

Two new species of *Dentatisyllis* and *Branchiosyllis* (Polychaeta: Syllidae: Syllinae) from Venezuela

Guillermo San Martín and David Bone

(GSM) Laboratorio de Biología Marina e Invertebrados, Departamento de Biología,
Unidad de Zoología, Universidad Autónoma de Madrid, Canto Blanco,
E-28049 Madrid, Spain, e-mail: guillermo.sanmartin@uam.es;

(DB) Departamento de Biología de Organismos, Instituto de Tecnología y Ciencias Marinas,
Universidad Simón Bolívar, Caracas, 1080 Venezuela, A. P. 89000

Abstract.—A new species of the genus *Dentatisyllis* Perkins, 1981 and another new species of the genus *Branchiosyllis* Ehlers, 1887 are described: *Dentatisyllis morrocoyensis* and *Branchiosyllis lorenae*. The specimens of both new species were collected during a study of the polychaetes from *Thalassia testudinum* beds in Morrocoy Park, Venezuela. One specimen of *B. lorenae* was previously collected and reported as *Branchiosyllis* sp., from Cuba by San Martín (1991), so this species could be distributed throughout the Caribbean area. *Dentatisyllis morrocoyensis* is distinguished from all other species of the genus by the high number and shape of teeth in the trepan and shape of the blades of the compound setae, unique in the genus. *Branchiosyllis lorenae* is very similar to *B. exilis* but differs by having, on the anterior and midbody parapodia, 1–2 compound setae, the bidentate blades of which are slightly curved and bear a distal tooth somewhat shorter than the proximal one. This latter characteristic is unique to the genus.

During a study on the ecology of the polychaetes inhabiting *Thalassia testudinum* beds in the Morrocoy Park, Venezuela, specimens of two undescribed species of Syllidae were collected. A series on the taxonomy and ecology of several families of polychaetes from this area and habitat has been recently begun (Bone & Viéitez 1999). This paper deals with the description of the two new species of Syllidae: *Dentatisyllis morrocoyensis* and *Branchiosyllis lorenae*. The study of the syllids from Morrocoy Park has been supported by the Agreement between the Universities Simón Bolívar (Venezuela) and Autónoma de Madrid (Spain).

Materials and Methods

All samples were collected in shallow *Thalassia testudinum* seagrass beds in less

than 0.5 m depth. The samples were taken using a 38 cm² corer which was pushed 25 cm into the sediment. Sediment samples were preserved in 10% buffered formalin and washed through a 1 mm mesh sieve. All organisms were hand-picked under a magnifying-lens from the remaining material and separated for taxonomic identifications. Measurements are referred to the holotype or largest specimen studied; width is measured across the proventriculus and excludes cirri, parapodia, and setae. Observations, drawings, and measurements were made using a microscope with interference contrast optics. Drawings were made with the aid of a drawing tube. The SEM micrographs were taken at the SIDI (Servicio Interdepartamental de Investigación) of the University Autónoma of Madrid. Types are deposited in the Museo Nacional de Ciencias Naturales de Madrid, Spain.

Results and Discussion

Family Syllidae Grube, 1850

Subfamily Syllinae Grube, 1850

Genus *Dentatisyllis* Perkins, 1981*Dentatisyllis morrocoyensis*, new species

Fig. 1

Material examined.—Morrocoy Park (Venezuela), *Thalassia testudinum* beds, Holotype.

Description.—Body small, thin, cylindrical, without color marking, incomplete, about 4.2 mm long, 0.32 mm wide, 30 setigers. Prostomium semicircular; four small eyes in open trapezoidal arrangement and two anterior eyespots. Only one lateral, broken antenna present on this specimen, with 10 articles, originating in front of anterior eyes. Palps slightly longer than prostomium, fused at bases. Tentacular segment distinct, somewhat shorter than following segments; dorsal tentacular cirri with about 13 articles; ventral tentacular cirri somewhat shorter, with about 8 articles. Dorsal cirri of first setiger long, with about 23 articles; remaining dorsal cirri alternating long and short; long dorsal cirri similar in length to body width, with about 17–18 articles, short dorsal cirri shorter than body width, with about 10 articles (Fig. 1A). Parapodia elongate, each with distal anterior lobe, somewhat shorter than distal posterior lobe; ventral cirri long, digitiform, extending past tips of parapodial lobes, distally broad (Fig. 1D). Compound setae all heterogomph fal-cigers, similar throughout; about 8–10 setae on each parapodium. Blades bidentate, with both teeth very close, similar in length. Marked dorso-ventral gradation in shape and length of blades; blades of dorsal-most compound setae long, about 38 μm , with short and coarse spines on margin; remaining blades provided with long, coarse, upwards dressed, 3–4 spines on bases, especially on medium size ones, and shorter and thinner spines distally; blades of ventral-most compound setae about 20 μm length (Fig. 1F). Simple dorsal and ventral setae not seen. Parapodia each with two slender

aciculae, ending with fine tips (Fig. 1E). Pharynx long, everted on this specimen (Fig. 1A); anterior margin (Fig. 1A, B) surrounded by a trepan of about 50 curved, hooked teeth (Fig. 1B, C), and a crown of about 20 soft papillae; midorsal pharyngeal tooth rhomboidal, small, located subterminally to anterior margin. Proventriculus shorter than pharynx, through 4 segments, with about 27 muscle cell rows.

Remarks.—The genus *Dentatisyllis* was erected by Perkins (1981) for species having a cylindrical body, pharyngeal tooth and a trepan on the anterior margin of the pharynx; the genus has been recently revised by Ding et al. (1998) who provided a diagnosis and a key to all the known species of the genus. *Dentatisyllis morrocoyensis* n. sp., is the only species of the genus provided with a very high number of marginal teeth on the trepan; all other species have about 10, whereas *D. morrocoyensis* has about 50. The blades of the compound setae and the aciculae of *D. morrocoyensis* n. sp. are very similar to those of *Opisthosyllis longidentata* San Martín, 1991, but the pharyngeal armature is completely different (San Martín 1991).

Etymology.—The species is named after the type locality, Morrocoy Park (Venezuela).

Genus *Branchiosyllis* Ehlers, 1887*Branchiosyllis lorenae*, new species

Figs. 2, 3, 4

Branchiosyllis sp. San Martín (1991):234, fig. 1O–S.

Material examined.—Morrocoy Park (Venezuela), *Thalassia testudinum* beds, Holotype and 27 paratypes. Additional material: 2 specimens used for SEM.

Description.—Body long, cylindrical (Figs. 2A, 4A), holotype incomplete specimen, 5.3 mm long, 0.4 mm wide, 54 setigers; longest complete paratype 7.2 mm long, 0.48 mm wide, 50 setigers, a few somewhat longer, incomplete paratypes. Most anterior segments without color mark-

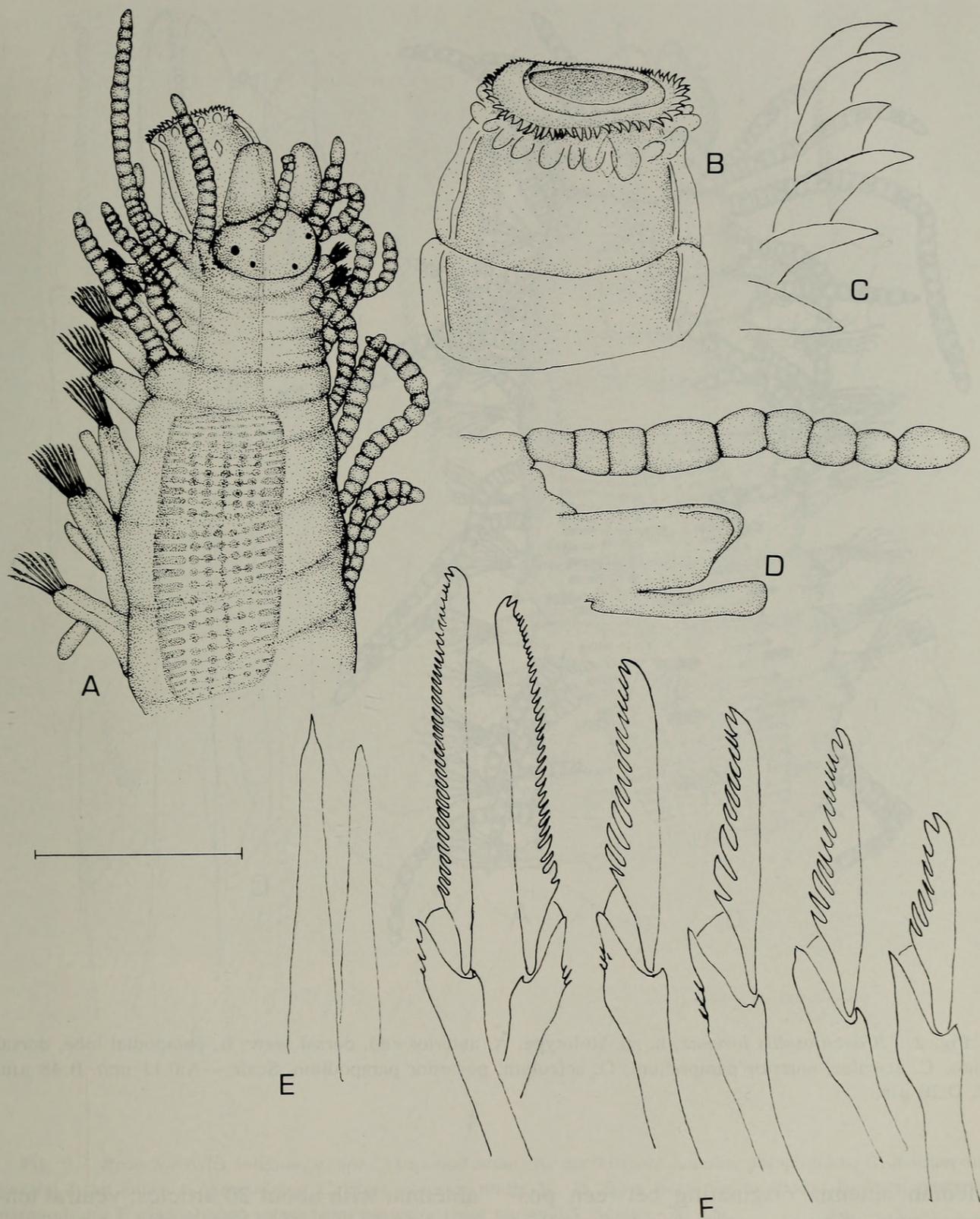


Fig. 1. *Dentatisyllis morrocoyensis*, n. sp. Holotype. A, anterior end, dorsal view; B, ventral view of the anterior end of the pharynx; C, detail of the teeth of the trepan; D, midbody parapodium, anterior view; E, aciculae, from midbody; F, compound setae, midbody. Scale.—A:0.11 mm. B, D:65 μ m. C:48 μ m. E, F:20 μ m.

ing, anterior and midbody segments provided dorsally each with three ovate dark spots, sometimes forming nearly a row; some articles of antennae, tentacular and

dorsal cirri with dark spots (Fig. 2A). Pro-stomium oval, wider than long; four eyes in very open trapezoidal arrangement, nearly on line, and two small anterior eyespots.

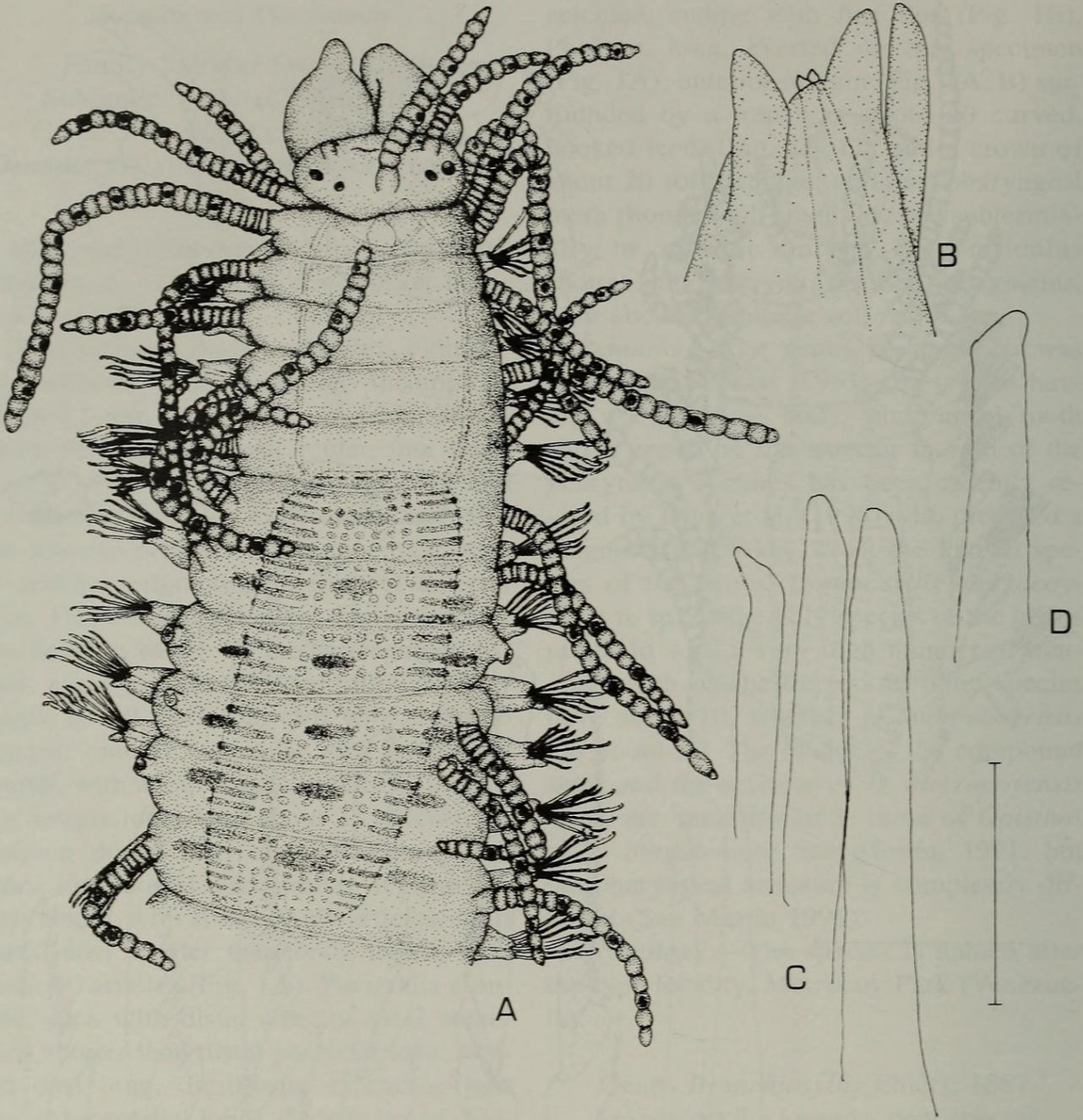


Fig. 2. *Branchiosyllis lorenae*, n. sp. Holotype. A, anterior end, dorsal view; B, parapodial lobe, dorsal view. C, aciculae, anterior parapodium; D, aciculum, posterior parapodium. Scale.—A:0.11 mm. B:48 μ m. C, D:20 μ m.

Median antenna originating between posterior pair of eyes, somewhat longer than prostomium and palps together, with 14 articles; lateral antennae shorter than median antenna, originating between anterior pair of eyes and eyespots, with 12–13 articles. Palps broad, longer than prostomium, fused at bases. Tentacular segment reduced, covered dorsally by prostomium and setiger 1; dorsal tentacular cirri longer than median

antenna, with about 20 articles; ventral tentacular cirri similar in length to lateral antennae, with about 13 articles. Dorsal cirri of setiger 1 very long, with about 30–33 articles; remaining dorsal cirri alternating long, somewhat longer than body width, with 25–30 articles, and short cirri, shorter than body width, with about 16–18 articles. Parapodial lobes conical, provided with two distal, triangular lobes (branchiae), anterior

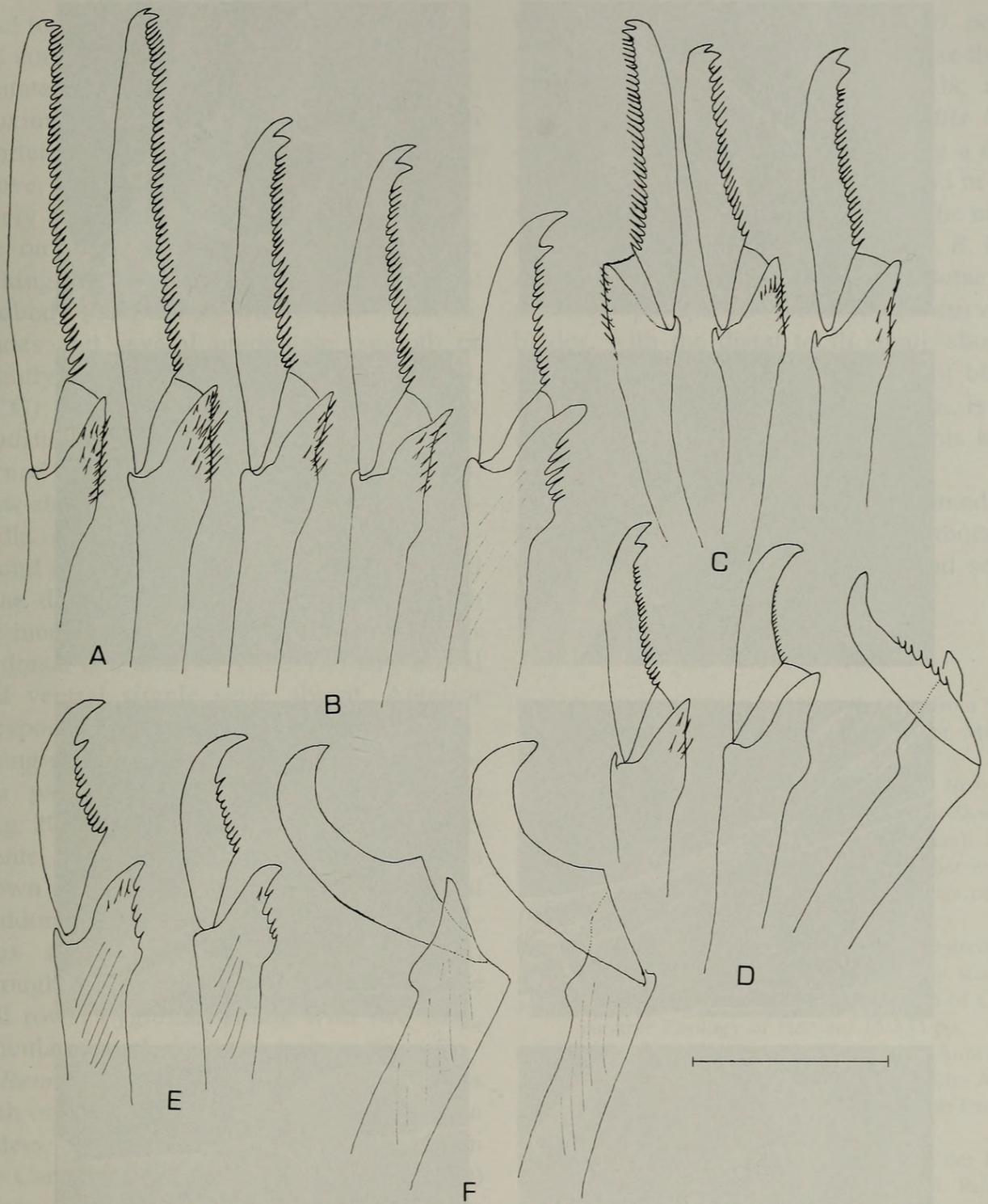


Fig. 3. *Branchiosyllis lorenae*, n. sp. Compound setae: A, dorsal from anterior parapodium; B, median and ventral from anterior parapodium. C, from anterior midbody; D, from posterior midbody; E, from posterior parapodium; F, claw-shaped setae, from posterior-most parapodia. Scale.—20 μ m.

lobe somewhat shorter than posterior lobe (Figs. 2B, 4E). Ventral cirri digitiform, elongate, reaching distal level of parapodial lobes. Anterior parapodia each with 1–2, sometimes 3, dorsal, compound setae provided with long, somewhat curved, biden-

tate blades, 50–55 μ m, distal tooth short and small proximal tooth somewhat larger, more prominent (Figs. 3A, 4C); spines on margin short, several rows of spines observed by SEM, slightly longer than those of the rest of blade, partially covering prox-

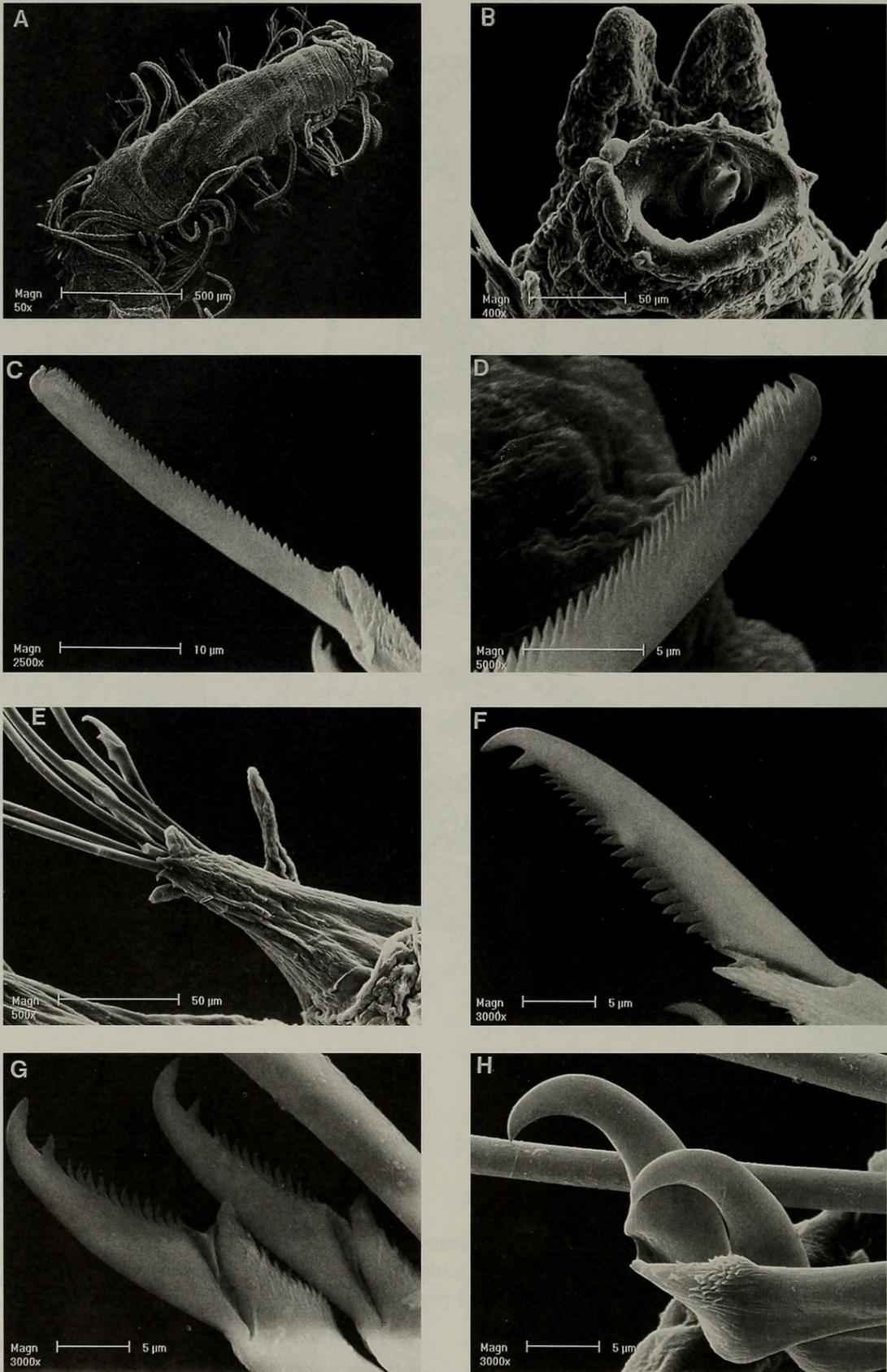


Fig. 4. *Branchiosyllis lorenae*, n. sp. SEM. A, anterior end, dorsal view; B, anterior rim of pharynx; C, long bladed, dorsal compound seta, anterior parapodium; D, detail of the same, showing several rows of spines on distal part. E, midbody posterior parapodium; F, dorsal compound seta from midbody; G, ventral compound setae from midbody; H, claw-shaped compound setae, from posterior-most parapodia.

imal tooth (Fig. 4D), 7–10 median and ventral compound setae with blades curved, bidentate, both teeth similar on longer blades, proximal tooth shorter than distal one on shorter blades; gradation in length, 32 μm above, 24 μm below (Fig. 3B). Progressively decreasing number of compound setae on each parapodium, blades shorter, lacking compound setae with long blades; midbody parapodium with a few bidentate blades and several unidentate, smooth or slightly bidentate, hooked blades (Figs. 3D, 4F, G); posterior parapodia each with a few modified compound setae with blades turned 180°, smooth, strongly hooked, claw-shaped (Fig. 4H); posterior-most parapodia only with 2–3 claw-shaped compound setae (Fig. 3F). Shafts of compound setae distally provided with spines, which are increasingly more numerous and longer in dorsal and anterior setae. Solitary dorsal and ventral simple setae absent. Anterior parapodia each with 3–4 aciculae, diminishing progressively to only 1–2 on posterior parapodia; aciculae with curved tip (Fig. 2C, D). Pharynx broad, through 5 segments; anterior margin provided with a crown of ten soft papillae and one conical middorsal tooth (Figs. 2A, 4B). Proventriculus somewhat longer than pharynx, through 6 segments, with about 30 muscle cell rows. Pygidium small, with two long, articulated anal cirri.

Remarks.—*Branchiosyllis* is a genus with only five described species: *B. oculata* Ehlers, 1887 (Ehlers 1887), distributed in the Caribbean Sea; *B. exilis* (Gravier, 1900) (Gravier 1900, Westheide 1974, San Martín 1984), a circumtropical species, also present in temperate waters; *B. pacifica* Rioja, 1941 (Rioja 1941), from the Pacific coasts of Mexico; *B. diazi* Rioja, 1958 (Rioja 1958), from the Caribbean coast of Mexico; and *B. abbranchiata* Hartmann-Schröder, 1965 (Hartmann-Schröder 1965) from Samoa. A table summarizing the main characters of all these species is provided in Hartmann-Schröder (1978) and San Martín (1984). *Branchiosyllis lorenae*, n. sp. is eas-

ily distinguished from *B. oculata*, *B. pacifica* and *B. abbranchiata* because these three species have only claw-shaped seta, and lack unmodified ones. *Branchiosyllis lorenae* differs from *B. diazi* in lacking a dorsal branchia on each parapodium and in the shape of anterior compound setae. The most similar species is *B. exilis*; however, *B. lorenae* differs in having compound setae on anterior parapodia with long, curved, blades, with the distal tooth small, shorter than the proximal tooth; this kind of blade is very unusual and *B. lorenae*, n. sp., is the only member of this genus with this kind of seta.

Etymology.—The species is named in honor of Lorena Galindo, who collaborated in the collection of the samples and separation of specimens.

Literature Cited

- Bone, D., & J. M. Viéitez, 1999. Spionidae from Morrocoy Park (Venezuela).—*Bulletin of Marine Science* (in press).
- Ding, Z., F. Licher, & W. Westheide. 1998. New and newly assigned species of the genus *Dentatisyllis* (Polychaeta, Syllidae, Syllinae), with comments on the reproduction, together with a key and a synoptic table of all species of the genus.—*Sarsia* 83:29–43.
- Ehlers, E. 1887. Report on the annelids of the dredging expedition of the U. S. coast survey steamer "Blake".—*Memoires of the Museum of Comparative Zoology of Harvard* 15:335 pp.
- Gravier, C. 1900. Contribution à l'étude des Annélides Polychètes de la Mer Rouge.—*Nouvelles Archives du Museum d'Histoire naturelle de Paris* 2: 137–282.
- Hartmann-Schröder, G. 1965. Zur Kenntnis der Eulitoralischen Polychaetenfauna von Hawaii, Palmira und Samoa.—*Abhandlungen und Verhandlungen des Naturwissenschaftlichen Vereins in Hamburg* 9:81–161.
- . 1978. Einige Sylliden-Art (Polychaeta) von Hawaii und aus dem Karibischen Meer.—*Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut* 75:49–61.
- 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.
- Rioja, E. 1941. Estudios Anelidológicos. III. Datos para el conocimiento de la fauna de poliquetos de las

- costas del Pacífico de México.—Anales del Instituto de Biología de México 12:669–746.
- . 1958. Estudios Anelidológicos. XXII. Datos para el conocimiento de la fauna de Anélidos Poliquetos de las costas orientales de México.—Anales del Instituto de Biología de México 29 (1/2):219–301.
- San Martín, G. 1984. Estudio biogeográfico, faunístico y sistemático de los Poliquetos de la familia Syllidos (Syllidae: Polychaeta) en Baleares.—Tesis Doctoral, Ediciones de la Universidad Complutense de Madrid, n° 187:529 pp.
- . 1991. Syllinae (Polychaeta: Syllidae) from Cuba and the Gulf of Mexico.—Bulletin of Marine Science 48:227–235.
- Westheide, W. 1974. Interstitielle Fauna von Galapagos. XI. Pisionidae, Hesionidae, Pilargidae, Syllidae.—Mikrofauna Meeresbodens 44:195–338.



San Martín, Guillermo and Bone, David. 1999. "Two New Species Of Dentatisyllis And Branchiosyllis (Polychaeta : Syllidae : Syllinae) From Venezuela." *Proceedings of the Biological Society of Washington* 112, 319–326.

View This Item Online: <https://www.biodiversitylibrary.org/item/107571>

Permalink: <https://www.biodiversitylibrary.org/partpdf/45159>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Biological Society of Washington

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.