European Journal of Taxonomy 925: 46–66
https://doi.org/10.5852/ejt.2024.925.2449
ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2024 · Nascimento R.L. *et al.*

Research article

urn:lsid:zoobank.org:pub:D89946CC-B736-4295-9433-52231D525E41

Two new 'incertae sedis' syllids (Annelida: Syllidae) from Brazilian oceanic islands

Rodolfo Leandro NASCIMENTO [1,*], Marcelo Veronesi FUKUDA [2] & Paulo Cesar de PAIVA [3]

[1,3] Laboratório de Polychaeta, Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro – Brazil.
[2] Museu de Zoologia, Universidade de São Paulo, São Paulo – Brazil.
[3] Programa de Pós-graduação em Biodiversidade e Biologia Evolutiva, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro – Brazil.

[*] Corresponding author: rodolfolns@ufrj.br
[2] Email: mvfukuda@usp.br
[3] Email: paulo.paiva@gmail.com

[1] urn:lsid:zoobank.org:author:E5360FF1-8981-430B-88A7-D72418FF7B03
[2] urn:lsid:zoobank.org:author:6BE36A7B-8997-451C-8DE5-35E0ED6F651D
[3] urn:lsid:zoobank.org:author:BF64FCF1-66E5-40C3-93BB-9B40E3A9FD79

Abstract. Oceanic islands harbor a unique and distinct fauna and flora, usually isolated by distance and the deep sea, making them fascinating environments to study. Despite their importance, taxonomic accounts from Brazilian oceanic islands have only recently begun to focus on important groups such as the Syllidae family. In this article, we present detailed descriptions and illustrations of two new species, *Brevicirrosyllis paulolanai* sp. nov. from Trindade Islands, and *Westheidesyllis splendida* sp. nov. from Rocas Atoll. These two species belong to genera currently of uncertain affinities within the family, in both cases previously included in the Eusyllinae subfamily. Moreover, we provide updated identification keys for both genera to facilitate their future identification.

Keywords. Polychaeta, Rocas Atoll, Trindade Island, *Brevicirrosyllis*, *Westheidesyllis*, Eusyllinae.

Nascimento R.L., Fukuda M.V. & Paiva P.C. de. 2024. Two new 'incertae sedis' syllids (Annelida: Syllidae) from Brazilian oceanic islands. *European Journal of Taxonomy* 925: 46–66. https://doi.org/10.5852/ejt.2024.925.2449

Introduction

The family Syllidae Grube, 1850 is one of the most diverse and complex groups of annelids, with approximately 1100 valid species and 79 genera (San Martín & Aguado 2014; Pamungkas *et al.* 2019; Martin *et al.* 2021). Presently, the family is classified into five subfamilies: Anoplosyllinae Aguado & San Martín, 2009, Autolytinae Langerhans, 1879, Eusyllinae Malaquin, 1893, Exogoninae Langerhans, 1879, and Syllinae Grube, 1850, along with some "Incertae sedis" genera (Aguado *et al.* 2012; San Martín & Aguado 2014).

Aguado *et al.* (2012) employed a combination of morphological and molecular data to investigate the relationships within Syllidae, revealing the paraphyletic nature of "Eusyllinae". However, they also discovered a monophyletic group within "Eusyllinae", leading the authors to suggest a reorganization while maintaining the name and rank of the subfamily. During this process, some genera were excluded from the new configuration of Eusyllinae but could not be attributed to any other subfamily, thus being denominated as "Incertae sedis". *Brevicirrosyllis* San Martín, López & Aguado, 2009 and *Westheidesyllis* San Martín, López & Aguado, 2009 were among the genera affected (Aguado *et al.* 2012, 2015).

The genera *Brevicirrosyllis* and *Westheidesyllis* are currently composed of five and three valid species, respectively (Read & Fauchald 2023a, 2023b). Both genera have only been recorded once each in Brazilian waters. The species *Brevicirrosyllis* cf. *mariae* (San Martín & Hutchings, 2006) was registered in Southeastern Brazil (Fukuda *et al.* 2015), while *Westheidesyllis gesae* (Perkins, 1981) was found at the Rocas Atoll (as *Pionosyllis gesae* – Netto *et al.* 1999; Paiva *et al.* 2007), but without descriptions or information on deposited material. In this paper, we present descriptions of two new species: *Brevicirrosyllis paulolanai* sp. nov., the sixth known species of the genus, found in the Trindade Island, and *Westheidesyllis splendida* sp. nov., the fourth species of the genus, and the first with glands, collected in the Rocas Atoll.

Material and methods

The specimens were collected from two oceanic islands in Northeastern Brazil. *Westheidesyllis splendida* sp. nov. was discovered in the Rocas Atoll (3°51′ S, 33°40′ W), the only atoll in the South Atlantic Ocean, located 260 km off the coast of Natal, Rio Grande do Norte, Northeastern Brazil. Specimens were initially fixed in formalin 10% and later preserved in ethanol 70%. The specimens of *Brevicirrosyllis paulolanai* sp. nov. were collected from Trindade Island (20°30′ S, 29°20′ W) during the "ProTrindade Marine Invertebrate Project", which focuses on the fauna of the Trindade and Martin Vaz Archipelago. This island is located 1140 km off the coast of Vitória, Espírito Santo, Southeastern Brazil. Specimens from this project were both fixed and preserved in ethanol 70%.

Morphological traits were examined and measured using a Zeiss Stemi SV11 stereo microscope and Zeiss Axio Lab A1 microscope. To further investigate the specimens, some were subjected to scanning electron microscopy (SEM). Prior to SEM, specimens were dehydrated in a graded series of increasing concentrations of ethanol (92–100%), critical point-dried, coated with ~35 nm of gold, and then examined and photographed at the Laboratório de Imagem e Microscopia Óptica e Eletrônica (LABIM–UFRJ). Detailed line drawings were made from slide-mounted specimens using a drawing tube. The specimens' length was measured from the tip of palps to the tip of pygidium, excluding anal cirri; width was measured at the proventricular level, excluding parapodia. We followed the systematics classification for Annelida Lamarck, 1802 provided by Rouse *et al.* (2022).

The type material and other examined specimens were deposited at the Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJP), Brazil, and at the Museu de Zoologia, Universidade de São Paulo (MZUSP), Brazil. For comparisons with the new species herein described, material from the following institutions was examined: Australian Museum (AM), Australia; National Museum of Natural History, Smithsonian Institution (USNM), USA; Zoologisches Museum Hamburg (ZMH), Germany.

Results

Phylum Annelida Lamarck, 1802
Class Polychaeta Grube, 1850
Subclass Errantia Audouin & Milne Edwards, 1832
Order Phyllodocida Dales, 1962
Family Syllidae Grube, 1850
Incertae sedis

Genus ***Brevicirrosyllis*** San Martín, López & Aguado, 2009

Type species

Pionosyllis weismanni Langerhans, 1879, designated by San Martín *et al.* (2009).

Remarks

San Martín *et al.* (2009) redefined the genus *Pionosyllis* Malmgren, 1867 and proposed several new genera, including *Brevicirrosyllis*, based on distinct groups previously allocated under the former genus. In the key to the identification of *Brevicirrosyllis* presented in that study, however, information regarding the morphology of the dorsal simple chaetae was confounded between *Brevicirrosyllis mayteae* (San Martín & Hutchings, 2006) and *B. ancori* (San Martín & Hutchings, 2006): different from the key (San Martín *et al.* 2009: 1469), the former was described as having pin-shaped dorsal simple chaetae, while the latter was described as having truncate ones (Table 1). Here, we present an updated identification key for all *Brevicirrosyllis*, including the new species described in this study.

Identification key to species of *Brevicirrosyllis* San Martín, López & Aguado, 2009

Adapted from San Martín *et al.* (2009).

1. Compound chaetae heterogomph ..... ***B. gorringensis*** (Hartmann-Schröder, 1977).
– Compound chaetae hemigomph 2

2. Dorsal cirri with fibrillar inclusions 3
– Dorsal cirri without fibrillar inclusions 4

3. Dorsal cirri on chaetiger 2 present ..... ***B. weismanni*** (Langerhans, 1879)
– Dorsal cirri on chaetiger 2 absent ..... ***B. mariae*** (San Martín & Hutchings, 2006)

4. Dorsal simple chaeta pin-shaped ..... ***B. mayteae*** (San Martín & Hutchings, 2006)
– Dorsal simple chaeta truncated 5

5. Palps longer than prostomium; median antenna twice length of palps; dorsal peristomial cirri about same length of body width; parapodial glands present ..... ***B. ancori*** (San Martín & Hutchings, 2006)
– Palps with same length of prostomium; median antenna more than four times as long as palps; dorsal peristomial cirri longer than body width; parapodial glands absent ..... ***B. paulolanai*** sp. nov.

Table 1 (continued on next page). Taxonomic and biogeographic data on the species of *Brevicirrosyllis* San Martín, López & Aguado, 2009. Type localities in bold. Data of *B. ancori* (San Martín & Hutchings, 2006), *B. mariae* (San Martín & Hutchings, 2006), and *B. mayteae* (San Martín & Hutchings, 2006) from San Martín & Hutchings (2006), *B. gorringensis* (Hartmann-Schröder, 1977) from Hartmann-Schröder (1977), and *B. weismanni* (Langerhans, 1879) from San Martín (2003).

	Original description	Body length × width (mm) / n° of chaetigers	Palps	Lateral antenna	Median antenna	Dorsal cirri	Parapodial	Number of falcigers per parapodium (anterior / posterior)
Brevicirrosyllis ancori	San Martin & Hutchings, 2006	8 × 0.2 / 50	Triangular, longer than prostomium	Slightly anteriorly to eyes, as long as palps	Posterior to eyes, longer than palps + prostomium, smooth	No inclusions; smooth, short, papilliform; absent on chaetiger 2	Slightly shorter than dorsal cirri; parapodial glands from proventricle, granular material	4 / 3
Brevicirrosyllis gorringensis	Hartmann-Schröder, 1977	1.5 × 0.22 / 25	Broad, subtriangular, as long as prostomium	On anterior margin of prostomium, slightly longer than palps	On posterior margin of prostomium, slightly longer than palps + prostomium, rugose	No inclusions; smooth, as long as or slightly shorter than median antenna; present on chaetiger 2	Shorter than dorsal cirri; no parapodial glands	8 / 4
Brevicirrosyllis paulolanai sp. nov.	This paper	7 × 0.17 / 47 (without posterior most segments)	Triangular, about same length of prostomium	Slightly anteriorly to eyes, about same length of palps	Posterior to eyes; three times longer than palps + prostomium, basally smooth, distal half rugose	No inclusions; ~ ½–¾ length of median antenna, smooth; absent on chaetiger 2	Shorter than dorsal cirri; no parapodial glands	4–5 / 3
Brevicirrosyllis mariae	San Martin & Hutchings (2006)	7 × 0.3 / 54	Triangular, longer than prostomium	Slightly anteriorly to eyes, as long as palps	Between posterior eyes, about same length of palps + prostomium	Fibrillar inclusions; from chaetiger 1 pseudoarticulated distally, as long as median antenna; absent on chaetiger 2	Slightly longer than dorsal cirri; parapodial glands from midbody	5 / 3–4
Brevicirrosyllis mayteae	San Martin & Hutchings (2006)	5.4 × 0.2 / 44	Broad, stout, shorter than prostomium	Slightly anteriorly to eyes, as long as palps + prostomium	Near posterior margin, about, about same length of palps + prostomium	No inclusions; from chaetiger 1 smooth, as long as median antenna; absent on chaetiger 2	Slightly shorter than dorsal cirri; parapodial glands from midbody, granular material	5 / 4
Brevicirrosyllis weismanni	Hartmann-Schröder, 1977	18 × 0.5 / 96	Broad, subtriangular, slightly longer than prostomium	Slightly anteriorly to eyes, as long as prostomium + palps	Between posterior eyes; almost three times longer than lateral ones, pseudoarticulated anteriorly	Fibrillar inclusions; smooth, slightly shorter or about same length as median antenna; present on chaetiger 2	Slightly shorter than dorsal cirri; no parapodial glands	+4 / 4

Table 1 (continued). Taxonomic and biogeographic data on the species of *Brevicirrosyllis* San Martín, López & Aguado, 2009. Type localities in bold.

	Falciger blades morphology	Falciger blades length – anterior/posterior blades (µm)	Dorsal simple chaeta	Ventral simple chaeta	Pharynx/proventricle segments (muscle cell rows)	Habitat	Distribution
Brevicirrosyllis ancori	Bidentate, teeth similar in size	33–8/20–10	From mid to posterior parapodia, truncated	Only on posterior parapodia; bidentate, subdistal tooth larger than distal one, with translucent hood	5/2.5 (30)	From 9 to 244 m deep. Associated with encrusting algae and sponges	Pacific Ocean: Australia (**Queensland**, Western Australia, northern New South Wales)
Brevicirrosyllis gorringensis	Bidentate, distal tooth larger	Small gradation in length (from drawings)	From midbody parapodia, long, straight, acute	Only on posterior parapodia; bidentate, subdistal tooth larger than distal one	4.5/4 (30)	72 m deep. From dredges	Only known from type locality. Atlantic Ocean: **Gorringe Bank**
Brevicirrosyllis paulolanai sp. nov.	Bidentate, distal tooth slightly larger than subdistal one throughout	27–10/15–7	From midbody, truncated	Not observed	2.5–3/2.5 (32–30)	Subtidal zones, 18–21 m deep	Only known from type locality. Atlantic Ocean: Brazil (**Trindade Island**)
Brevicirrosyllis mariae	Bidentate, distal tooth larger anteriorly, teeth about same size towards posterior body	27–12 throughout	From midbody parapodia, truncated	From mid to posterior parapodia; bidentate, subdistal tooth larger than distal one, with translucent hood	4/3–4 (30–36)	Subtidal to 244 m deep. Associated with incrusting communities and sand	Pacific Ocean: Australia (**Queensland**, New South Wales)
Brevicirrosyllis mayteae	Bidentate, distal teeth similar in size	16–8/10–7	From mid to posterior parapodia, long, straight, acute, with minute subdistal spines on margin	Only on posterior parapodia, bidentate, teeth at 90°, subdistal tooth larger than distal one with translucent hood	5/5 (20)	Subtidal to 30 m deep. Associated with *Lithothamnion* sp. and *Halimeda* sp.	Pacific Ocean: Australia (**Queensland**)
Brevicirrosyllis weismanni	Bidentate, distal tooth slightly larger	25–20/–	From anterior parapodia, truncated	Form proventricle or only on posterior parapodia, bidentate, subdistal tooth larger than distal one, with translucent hood	5/3 (30)	From intertidal to 200 m deep. Associated with vermetids, coralline substrates and in rocky and *Peyssonelia* sp. bottoms	Atlantic Ocean: Mediterranean Sea, Brittany, **Madeira Island**, Gulf of Mexico, and Cuba. Pacific Ocean: Hawaii Islands

Brevicirrosyllis paulolanai sp. nov.
urn:lsid:zoobank.org:act:6AFB0EF7-ECB4-43F5-AE89-43DA78943CA5
Fig. 1

Differential diagnosis

Brevicirrosyllis without dorsal cirri on chaetiger 2, parapodial glands absent, palps similar in length to prostomium, median antenna more than four times as long as palps, dorsal peristomial cirri longer than body width.

Etymology

This species is named in honor of the late Dr Paulo da Cunha Lana (20 April 1956–30 June 2022), a remarkable Brazilian researcher who left an indelible mark in the fields of oceanography, marine ecology, and systematics of marine invertebrates, especially polychaetes. Throughout his distinguished career, Dr Lana inspired and amazed generations of researchers with his unwavering passion for science and his deep love for people. He once expressed that while he loved polychaetes, he loved people even more. Dr Lana's invaluable contributions to the scientific community and his steady commitment to excellence in research make him an outstanding role model and a true inspiration. We are deeply grateful for his legacy. Thank you, Paulo.

Type material

Holotype

BRAZIL • Trindade Island, Enseada da cachoeira; 20.2357136° S, 28.6968285° W; depth 18 m; 4 Jul. 2012; MZUSP 6096.

Paratype

BRAZIL • 1 spec.; Trindade Island, Ilha da Racha; 20.5083781° S, 29.4587883° W; depth 21 m; 16 Jul. 2013; MZUSP 6097.

Comparative material examined

Brevicirrosyllis ancori (San Martín & Hutchings, 2006)

AUSTRALIA • 1 spec. (holotype); Queensland, Great Barrier Reef, Outer Younge Reef; 14.6149208° S, 145.5871437° E; depth 9 m; 21 Jan. 1977; rock covered with coralline algae and encrusting sponges; G. San Martín det; AM W29244 • 4 specs; same locality as for preceding; depth 30 m; 24 Jan. 1977; rock with *Lithothamnion* and *Halimeda*; P. Hutchings leg; G. San Martín det; AM W28962.

Description

Medium to long-sized body, slender, longest specimen examined incomplete, 7 mm long, 0.17 mm wide, with 47 chaetigers; body without pigmentation in specimen preserved in ethanol (Fig. 1A). Palps triangular, distally tapering, fused only at bases, about same length of prostomium; prostomium subpentagonal, with a pair of eyes close to bases of lateral antennae, and a pair of eyespots on anterior margin; lateral antennae inserted slightly anteriorly to pair of eyes, about same length of palps; median antenna inserted posteriorly to eyes, on middle of prostomium or slightly posteriorly, almost four times as long as lateral ones, basally smooth, distal half rugose (Fig. 1A). Peristomium distinct, shorter than subsequent segments; dorsal peristomial cirri about same length of palps and prostomium together, longer than body width and lateral antennae, but shorter than dorsal cirri from chaetiger 1; ventral peristomial cirri almost ½ length of dorsal ones (Fig. 1A). Dorsal cirri from chaetiger 1 longer than remaining ones, with almost half length of median antenna; dorsal cirri absent on chaetiger 2; remaining dorsal cirri digitiform to distally slightly tapered, without internal glands, longer than parapodial lobes but shorter than width of respective chaetiger, approximately ½–¾ length of median antenna (Fig. 1A).

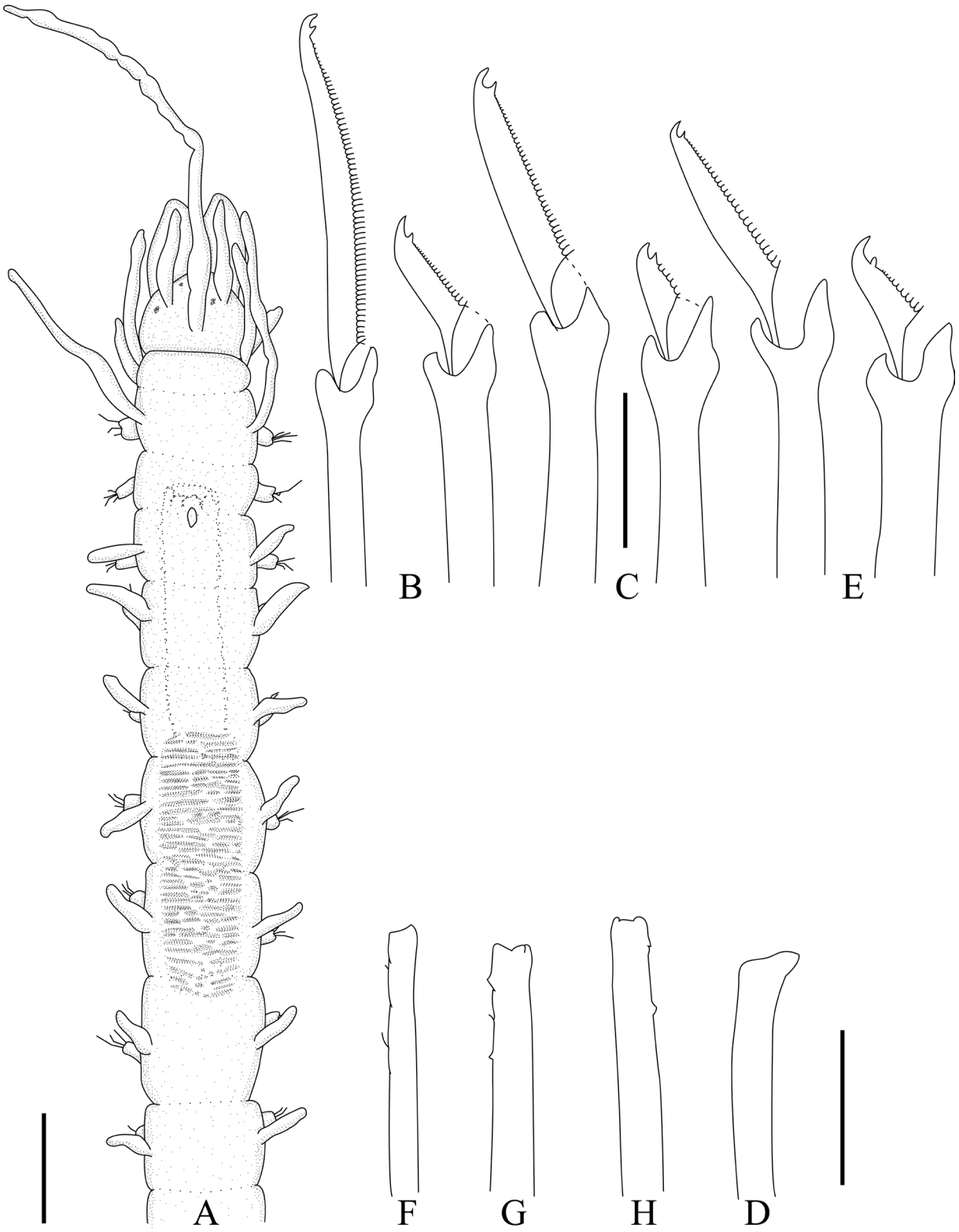

Fig. 1. *Brevicirrosyllis paulolanai* sp. nov., holotype (MZUSP 6096). **A**. Anterior body, dorsal view. **B–C, E**. Falciger chaetae, anterior, mid- and posterior body, respectively. **D**. Acicula. **F–H**. Dorsal simple chaetae, anterior, mid- and posterior body, respectively. Scale bars: A = 0.17 mm; B–H = 10 µm.

Ventral cirri digitiform, shorter than parapodial lobes. Parapodial lobes conical. Anterior body parapodia with 5–4 falcigers each, 4–3 falcigers on midbody and 3 falcigers on each posterior body parapodium; shafts of falcigers hemigomph, smooth, thicker ventralwards; blades bidentate, distal tooth slightly larger than subdistal one throughout; on each anterior parapodium, dorsalmost blade elongate, subdistally faintly sinuous (Fig. 1B); blades with short and thin spines on margin, with smooth connective joining blade and shafts on anterior and midbody parapodia; blades with dorsoventral gradation in length, about 27–10 µm on anterior body (Fig. 1B), 29–8 µm on midbody (Fig. 1C) and 15–7 µm on posterior body parapodia (Fig. 1E). Dorsal simple chaetae present from chaetiger 10–11, truncated, with few spines laterally, becoming slightly thicker towards posterior body (Fig. 1F–H). Ventral simple chaetae not observed, possibly lost with the posteriormost segments. One acicula per parapodium throughout almost bent at right angle, with irregular, tapering tip (Fig. 1D). Pharynx through 2.5–3 segments; with conical to rhomboidal pharyngeal tooth located on anterior rim (Fig. 1A). Proventricle through 2.5 segments, with 32–30 muscle cell rows.

Remarks

Brevicirrosyllis paulolanai sp. nov. is distinguished from its congeners by several morphological features, including palps of approximately the same length as the prostomium, median antenna more than four times as long as palps, and dorsal peristomial cirri with similar length to that of the palps and prostomium combined, which is greater than the body width. The dorsal cirri of chaetiger 1 are longer than those of the remaining chaetigers, about half the length of the median antenna or twice the width of the corresponding segment, while the dorsal cirri of the remaining chaetigers are shorter, digitiform to slightly tapered distally, and lack internal glands.

The species *Brevicirrosyllis ancori*, originally described from the Pacific Ocean off Queensland, Australia, shares many similarities with the newly described *B. paulolanai* sp. nov., including overall body morphology (palps, body wall, and appendages) and shape of compound chaetae (Table 1). However, several distinct differences set *B. ancori* apart, including palps that are about 1.5 times as long as the prostomium, a shorter median antenna that is only about twice the length of the palps, and dorsal peristomial cirri about the same size as the palps and roughly equivalent to the body width (Table 1). Additionally, *B. ancori* possesses parapodial glands (Table 1). San Martín & Hutchings (2006) noted some variation in *B. ancori*, such as the occasional presence of two pairs of eyes, longer dorsal cirri on chaetiger 1, and larger parapodial glands than in the holotype, and despite these variations, *B. paulolanai* is readily distinguishable from *B. ancori*.

Type locality

Trindade Island, Espírito Santo, Brazil.

Distribution

South Atlantic Ocean, Trindade Island.

Genus ***Westheidesyllis*** San Martín, López & Aguado, 2009

Type species

Eusyllis heterocirrata Hartmann-Schröder, 1959, designated by San Martín *et al.* (2009).

Emended diagnosis

Small-sized, fragile bodies, easily loosing antennae and cirri. Transversal bands of cilia may be present on prostomium, peristomium and segments. Palps subtriangular, free from each other for most of their length, fused only at bases; prostomium oval to subpentagonal, with lateral antennae inserted near

anterior rim, median antenna inserted posteriorly to lateral ones; eyes present or absent, sometimes only a pair; some species with pair of anterior eyespots. Peristomium distinct, with two pairs of peristomial cirri. Dorsal cirri alternating long cirri, more than twice as long as body width at corresponding segment, and short cirri, with length up to half width of corresponding segment. Parapodial glands occasionally present at the bases of parapodial lobes. Falcigers with homogomph articulation; blades short, bidentate, spinulated, with short spines. Dorsal simple chaetae from anterior to midbody posteriorwards. Ventral simple chaetae not known. Aciculae distally inflated, laterally expanded or knobbed. Pharynx longer or about same size as proventricle, with anterior tooth.

Remarks

When the genus *Westheidesyllis* was proposed, only three species were recognized: *W. corallicola* (Ding & Westheide, 1997), *W. gesae* (Perkins, 1981), and *W. heterocirrata* (Hartmann-Schröder, 1959).

Two species of the genus, *W. gesae* and *W. heterocirrata*, are very similar morphologically. *Westheidesyllis gesae* has long and thin spines on the anterior and midbody falciger blades, ciliation on the prostomium and as transversal bands of cilia in each segment, and proventricle extending for about three segments, with approximately 23 muscle-cell rows. *Westheidesyllis heterocirrata* has relatively thicker spines on the falciger blades, proventricle extending for about two segments, with 14 muscle-cell rows, and does not have transversal ciliary bands on the segments. However, the identification of ciliation patterns can be difficult without proper fixation methods and examination under SEM (San Martín & Aguado 2012), an issue particularly important in genera for which this character is important, such as *Westheidesyllis*. For instance, ciliation in some paratypes of *W. gesae* could not be visualized properly under optical microscopy, except at the bases of dorsal cirri (MVF pers. obs.), and the transverse ciliary bands might not be present in some specimens of this species from the Mexican Pacific (Salcedo-Oropeza *et al.* 2016). Additionally, although the original description of *W. heterocirrata* does not mention this character, tufts of cilia could be observed at the bases of the dorsal cirri of the holotype (MVF pers. obs.). Moreover, *W. gesae* was described from Florida and with reports from the Atlantic coast of the United States, the Gulf of Mexico and the Caribbean, while *W. heterocirrata* was described from and only known to occur in El Salvador, in the Pacific Ocean (Read & Fauchald 2023b). Thus, the Isthmus of Panama is the geographic barrier between the two species, and that should be considered in the revision of this genus, that preferably should use SEM.

Although *W. gesae* had been recorded in Brazilian waters, specifically in the Rocas Atoll (Paiva *et al.* 2007, as *Pionosyllis gesae*), no description or information about deposited material was provided. In this study, we describe a new species from the Rocas Atoll, *Westheidesyllis splendida* sp. nov., which is the first species of the genus described as presenting glands. This character led us to amend the genus, to accommodate this new observation.

Identification key to species of *Westheidesyllis San Martín, López & Aguado, 2009*

Adapted from San Martín *et al.* (2009).

1. Eyes absent, but anterior eyespots may be present 2
– Eyes and eyespots present 3

2. Without eyespots; parapodial glands present; aciculae distally hollow, with tips protruding from parapodial lobes ..... ***W. splendida*** sp. nov.
– With eyespots; parapodial glands absent; aciculae distally knobbed, not protruding from parapodial lobes ..... ***W. coralicolla*** (Ding & Westheide, 1997)

3. Transversal ciliated bands on prostomium, peristomium and segments; blades of falcigers with long and thin spines ..... ***W. gesae*** (Perkins, 1981)
– Transversal ciliated bands absent, or not as above; blades of falcigers with spines coarser than above ..... ***W. heterocirrata*** (Hartmann-Schröder, 1959)

Westheidesyllis splendida sp. nov.
urn:lsid:zoobank.org:act:D172737A-CC06-4DAB-B6E7-F82FDBD4A8E2
Figs 2–7

Diagnosis

Westheidesyllis with parapodial glands.

Etymology

This species is named in honor of its type locality, the Rocas Atoll, a splendid place.

Type material

Holotype

BRAZIL • Rocas Atoll; 3.8805091° S, 33.8780718° W; depth 1 m; 16 Oct. 2000; on coralline sand; MZUSP 6098.

Paratypes

BRAZIL • 4 specs; same collection data as for holotype; MZUSP 6099.

Additional material examined

BRAZIL • 135 specs; same collection data as for holotype; MNRJP • 57 specs (four mounted for SEM); Piscina das Âncoras; 3.8638266° S, 33.8263897° W; depth 1 m; 16 Oct. 2000; on coralline sand; MNRJP • 6 specs; "along of the Rais"; depth 1 m; 23 Oct 2000; on coralline sand; MNRJP.

Comparative material examined

Westheidesyllis gesae (Perkins, 1981)

UNITED STATES • 1 spec. (holotype); Florida, Hutchinson Island; 27.3567° N, 80.2217° W; depth 10.9 m; 12 Mar. 1976; Gallagher, Boyle and Whiting leg.; T.H. Perkins det.; USNM 60456 • 1 spec. (paratype); same locality as for holotype; depth 9.7 m; 29 Jul. 1973; Gallagher, Futch and Jaap leg.; T.H. Perkins det.; USNM 60458; • 2 specs (paratypes); same locality as for holotype; depth 11.5 m; 14 Mar. 1972; Gallagher and Hollinger leg.; T.H. Perkins det.; USNM 60459.

Westheidesyllis heterocirrata (Hartmann-Schröder, 1959)

EL SALVADOR • 1 spec. (holotype); Estero Jaltepeque, La Herradura; 1955; sand, infralittoral; HMZ P-14579.

Description

Small-sized, slender bodies, longest specimen 2.6 mm long, 0.25 mm wide, with 32 chaetigers; specimens preserved in ethanol without pigmentation. Palps subtriangular, basally juxtaposed for ~¼ their length, distally rounded, slightly shorter than prostomium (Figs 2A, 3, 4A, 5A, C–D). Prostomium ovate to subpentagonal; eyes absent; lateral antennae inserted close to anterior margin of prostomium, about half length of median one; median antenna inserted on midline of prostomium, almost four times as long as palps and prostomium (Figs 3, 5A–D). Two large ciliated nuchal organs between prostomium and peristomium (Fig. 5B). Peristomium distinct, shorter than subsequent segments; dorsal peristomial cirri about same length or slightly shorter than median antenna (Fig. 3); ventral peristomial cirri almost half length of dorsal ones. Ciliated pits transversally arranged on midline of peristomium and first chaetiger, from the second to at least chaetiger 15 (Fig. 5B, G), ciliated pits distributed dorsally close to the base of dorsal cirri. Dorsal cirri alternating in length, on chaetiger 1 about four times as long as width of segment (Fig. 3); on chaetiger 2 absent; on chaetigers 3, 5 and 7, shorter than width of corresponding segments; on chaetigers 4, 6, 8 and 9, three to four times as long as width of corresponding segment

(Fig. 3); from chaetiger 10 onwards, dorsal cirri with regular alternation in length, short cirri shorter than corresponding segment, long cirri three to five times as long as corresponding segment (Fig. 4D). Antennae, peristomial and dorsal cirri with cirrophores (Figs 3, 4B, D, 5A–D, G). Ventral cirri digitiform, shorter than parapodial lobes, inserted distally, extending beyond parapodial lobes, shorter towards posterior body (Figs 4A–B, 5H). Parapodial lobes elongated, rectangular, slightly bilobed (Figs 3, 4B); parapodial glands presents after proventricle, close to bases of parapodial lobes, with rounded to subpentagonal granules (Figs 2A–C, 4B–D). Parapodia with three falcigers each throughout; shafts of falcigers smooth, homogomph, with irregular, usually quadrilobate acute tips (Figs 6A–C, 7F); blades bidentate, with teeth about same size or distal tooth slightly larger throughout; blades spinulated, with short and thin spines (Figs 6A–C, 7A–B, F, J); blades varying in length on dorsalmost, intermediate and ventralmost chaetae, with 6 µm, 12 µm and 8 µm on anterior parapodia (Figs 6A, 7A–B); 7 µm, 13 µm and 10 µm long on midbody (Figs 6B, 7E–F); and 5 µm, 12 µm and 9 µm on posterior body (Figs 6C, 7H–J). Dorsal simple chaetae present from chaetigers 3–4, tapering distally, with rounded tip, subdistally spinulated on anterior body (Figs 6D, 7C–D), slightly sigmoid towards posterior body

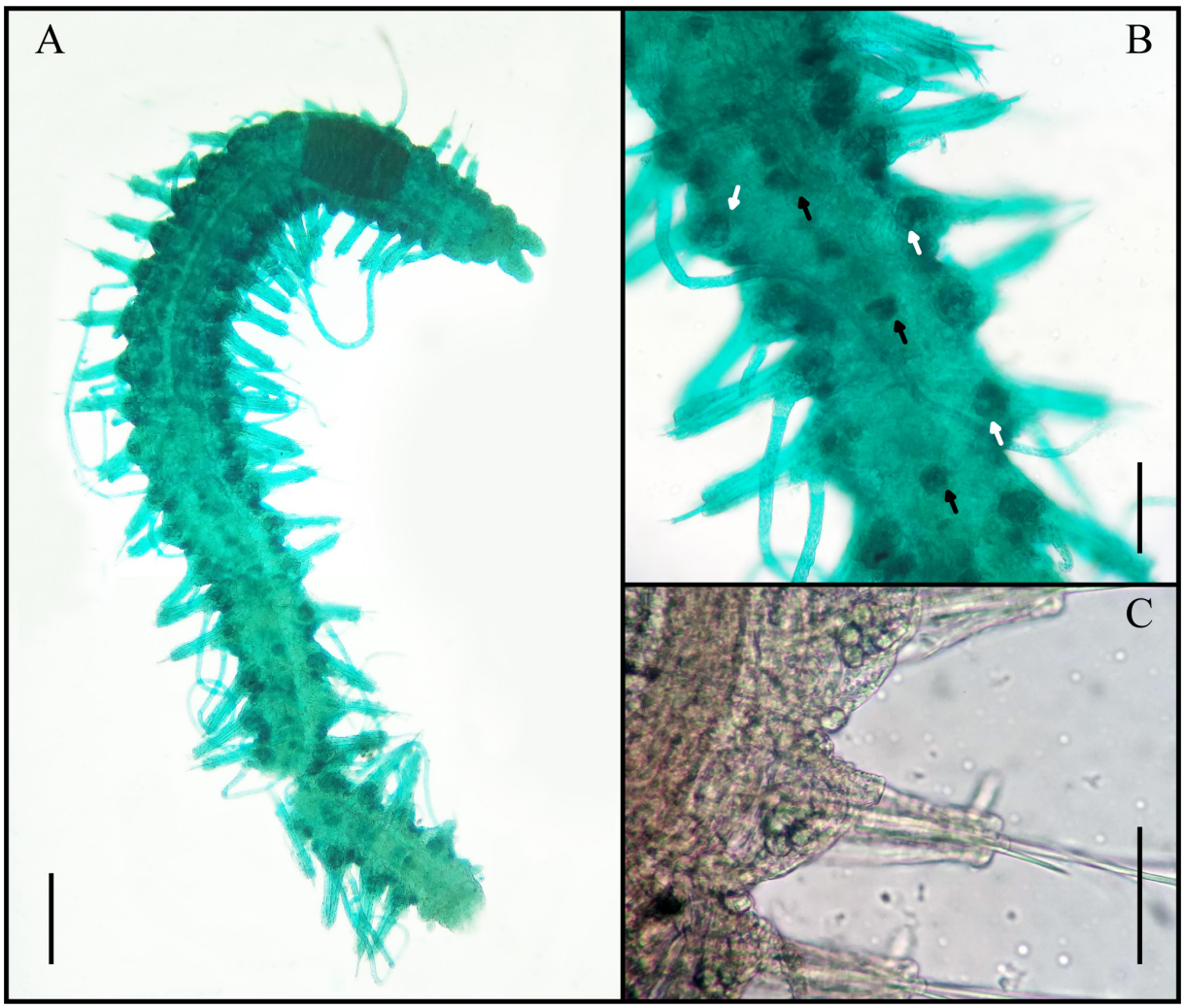

Fig. 2. *Westheidesyllis splendida* sp. nov., paratype (MZUSP 6099). **A**. Whole body of methyl green stained specimen, dorsal view. **B**. Midbody of methyl green stained specimen, white arrows showing parapodial glands, black arrows showing digestive tube content. **C**. Midbody parapodial glands on a not stained specimen. Scale bars: A = 0.22 mm; B = 0.15 mm; C = 0.1 mm.

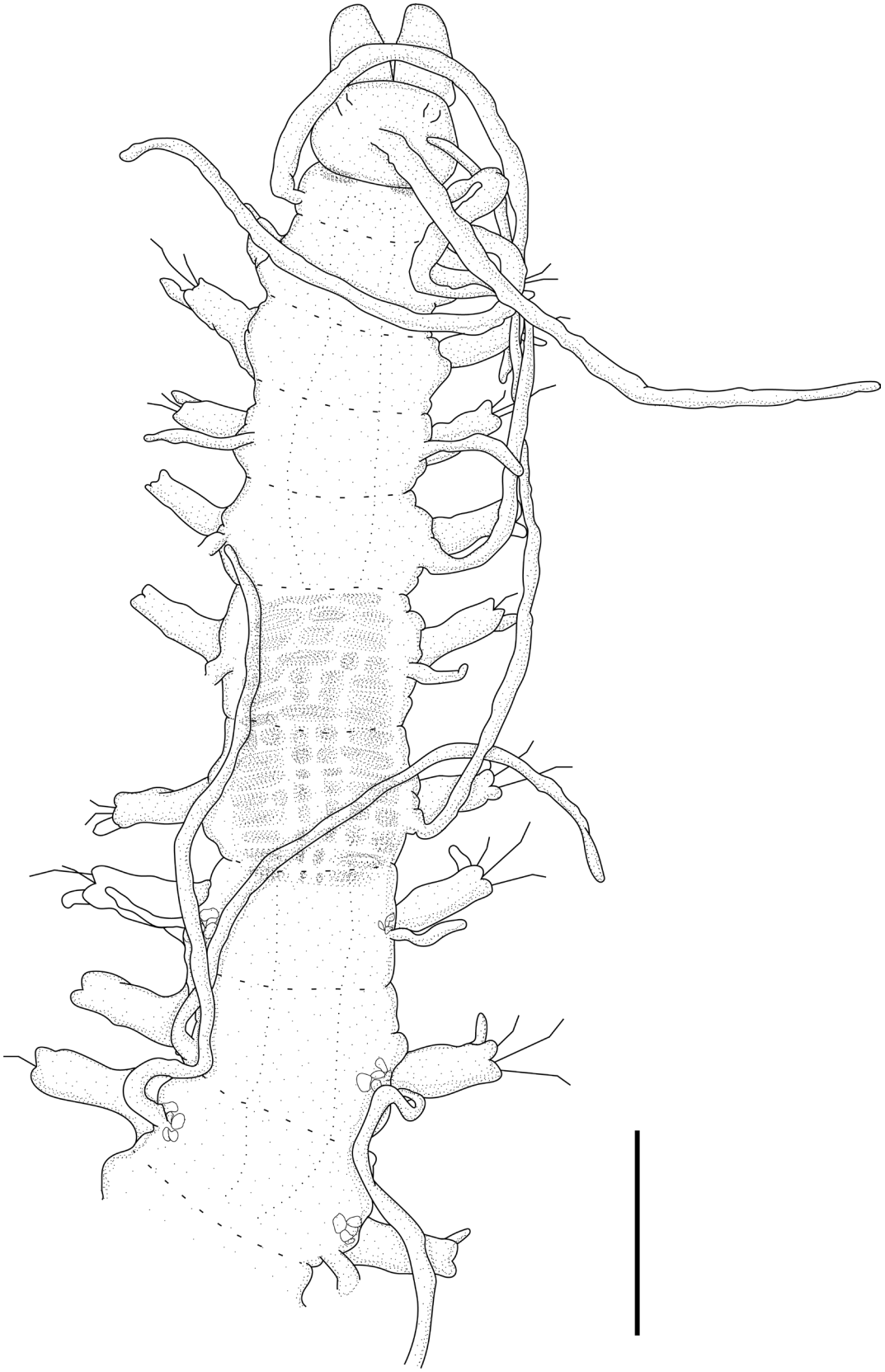

Fig. 3. *Westheidesyllis splendida* sp. nov., paratype (MZUSP 6099). Anterior body, dorsal view. Scale bar = 0.22 mm.

(Figs 6E–F, 7G, K). One acicula per parapodium throughout, distally inflated, hollow (Fig. 6G), with tip protruding from parapodial lobe (Fig. 4B). Pharynx through about 4 segments (Figs 2A, 3), with conical to rhomboidal pharyngeal tooth located on anterior rim, surrounded by 10 soft papillae; proventricle through around 2.5 segments, with 14–15 muscle cell rows (Figs 2A, 3). Pygidium rounded (Figs 4C, 5H), with pair of cirri about same length of long posterior body dorsal cirri.

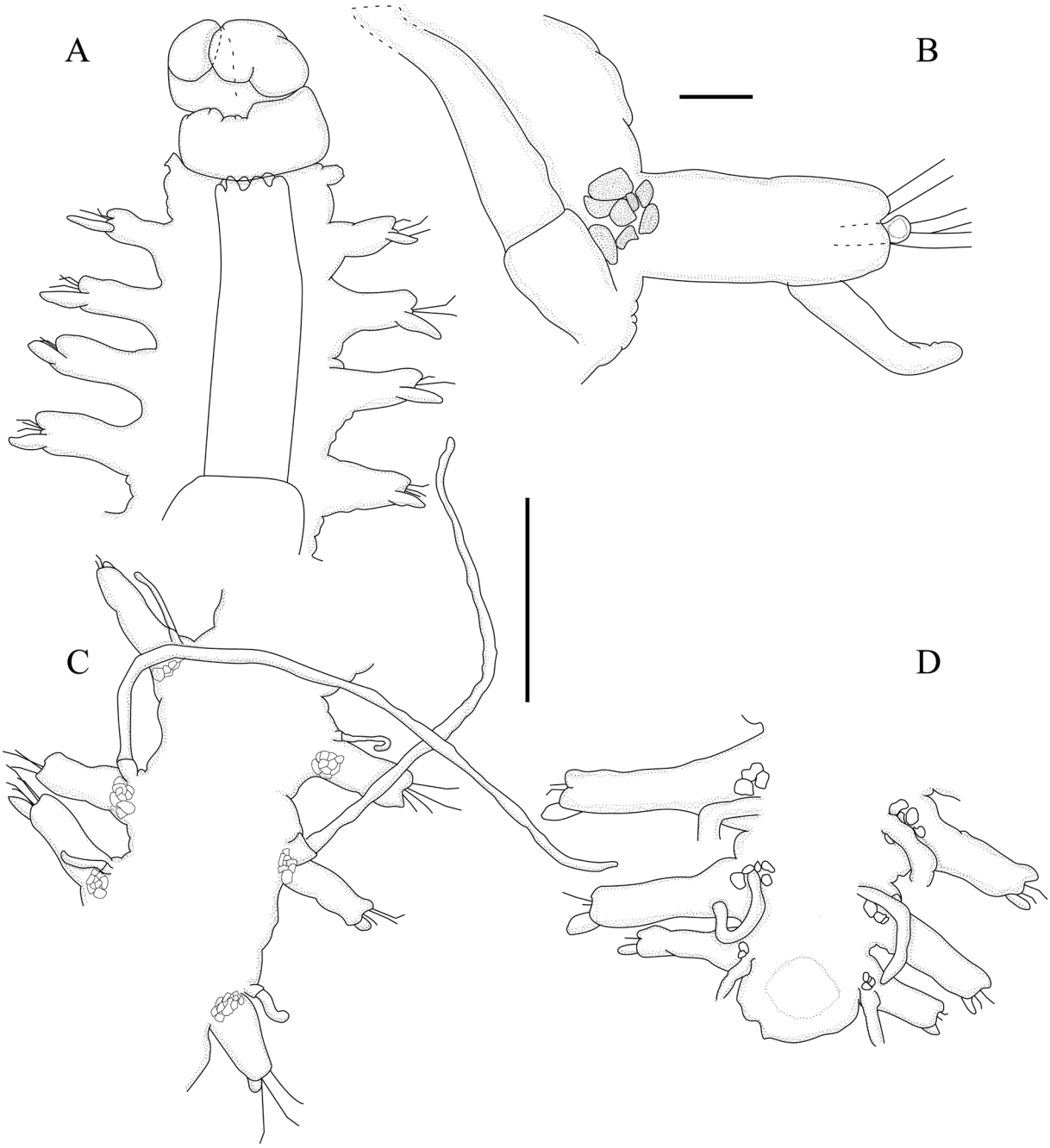

Fig. 4. *Westheidesyllis splendida* sp. nov., paratype (MZUSP 6099). **A**. Anterior body, ventral view. **B**. Midbody parapodium, with dorsal cirrus and parapodial glands, dorso-lateral view. **C–D**. Midbody and posterior end, dorsal view. Scale bars: A, C–D = 0.2 mm; B = 15 µm.

Remarks

None of the specimens of *Westheidesyllis splendida* sp. nov. examined in this study showed cilia at the bases of the dorsal cirri or transverse ciliary bands on the segments, as observed in other species of the genus. However, using scanning electron microscopy (SEM), a set of pits was observed, which are

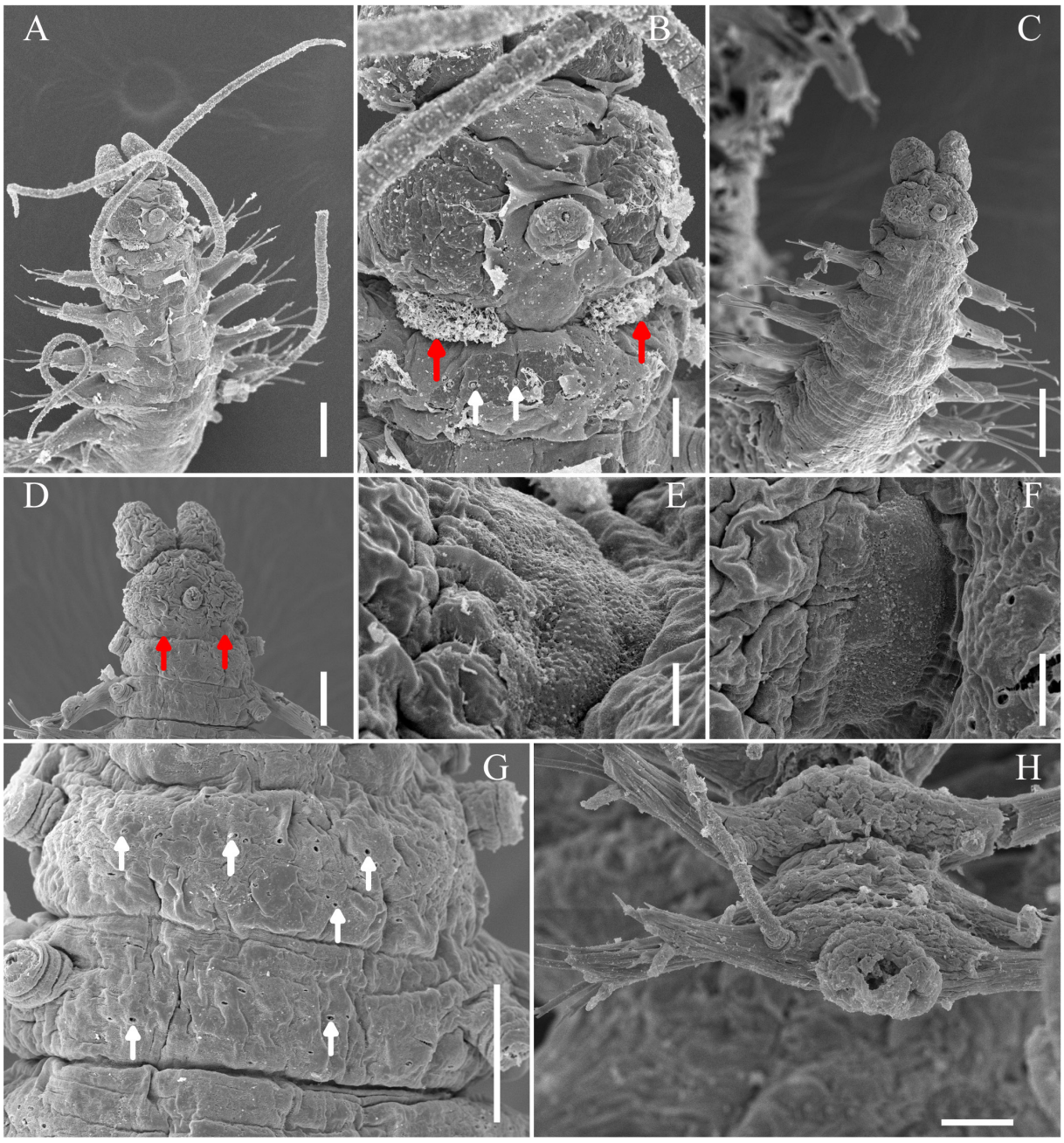

Fig. 5. *Westheidesyllis splendida* sp. nov., non-type specimen (MNRJP), SEM. **A**. Anterior body, dorsal view. **B**. Details of prostomium, peristomium, and nuchal organs, dorsal view. **C**. Anterior body of specimen with retracted nuchal organs, dorsal view. **D**. Anterior end, dorsal view. **E–F**. Details of retracted ciliated nuchal organs. **G**. Anterior segments showing details of ciliary pits, dorsal view. **H**. Posterior end, dorsal view. Red arrows pointing to ciliated nuchal organs, white arrows pointing to ciliary pits. Scale bars: A, C = 50 µm; B, G = 10 µm; D, H = 20 µm; E = 2 µm; F = 5 µm.

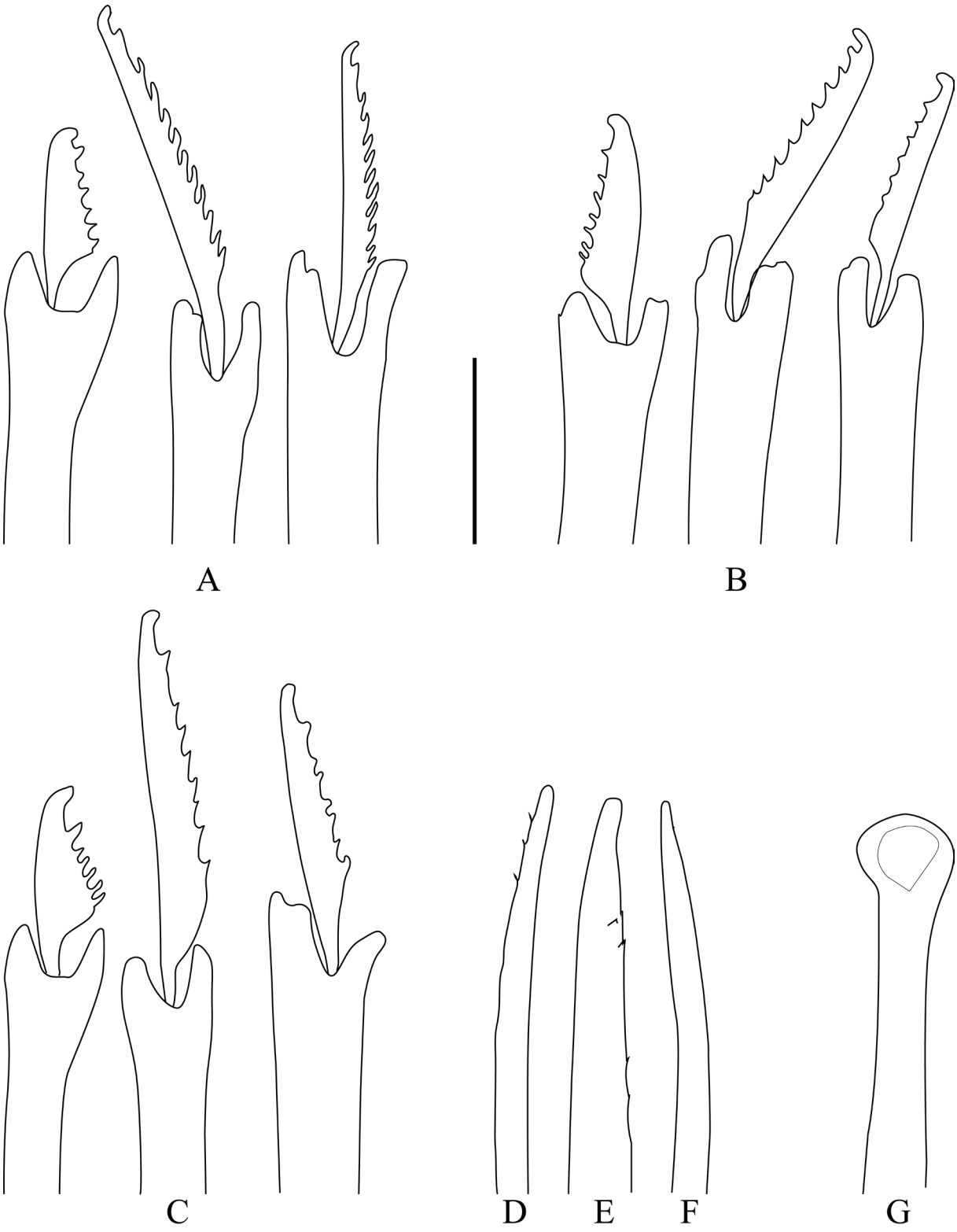

Fig. 6. *Westheidesyllis splendida* sp. nov., paratype (MZUSP 6099). **A–C**. Falciger chaetae, anterior, mid- and posterior body, respectively. **D–F**. Dorsal simple chaetae, anterior, mid- and posterior body, respectively. **G**. Acicula. Scale bar = 6 µm.

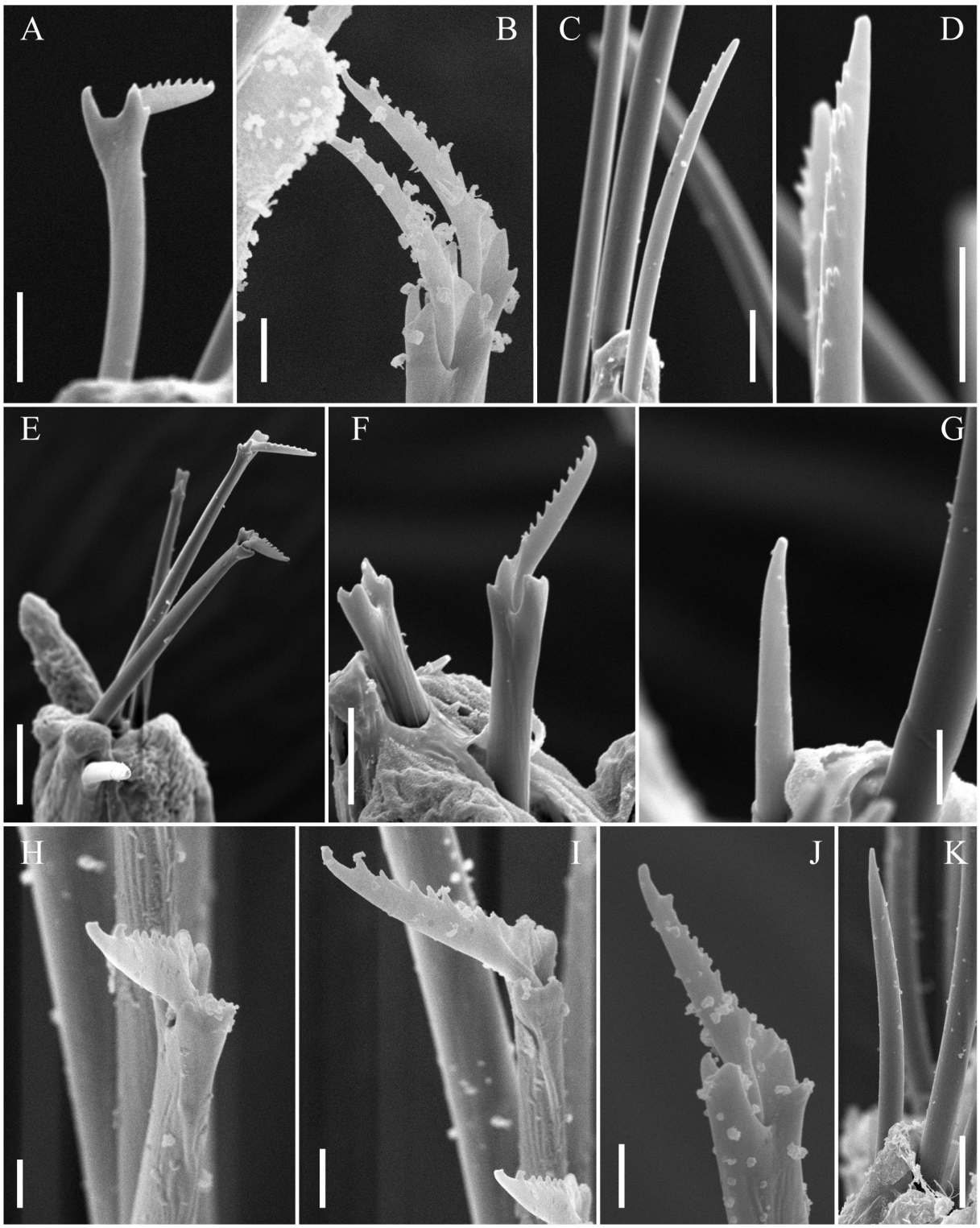

Fig. 7. *Westheidesyllis splendida* sp. nov., non-type specimen (MNRJP), SEM. **A–B**. Falciger chaetae, anterior body. **C–D**. Dorsal simple chaetae, anterior body. **E–F**. Falciger chaetae, midbody. **G**. Dorsal simple chaeta, midbody. **H–J**. Falciger chaetae, posterior body. **K**. Dorsal simple chaeta, posterior body. Scale bars: A, C, F = 5 μm; B, D, G, I–K = 2 μm; E, H = 10 μm.

usually the location where these cilia are projected. These pits were observed at the bases of the dorsal cirri, located almost above the parapodial glands and arranged transversely, more or less in line, on anterior segments and peristomium.

The new species is similar to *W. corallicola*, which was originally described from Hainan Island in South China and later found in Australia (New South Wales and Lizard Island), all in the Pacific Ocean. Both species lack eyes, share the overall body morphology and have similar compound chaetae. However, there are several differences between them. For instance, *W. splendida* sp. nov. lacks eyespots, has the median antenna inserted medially on the prostomium, aciculae that are distally hollow with tips protruding from the parapodial lobes, a proventricle extending for ~2.5 segments, and internal glands at the bases of the parapodia. Conversely, *W. corallicola* has eyespots, the median antenna inserted posteriorly on the prostomium, aciculae distally knobbed but not hollow nor protruding from the parapodial lobes (Ding & Westheide 1997: fig. 6d–e, i), a proventricle extending for about 1.5 segments (Ding & Westheide 1997: fig. 6a), and lacks internal glands (Ding & Westheide 1997; San Martín & Hutchings 2006). Additionally, specimens of *W. splendida* examined herein showed signs of cilia and ciliary pits indicating differences in the ciliation pattern to that found in *W. corallicola*, that has tufts dorsally and ventrally located close to the bases of the parapodia and on the pygidium (Ding & Westheide 1997).

As mentioned above, *Westheidesyllis splendida* sp. nov. is the only known species of the genus where glands have been observed. Although outside the scope of the present paper, some ideas could be shed about functions of these glands in *Westheidesyllis*. The presence of glands, especially those associated to the parapodia, is commonly reported in interstitial species on soft-bottom substrates (Worsaae *et al.* 2021). Accordingly, the glands now observed could be related to some adhesive ability to deal with sediment grains, which could provide greater stability to the substrate, or enhance camouflage, and reduce palatability, both potentially decreasing predation risk. Indeed, various specimens of *W. splendida* were covered in small grains across the body. Also, glands could be associated to reproduction processes in the animals, as has been indicated in other syllids (Haswell 1920), although, to our knowledge, no information on the reproduction of *Westheidesyllis* is currently known. The parapodial glands in *W. splendida* sp. nov. are best observed after methyl green staining (Fig. 2A–B), but they can be relatively easily visualized without the aid of this technique (Fig. 2C).

Type locality

Rocas Atoll.

Distribution

Atlantic Ocean: Rocas Atoll, Brazil.

Discussion

A total of 14 species of Syllidae have been previously identified from the Brazilian oceanic islands, viz. *Branchiosyllis belchiori* Nascimento, Fukuda & Paiva, 2019, *B. gozanguinhai* Nascimento, Fukuda & Paiva, 2019, *B. oculata* (Ehlers, 1887), *Exogone africana* Hartmann-Schröder, 1974, *E. breviantennata* Hartmann-Schröder, 1959, *E. naidinoides* Westheide, 1974, *E. rocas* Nascimento, Fukuda & Paiva, 2020, *E.* cf. *simplex* Hartmann-Schröder, 1960, *Haplosyllis spongicola* (Grube, 1855), *Salvatoria marielleae* Nascimento, Fukuda & Paiva, 2021, *S. ypsiloides* Nascimento, Fukuda & Paiva, 2021, *Salvatoria* sp., *Syllis cornuta* Rathke, 1843, and *S. variegata* (Grube, 1855) (Paiva *et al.* 2007; Nascimento *et al.* 2020, 2021). This study has identified two species new to science, bringing the total to 16.

Syllidae is the most speciose family within Annelida and is typically among the richest in faunal surveys. Currently, 155 species of this family are found in Brazilian waters (Nascimento *et al.* 2021),

already including the two described here. It is safe to say that the 16 species found so far off Brazilian oceanic islands represent only a small fraction of the actual richness of this family in these habitats. Among these, seven have been described and are known exclusively from these localities, while the remaining nine species were already known from the Brazilian coast, which is the largest continental area near these islands. This underscores the research potential in taxonomy and biogeography around these oceanic islands.

Acknowledgments

We are grateful to Marcos Tavares (MZUSP), coordinator of the ProTrindade Project (CNPq 403940/2012-5, 443278/2019-9 and FAPESP 2016/50373-6), who made the specimens of *B. paulolanai* sp. nov. available for study and to Joel Braga de Mendonça Jr for conducting the field work at the Trindade Island. This is the contribution number 19 of the ProTrindade Marine Invertebrates Project (CNPq Process nº 443278/2019-9). Thanks are due to Angelika Brandt (then at ZMH), Javier Sánchez Almazán (MNCN), Karen Osborn and Geoff Keel (USNM) and the staff of the respective museums for all the support during visits of MVF to the institutions. We are thankful to SISBIO – Brazilian Ministry of Environment (MMA) which provided a license/permit (under the number: 53344) to the sampling of organisms in the field. Thanks are due to both reviewers whose comments have improved this manuscript.

Funding information

RLN received a PhD fellowship provided by the Coordenacão de Aperfeiçoamento de Pessoal de Nível Superior – CAPES (proc. 1541399); RLN was also supported with a postdoctoral fellowship by the Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro – FAPERJ (E-26/204.205/2021). MVF received support from the Fundação de Amparo à Pesquisa do Estado de São Paulo – FAPESP (procs. 2007/53040-9, 2010/19424-7 and 2014/11549-6). PCP received productivity grants from Conselho Nacional de Desenvolvimento Científico e Tecnológico Brazil – CNPq (Proc. 306788/2021-7), and the FAPERJ (ProE-26/202.607/2019 –246952).

Conflict of interest

The authors declare that they have no conflict of interest.

Ethical approval

No animal testing was performed during this study.

Sampling and field studies

All necessary permits for field studies and sampling have been obtained by the authors from the competent authorities and are mentioned in the acknowledgements.

Data availability statement

All data generated or analysed during this study are included in this published article

References

Aguado M.T. & San Martín G. 2009. Phylogeny of Syllidae (Polychaeta) based on morphological data. *Zoologica Scripta* 38 (4): 379– 402. https://doi.org/10.1111/j.1463-6409.2008.00380.x

Aguado M.T., San Martín G. & Siddall M.T. 2012. Systematics and evolution of syllids (Syllidae, Annelida). *Cladistics* 28: 234–230. https://doi.org/10.1111/j.1096-0031.2011.00377.x

Aguado M.T., Murray A. & Hutchings P. 2015. Syllidae (Annelida: Phyllodocida) from Lizard Island, Great Barrier Reef, Australia. *Zootaxa* 4019 (1): 35–60. https://doi.org/10.11646/zootaxa.4019.1.5

Audouin J.V. & Milne-Edwards H. 1832. Classification des Annélides, et description de celles qui habitent les côtes de France. *Annales des Sciences naturelles, Paris* 27: 337–347. https://doi.org/10.5962/bhl.part.8010

Dales R.P. 1962. The polychaete stomodeum and the interrelationships of the families of Polychaeta. *Proceedings of the Zoological Society of London* 139: 389–428. https://doi.org/10.1111/j.1469-7998.1962.tb01837.x

Ding Z. & Westheide W. 1997. New records and descriptions of tidal and subtidal syllid species (Polychaeta) from the Chinese coast. *Bulletin of Marine Science* 60 (2): 277–292.

Ehlers E. 1887. Reports on the results of dredging, under the direction of L.F. Pourtalès, during the years 1868–1870, and of Alexander Agassiz, in the Gulf of Mexico (1877–78), and in the Caribbean Sea (1878–79), in the U.S. Coast Survey steamer "Blake", Lieut-Com. C.D. Sigsbee, U.S.N. and Commander J.R. Bartlett, U.S.N., commanding. XXXI. Report on the Annelids. *Memoirs of the Museum of Comparative Zoology at Harvard College* 15: vi + 335 pp. https://doi.org/10.5962/bhl.title.65639

Fukuda M.V., Nogueira J.M.M. & San Martín G. 2015. Eusyllinae and "Incertae sedis" syllids (Annelida: Syllidae) from South America, with a new species from Brazil and a new combination for a Peruvian species. *Zootaxa* 3936 (4): 507–537. https://doi.org/10.11646/zootaxa.3936.4.3

Grube A.E. 1850. Die Familien der Anneliden. *Archiv für Naturgeschichte* 16: 249–364. Available from https://www.biodiversitylibrary.org/page/14713278 [accessed 30 Jan. 2024].

Grube A.E. 1855. Beschreibungen neuer oder wenig bekannter Anneliden. *Archiv für Naturgeschichte* 21 (1): 81–136. https://doi.org/10.5962/bhl.part.13989

Hartmann-Schröder G. 1959. Zur Ökologie der Polychaeten des Mangrove-Estero-Gebietes von El Salvador. *Beiträge zur Neotropischen Fauna* 1: 70–183. https://doi.org/10.1080/01650525909380612

Hartmann-Schröder G. 1960. Polychaeten aus dem Roten Meer. *Kieler Meeresforschungen* 16 (1): 69–125. Available from http://unesdoc.unesco.org/images/0014/001489/148944mo.pdf [accessed 30 Jan. 2024].

Hartmann-Schröder G. 1974. Zur Kenntnis des Eulitorals der afrikanischen Westküste zwischen Angola und Kap der Guten Hoffnung und der afrikanischen Ostküste von Südafrika und Mocambique unter besonderer Berücksichtigung der Polychaeten und Ostracoden. Teil II. Die Polychaeten des Untersuchungsgebietes. *Mitteilungen des Hamburgischen Zoologischen Museums und Institut* 69: 95–228.

Hartmann-Schröder G. 1977. Polychaeten aus dem Sublitoral und Bathyal vor der portugiesischen und marokkanischen Küste. Auswertung der Fahrt 8 (1967) von F.S. "Meteor". "*Meteor*" *Forschungen Ergebnisse* 26: 65–99.

Haswell W.A. 1920. The Exogoneae. *Journal of the Linnean Society of London* 34: 217–245. https://doi.org/10.1111/j.1096-3642.1920.tb01788.x

Lamarck J.-B. de 1802. La nouvelle clases des Annélides. Prononcé le 27 floréal An 10, au Muséum d'Histoire naturelle. Recherches sur l'organisation des corps vivans: reprinted 1906. *Bulletin scientifique de la France et de la Belgique, 5e Série* 40: 483–517.
Available from https://www.biodiversitylibrary.org/page/10730977 [accessed 30 Jan. 2024].

Langerhans P. 1879. Die Wurmfauna von Madeira [part I]. *Zeitschrift für wissenschaftliche Zoologie* 32 (4): 513–592. Available from https://www.biodiversitylibrary.org/page/45240737 [accessed 30 Jan. 2024].

Malaquin A. 1893. Recherches sur les syllidens. *Mémoires de la Société des Sciences de l'Agriculture et des Arts de Lille* 18: 1–477. https://doi.org/10.5962/bhl.title.99327

Malmgren A.J. 1867. *Annulata Polychaeta Spetsbergiæ, Grœnlandiæ, Islandiæ et Scandinaviæ. Hactenus Cognita*. Ex Officina Frenckelliana, Helsinki [= Helsingforsiæ]. https://doi.org/10.5962/bhl.title.13358

Martin D., Aguado M.T., Fernández Álamo M.A., Britayev T.A., Böggemann M., Capa M., Faulwetter S., Fukuda M.V., Helm C., Petti M.A.V., Ravara A. & Teixeira M.A.L. 2021. On the diversity of Phyllodocida (Annelida: Errantia), with a focus on Glyceridae, Goniadidae, Nephtyidae, Polynoidae, Sphaerodoridae, Syllidae and the holoplanktonic families. *Diversity* 13: 131. https://doi.org/10.3390/d13030131

Nascimento R.L., Fukuda M.V. & Paiva P.C. 2020. *Exogone* Ørsted, 1845 (Annelida: Syllidae: Exogoninae) from Brazilian oceanic islands, with description of a new species and notes on possible hidden diversity in the genus. *Marine Biodiversity* 50: 32. https://doi.org/10.1007/s12526-020-01055-x

Nascimento R.L., Fukuda M.V., Paresque K., Nogueira J.M.M. & Paiva P.C. 2021. A synopsis of *Salvatoria* McIntosh, 1885 (Annelida: Syllidae: Exogoninae) from Brazilian coastal and oceanic waters. *PLoS ONE* 16 (5): e0250472. https://doi.org/10.1371/journal.pone.0250472

Netto S.A., Warwick R.M. & Attrill M.J. 1999. Meiobenthic and macrobenthic community structure in carbonate sediments of Rocas Atoll (North-east, Brazil). *Estuarine, Coastal and Shelf Science* 48: 39–50. https://doi.org/10.1006/ecss.1998.0398

Paiva P.C., Young P.S. & Echeverría C.A. 2007. The Rocas Atoll, Brazil: a preliminary survey of the crustacea and polychaete fauna. *Arquivos do Museu Nacional* 65 (3): 241–250. Available from https://www.biodiversitylibrary.org/page/57409325 [accessed 30 Jan. 2024].

Pamungkas J., Glasby C.J., Read G.B., Wilson S.P. & Costello M.J. 2019. Progress and perspectives in the discovery of polychaete worms (Annelida) of the world. *Helgoland Marine Research* 73: 4. https://doi.org/10.1186/s10152-019-0524-z

Perkins T.H. 1981. Syllidae (Polychaeta), principally from Florida, with descriptions of a new genus and twenty-one new species. *Proceedings of the Biological Society of Washington* 93: 1080–1172. Available from https://www.biodiversitylibrary.org/page/34599967 [accessed 30 Jan. 2024].

Rathke H. 1843. Beiträge zur Fauna Norwegens. *Nova Acta Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum* 20: 1–264. https://doi.org/10.5962/bhl.title.11613

Read G. & Fauchald K. 2023a. World Polychaeta Database. *Brevicirrosyllis* San Martín, López & Aguado, 2009. Available from https://www.marinespecies.org/aphia.php?p=taxdetails&id=731112 [accessed 4 Jul. 2023].

Read G. & Fauchald K. 2023b. World Polychaeta Database. *Westheidesyllis* San Martín, López & Aguado, 2009. Available from https://www.marinespecies.org/aphia.php?p=taxdetails&id=731116 [accessed 4 Jul. 2023].

Rouse G., Pleijel F. & Tilic E. 2022. *Annelida*. Oxford University Press, Oxford.

Salcedo-Oropeza D.L., San Martín G. & Solís-Weiss V. 2016. Eusyllinae, Exogoninae and Autolytinae (Syllidae: Polychaeta) from the Southern Mexican Pacific, with the description of three new species. *Zootaxa* 4158 (4): 507–522. https://doi.org/10.11646/zootaxa.4158.4.4

San Martín G. 2003. Annelida Polychaeta II: Syllidae. *In*: Ramos M.A. *et al.* (eds) *Fauna Ibérica, Vol. 21*. Museo Nacional de Ciências Naturales–CSIC, Madrid.

San Martín G. & Aguado M.T. 2012. Contribution of Scanning Electron Microscope to the study of morphology, biology, reproduction, and phylogeny of the family Syllidae (Polychaeta). *In*: Kazmiruk V. (ed.) *Scanning Electron Microscopy*: 129–146. InTechOpen, London. https://doi.org/10.5772/34681

San Martín G. & Aguado M.T. 2014. Family Syllidae. Phyllodocida: Nereidiformia. *In*: Westheide W. & Purschke G. (eds) *Handbook of Zoology Online, Annelida: Polychaeta*: 1–52. De Gruyter, Berlin.

San Martín G. & Hutchings P. 2006. Eusyllinae (Polychaeta: Syllidae) from Australia with the description of a new genus and fifteen new species. *Records of the Australian Museum* 58: 257–370. https://doi.org/10.3853/j.0067-1975.58.2006.1466

San Martín G., López E. & Aguado M.T. 2009. Revision of the genus *Pionosyllis* (Polychaeta: Syllidae: Eusyllinae), with a cladistics analysis, and the description of five new genera and two new species. *Journal of the Marine Biological Association of the United Kingdom* 89: 1455–1498. https://doi.org/10.1017/S0025315409003099

Westheide W. 1974. Interstitielle Fauna von Galapagos. XI. Pisionidae, Hesionidae, Pilargidae, Syllidae (Polychaeta). *Mikrofauna des Meeresbodens* 44: 1–146

Worsaae K., Kerbl A., Domenico M.D., Gonzalez B.C., Bekkouche N. & Martínez A. 2021. Interstitial Annelida. *Diversity* 13: 77. https://doi.org/10.3390/d13020077

Manuscript received: 13 October 2022
Manuscript accepted: 31 October 2023
Published on: 4 March 2024
Topic editor: Magalie Castelin
Desk editor: Pepe Fernández