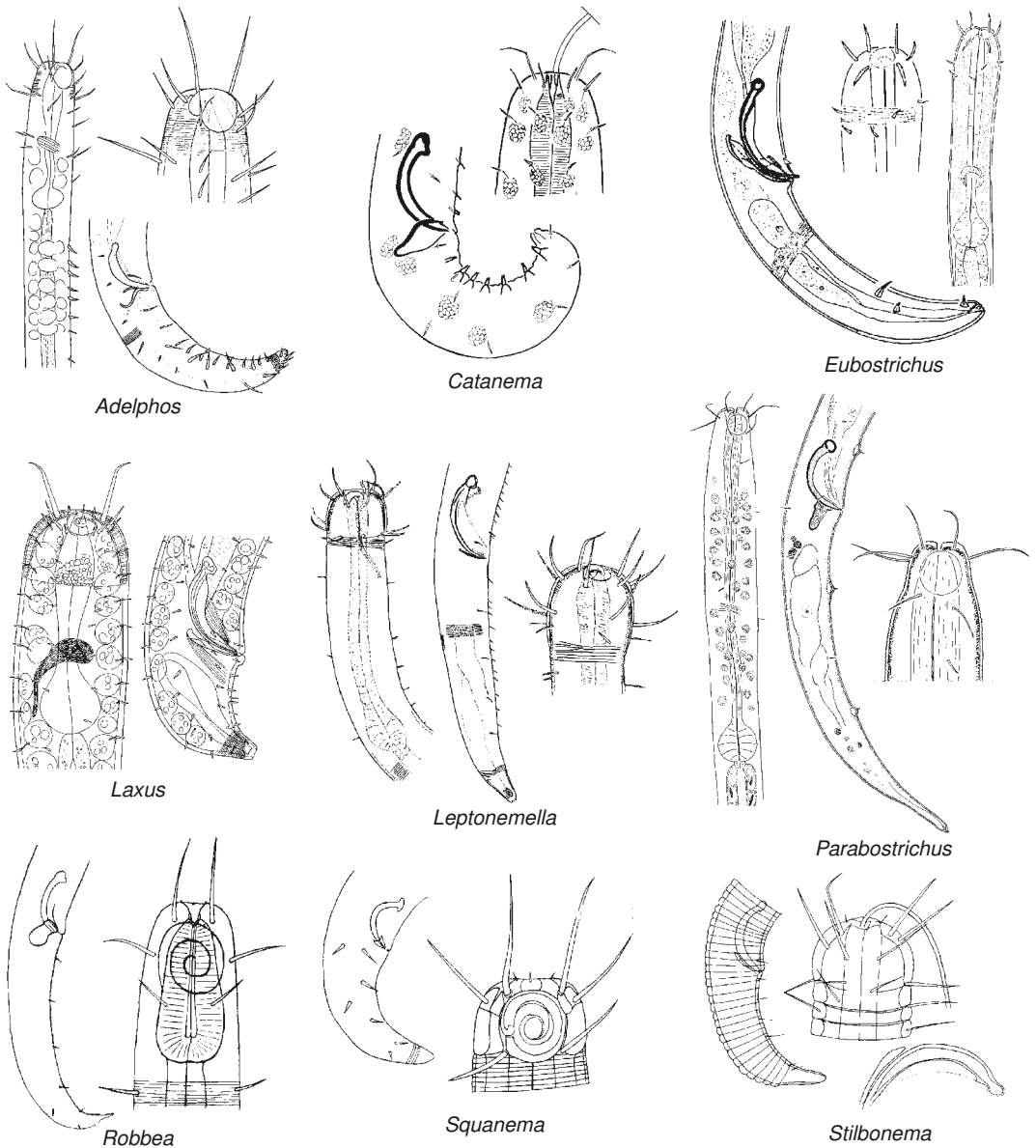


Fig. 1. Icons of the Stilbonematinae genera (*Adelpbos* – adapted from Ott 1997; *Catanema* – adapted from Cobb 1920; *Eubostrichus* – adapted from Muthumbi et al. 1995; *Laxus* – adapted from Ott et al. 1995; *Leptonemella* – adapted from Riemann et al. 2003; *Parabostrichus* – adapted from Tchesunov et al. 2012; *Robbea* – adapted from Gerlach, 1956; *Squanema* – adapted from Gerlach 1963b; *Stilbonema* – adapted from Gerlach 1963b)

diam.n.r. – body diameter at the level of nerve ring, in μm ;
 diam.subc.s. – body diameter at the level of the anterior subcephalic setae, in μm ;
 gub.apo. – length of dorso-caudal apophysis of the gubernaculum, in μm ;

isthmus w. – width of isthmus, median slender portion of the pharynx, in μm ;
 L – body length, in μm ;
 procorpus l. – length of procorpus, the anterior muscular portion of the pharynx, in μm ;

procorpus w. – width of procorpus, the anterior muscular portion of the pharynx, in μm ;
 spic.ar. – spicule's length along the arch, in μm ;
 spic.ch. – spicule's length along the chord, in μm ;
 subc.s. – length of the subcephalic setae (if single circle), in μm ;
 subc.s. I – length of the anterior (preamphideal) subcephalic setae, in μm ;
 subc.s. II – length of the posterior (postamphideal) subcephalic setae, in μm ;
 V – distance of vulva from anterior end as percentage of body length, in %

Taxonomic part

Order Desmodorida de Coninck, 1965
 Family Desmodoridae Filipjev, 1922

Subfamily Stilbonematinae Chitwood, 1936

Diagnosis (orig.). Desmodoridae. Body very long, up to 10 mm long, filiform, often with somewhat club-like inflated anterior body and head. Cuticle uniformly annulated throughout the body and devoid of lateral differentiation, spines or any other sculptures, etc. Mouth opening minute, buccal cavity small if present and unarmed. Pharynx very short in relation to the body length, slender and differentiated in three regions, anterior procorpus, intermediate slender isthmus, and small posterior bulb. Eight genera: *Adelphos* Ott, 1997, *Catanema* Cobb, 1920, *Eubostrichus* Greeff, 1869, *Laxus* Cobb, 1894, *Leptonemella* Cobb, 1920, *Parabostrichus* Tchesunov et al., 2012, *Robbea* Gerlach, 1956, *Squanema* Gerlach, 1963, *Stilbonema* Cobb, 1920.

Distinguishing features of genera of the Stilbonematinae are summarized in the table 1 and figure 1.

Adelphos Ott, 1997

Diagnosis (modified after Ott, 1997). Stilbonematinae. Cuticle finely annulated. Head cuticle thickened but annulated. Amphideal fovea large, coiled in 1.5 turns, lateral but close to the apex, and surrounded with annulation. Anterior part of the pharynx swollen but not sharply differentiated from the median narrow region; round terminal bulb present. Gubernaculum with weak curved

dorsocaudal apophysis. Males with one row of midventral thorn-like setae posterior to the neck region and paired rows of thorn-like setae on the tail. Body covered with long crescent-like symbiotic bacteria arranged in spiral pattern.

Type species: *A. rolandi* Ott, 1997. No other species.

Catanema Cobb, 1920

Diagnosis. Stilbonematinae. Cuticle very fine annulated. Cephalic cuticle not thickened. Amphids apical, small, difficult to see. Minute onchia-like structures in the small stoma may be present. Anterior region of the pharynx swollen and distinctly separated from the narrow median region. Gubernaculum with dorso-caudal apophysis. In male, a series of enlarged midventral glands associated with tiny setae from the cardia to the anterior midgut; several pairs of subventral tubular setae on the tail.

Type species: *Catanema exile* Cobb, 1920. Cobb, 1920: 271–272, fig. 56 (Jamaica). Non Gerlach, 1963a, nec Gerlach, 1964.

Other *Catanema* species:

Catanema dambayensis Tchesunov sp. n. Present paper.

Gerlach (1963a: 96) transferred the species *Catanema exile* to the genus *Eubostrichus* Greeff 1869 and considered the generic name *Catanema* as a junior synonym of *Eubostrichus*. Specimens cited under the name *Eubostrichus exilis* (Cobb 1920) from the Maldiv Islands and the Red Sea (Gerlach 1963a, 1964) definitely do not belong to the species described by Cobb. Ott et al. (1995: 517) have expressed the view that both *Eubostrichus exilis* sensu Gerlach, 1963a and 1964 belong to *Laxus cosmopolitus*.

Catanema dambayensis sp. n.

Table 2; Fig. 2, 3, 9A

Material. One holotype male, four paratype males and one paratype female. Type specimens are deposited in the Nematological collection of the Center of Parasitology of A. N. Severtsov Institute of Ecology and Evolution of the Russian

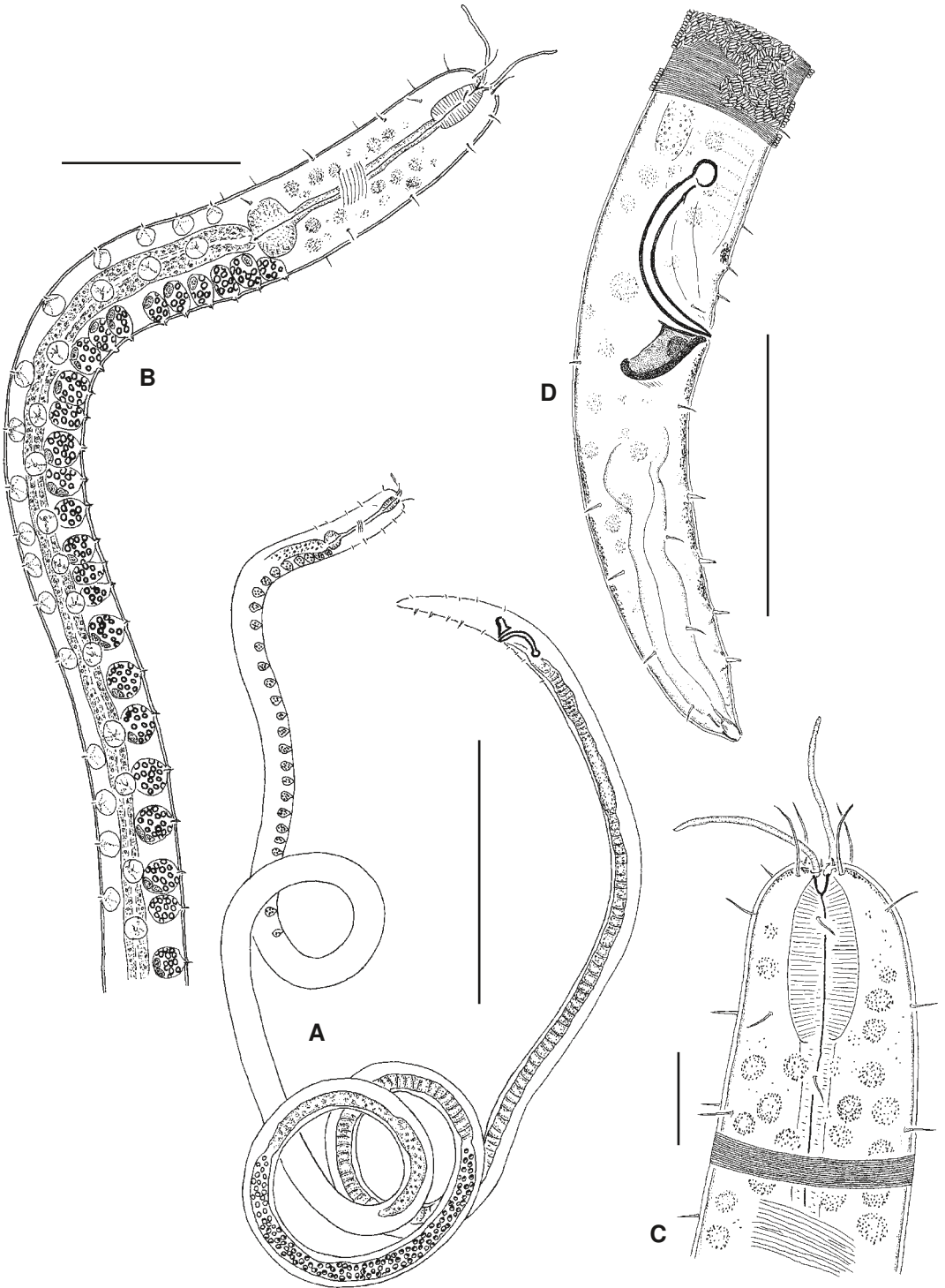


Fig. 2. *Catanema dambayensis* sp. n., paratype male. A. entire; B. anterior body; C. cephalic end; D. posterior body. Scale bars: A, 200 μ m, B,D, 50 μ m, C, 10 μ m.

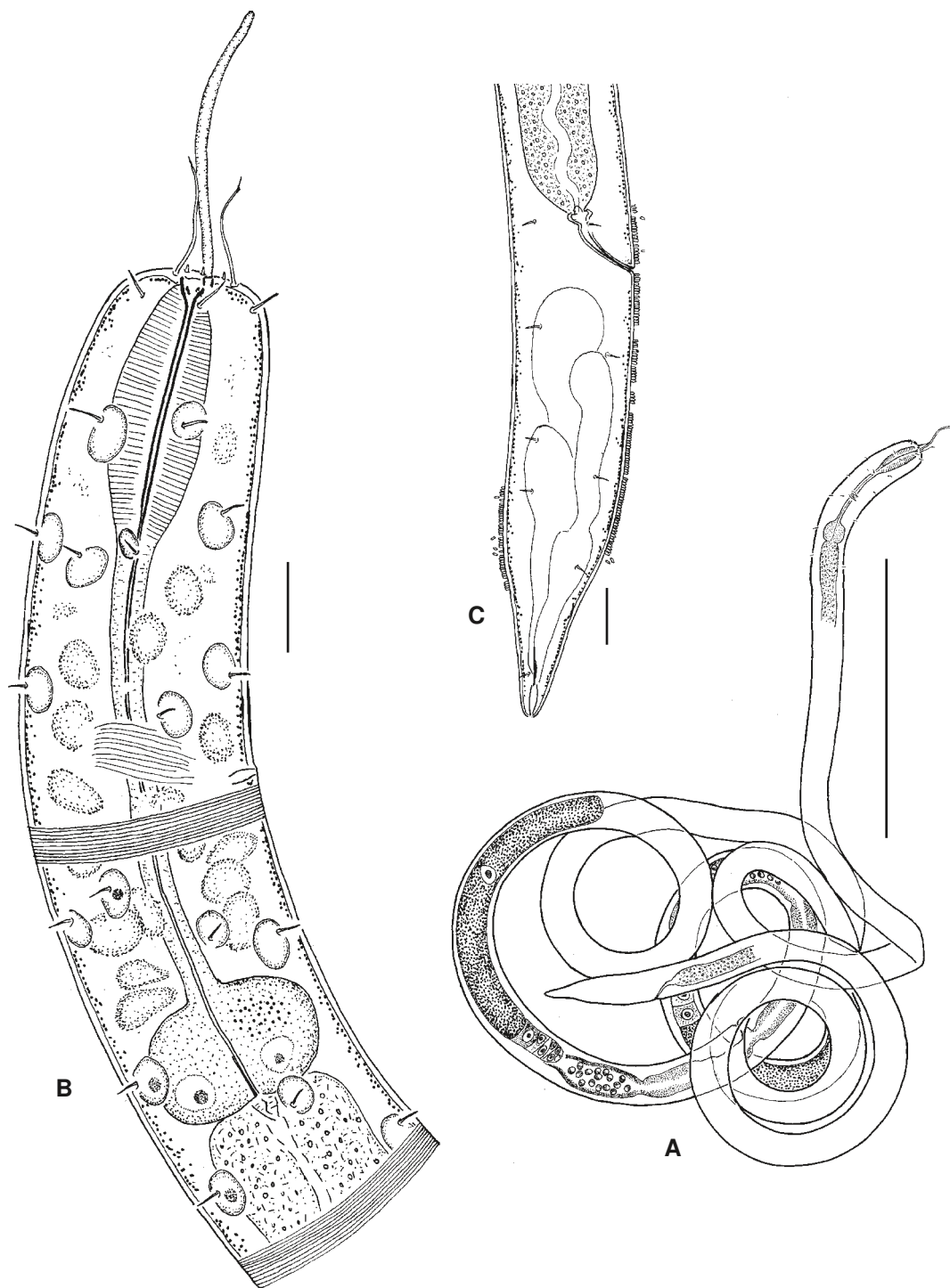


Fig. 3. *Catanema dambayensis* sp. n., paratype female. A. entire; B. neck region; C. tail. Scale bars: A, 100 μm ; B, 10 μm ; C, 20 μm .

Academy of Sciences, Moscow, Russia. Inventory number of the holotype 50/4, paratypes 50/2-50/3.

Locality. Central Vietnam, Nha Trang Bay, Tre Island, Dam Bay (a narrow armlet at the south side of the Island), plantation of young mangrove saplings *Rhizophora* sp. in the tidal zone, coarse sand. March 27, 2007.

Etymology. The species name is derived from Dam Bay, a site where the new species was found.

Description. Body cylindrical, thread-like, slightly widened anteriorly, yellowish. Cuticle very fine transversely striated, the striation hardly discernible, about or over 30 annules in 10 μ m. The striation starting apically at the level of cephalic setae. Cephalic capsule not developed and cephalic cuticle unlikely differs from that of the neck region. Fine cuticular annulation spreads to the tail terminal pore, so a terminal cone not developed.

Mouth opening small and withdrawn inward a bit, i. e. situated on the bottom of shallow conical

pit. Body cuticle not widened or modified in the head region.

There six minute acute outer labial papillae around the mouth apically. Four rather long cephalic setae situated also close to the mouth and directed straight forward. Amphideal apertures are formed as big pores situated apically close to the mouth opening. The apertures lead rearward into short cylindrical fovea with slightly sclerotised walls and upward give long (29–31 μ m) vermiform corpus gelatum directed straight ahead. About six or eight cervical setae 3.5–5 μ m long form an irregular circle posterior to the cephalic setae around the apex. There are shorter irregular somatic setae thinning out gradually to the posterior pharynx and midgut. The somatic setae 1.5–3 μ m in median and lateral rows are associated with light globular glands.

Cheilostoma small and unclear. Pharyngostoma small, 2.5–5 μ m long and 3.5–6 μ m wide, conoid, with slightly sclerotised walls, unarmed. Pharynx consists of elongate oval procorpus with distinct radial muscular striation, long slender isthmus devoid of the striation, and rounded apple-shaped glandular posterior bulb. Internal cuticular lining, distinct and rather thick in the procorpus, becomes thinner and less definite in the posterior isthmus and bulb. Nerve ring in the middle of the isthmus. Cardia indistinct, conical, internal. There is no content, particularly that resembling external bacterial cells.

Tail cylindroconical, with indistinctly separated narrowed terminal cone. Caudal glands entirely within the tail.

♀. Reproductive system didelphic, amphidelphic; ovaries antidromously reflected. Anterior ovary situated to the right and posterior gonad to the left of the intestine. Uteri empty, spermathecas are filled with minute lens-formed spermatozoa.

♂. There is a row of 24–30 large midventral glands situated tight close to one another from the level of the cardia to the anterior midgut. The glands are associated with tiny setae. The gland cells are filled with large dense inclusions or vacuoles. Spaces between these glands widen to the posterior end of the row. The row of the large dense glands is continued further posteriorly with smaller light globular glands.

Male gonad situated to the right of the intestine contains small light globular ?spermatids with excentric nuclei. Spicules short, strong, arcuate, proximally cephalated and distally pointed.

Table 2. Morphometry of *Catanema dambayensis* sp. n. Measurements in μ m.

	holotype male	four paratypes males	paratype female
L	2670	2370–2640	3170
a	124	91.1–103	95.9
b	30.3	27.9–29.2	34.4
c	30.3	25.9–33.8	40.1
c'	3.38	2.92–3.92	3.76
V	–	–	–
diam.subc.s.	16	14.5–18	16
diam.n.r.	25	23–26	25
diam.ca.	25	22–26	25
diam.midb.	21.5	25–28	33
diam.ani	26	23–26	21
c.s.	12	11	12
subc.s. I	3.5	4–5	4
procorpus l.	25	27–29	29
procorpus w.	9	10–11	11
isthmus w.	5	5–6	4
bulb l.	13	10–12	?
bulb w.	13	15–18	?
spic.cho.	31	25–30	
spic.arc.	41	33–42	
gub.apo.	13	9–12	

Gubernaculum with paired broad dorso-caudal apophyses.

Tail bears thin subdorsal setae 2–3 μm long and five to seven subventral thick spike-like setae with truncated top (indicated as porids in Hopper & Cefalu, 1973) 1.5–2 μm long.

Symbionts. Bacteria look like short bacilla about 1.5–2.5 μm long and 0.5–1 μm wide. The bacteria form dense settlements here and there on the body where they are situated vertically on the cuticle. The bacteria can be detached easily; the nematodes in glycerin slides are often surrounded with suspension of crumbled bacteria. Cuticle is not modified beneath the bacterial colonies.

Diagnosis. In males, body length 2368–2669 μm , index a 91–124 and index c' 2.92–3.38. In female, the same figures 3166 μm , 96 and 3.76, respectively. Cuticle very fine striated. Cephalic setae 11–12 μm . Apical amphideal apertures with vermiform corpus gelatum 29–31 μm . Males with midventral series of 24–30 dense enlarged glands from the level of cardia to the anterior midgut. Spicules arcuate, 25–31 μm (arc); long and broad paired apophyses of the gubernaculum 9–13 μm long. No preanal supplementary organ.

Discussion. The only hitherto known species of the *Catanema*, *C. exile* Cobb, 1920 is described on a single male from Florida, and the original diagnosis lacks some important morphological details and measurements. *C. dambayensis* sp. n. differs from *C. exile* by some shorter body (2368–2669 μm versus 3400 μm in males) and absence of a midventral preanal supplementary organ.

Eubostrichus Greeff, 1869

Diagnosis. Stilbonematinae. Cuticle with very faint or sometimes even indiscernible transverse striations. Head cuticle not thickened and not modified, striations of the cuticle starts from the apex. Amphideal fovea situated laterally, large, spirally coiled, but often obscure because its cuticular margin is not clear. Buccal cavity not developed as such. Anterior region of the pharynx slightly widened and not separated sharply from the narrow median region; small posterior bulb. Gubernaculum without a dorso-caudal apophysis. In males, strong and stout subventral setae (porids) occur on the tail. Body covered

mostly with long crescent-like symbiotic bacteria often arranged in a spiral pattern (in *E. dianei* the symbionts are straight non-septate filaments up to 100 μm long).

Type species: *Eubostrichus filiformis* Greeff, 1869. Greeff (1869): 117–118, pl. 7, fig. 1–4 (North Sea). It is considered as species inquirenda by Gerlach (1963a): the original description is so poor that this species cannot be recognized if found again.

Other species:

- E. africanus* Muthumbi, Verschelde & Vincx, 1995. Muthumbi et al., 1995: 190–192, Tab. 3, fig. 6A–G (Kenya, intertidal mangroves).
- E. dianae* Hopper & Cefalu, 1973. Hopper & Cefalu, 1973: 582–585, fig. 1–6, 21, 22 (Florida, Key Biscayne, bed of turtle grass *Thalassia testudinum*, fairly hard-packed sand bottom).
- E. hopperi* Muthumbi, Verschelde & Vincx, 1995. Hopper & Cefalu, 1973: 585–586, fig. 7–11, 23, 24 (as *E. parasitiferus*, Florida, Biscayne Bay). Muthumbi et al., 1995: 190.
- E. longosetosus* Muthumbi, Verschelde & Vincx, 1995. Muthumbi et al., 1995: 192–194, tab. 4, fig. 7A–I (North Sea, depth 14–32 m, sand).
- E. parasitiferus* Chitwood, 1936. Chitwood, 1936: 7, fig. 1 DD–EE (North Carolina, beach below low-tide mark). Identity of specimens from Maldives and Red Sea designated by Gerlach (1963a, 1964) as *E. parasitiferus* remains questionable. Male specimen from Maldives (Gerlach, 1963) differs from those of North Carolina and Florida by distinct spiral amphideal fovea and another shape of modified subventral setae on the male tail, short setae on rounded socle versus strong thorn-like setae. Description of a female specimen from the Red Sea (Gerlach, 1964) also having distinct amphideal fovea is not sufficient for *Eubostrichus* species identification because male's structures as modified preanal and postanal setae are necessary as important characters.
- E. phalacrus* Greeff, 1869. Greeff, 1969: 118, pl. 7, fig. 5–6 (English Channel). Since the original description misses such important details as cuticular annulations, amphids, male structures as well as morphometric data, the species is designated here as species inquirenda.
- E. topiarius* Berger, Urbancik & Ott, 1996. Berger et al., 1996: 521–536, Table I, fig. 1–5 (Adriatic Sea, coarse subtidal sand).

***Eubostrichus africanus* Muthumbi,
Vershelde & Vincx, 1995**
Table 3; Fig. 4, 9B–E.

Material. Two males and two females.

Locality. Central Vietnam, Bay of Nha Trang, the estuary of Be River (Cua Be) at the south suburban of Nha Trang City (12°12.033'N, 109°10.899'E), the intertidal flat with *Avicennia* mangrove trees, the subsurface layer of reduced sediment (silty sand). March 16, 2008.

Description. Body extremely slender, cylindrical, thread-like. Cuticle fine but distinctly annulated, without about 17–23 annules in 10 µm; without any lateral differentiation. Cephalic cuticle smooth and slightly thickened from the labial region to the level of the amphideal fovea.

Tiny outer labial sensilla around the mouth. Four relatively long cephalic setae are followed by two subsequent circles of subcephalic setae; the latter are respectively preamphideal and postamphideal sets both consisted of about four lateromedian setae of nearly the same length.

Table 3. Morphometry of *Eubostrichus africanus* Muthumbi et al., 1995 from NhaTrang.

Character	males (2 specimens)	females (2 specimens)
L	2477–2906	3014–3500
a	171–183	159–167
b	30.2–33.5	31.3–37.2
c	46.7–52.8	43.3–44.8
c'	3.79–3.79	5.35–6.24
V	–	39.5–43.5
diam.am.	13–15	11.5–13.5
diam.n.r.	16.5–19	19.5–21
diam.ca.	15.5–19	19.5–21
diam.midb.	13.5–17	19–21
diam.ani	14–14.5	12.5–13
c.s.	6	5–5.5
subc.s. I	5.5	5.5–6.5
subc.s. II	3	3.5–3.5
am.w.	8	6–8
bulb.l.	12–13	14.5–16.5
bulb.w.	9.5–15	14.5–15
spic.ch.	21.5–22	–
spic.ar.	26–29	–
gub.apo.	12.5–14	–

Antermost somatic setae irregularly disposed and comparable in length with the postamphideal setae. Further posteriad, irregular lateral and lateromedian setae becoming short and sparse to the cardia and midgut body region.

Amphideal fovea round, large and situated laterally posterior to the cephalic preamphideal subcephalic setae. Outer contour of the fovea indistinct or at least poorly discernible. No spirality visible in the amphideal fovea.

In one male, three small (4–5 µm) successive midventral setae distinctly visible, two setae anterior to the nerve ring and one midventral seta posterior to the nerve ring. Posterior to the cardia, the row of these midventral setae followed by fourteen minute midventral papillae gradually decreasing in size posteriad.

Buccal cavity very small but distinct, oval, with weakly sclerotized walls, toothless. Pharynx consists of anterior wide radially striated procorpus gradually transforming into long slender middle region, isthmus, which in its turn widens posteriorly into small terminal bulb without evident radial striation. Midgut slender, with relatively large light-breaking inclusions.

Single anterior testis situated to the right of the intestine. Spicules small, arcuate, distally pointed and proximally slightly cephalated. Gubernaculum as a slightly curved bar parallel to the distal half of the spicule; no dorso-caudal apophysis.

Tail conical, rounded at the tip. Terminal cap not differentiated. In males, the tail bears porids, thick conical setae: one short (2–3 µm) ventral preanal, two longer (5–7 µm) subventral pairs on the posterior half of the tail, three pairs at the tail tip.

Symbionts. The body is loosely covered by longitudinally arranged bacteria. The bacterial cells elongate fusiform, slightly crescent-shaped, 8–10 µm long. No cell divisions are detected.

Discussion. Vietnamese specimens fit well to the original diagnosis (Muthumbi et al., 1995) in peculiar structural features such as slightly swollen anterior cervical region and pattern of strong setae (porids) on the male tail as well as in all morphometric dimensions. *E. africanus* was originally described from intertidal sediment of mangroves in Kenya, so the finding of the specimens in a similar environment of Vietnam widens the species area considerably.

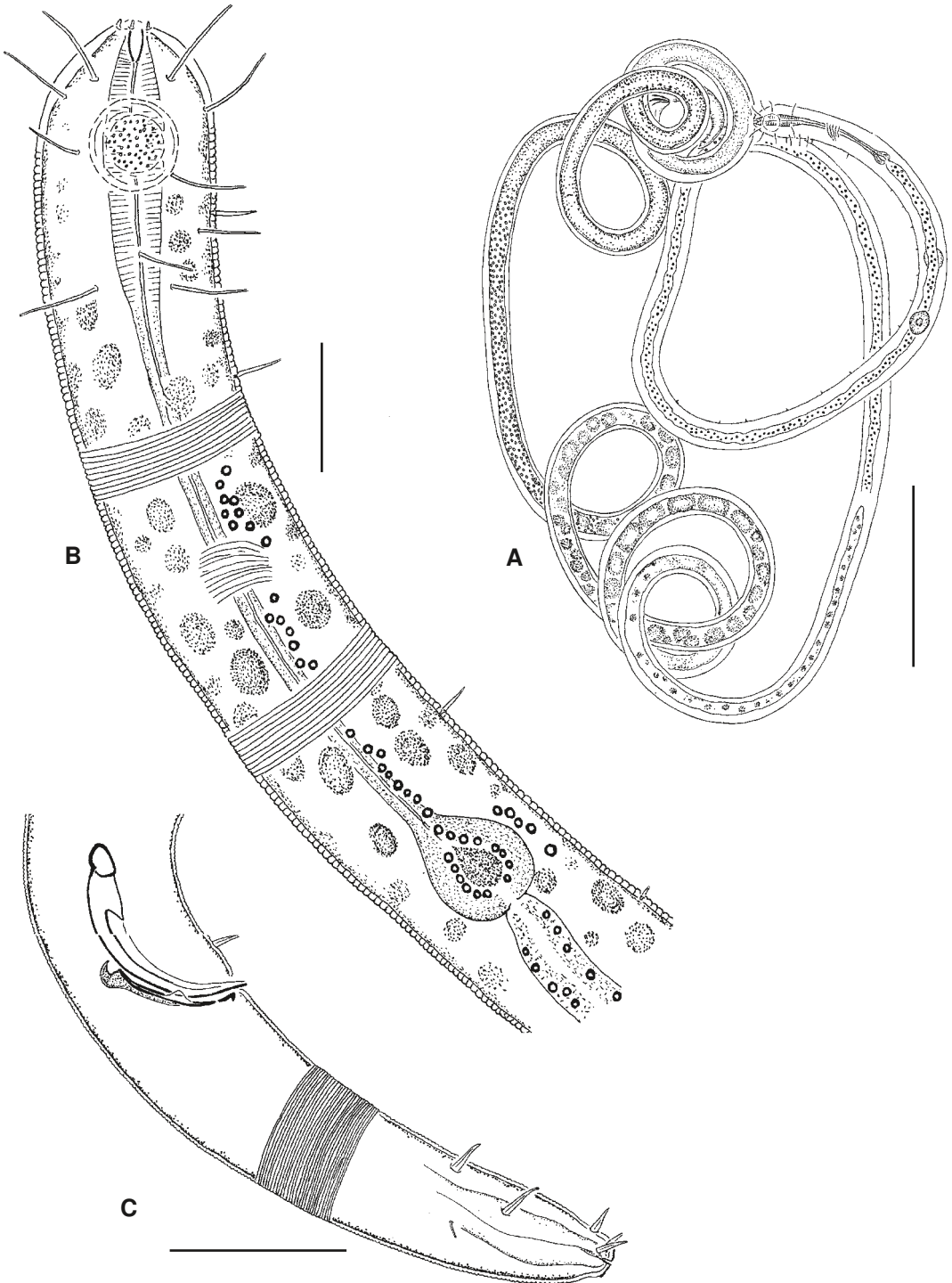


Fig. 4. *Eubostrichus africanus* male. A. entire; B. neck region; C. tail. Scale bars: A, 100 μm ; B, 10 μm ; C, 20 μm .

Laxus Cobb, 1894

Diagnosis. Stilbonematinae. Cuticle with fine transverse striae. Cephalic cuticle thickened; its surface irregularly annulated, reticulated, or sculptured in a fingerprint pattern. Amphideal fovea small, coiled in about 1.5 turns, situated close to the apex. Anterior region of the pharynx slightly swollen and not sharply separated from the narrow median region. Gubernaculum directed dorsally, no dorso-caudal apophysis. Tail short, conical, mostly 1.4–2 anal diameters long. Symbiotic bacteria coccoid.

Type species: *Laxus longus* Cobb, 1894. Cobb, 1894: 415–416, fig. 11 I–IV (Australia, New South Wales, marine sand).

Other species:

Laxus cobbi (Inglis, 1968). Inglis, 1968: 49–50, fig. 37–43 (as *Catanema cobbi*, New Caledonia). Gerlach & Riemann (1973: 232) referred this species to the genus *Eubostrichus*. Ott et al. (1995) clearly justified belonging of this species to the genus *Laxus*. Moreover, in the reprint of a paper of Inglis (1968) sent to me by the author, a sentence is inscribed by hand on the page with description of *Catanema cobbi*: “should be *Laxus cobbi*. Certainly not *Eubostrichus* Greeff 1869 as claimed by Gerlach & Riemann (1973)”.

Laxus contortus Cobb, 1894. Cobb, 1894: 413–414 (Mediterranean, Bay of Naples, sand). Since the original description based on a single female without illustrations and some necessary dimensions the species is considered here as species inquirenda.

Laxus cosmopolitus Ott, Bauer-Nebelsick & Novotny, 1995. Ott et al., 1995: 517–523, figures 9–13 (Adriatic Sea, Red Sea, Maldives Islands, New Caledonia, coarse subtidal sands).

Laxus gerlachi (Hopper & Cefalu, 1973) comb. n. Gerlach, 1963a: 96–97, Taf. 11, Fig. e–f (as *Eubostrichus exilis*, non *Catanema exile* Cobb; Maldives Islands, sand at 4 m depth). Hopper & Cefalu, 1973: 587–588 (as *Catanema gerlachi*). This species was briefly described on the base of the only male by Gerlach (1963a). He identified the species as *Catanema exile* Cobb, 1920 but referred it to another genus *Eubostrichus* Greeff, 1869. Gerlach (1963a) unified the genera *Eubostrichus* and *Catanema* and proposed

further synonymization for *Laxus*. Hopper & Cefalu (1973) found that the Maldives specimen differs clearly from *C. exile* of Cobb in position and shape of amphideal fovea, and absence of a dorso-caudal apophysis of gubernaculum, and distinguished the specimen of Gerlach as *Catanema gerlachi*. But this species differs significantly from the type species of *Catanema*, *C. exile* and does not agree with the emended diagnosis of *Catanema* (see above) because of large spirally coiled lateral amphideal fovea and absence of dorso-caudal gubernaculum apophysis. Ott et al. (1995) supposed the specimen of Gerlach (1963a) belongs to *Laxus cosmopolitus*. I hereby transfer this species to the genus *Laxus* based on the position of the amphideal fovea close to the apex, no indication on sharply separated procorpus of the pharynx, short rounded-conical tail, and gubernaculum nearly parallel to the spiculum.

Laxus oneistus Ott, Bauer-Nebelsick & Novotny, 1995. Ott et al., 1995: 509–517, Tables 1–3, figures 1–8 (Caribbean Sea, Belize, coarse, poorly sorted coralline sand, 0.2–0.5 m sand).

Laxus septentrionalis Cobb, 1914. Cobb, 1914: 29–30, fig. 23 (Antarctica). The species has been found in cold Antarctic water that is unusual for *Laxus* species. Ott et al. (1995) argued that this species does not belong to the genus *Laxus*. However, it is unlikely possible to place the species in a certain genus. Since the original description is very poorly illustrated, and morphometric data are insufficient, the species is considered here as a species inquirenda.

Laxus sigma (Gerlach, 1963) comb. n. Gerlach, 1963a: 97, Taf. 11, Fig. g–k (as *Leptonemella sigma*, Maldives, 2 m deep). This species belongs to *Laxus*, because of shape of the head not set off the body and short conical tail.

***Laxus* sp.**

Fig. 5D–E, 10A–B

Material. One female specimen.

Locality. Central Vietnam, Nha Trang Bay, Hon Mun Island, depth 3 m, small clearing between coral beds, with sparse lawn of sea grass *Halophila ovalis*, medium-grained coral sand. April 27, 2004.

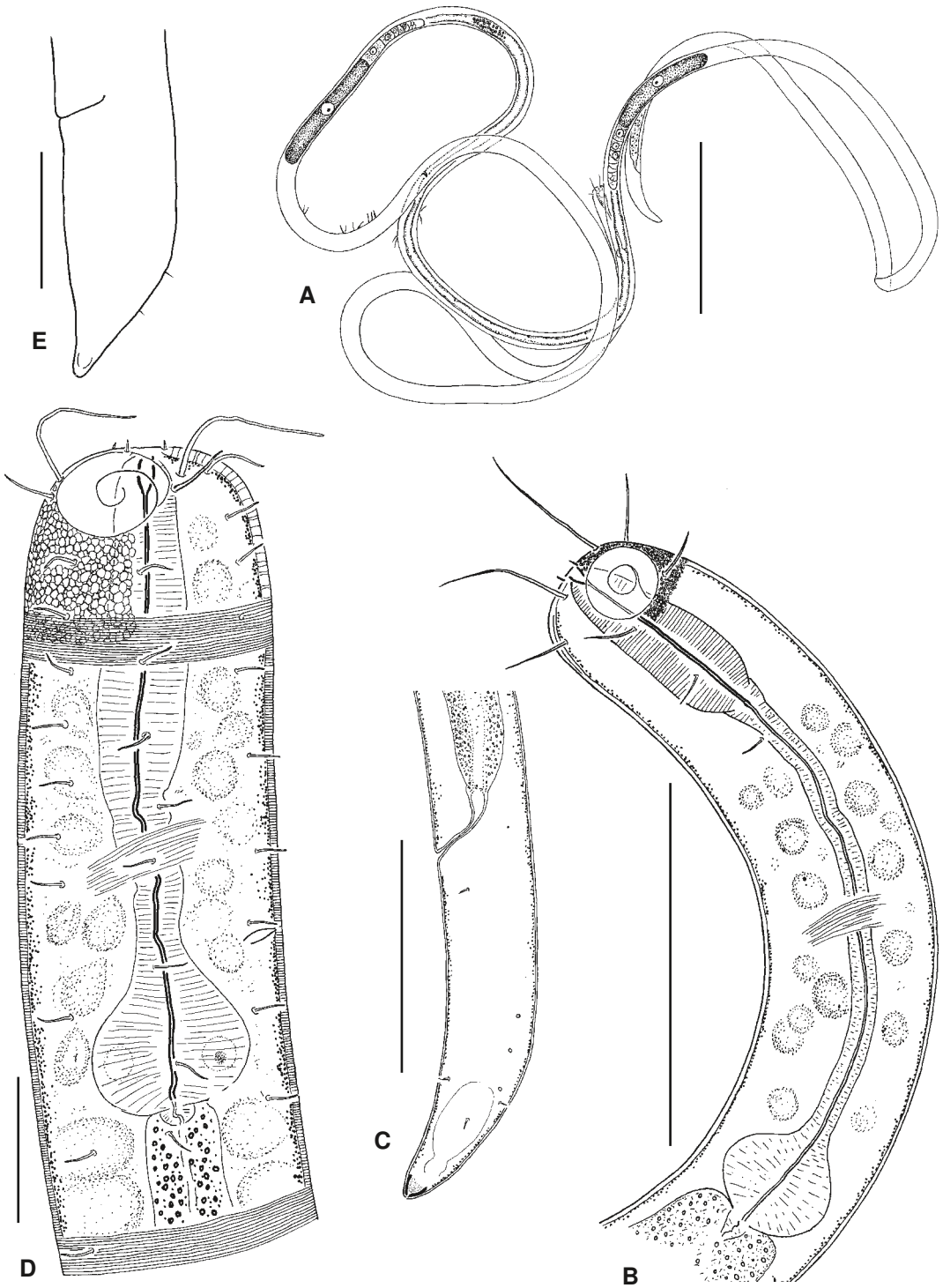


Fig. 5. Females *Laxus* sp. and *Robbea* sp. A. *Robbea* sp., entire; B. *Robbea* sp., anterior body; C. *Robbea* sp., tail; D. *Laxus* sp., anterior body, E. *Laxus* sp., tail. Scale bars: A, 100 µm; B,C,E, 50 µm; D, 20 µm.

Description. Body cylindrical, long, filiform, yellow-brownish. L 5161 μm , a 96, b 44.9, c 55.5, V 44.5 %, c' 1.98. Body diameter at the level of the amphideal fovea 33.5 μm , nerve ring 49 μm , cardia 46 μm , midbody 54 μm , anus 47. Cuticle very finely annulated, about 18–20 annules in 10 μm . The annulation commences at some distance posterior to the apex; the annulation is indiscernible here and there from the level of the anterior intestine caudad but again becomes distinct in the tail region. Cephalic capsule is made up by thickened cuticle with facile mosaic pattern. There is no sharp borderline between mosaic network and annulation at the hind rim of the cephalic capsule since the annulation overlays the mosaic network at some extent.

Small mouth opening is surrounded by six minute outer labial setae and then four cephalic setae about 28 μm long. The latter are rooted at the margin of the apical surface. About eight much shorter subcephalic setae (two sublateral and two submedian pairs, 7–8 μm long) are located at the level of the amphideal fovea. Amphideal fovea is 13 μm (39 % c.b.d.) wide, spirally coiled in two turns, slightly transversally oval in outline; situated at the margin of the apical surface. Numerous shorter somatic setae 3 μm long are arranged in about eight longitudinal rows extended throughout the entire body. All setae are inserted in small crater-shaped pores. All the somatic setae are associated with voluminous epidermal glands which occupy together a considerable part of the internal space of the body.

Buccal cavity very small, elongate conical, unarmed, with walls hardly differing from the posterior internal cuticular pharyngeal lumen. Pharynx clearly muscular throughout its length, consisted of anterior slightly fusiform portion constituting almost 50 % of its entire length, then slightly narrowed and curved isthmus with the nerve ring and distinct triangular terminal bulb 22 μm long and 28 μm wide. Cardia conical, enveloped with the intestinal tissue. Intestine slender, with distinct internal lumen.

Female ovaries paired, antidromously reflected, both anterior and posterior branches situated to the right of the intestine. There one egg 230 μm long and 41 μm wide in the uterus of the anterior branch and no eggs but a group of oval spermatozoa in the uterus of the posterior branch.

Tail very short, conical, with clear spinneret and incaudal glands.

Symbionts. Body is covered by a discontinuous layer of short-stick-shaped bacteria. The cells are shaped as cylinders with length twice or thrice greater than diameter (2–2.5 $\mu\text{m} \times 1 \mu\text{m}$). The cells are arranged vertically to the cuticle surface and crowded tight to one another. The bacteria come off from the cuticle here and there, not individually but as entire layer. Evidently, the cells are stuck to the cuticle and to one another with a secret released by numerous big epidermal cells (see also Bulgheresi et al., 2006).

Discussion. This specimen fits morphometrically to both *Laxus* species with well described females, i.e. to *L. cosmopolitus* and *L. oneistus*. Evidently, species of *Laxus* unlikely can be identified on the base of only females.

Leptonemella Cobb, 1920

Diagnosis. Stilbonematinae. Cuticle with fine but distinct annulation. Cephalic capsule convex, smooth or punctuated, separated by a slight constriction from the annulated body cuticle. Amphideal fovea apicolateral, small, spirally coiled in 1.5 turns, loop-shaped or formed as a shepherd's crook; sausage-like corpus gelatum may be protruded. Buccal cavity not developed. Pharynx very slightly swollen anteriorly. Gubernaculum without dorso-caudal apophysis. Males of some species equipped with stout postcervical, preanal and postanal subventral setae. Tail elongate-conical, c' 3–5. Symbiotic bacteria coccoid to short-stick-shaped.

Type species: *Leptonemella cincta* Cobb, 1920. Cobb, 1920: 244, fig. 21 (Florida, beach sand). Gerlach, 1964: 29–30, Abb. 4c–e (Red Sea).

Other species:

Leptonemella aphanothecae Gerlach, 1950. Gerlach, 1950: 184–187, Abb. 3a–g (Kiel Bay, coarse sand at depth 8–12 m). Luc & de Coninck, 1959: 132–133, fig. 40, 41 (English Channel). Riemann et al., 2003: 120–122, fig. 1A–D, 2A–C, 5E,F (North Sea, Sylt, intertidal zone). The species is also registered in medium sand at depth 10 m in the White Sea, North Russia (personal data).

Leptonemella froeyensis (Allg n, 1946). List of synonyms and mentions in: Gerlach & Riemann (1973: 234). Boucher (1975: 112) denoted this

species as inquirenda because of the incomplete description.

Leptonemella gorgo Gerlach, 1950. Gerlach, 1950: 188-190, Abb. 4a-f (Kiel Bay, coarse and fine sand, 8-12 m deep). Riemann et al. (2003): 125-127, figs. 6A-E, 7A-C (North Sea, Sylt, intertidal zone).

Leptonemella granulosa Boucher, 1975. Boucher, 1975: 110-113, fig. 4 (West Channel, sublittoral fine sand).

Leptonemella juliae Hoschitz, Buchholz & Ott, 1999. Hoschitz et al., 1999: 424-428, fig. 1-14 (northern Adriatic Sea, coarse sand at 3-4 m depth).

Leptonemella parabullata (Allgén, 1946). List of synonyms and mentions in: Gerlach & Riemann (1973: 234). Boucher (1975: 112) denoted this species as inquirenda because of the incomplete description.

Leptonemella vestari Hoschitz, Buchholz & Ott, 1999. Hoschitz et al., 1999: 428-432, fig. 15-24 (northern Adriatic Sea, coarse sand at 3-4 m depth).

Leptonemella vicina Riemann, Thiermann & Bock, 2003. Riemann et al., 2003: 122-125, fig. 3A-I, 4A, 5A-D (North Sea, Sylt, intertidal zone).

Leptonemella sigma Gerlach, 1963. The species is transferred to *Laxus*, see above.

Parabostrichus Tchesunov, Ingels & Popova, 2012

Diagnosis. Stilbonematinae. Cuticle with very faint or sometimes even indiscernible striations. Head cuticle not thickened and not modified, annulations of the cuticle starts from the apex. Amphideal fovea situated laterally, large, spirally coiled, but obscure because its cuticular margin smoothed. Buccal cavity not developed as such. Anterior region of the pharynx slightly widened and not separated sharply from the narrow median region; small posterior bulb. Gubernaculum with a dorso-caudal apophysis. In males, short subventral setae on papilloid projections on the tail. Body covered with long crescent-like symbiotic bacteria often arranged in a spiral pattern.

Type species: *Parabostrichus bathyalis* Tchesunov, Ingels & Popova, 2012. Tchesunov et al., 2012: (Slope canyons in the north-east Atlantic, depths 700-1000 m).

Robbea Gerlach, 1956

Diagnosis. Stilbonematinae. Cuticle fine striated. Cephalic capsule mostly not clearly separated, annulated or smooth. Four cephalic setae much longer than subcephalic ones and usually directed straight forward, Amphideal fovea large, spirally coiled in 1.5-2.5 turns, situated laterally posterior to the apex. Tiny unarmed cylindro-conical stoma with sclerotised walls. Pharynx tripartite, with anterior swollen muscular region clearly separated from the narrow median region, long slim isthmus, and small posterior swelling. Gubernaculum with dorso-caudal apophyses. Cervical prominent cup-shaped supplementary organs may be present (in *R. tenax*). Cuticle often covered by coccoid symbionts inserted in supracuticular slimy pellicle.

Type species: *Robbea caelestis* Gerlach, 1956. Gerlach, 1956: 213-214, Taf. 28, Fig. a-e (Brazil, Pernambuco, ground water, fine sand).

Other species:

Robbea gallica Vitiello, 1974. Vitiello, 1974: 142-144, fig. 4a-d (Mediterranean, Gulf of Marseilles, depth 82 m).

Robbea gerlachi Boucher, 1975. Boucher, 1975: 113-115, fig. 5 (West Channel, sublittoral fine sand).

Robbea macintyreii (Platt & Zhang, 1982) comb. n. Platt & Zhang, 1982: 231-234, fig. 2-3 (as *Catanema macintyreii*, Scotland, sublittoral sand, 3 m depth). The species is here transferred to the genus *Robbea* because of its large spirally coiled amphideal fovea in lateral position.

Robbea porosum (Hopper & Cefalu, 1973) comb. n. Hopper & Cefalu, 1973: 586-588, fig. 12-15 (as *Catanema porosum*, Florida, sand bottom within bed of turtle grass, *Thalassia testudinum*). The species is here transferred to the genus *Robbea* because of its large spirally coiled amphideal fovea in lateral position.

Robbea smo (Platt & Zhang, 1982) comb. n. Platt & Zhang, 1982: 234-235, fig. 4 (as *Catanema smo*, Scotland, sublittoral sand, 3 m depth). The species is here transferred to the genus *Robbea* because of its large spirally coiled amphideal fovea in lateral position.

Robbea tenax Gerlach, 1963. Gerlach, 1963b: 153-155, Abb. 1-2 (Maldiv Islands, surf beach). Hopper & Cefalu, 1973: 589, fig. 16-20 (Florida, sand bottom within bed of turtle grass, *Thalassia testudinum*).

Robbea sp.
Fig. 5A-C, 9F.

Material. Two females. Body length of one of them is not measurable because the body is coiled in a dense clew.

Locality. Central Vietnam, Bay of Nha Trang, Tre Island, Dam Bay, low tidal zone of a mangrove strip, medium sand. November 10, 2006.

Description. Body cylindrical, long and very slender, filiform, yellowish. Body length 3987 μm , a 137, b 44.5, c 57, c' 3.81-3.88, V 54 %. Body diameter at the level of: amphideal fovea 19 μm , nerve ring 23.5-25 μm , cardia 25.5-29 μm , mid-body 25.5-29 μm , anus 18-22 μm . Cuticle thin, transversal striation hardly discernible. Cuticle of the cephalic end around the amphideal fovea looks granular or finely reticular.

Cephalic end rounded. There are minute outer labial setae with little drops squeezed out on their ends around the small mouth out. Four long (13-20 μm) and thin cephalic setae situated apically and directed forward. Two subventral and two subdorsal pairs of thin and shorter (6-7 μm) anterior subcephalic setae close to the apex, at the anterior edge of the amphideal fovea. There are two sublateral pairs of posterior subcephalic setae (6 μm) at the posterior edge of the amphideal fovea. Two successive lateral setae 3 μm long farther posterior at the level of the anterior pharynx. Amphideal fovea lateral but close to the apex, large (9.5-10 μm wide, 50-53 % c.b.d.), round, with fine but distinct contour, cryptospirally coiled in one+ turn, with a central spot.

Somatic cuticle a bit widened and slightly modified at the level of the amphideal fovea. A small conical unarmed buccal cavity with weakly sclerotised walls present (2.5-3 μm long and 2-5 μm wide). Pharynx distinctly consists of anterior oval muscular portion with clear radial striation (procorpus) 32-38 long and 11-14 μm wide, slightly twisted medium portion (isthmus) 4-7 μm wide and terminal small and wide bulb 12.5-13 μm long and 14-19 μm wide.

Tail conical, with a few lateral setae.

Symbionts. On one of the female little, as short sticks sized 3 \times 0.5-1 μm and form small mats on the cuticle here and there. Symbionts of the other female look quite differently, they are long sized

6-9 \times 3 \times 0.5-1 μm and similar to those covering cuticle of *Eubostriachus africanus* found close by.

Squanema Gerlach, 1963

Diagnosis. Stilbonematinae. Body cuticle fine annulated. Cephalic cuticle smooth and consists of plates. Amphideal fovea large, lateral, spirally coiled in two turns. Pharynx very slightly swollen anteriorly, with terminal bulb. Gubernaculum without dorso-caudal apophysis. Body covered with long crescent-like symbiotic bacteria.

Type species: *Squanema articulatum* Gerlach, 1963. Gerlach, 1963a: 98, Taf. 12, fig. d-f (Maldive Islands, coarse sand).

No other species.

Stilbonema Cobb, 1920

(= *Laxonema* Cobb, 1920, opinion of Ott, 1997: 421)

Diagnosis. Stilbonematinae. Cuticle thick, distinctly annulated, annules broad. Cephalic capsule bulging, with smooth or punctated cuticle, separated by a constriction from the body cuticle. Amphideal fovea in apical position, as a short, weakly sclerotised cylinder often with long vermiform corpus gelatum protruding from the anterior outlet of the short cylinder. Buccal cavity not developed. Anterior muscular region of the pharynx not sharply separated from the median region. Gubernaculum without dorso-caudal apophysis. Cervical cup-shaped supplementary organs may be present. Symbiotic bacteria not mentioned.

Type species: *Stilbonema brevicolle* Cobb, 1920. Cobb, 1920: 242-243, 19a-b (shoal in Kingston Harbour, Jamaica in about one foot of water).

Other species:

Stilbonema annulatum Gerlach, 1963. Gerlach, 1963a: 97-98, Taf. 12, Fig. a-c (Maldive Islands, 2 m depth).

Stilbonema majum (Cobb, 1920) comb. n. Cobb, 1920: 243-244, fig. 20 (as *Laxonema majum*; shoal in Kingston Harbour, Jamaica in about one foot of water).

Stilbonema smurovi sp. n. Present paper.

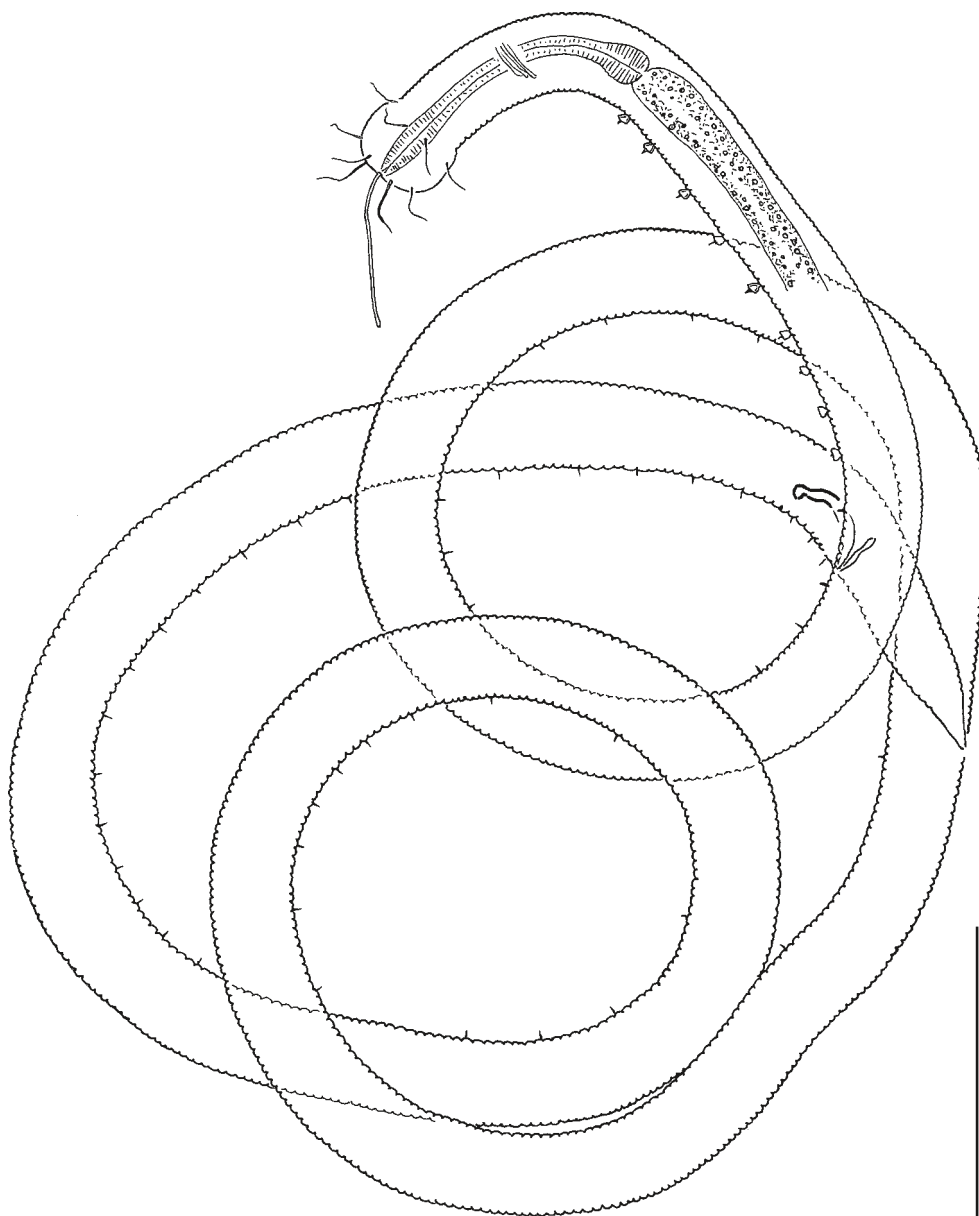


Fig. 6. *Stilbonema smurovi* sp. n., holotype male, entire. Scale bar 100 μ m.

Stilbonema is a poorly known genus yet. According to some physiological and molecular works *Stilbonema majum* and *Stilbonema* sp. are abundant in Belize (e.g. Schiemer et al., 1990; Bulgheresi et al., 2011). But all the taxonomic descriptions of *Stilbonema* species are presented now by only original diagnoses.

***Stilbonema smurovi* sp.n.**

Fig. 6, 7A-B, 8A-B, 10D-F

Material. One male specimen (holotype) and one female specimen) (paratype).

Locality. Central Vietnam, Nha Trang Bay, Hon Mun Island, depth 3 m, small clearing with sparse

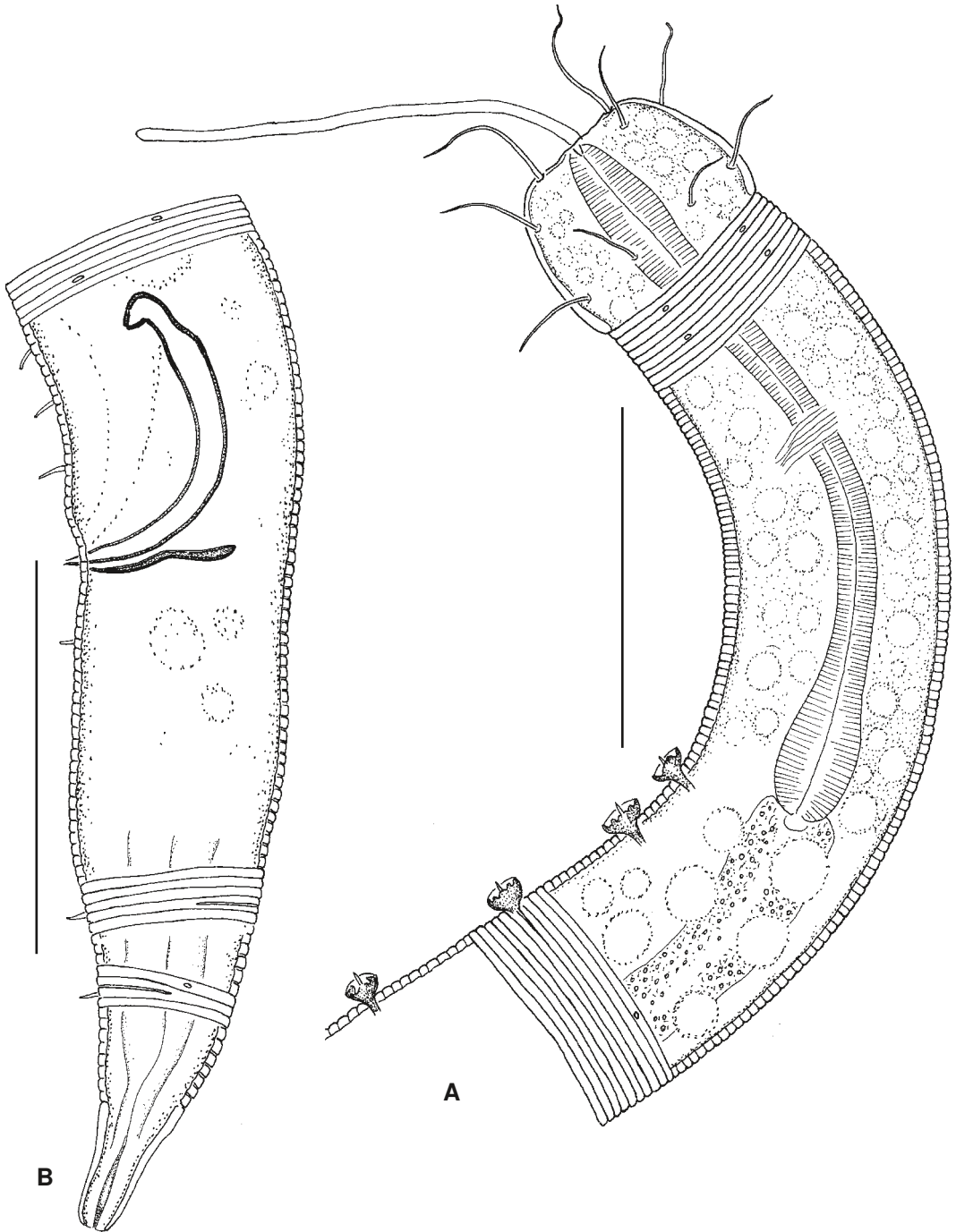


Fig. 7. *Stilbonema smurovi* sp. n., holotype male, body parts. A. anterior body; B. tail. Scale bars 50 μ m.

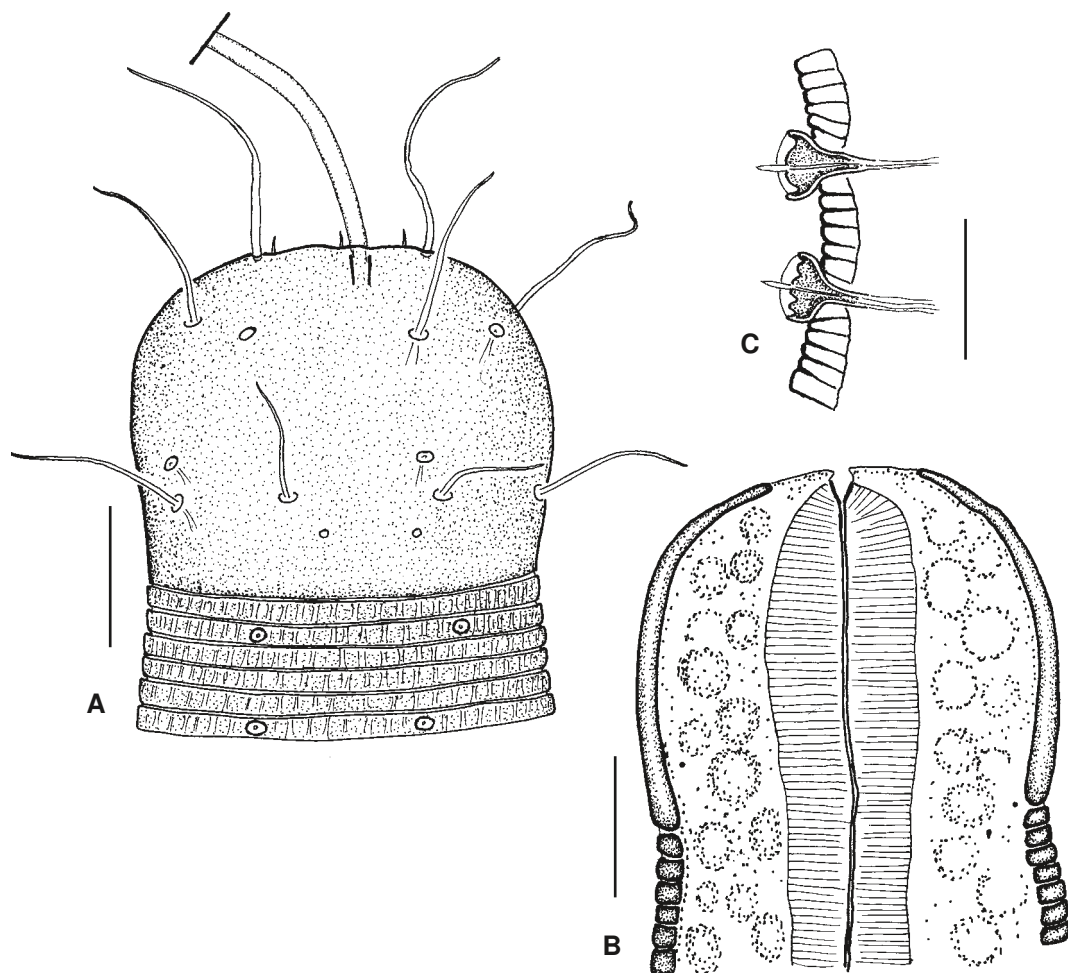


Fig. 8. *Stilbonema smurovi* sp. n., holotype male, details. A. cephalic end, surface view; B. optical section; C. anteriormost cervical supplementary organs. Scale bars 10 μ m.

lawn of the sea weed *Halophila ovalis*, medium-grained coral sand. April 27, 2004.

Etymology. The species is named in honour of Prof. Dr. A. V. Smurov who sampled the nematodes in coral and mangrove biotopes in the Nha Trang area.

Measurements. Male: L 2333 μ m, a 64.9, b 17.7, c 24.7. Female: L 4372 μ m, a 97.2, b 35.5, c 36.7, V 45.9 %. Male: diam.c.s. 22 μ m, diam.n.r. 34 μ m, diam.ca. 31 μ m, diam.midb. 34 μ m, diam.ani 37 μ m. Female: diam.c.s. 23 μ m, diam.nr. 33 μ m, diam.ca. 34.5 μ m, diam.midb. 45 μ m, diam.ani 27 μ m.

Description. Body long, cylindrical, thread-like, but not extremely filiform as that in other stilbonematines. Cuticle brownish, sharply annulated, the annules relatively wide, approximately of the same width throughout the body (5-6 annules in the stretch 10 μ m). The cuticle rather thick, especially in the pharyngeal region; weak longitudinal striation on the annules of the anterior body.

Head distinctly separated, spherically inflated as a cephalic capsule, its cuticle non-annulated and thinner than the posterior annulated cuticle. Surface of the cephalic capsule smooth, without punctations and reticulation. There several smaller and bigger pores on the cephalic capsule; the bigger pores perhaps associated with sensilla.

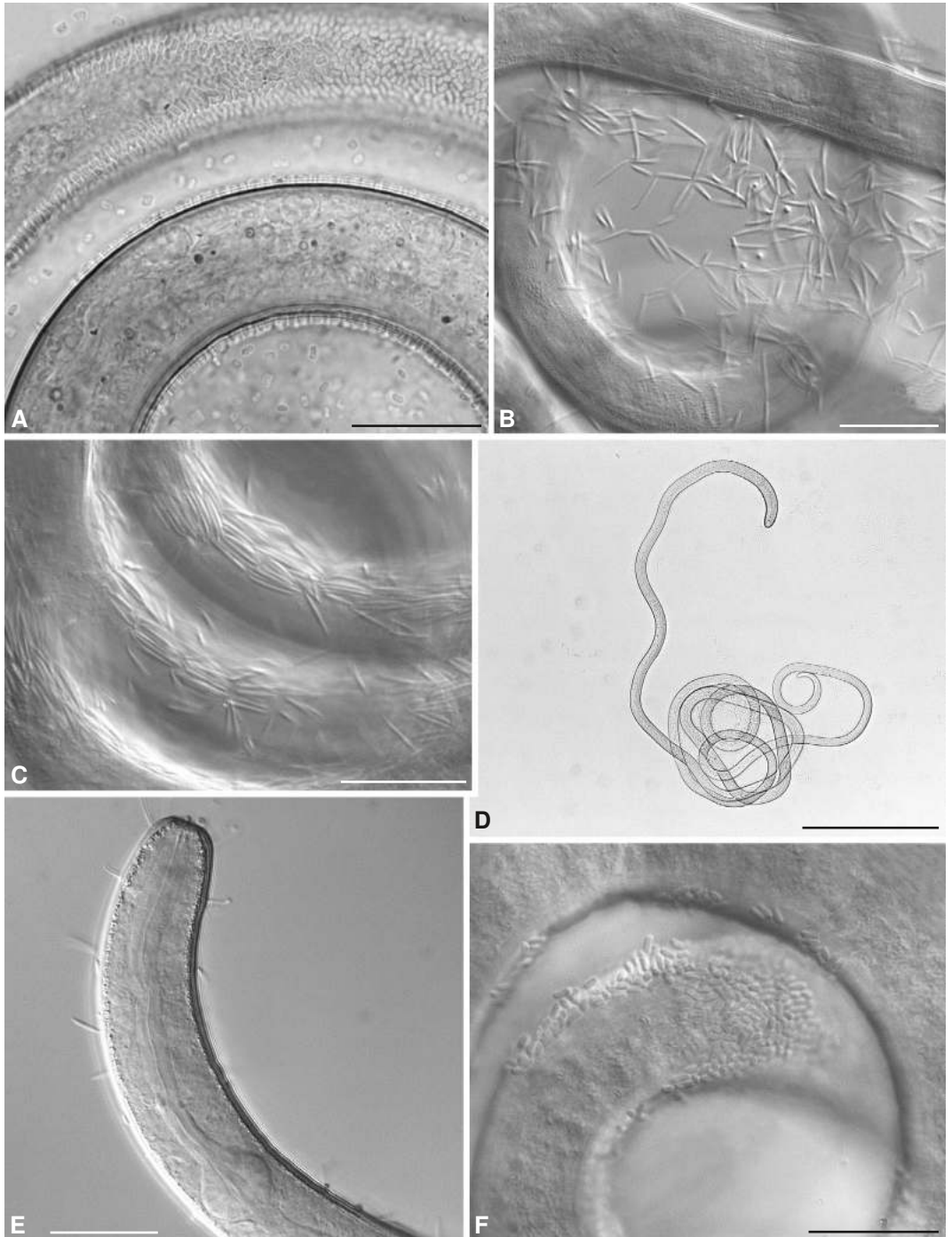


Fig. 9. Three species of Nha Trang stilbonematines and their ectosymbionts. **A.** *Catanema dambayensis* sp. n. covered with symbiotic bacteria; **B.** *Eubostrichus africanus* in a suspension of crumbled symbiotic cells; **C.** *Eubostrichus africanus*, symbiotic cells loosely arranged on the cuticle along the hopst's body; **D.** *Eubostrichus africanus*, female, entire; **E.** *Eubostrichus africanus*, pharyngeal body part; **F.** *Robbea* sp., symbiotic cells on the cuticle. Scale bars: A-C, E-F, 20 μ m; D, 200 μ m.

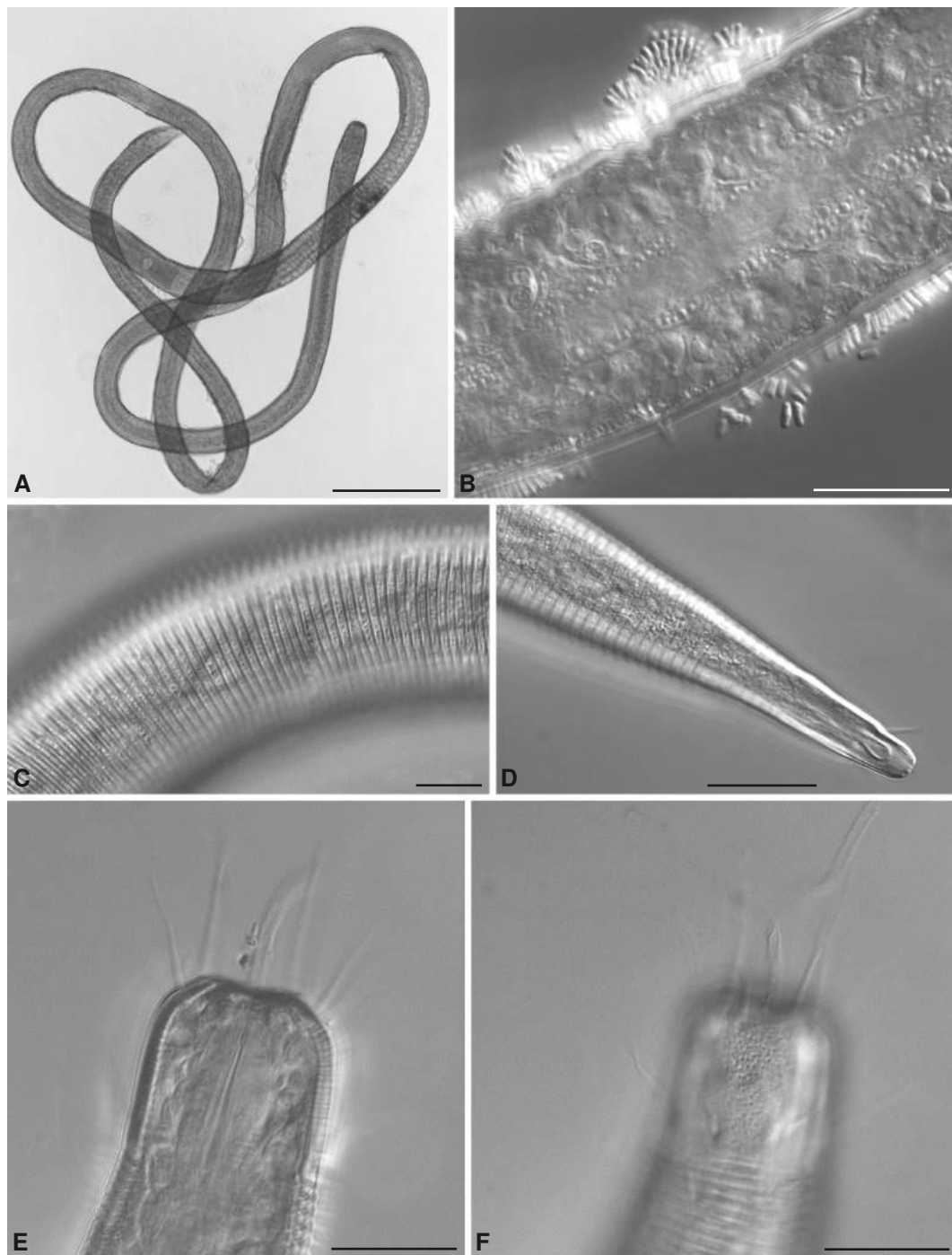


Fig. 10. Two species of Nha Trang Stilbonematinae and their ectosymbionts. **A.** *Laxus* sp., female, entire; **B.** *Laxus* sp., female, body part with ectosymbionts; **C.** *Stilbonema smurovi* sp. n., holotype male, body cuticle; **D.** *Stilbonema smurovi* sp. n., paratype female, tail tip; **E.** *Stilbonema smurovi* sp. n., paratype female, head, optical section; **F.** *Stilbonema smurovi* sp. n., paratype female, head, surface view. Scale bars: A, 200 μ m; B,D-F, 20 μ m; C, 10 μ m.

There six short (3–4 μm in both specimens) outer labial setae visible apically. They are followed with four also apical rather long (22 μm in male, 25 μm in female) cephalic setae directed forward. There are also eight(?) a bit shorter anterior subcephalic setae (14 μm in male, 15–16 μm in female) and eight similar posterior subcephalic setae (14–15 μm in male, 15 μm in female) on the cephalic capsule. Very short cervical and then somatic setae (> 10 μm) distributed farther along the body.

Amphids situated apically and consist of a short cylindrical pit (fovea) with slightly sclerotized walls and a vermiform corpus gelatum (60 μm in male, 40 μm in female) emerging from the pit.

In the male, there is a row of nine midventral supplementary organs from the level of the cardia to the anterior intestine. The organs are cup-shaped with a narrowed base; a short acute seta sticks up from the cup centre. The row of supplements is followed by numerous (> 50) tiny midventral setae to nearly the cloacal opening.

Buccal cavity not developed. Pharynx short and slender, with fine radial muscular striation in its anterior region; the anteriormost part or procorpus of the pharynx slightly widened (in male, 63 μm long and 19 μm), posterior part of the pharynx widened as an oval bulb (in male, 26.5 μm long and bulb. Midgut slender, with distinct internal lumen.

Male reproductive system poorly discernible. Spicules short (chord 35 μm , arc 59 μm) arcuate, distally pointed, proximally with ventrally bent knobs. Gubernaculum as a nearly straight dorsally directed trough 22 μm long.

Tail conical, c' 3.2 in male and 4.41 in female, with terminal cone of smooth cuticle. In male, there are three successive short and thick setae preanally and three shorter thick setae postanally on the tail.

Symbionts. No evident bacterial cells on the cuticle are detected.

Diagnosis. *Stilbonema*. Male: L 2333 μm , a 65, b 18, c 25, c' 3.2. Female: L 4372 μm , a 97, b 36, c 37, c' 4.4. C.s. 22 μm . Two successive circles of eight shorter subcephalic setae on the cephalic capsule. In male, a midventral row of nine cup-shaped supplementary organs extended from the level of the pharynx posterior end to the anterior midgut. Neither any posterior preanal nor postanal modified setae or supplementary organs.

Discussion. Two type specimens, male and female differ strongly in body length from one another. However, the female is not distinguished significantly from the male in any other structural features and dimensions except the much greater body length. The new species differs from *S. annulatum* Gerlach 1963 and *S. majum* (Cobb 1920) by notably lesser body length and lesser index *a* (2333 μm and 65 versus 5977 μm and 124 in *S. annulatum*, 10000 μm and 143 in *S. majum*), and from *S. majum* also by presence of cervical supplementary organs (the latter are lacking or at least not noted in *S. annulatum*). On the contrary, *S. smurovi* sp. n. relates to *S. brevicolle* Cobb 1920 in body length and slenderness (L > 3000 μm , a > 67) but differs in character of body annulations (in *S. brevicolle*, the annules “retorse in the posterior half of the body, the reverse in the anterior”), evidently longer cephalic setae (not measured by Cobb in *S. brevicolle*) and two versus three circles of subcephalic setae on the cephalic capsule.

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