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A NEW SPECIES OF *STREBLOSOMA* SARS, 1872 (POLYCHAETA, TEREBELLIDAE, THELEPODINAE) FROM BRAZIL, WITH COMMENTS ON *STREBLOSOMA OLIGOBANCHIATUM* NOGUEIRA & AMARAL, 2001

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ABSTRACT

A new species of *Streblosoma* is described and the diagnosis of *S. oligobranchiatum* is emended, based on material collected on intertidal rocky shores along the State of São Paulo, Brazil, associated with algae, sponges, ascidians and other sedentary polychaetes. *Streblosoma porchatensis* n. sp. is characterised by the C-shaped arrangement of uncini from posterior thorax, numerous branchial filaments, some inserted laterally from the level of notopodia on segment 2, and by the morphology of uncini. The diagnosis of *S. oligobranchiatum* is emended to allow for variation in the number of branchial filaments and dental formula of uncini. Both species are compared with the closest congeners and some comments are made on the relationships within the group.

INTRODUCTION

The genus *Streblosoma* Sars, 1872 is characterized by having up to three branchiate segments, starting from segment 2, notopodia starting from the first branchiate segment, extending for a variable number of chaetigers, and neuropodia from the last branchiate or the first post-branchiate segment (segments 4 or 5) until near pygidium (Holthe, 1986; Hutchings & Glasby, 1990).

Branchiae comprise a variable number of single filaments, arising independently from the body wall, and tori always have uncini in single rows, both features being characteristic of the

subfamily Thelepodinae. However, in a few species of *Streblosoma*, as well as in some *Thelepus* Leuckart, 1849, uncinial rows are curved, C-shaped, instead of straight as in most species of both genera (Hutchings & Glasby, 1990; Hutchings & Smith, 1997).

In Brazil, only two species of *Streblosoma* were reported until present, *S. bairdi* (Malmgren, 1866) was identified from the states of Alagoas, north-eastern Brazil (Nonato & Luna, 1970), Rio de Janeiro (Rullier & Amoureux, 1979) and São Paulo (Rullier & Amoureux, 1979; Morgado & Amaral, 1989; Amaral et al., 1994, among others), the latter two states on the southeastern coast

of the country, and *S. oligobranchiatum* Nogueira & Amaral, 2001 was described from material from the State of São Paulo.

In the present paper, we describe a new species of *Streblosoma*, found in organically enriched areas off the State of São Paulo, and emend the diagnosis of *S. oligobranchiatum*, based on the study of living and recently preserved material.

MATERIALS AND METHODS

The material examined was obtained from several rocky shores along the State of São Paulo. *Streblosoma oligobranchiatum* was collected only from beaches off São Sebastião, on the northern coast of the State, and *S. porchatensis* n. sp. was only obtained from Santos and São Vicente, in the central area of the State.

All collections were made by the team of Laboratório de Poliquetologia, IB-USP (Adriano Abbud, Isabella Lopes de Almeida Leite, João Miguel de Matos Nogueira, Máira Cappellani Silva Rossi, and Marcelo Veronesi Fukuda), at low tide, in the intertidal zone, by scraping rocks with chisels to extract tufts of algae, colonies of sponges and ascidians, aggregations of tubes of polychaetes, and similar substrata.

Polychaetes were extracted and studied alive under a stereo microscope, relaxed with menthol solution (a few crystals in a petri dish with sea water), fixed in 4% formaldehyde solution, and, after about one week, washed and stored in 70% ethanol. Further analysis under stereo- and light microscopes came from type material and detached parapodia of non-type specimens, mounted on permanent glycerine jelly slides, in the case of *S. porchatensis* n. sp., and entire specimens mounted in permanent slides, in the case of *S. oligobranchiatum*.

For the SEM study, four specimens of *S. porchatensis* n. sp. and two of *S. oligobranchiatum* were critical point dried, covered with 25 nm of gold and examined at Laboratório de Microscopia Eletrônica, IB-UNICAMP.

Descriptions are made based on the whole type series, in the case of *S. porchatensis* n. sp., or the whole amount of specimens, in the case of *S. oligobranchiatum*.

The material examined is deposited at Museu de História Natural, Universidade Estadual de

Campinas (MHN-UNICAMP), Museu do Centro de Estudos do Mar, Universidade Federal do Paraná (MCEM-UFPR), Zoological Museum of the University of Copenhagen (ZMUC), and at the Australian Museum, Sydney (AM).

TAXONOMY

Family Terebellidae Grube, 1851

Subfamily Thelepodinae Hesse, 1917

Genus *Streblosoma* Sars, 1872

TYPE SPECIES. - *Streblosoma bairdi* (Malmgren, 1866).

DIAGNOSIS. - Thelepodines with up to three pairs of unbranched branchial filaments, starting from segment 2. Notopodia beginning on segment 2 and extending for a variable number of chaetigers; notochaetae as smooth tipped capillaries. Neuropodia from segment 5, except for a few species with neuropodia from segment 4, and present until pygidium or near to it; neuropodial tori with uncini typically arranged in single rows, but some species have uncini in C-shaped loops from midthorax; neurochaetae as avicular uncini, with dorsal button developed and prow either present or absent.

***Streblosoma porchatensis* n. sp.**

Figs. 1-3

TYPE MATERIAL. - Nine specimens, all of them complete and in good shape, collected from Ilha Porchat (23°58'50"S, 46°22'30"W) in 15 June, 2003. Holotype and paratypes 1-2 deposited at MHN (holotype: MHN-BPO 93/0, paratypes MHN-BPO 93/1-2); holotype measuring 36 mm in length by 2.2 mm in width, buccal tentacles 15 mm long, with 56 chaetigers, 54 of which with notopodia, and preserved in 70% ethanol; paratype 1 measuring 40 mm in length by 1.5 mm in width, buccal tentacles 18 mm long, with 66 chaetigers, 51 of which with notopodia, preserved in 70% ethanol; paratype 2 measuring 22 mm in length by 2.2 mm in width, with 65 chaetigers, 56 of which with notopodia, and mounted in glycerine-jelly permanent slide. Paratypes 3-4 deposited at the AM (AM W 29240-29241); paratype 3 measuring 32 mm in length by 2.1 mm in width, buccal tentacles 16 mm long, with 58 chaetigers, 48 of which with notopodia, and preserved in 70% ethanol; paratype 4 measuring 29 mm in length by 2 mm in width, with 54 chaetigers, 48 of which with notopodia, and mounted in glycerine-jelly permanent slide. Paratypes 5-6 deposited at the ZMUC (ZMUC Pol 1696-1697); paratype 5 measuring

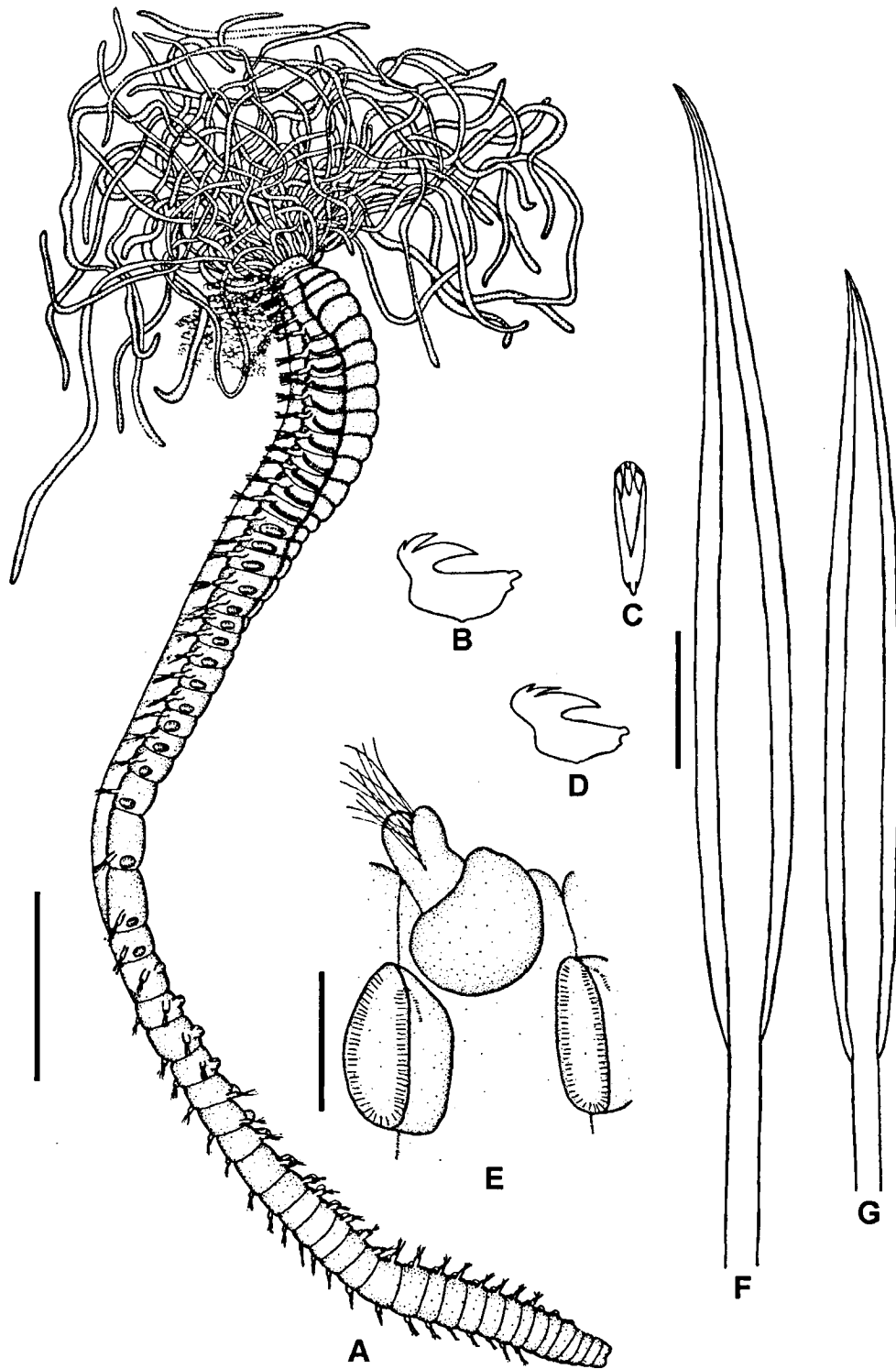


Fig. 1. *Streblosoma porchatensis* n. sp. A, holotype, entire worm. B-C, anterior uncini, lateral and frontal views, respectively. D, posterior uncinus, lateral view. E, parapodium, segment 21. F, notochaeta, posterior row. G, notochaeta, anterior row (scale bars: A = 5 mm; B-D, F-G = 50 μ m; E = 0.2 mm).

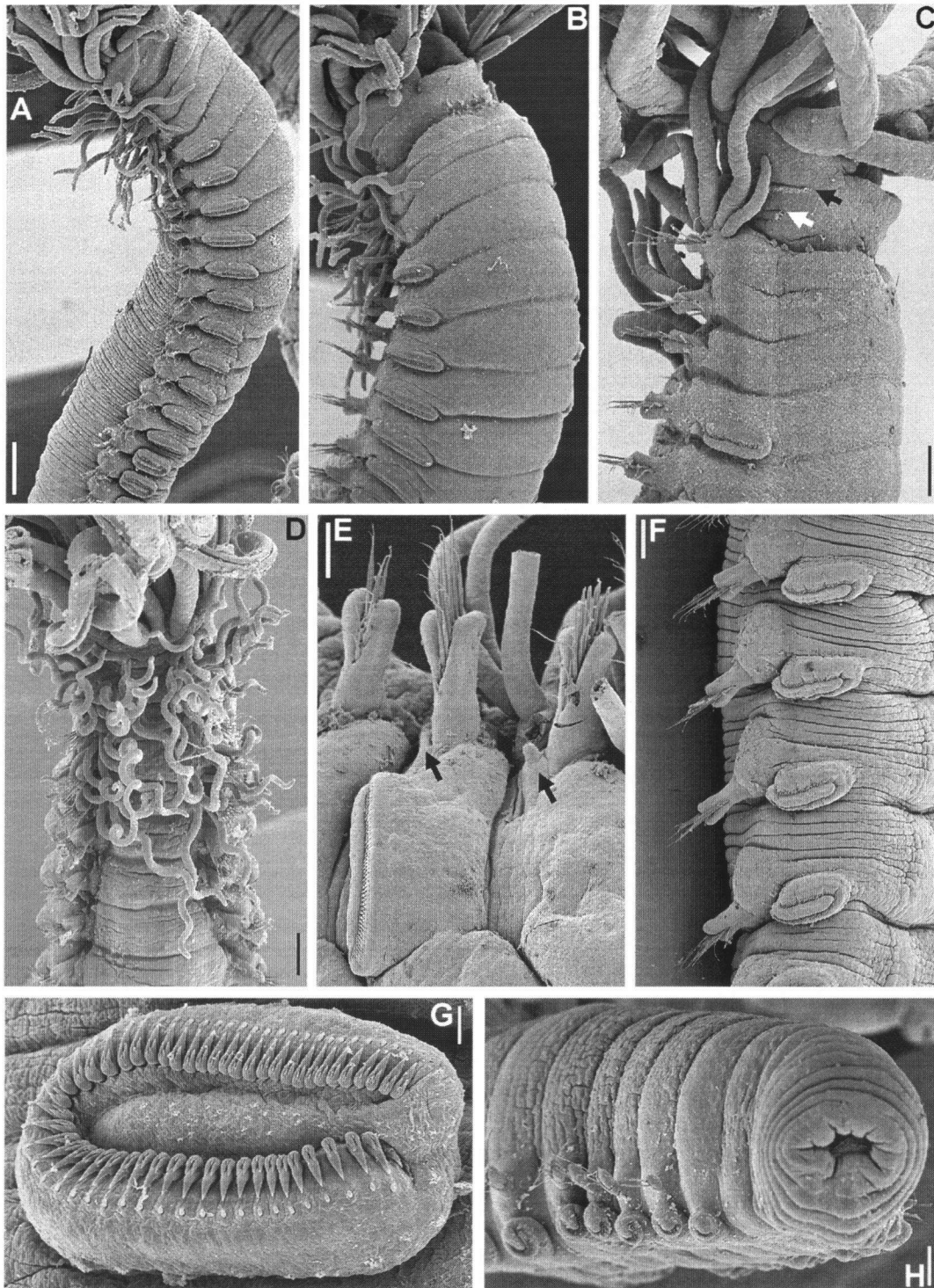


Fig. 2. *Streblosoma porchatensis* n. sp., scanning electron micrographs. A, anterior end, lateral view. B, anterior segments, ventrolateral view. C, anterior segments, ventrolateral view, black arrow points to the ciliated band in the border between tentacular membrane and peristomium, white arrow points to the border between peristomium and segment 1. D, anterior end, dorsal view. E, segments 4-6, showing first neuropodium on segment 5, arrows point to nephridial papillae. F, midbody segments. G, midbody neuropodium. H, posterior end (scale bars: A = 500 μ m; B, D, F = 300 μ m; C, E, H = 200 μ m; G = 30 μ m).

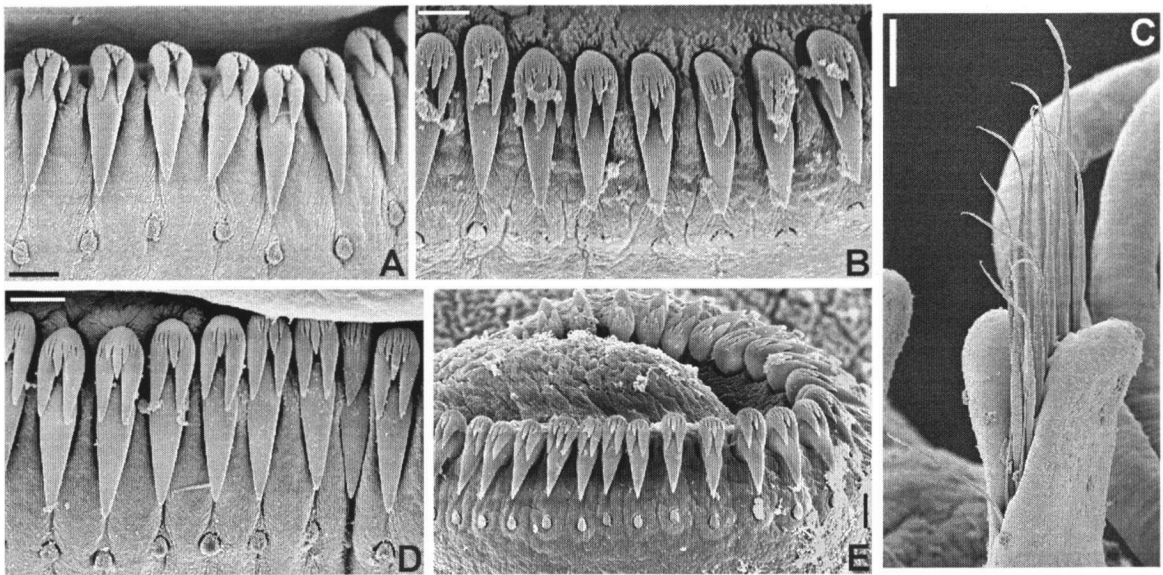


Fig. 3. *Streblosoma porchatensis* n. sp., scanning electron micrographs. A, uncini, anterior segment. B, uncini, midbody to posterior segment. C, notopodium, segment 5. D, uncini, midbody segment. E, uncini, posterior segment (scale bars: A-B, D-E = 10 μ m; C= 100 μ m).

40 mm in length by 1.5 mm in width, buccal tentacles 18 mm long, with 66 chaetigers, 51 of which with notopodia, and preserved in 70% ethanol; paratype 6 measuring 23 mm in length by 2 mm in width, with 54 chaetigers, 46 of which with notopodia, and mounted in glycerine-jelly permanent slide. Paratypes 7-8 deposited at the MCEM (MCEM-BPO 1635-1636); paratype 7 measuring 41 mm in length by 2.1 mm in width, buccal tentacles 15 mm long, with 68 chaetigers, 62 of which with notopodia, and preserved in 70% ethanol, paratype 8 measuring 32 mm in length by 2 mm in width, missing buccal tentacles, with 53 chaetigers, all of them with notopodia, and preserved in 70 % ethanol
 Additional material: State of São Paulo: São Vicente, Ilha Porchat (23°58'50"S 46°22'30"W): 16 specimens, coll. 16-III-2003, 29 specimens, coll. 15-VI-2003, 15 specimens, coll. 9-XII-2003; Santos, Ilha das Palmas (24°00'30"S 46°19'30"W), 5 specimens, coll. 6-III-2004.

DESCRIPTION. - Longest specimen measuring around 40 mm in length, plus 17 mm of buccal tentacles, by 3 mm in width and with 58 chaetigers, shortest specimen with 15 mm in length, plus 7 mm of buccal tentacles, by 1.2 mm in width and with 51 chaetigers, but specimens with more and less chaetigers were also found. Upper lip short, hood-like, lower lip swollen. Tentacular membrane (prostomium) with many ocelli irregularly arranged in a thin but evident bar extending along its entire length; buccal tentacles slightly shorter than half of body length.

Peristomium continuing dorsally as a narrow ring about as long as segment 1, border between prostomium and peristomium with ciliate band (Figs. 2A-C). Segment 1 short, partially covered ventrally by first ventral shield; first ventral shield originating from segment 2, shorter than the following shields and medially indented; following shields not well defined, extending across the entire ventral surface between neuropodia, usually smooth (Figs. 1A, 2A), progressively narrowing from around segment 11 and absent from around segments 16-21. Branchial filaments numerous, placed on segments 2-4, many more branchial filaments on segment 2 than on either of the remaining branchiate segments, filaments laterally extending slightly beyond the level of first pair of notopodia (Fig. 2C); about 17 filaments on each side of first branchiate segment, roughly arranged in two rows, and seven filaments on each side of both remaining branchial segments; medial gap between branchial filaments always distinct (Fig. 2D). Notopodia from first branchiate segment and continuing until near pygidium (Figs. 1A, 2A-D, H); notopodia as elevated rectangular lobes, distally divided into two flattened lobes between which notochaetae arise (Figs. 1E, 2A-F, H, 3C), progressively shortening towards posterior body; anterior base of notopodia

swollen, glandular, until around segments 26-31 (Figs. 1E, 2A-C, E-F). Notochaetae arranged in two rows, each increasing in length from ventral to dorsal position, but shortest chaeta of posterior row about the same length as longest chaeta of anterior row (Figs. 2E-F, 3C). Posterior notochaetae as bilimbate capillaries, finely striated (only seen under higher magnifications of light microscope and SEM), slightly inflated at midlength, and gently tapering towards the tip (Fig. 1F); anterior notochaetae as posterior ones, but with slightly narrower limbation (Fig. 1G). Neuropodia starting from segment 5, initially as low and long tori (Figs. 2A-C, E), which become progressively higher and shorter, as developed neuropodial pinnules from around segment 21 onwards (Figs. 1E, 2F-H). Uncini initially arranged in straight rows, which abruptly become curved from segments 15-16 onwards (Figs. 1E, 2A-C, E-H); uncini breviavicular, dorsal button developed, terminal, directed forwards, prow short, reduced to a small knob shorter than dorsal button, main fang strong, secondary teeth as one row of one to three teeth, usually two, above main fang and a second row with much smaller teeth, 1-2 larger ones inserted between teeth of the first row, surrounded by several smaller teeth at each side (dental formula: MF:1-3:6-7) (Figs. 1B-D); uncini with same shape throughout, with number of secondary teeth varying within same torus (Figs. 3 A-B, D-E). Few achaetous segments are usually present before the smooth to irregularly fringed pygidium (Fig. 2H). Nephridial papillae as short digitate lobes (Fig. 2E), present immediately posterior to notopodia on segments 4-7. Dorsal blood vessel enlarged on segments 2-4. In life, body reddish orange with bright red branchiae and whitish ventral shields; recently fixed specimens greenish grey, with branchiae darker and whitish shields and parapodia; after preservation in 70% ethanol solution, specimens beige to white.

TUBE. - Tube mucous, with small to medium-sized agglutinated debris, such as stones and shells of small bivalves.

VARIATION. - Characteristics of each specimen of the type series are listed above. Although there is considerable variation in relation to body size, the

number of chaetigers shows little variation, suggesting that once a certain number of chaetigers is attained, the addition of new segments is reduced and growth proceeds by enlargement of already existing segments in both length and width. There was also variation in regards to the number of pairs of notopodia present, but it seems related to size, since in all specimens notopodia extend until near pygidium. The anterior ventral shields may be ruffled or smooth; this character is considered important in Terebellinae genera, but, at least in *S. porchatensis* n. sp., it seems to be related to the muscular contraction or protrusion of buccal organ at the time of fixation. The chaetiger from which uncini are arranged in curved rows varies between segments 15-16, irrespectively of body length; one specimen (paratype 2) has different numbers of pairs of parapodia between left and right sides of the body. Knight-Jones & Bowden (1984) suggested in sabellids such asymmetries between left and right sides of the body were due to imperfect regeneration after damage or scissiparity and similar asymmetries are known to occur at least in another terebellid species (Nogueira, 2003). Finally, the number of branchial filaments shows great variation and is size-dependent, but in all specimens the first pair of branchiae extends laterally beyond first notopodium and the branchial filaments are always arranged with a distinct middorsal gap inbetween.

REMARKS. - Although *Streblosoma* is one of the largest genera of Thelepodinae, only a limited number of species present uncini arranged in curved rows, a character which also occurs in some species of *Thelepus* Leuckart, 1849 (Day, 1955; Hutchings, 1990), but the latter genus differs from the former by having notopodia present from segment 3.

Up to the present, only four other species of *Streblosoma* have been reported as having uncini arranged in curved rows: *S. duplicata* Hutchings, 1990, *S. hesslei* Day, 1955, *S. toddae*, Hutchings & Smith, 1997, and *S. uncinatus* Kudenov, 1975. Those species also share other characters with *S. porchatensis* n. sp., such as branchial filaments on segment 2 extending beyond the level of first pair of notopodia (except for *S. duplicata*), neuropodia from segment 5 (except for *S. toddae*), and notopo-

Table 1. Morphological comparison between the species of *Streblosoma* with uncini in curved rows (characters of *S. porchatensis* measured from the holotype. Sources: Day, 1955; Kudenov, 1975; Hutchings, 1990; Hutchings & Smith, 1997).

	<i>S. duplicata</i>	<i>S. hesslei</i>	<i>S. porchatensis</i>	<i>S. toddae</i>	<i>S. uncinata</i>
Length x width (mm)	10 x 1	25 x 1.5	36 x 2.2	180 x 10	33 x 3
Number of segments	(incomplete) 38, posteriorly incomplete	73	57	150	62
Eyespots	absent	present	present	present	present
Presence of lateral extension of branchiae on chaetiger 1	absent	present	present	present	present
Notopodia on segments	2-24	2-35	2 until near pygidium	2 until near pygidium	2 until near pygidium
Notochaetae	narrowly bilimbate	narrowly and broadly bilimbate	narrowly bilimbate, with narrower limbation on posterior chaetigers	narrowly bilimbate	bilimbate
Beginning of uncini (segment)	5	5	5	4	5
Uncini in curved rows (segment)	14 onwards	13 onwards	15-16 onwards	28 onwards	15-56
Posterior uncini arranged in straight rows	no	no	no	no	yes
Uncinal prow	short and rounded, making the dorsal button subdistal	very short, not forming a knob	reduced to a small knob	absent	reduced to a knob much smaller than that of <i>S. porchatensis</i>
Dental formula of uncini	MF:2-3:1	MF:2-5:5-9	MF:2-3:3-4	MF:2-3	MF:2:0-1
Colour	yellowish brown (preserved material)	flesh white (not said in the original description if this is in live or preserved specimens)	in life, reddish orange with tentacles slightly darker; green- ish grey after preservation	in life, yellowish brown, with yellowish shields, and dark-speckled abdomen	bright green with white tentacles
Type locality	Hong Kong	South Africa, Cape of Good Hope	Brazil, State of São Paulo	New Zealand	Mexico, Gulf of California

dia present until near pygidium (except for *S. hesslei*; Table 1).

Besides the absence of any lateral extension of branchial filaments on segment 2, *S. duplicata* differs from *S. porchatensis* n. sp. by having much fewer branchial filaments, by lacking eyespots, by having uncini arranged in closed loops, instead of just curved rows, beginning from segment 14, and by the dental formula of uncini. *Streblosoma hesslei* differs from *S. porchatensis* n. sp. by having more

chaetigers, but with notopodia restricted to less than half of them; inferior notochaetae with broad wings, uncini arranged in curved rows from segment 13, and by the dental formula of uncini. *Streblosoma toddae* is a much longer species, measuring up to 180 mm and up to 146 segments, with many more tentacles and branchial filaments, uncini from segment 4, arranged in curved rows from segment 29, and with body yellowish brown in life, with yellowish shields and

dark speckled abdomen. Finally, *S. uncinatus* is the most similar species, but it has uncini in curved rows from segments 16-57 and then uncini in straight rows until pygidium, different dental formula of uncini, and it is, in life, bright green with white tentacles.

Furthermore, besides the arrangement of uncini in *S. porchatensis* n. sp., the morphology of uncini is also different from that of most species of *Streblosoma*, as they have a prow as a small knob. Among the four species of *Streblosoma* with uncini arranged in curved rows, uncini of *S. toddae* completely lack a prow, those of *S. hesslei* have a short and rounded prow, not forming a knob (Day, 1955: 438, fig. 6k); in *S. uncinatus* the prow is reduced to a very short, almost indistinct knob (Kudenov, 1975: 225, fig. 43), considerably shorter than in *S. porchatensis* n. sp., and in *S. duplicata* the prow is developed, making the dorsal button subdistal.

The comparison between the morphological characters of *S. porchatensis* n. sp. and the four species discussed above is provided in Table 1.

BIOLOGY. - Although rocky shores off northern and central coasts of the State of São Paulo have been monthly surveyed since 2002, *S. porchatensis* n. sp. was only found in the central area of the State of São Paulo, adjacent to the cities of Santos and São Vicente. That area is heavily impacted by human occupation, with high degree of organic contamination. Tubes of *S. porchatensis* n. sp. were found on rocky shores, living among dense aggregations of tubes of sabellids, spionids and another species of terebellid polychaete, in the lower intertidal zone.

ETYMOLOGY. - This species is named after the type locality, Ilha Porchat.

Streblosoma oligobranchiatum Nogueira & Amaral, 2001, emended
Fig. 4

Streblosoma oligobranchiatum Nogueira & Amaral, 2001: 292-295, figs. 3-4.

MATERIAL. - State of São Paulo: São Sebastião, Praia de São Francisco (23°45'25"S, 45°24'25"W): 22 specimens, coll. 19-IV-2003, 152 specimens, coll. 16-VII-2003, 104

specimens, coll. 27-IX-2003; Praia Preta (23°49'15"S, 45°24'35"W): 15 specimens, coll. 18-IV-2003, 1 specimen, coll. 18-VII-2003; Praia de Barequeçaba (23°49'35"S, 45°26'30"W): 41 specimens, coll. 20-IV-2003. Ten specimens deposited at MHN (MHN-BPO 81/4-13).

DESCRIPTION. - Longest specimen measuring around 11 mm in length, plus 7 mm of buccal tentacles, by 0.9 mm in width and with 29 chaetigers, shortest specimen with 5.5 mm in length, plus 1.8 mm of buccal tentacles, by 0.5 mm in width and with 38 chaetigers, but specimens with more and less chaetigers were also found. Upper lip short, hood-like, lower lip swollen. Tentacular membrane (prostomium) with many ocelli arranged in a thick bar in adult specimens, more concentrated laterally; buccal tentacles extending between 1/2 and 2/3 of body length, with numerous dark spots arranged in one straight line at each lateral. Peristomium continuing dorsally as a narrow ring about as long as segment 1, border between prostomium and peristomium with ciliate band (Figs. 4A, B). Branchial filaments short and few in number; up to three filaments at each side on segment 2 (Figs. 4A, B), and zero to one filament on each side on segments 3 and 4; frequently, different number of branchial filaments from one side to another on same segment; if more than one filament is present, inner (dorsalmost) filament always about twice length of remaining filaments, and outer (lateral most) filament always shortest; branchiae may be completely absent in small specimens. Notopodia from first branchiate segment, extending for up to 23 segments as short rectangular lobes (Fig. 4C). Anterior notochaetae as bilimbate capillaries, finely striated (only visible under highest magnification of light microscope and SEM), slightly inflated at midlength, and gently tapering towards tip; notochaetae in two rows throughout, from segment 5, chaetae from the posterior row as above, anterior chaetae shorter and with broader limbation (Figs. 4C, D). Neuropodia starting from segment 5 as low short crests (Fig. 4B), becoming progressively higher and forming neuropodial pinnules from midbody (Fig. 4G). Uncini always arranged in straight rows (Figs. 4B, E-G); uncini breviavicular, dorsal button developed, subterminal, prow short, main fang strong, surmounted by two (anterior chaetigers) or three

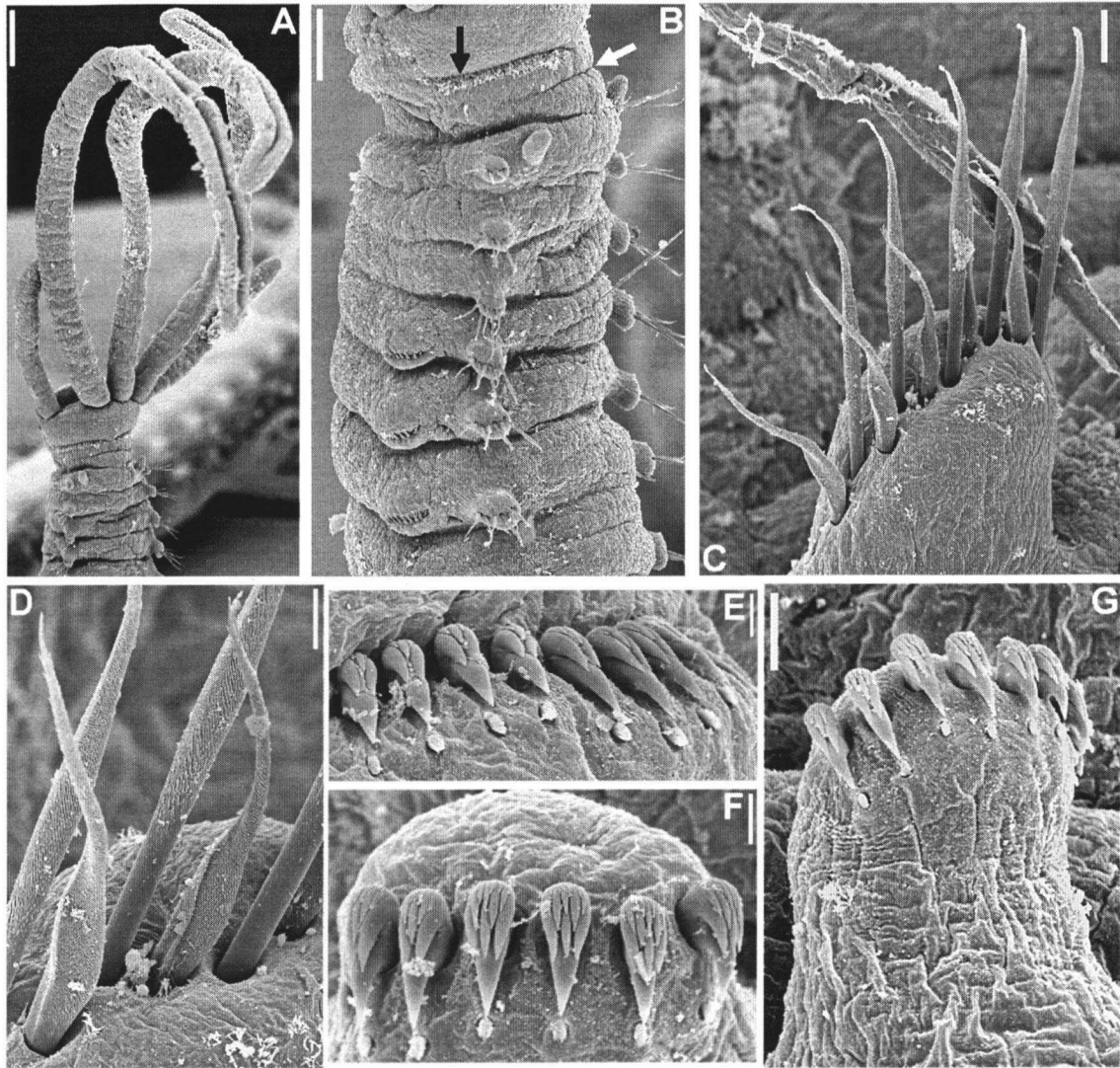


Fig. 4. *Streblsoma oligobranchiatum*, scanning electron micrographs. A, anterior end, dorsal view. B, anterior end, lateral view, black arrow points to the ciliated band in the border between tentacular membrane and peristomium, white arrow points to the border between peristomium and segment 1. C, midbody notopodium. D, detail of figure C, showing anterior notochaetae. E, uncini, segment 7. F, uncini, midbody segment. G, uncini, posterior segment (scale bars: A = 200 μm ; B = 100 μm ; C = 20 μm ; D, G = 10 μm ; E-F = 5 μm).

rows (from midbody chaetigers) of secondary teeth; on anterior chaetigers, uncini with first row above main fang with two teeth above main fang and second row with larger tooth between teeth of the first row, surrounded by two smaller teeth at each side (dental formula: MF:2:5) (Fig. 4E); posterior uncini with first row of secondary teeth with two to four, second row with three to four teeth, and third row with six to nine teeth of variable size (dental formula: MF:2-4:3-4:6-9). Pygidium smooth, usually with few achaetous segments before. Nephridial papillae not seen.

REMARKS. - Nogueira & Amaral (2001) described this species based on nine specimens, all in a poor state of preservation. The arrangement of branchial filaments was described based only on three specimens on which it was possible to clearly see the filaments and all of them had the filaments as then described: two filaments on segment 2 and one on segment 3, on the left side of the body, and one filament on each segment, from segments 2-4, on the right side of the body.

In the material examined in this study, many more specimens were available, several of them

larger than those examined by Nogueira & Amaral (2001). In the present material, it was possible to see that the number of branchial filaments is variable: zero to three on each side of segment 2 and zero to one on each side of segments 3-4, as described above.

The number of eyespots is also variable within our samples, as smaller specimens have them restricted to a few spots in each lateral of the tentacular membrane.

For this study, we performed statistic surveys to investigate a possible correlation of body size to number of branchial filaments, number of pairs of notopodia and of eyespots, however we could not obtain conclusive results either to confirm or deny such correlation, but we suspect it exists.

Besides, we have also noticed a slight variation in the number of secondary teeth present in posterior uncini, as the first row of teeth above main fang may have two to four teeth, and the teeth on second and third rows above main fang were misinterpreted in the original description.

Finally, in the original description, Nogueira & Amaral (2001) only compared *S. oligobranchiatum* to *S. minutum* Hutchings & Glasby, 1987, but there is another species with very few and short branchial filaments, *S. intestinale* Sars, 1872. That species, only known from Northern Atlantic (Scandinavian Peninsula, Faeroes Islands, and Greenland), differs from *S. oligobranchiatum* by lacking eyespots, by having a few more branchial filaments on all branchiate segments, and by having an uncinial prow far more developed (Holthe, 1986).

DISCUSSION

Traditionally, the segment on which notopodia first appear is considered as a very important character in terebellids, used to define genera. Based on that, *Streblosoma* is characterised as having notopodia from segment 2, while *Thelepus* has them from segment 3. Other characters, however, seem to vary within each of these genera, such as the number of pairs of branchiae and, at least in the case of *Streblosoma*, the segment on which neuropodia first appear, for example.

Features that present intrageneric variability include the arrangement of uncini, if in straight or curved rows, as in both genera there are a few

species with uncini in curved rows.

In another terebellid subfamily, Terebellinae, the arrangement of uncini is considered as an important character and the presence of uncini in double rows has been suggested to be the only synapomorphy for that subfamily (McHugh, 1995). We believe that a future phylogenetic work could attribute more importance to the arrangement of uncini in thelepodines as well, and that the presence of uncini in curved rows could define a genus, still undescribed. This new genus will include species currently considered as belonging to *Streblosoma* and *Thelepus* and thus the segment on which notopodia first appear will be viewed as a variable feature within that clade, changing from segment 2 to 3.

In the first phylogenetic study of terebellids, McHugh (1995) investigated the relationships between genera of Terebellinae and concluded that subfamily forms a monophyletic clade, based on the presence of uncini arranged in double rows on at least some chaetigers, as said above. However, Nogueira et al. (2003), when describing a new genus of that subfamily, repeated McHugh's analysis and verified that, due to a basal polytomy, the monophyly of Terebellinae was still poorly supported.

Recently, Glasby et al. (2004) investigated the relationships within the Terebelliformia clade and obtained a different result from McHugh's analysis. In their cladogram, Glasby et al. (2004) verified that all subfamilies of Terebellidae except Polycirrinae were paraphyletic, with Thelepodinae originating from within Terebellinae, and giving rise to the Polycirrinae. Due to the low clade support obtained, however, the authors felt unwilling to propose any new classification for the subfamilies of Terebellidae, although their result indeed shed a new light in our view on the relationships within that group.

We suspect that the curved arrangement of neuropodial uncini on species of *Streblosoma* and *Thelepus* may have given rise to the double row condition found in Terebellinae, if the lateral connection between anterior and posterior parts of the row is lost. If this is true, the order of evolution of the subfamilies of Terebellidae is different from that obtained by Glasby et al. (2004), with Terebellinae originating from Thelepodinae, and Polycirrinae originating from Terebellinae.

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