PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON
114(3):708–719. 2001.

Syllidae (Polychaeta) from San Quintín lagoon, Baja California, Mexíco, with the description of a new genus

Victoria Díaz-Castañeda and Guillermo San Martín

(VD-C) Departamento de Ecología, CICESE, Apartado Postal 2732, Ensenada, Baja California, Mexico;
(GSM) Departamento de Biología (Zoología), Laboratorio de Biología Marina e Invertebrados, Facultad de Ciencias, Universidad Autónoma de Madrid, España

Abstract.—During a recent study of the polychaetes from San Quintín lagoon (Baja California) 514 specimens belonging to the family Syllidae (Polychaeta) were collected, but only a few species were previously reported. In this paper, we report seven species: *Syllis aciculata* (Treadwell, 1945), *Syllis gracilis* (Grube, 1840), *Syllis heterochaeta* (Moore, 1909), *Exogone* (*Exogone*) *lourei* (Berkeley & Berkeley, 1938), *Sphaerosyllis californiensis* (Hartman, 1966), *Grubeosyllis mediodentata,* a new combination, and *Cicese sphaerosylliformis,* a new genus, and species. *Grubeosyllis mediodentata* is characterized by having cylindrical, somewhat elongated papilliform dorsal cirri, a long proventriculus and pharynx, pharyngeal tooth located in front of the midline of the pharynx, and compound setae with long bidentate blades provided with long, fine spines on margin. The new genus *Cicese* is similar to the genus *Sphaerosyllis* since it has antennae, tentacular cirri and anal cirri with bulbous bases, as well as papillae on the palps and dorsum, but it has two pairs of tentacular cirri instead of a single pair.

The Syllidae is a very large family of polychaetes with a high number of described species; most species are small and usually overlooked in macrofaunal studies. Syllids of the Pacific coast of Mexico were reported in a few papers: Rioja (1941, 1947a, 1947b, 1959, 1962); the papers of Rioja (1943), Góngora-Garza (1984) and Góngora-Garza & de León González (1993) are the only ones devoted exclusively to this family. The former paper also includes a key for all the syllids known on the Pacific coast of México; a total of 49 species of Syllidae is reported in the key. Other papers treating syllids from close areas are those of Hartman (1968) and Kudenov & Harris (1995) (for California), Hartmann-Schröder (1959) (for El Salvador), Fauchald (1977), Fauchald & Reiner (1975) and López et al. (1997) (for Panamá) and Westheide (1974) (for the Galápagos Islands). Other studies dealing with syllids are Day (1967) and Fauchald & Reiner (1975).

San Quintín lagoon is a highly productive coastal lagoon located between 30°24′–30°30′N and 115°57′–116°01′W on the Pacific coast of Baja California (Fig. 1). This lagoon has an area of 42 km^2 and around 75% of it is covered by the eelgrass *Zostera marina* (Inclán-Rivadeneyra & Acosta-Ruiz 1988, Ibarra-Obando 1990). It has been exploited for many years (mariculture), but it can still be considered a relatively non-disturbed area, although intensive oyster mariculture is being considered in the near future.

The lagoon has the shape of an inverted "Y", the western arm (Falsa Bay) has an average depth of 4 m, whereas the eastern arm (San Quintín Bay) has an average depth of 8 m. Granulometric studies show

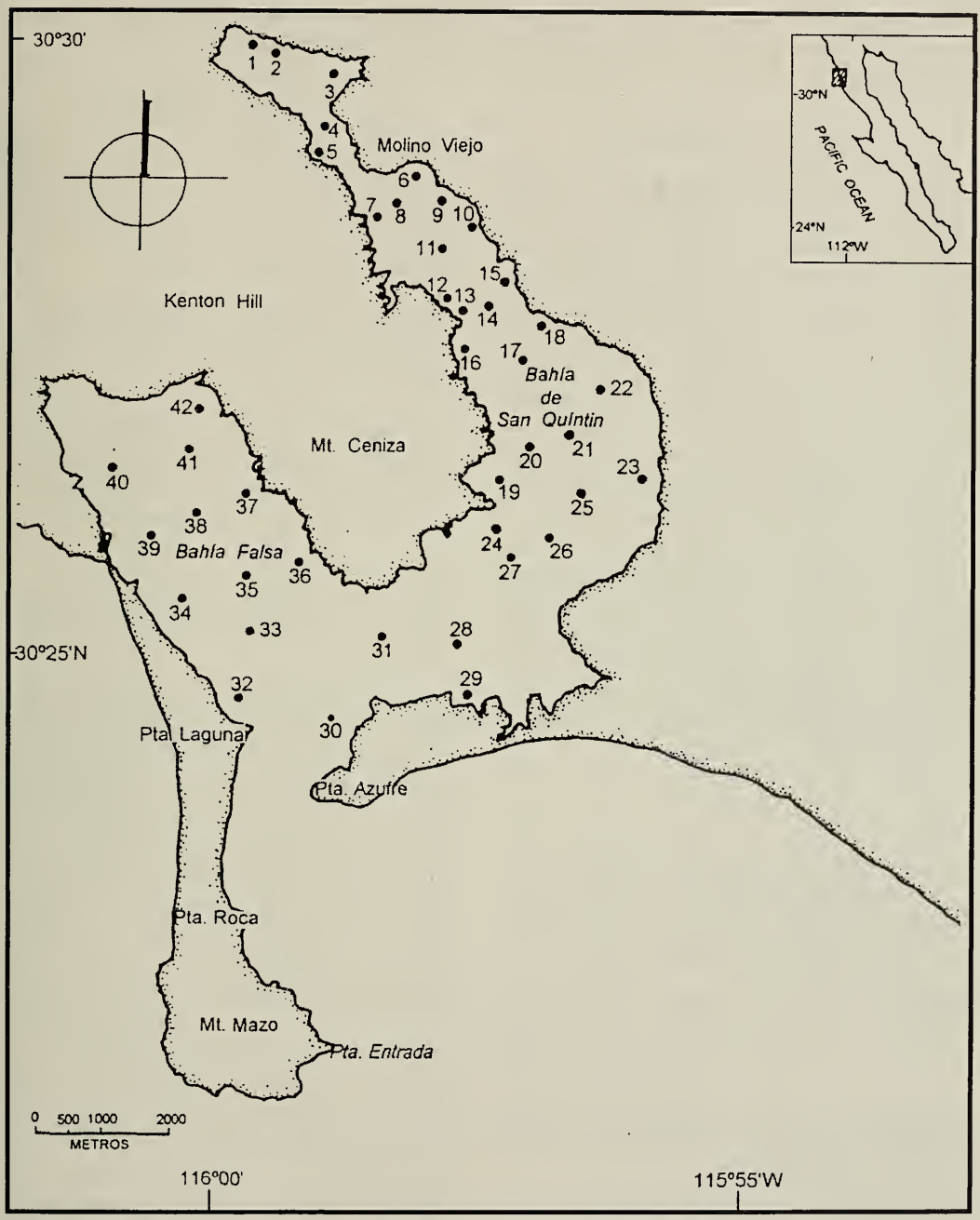

Fig. 1. Study site: sampling stations in San Quintin Bay, Baja California, Mexico.

that in shallow areas, as well as to the north of both arms, clay and silty-sand predominate, whereas near the mouth very fine sands are more abundant. The channel sediments are highly diverse, ranging from medium to fine sand and silt (Barnard 1970, Calderón-Aguilera 1992). The lagoon margins present a typical saltmarsh flora with *Spartina foliosa* and *Salicornia virginica* among other vascular plants. Syllids are

more abundant in areas of fine sand, covered by *Zostera marina* and *Spartina foliosa*.

Materials and Methods

Forty-four stations distributed in both arms were sampled in December 1995 and April 1998 (Table 1). Two replicates per station were collected with a geological corer (16 cm internal diameter, 12 cm depth) with a sampling area of 0.02 m^2. Sediments were sieved in the field using 1 mm mesh size and retained material was preserved in 7% buffered formaldehyde. In the laboratory, samples were washed using a 0.5 mm mesh and transferred to 70% isopropanol. Polychaetes were then sorted and syllids identified to species level.

In the material examined, BSQ represent the initials for Bahía San Quintín, followed by the station number. Samples are represented by M and replicates by R. Specimens are deposited in the Polychaete Collection of Universidad Autónoma de Nuevo León (UANL).

Results

Family Syllidae Grube, 1850
Subfamily Syllinae Grube, 1850
Genus *Syllis* Savigny in Lamarck, 1818
Syllis aciculata Treadwell, 1945

Typosyllis aciculata Treadwell, 1945:1–2, figs. 1–5; Hartman, 1968:475, text-figs. 1–7.

Material examined.—BSQ 42R (6).

Distribution.—From California to Panamá; South Chinese Sea.

Syllis gracilis Grube, 1840

Syllis gracilis Grube, 1840:77, pl. 31a–l; San Martín, 1984:376, pls. 97, 98.

Syllis (*Syllis*) *gracilis.*—Fauvel, 1923:259, fig. 96F–I; Day, 1967:241, fig. 12.1m–p.

Material examined.—BSQ 14 (1), BSQ 7M (1), BSQ 7R (1).

Distribution.—Cosmopolitan in temperature and tropical seas.

Syllis heterochaeta Moore, 1909

Syllis (*Ehlersia*) *heterochaeta.*—Rioja, 1941:694–695; Hernández-Alcántara, 1992:200.

Langerhansia heterochaeta.—Hartman, 1968:434–435, figs. 1–7.

Material examined.—BSQ 43M (5).

Distribution.—Western Mexico to western Canada.

Subfamily Exogoninae Rioja, 1925
Genus *Grubeosyllis* Verrill, 1900
Grubeosyllis mediodentata (Westheide, 1974), new combination
Figs. 2–4

Brania mediodentata Westheide, 1974:93–97, figs. 42A–C, 43; Russell, 1991:52–54, Fig. 2.

Material examined.—BSQ 29 (1). BSQ 6R (1). BSQ 19R (2). BSQ 23 (1). BSQ 39 (3). BSQ R15 (1). BSQ R16 (1). BSQ 27R (1). BSQ 17R (1). BSQ 6 (1). BSQ 28R (1). BSQ 25 (1). BSQ 19 (2). BSQ 14 (18) + 2 specimens used for SEM observations.

Description.—Body small, slender, 1.9 mm long, 0.2 mm wide, for 31 setigers, without color markings; intersegmental furrows well marked (Fig. 2A). Prostomium ovate, about 2.2 times wider than long; two pairs of lensed eyes in open trapezial arrangement and two small anterior eyespots. Antennae elongate, fusiform, with small subdistal enlargement, shorter than prostomium and palps together; median antenna of same length or slightly longer than prostomium, originating in middle of prostomium; lateral antennae somewhat shorter than median antenna, originating in front of anterior eyes, slightly posterior to eyespots (Figs. 2A, B, 3A). Palps small, shorter than prostomium, fused along entire length, with distal notch. Tentacular segment well defined, similar in length to following segments; two ciliated lateral nuchal organs

Table 1.—Station locations and granulometry at San Quintín lagoon, Baja California.

Station	Lat. N.	Long. W.	Eh(mV)	T°C	O.M. (%)	Sand (%)	Silt (%)	Clay (%)
1	30°29′20″	115°59′35″			2.35	39.86	30.68	29.28
2	30°29′34″	115°59′34″	−255	21.4	0.43	96.8	3.2	0
3	30°29′06″	115°59′02″			1.86	63.78	23.64	7.9
4	30°29′23″	115°58′57″	−184	20.8	1.33	60.08	25.81	13.61
5	30°29′06″	115°59′01″	−127	20.1	2.81	44.97	30.12	22.46
6	30°29′02″	115°58′37″	103	20.5	2.78	13.42	65.52	21.26
7	30°28′38″	115°58′26″	−150	20.5	1.91	63.79	23.38	10.21
8	30°28′45″	115°58′10″	−280	20.4	0.58	71.88	27.84	0.77
9	30°28′50″	115°57′51″	−322	20.6	2.66	36.2	36.38	22.78
10	30°28′28″	115°57′29″	168	21.4	2.37	65.82	18.78	14.63
11	30°28′18″	115°57′46″	−294	20.5	0.79	84.38	11.51	4.11
12	30°27′52″	115°57′50″	−145	19.1	0	25.84	66.09	8.1
13	30°27′48″	115°57′46″	−203	20.5	0.58	86.72	13.28	0
14	30°27′49″	115°57′30″	−320	21	1.55	50.59	35.64	12.8
15	30°28′02″	115°57′11″	−126	19.9	3.33	19.77	44.88	27.69
16	30°27′33″	115°57′41″	−360	20	3.1	96.68	3.32	0
17	30°27′21″	115°57′09″	−230	20.4	1.89	54.51	31.55	14.86
18	30°27′46″	115°57′06″	−200	20.4	1.4	69.61	6.59	21.57
19	30°26′32″	115°57′17″	−252	21.4	2.03	60.08	25.81	13.61
20	30°26′46″	115°57′00″	−156	20.1	0.62	74.65	25.04	2.36
21	30°26′52″	115°56′37″	−297	20.3	0.76	78.61	12.34	9.26
22	30°27′07″	115°56′17″	−30	18.9	1.68	37.77	35.52	22.97
23	30°26′33″	115°56′03″	152	19.3	1.27	42.58	40.04	25.89
24	30°25′52″	115°57′11″			2.23	31.95	28.86	24.06
25	30°26′22″	115°56′33″	−257	20.7	0.89	52.38	24.01	20.78
26	30°25′58″	115°56′48″	−166	21.6	0.43	97.06	2.9	0
27	30°25′50″	115°57′09″	−223	21.1	1.38	98.08	1.92	0
28	30°25′12″	115°57′31″	−136	20.5	0.48	89.05	10.95	0
29	30°24′32″	115°57′29″	−242	21.6	0.28	98.13	2.25	0
30	30°24′29″	115°58′38″	−94	20.5	0.05	71.78	17.04	8.86
31	30°25′10″	115°58′12″	−104	21.5	0.37	88.4	11.79	0
32	30°24′39″	115°59′46″	−174	20.5	1.99	66.82	21.8	10.39
33	30°25′12″	115°59′44″	−285	20.6	0.26	93.75	6.25	0
34	30°25′32″	115°00′14″	−84	21.1	2.96	51.3	36.54	12.52
35	30°25′42″	115°59′44″	−326	21.1	2.21	42.27	45.83	6.4
36	30°25′52″	115°59′12″	−104	21.5	0.53	58.99	33.54	7.03
37	30°26′21″	115°59′33″	−205	20.6	0.93	30.03	60	6.05
38	30°26′10″	115°59′58″	−115	21	2.57	39	46.14	15.27
39	30°26′00″	115°00′26″	−148	19.8	1.16	7.26	72.59	8.17
40	30°26′32″	115°00′36″	181	21.9				
41	30°26′42″	115°00′42″	100	21.6				
42	30°26′54″	115°59′55″	−86	21.3				

between prostomium and peristomium (Fig. 3A); two pairs of tentacular cirri, short, smaller than antennae, ovate to conical, somewhat larger at bases (Figs. 2A, B, 3A, B). Dorsal cirri on all setigers; anterior dorsal cirri similar in shape to dorsal tentacular cirri but somewhat longer, shorter than parapodial lobes, but progressively longer and slender with very small difference in width between bases and tip, cylindrical (Fig. 2A, B, D); dorsal cirri of midbody somewhat longer than parapodial lobes (Fig. 2C); from midbody posteriorly, dorsal cirri progressively smaller. Parapodial lobes conical, with presetal papilla (Fig. 2C). Ventral cirri digitiform, shorter than parapodial lobes. Compound setae heterogomph, with short, fine subdistal spines on

shafts, and blades strongly bidentate, both teeth similar in length and shape or proximal tooth somewhat shorter than distal tooth, well separated from each other, elongate, provided with long, upwardly projecting spines on margin, especially on most anterior and dorsal setae (Figs. 2E, H, 4A–C). Anterior parapodia each with about 10 compound setae, with marked dorsoventral gradation, 28 μm blades on dorsalmost setae, 18 μm blades on ventralmost ones (Fig. 2E); progressively decreasing number of compound setae on each parapodium, posterior parapodia each with about 5 compound setae, blades 32 μm dorsally, 14 μm ventrally (Fig. 2H). Solitary dorsal simple seta from anterior parapodia, thick, strongly bidentate, with large, triangular proximal tooth, forming about a 45° angle with the distal tooth, smooth on anterior parapodia (Fig. 2F), progressively provided with more spines on margin (Fig. 2I), forming several rows of spines (observations by SEM) (Fig. 4D). Solitary ventral simple seta on each posterior parapodium, sigmoid, similar to dorsal simple seta but slender, smooth (Fig. 2J) or provided with few short spines on margin (SEM observations) (Fig. 4E). Anterior parapodia each with two slender aciculae, one straight and other acuminate (Fig. 2G), provided with subdistal enlargement and conical tip; single aciculum on each middle and posterior parapodium, acuminate (Fig. 2K). Pharynx long and wide, through about 5–6 segments (Fig. 2A); mouth opening provided with circle of cilia and about 10 soft, very small papillae (Fig. 3B); pharyngeal tooth very small, inconspicuous, conical, located just in front of middle of pharynx, far from anterior margin of pharynx (Fig. 2A, B). Proventriculus similar in length to pharynx, through about 5 segments, with about 27 rows of muscle cells (Fig. 2A). Females carrying eggs on dorsolateral position of midbody; eggs attached to body by means of thin notosetae (Fig. 3C, D).

Remarks.—Most of the species of the genus *Grubeosyllis* have fusiform dorsal cirri, with bulbous bases and long, pointed tips; however, a few species of this genus have cylindrical, digitiform dorsal cirri, as in *G. mediodentata.* This species has a body very similar to *G. swedmarki* (Gidholm, 1962), from the North Atlantic, but the compound setae are completely different being short and unidentate in *G. swedmarki* (Gidholm 1962, Parapar et al. 1993) and long and bidentate in *G. mediodentata. Grubeosyllis celiae* (Parapar & San Martín, 1992), from Ceuta (North West Africa) has longer dorsal cirri, a longer proventriculus, compound setae with shorter blades than those of *G. mediodentata* and the dorsal simple setae are unidentate (Parapar & San Martín 1992).

This species reproduces by external gestation, as many others of the same genus and the subfamily Exogoninae. The eggs are attached to the body by means of epitokous setae (Fig. 3C), as recently reported by Kuper & Westheide (1998) for other similar species.

Distribution.—Galápagos Islands, Belize. This species is newly recorded for México.

Cicese, new genus

Diagnosis.—Body small, cylindrical. Prostomium with two pairs of lensed eyes and two eyespots. Palps fused along entire length. Peristomium well defined, not fused to prostomium, with two pairs of tentacular cirri. Dorsal and ventral cirri on all parapodia. Antennae, tentacular cirri, anal cirri and, at least, some dorsal cirri with bulbous bases and slender tips. Palps, pygidium and dorsum provided with papillae. Two anal cirri. Pharynx provided with an anterior middorsal tooth and a crown of papillae. Parapodia each with several compound setae, and dorsal and ventral simple setae on some parapodia. Aciculae acuminate. Females carrying eggs dorsally by means of notosetae and mature males provided with long natatory setae.

Remarks.—The new genus is close to a group of species of the genus *Sphaerosyllis,*

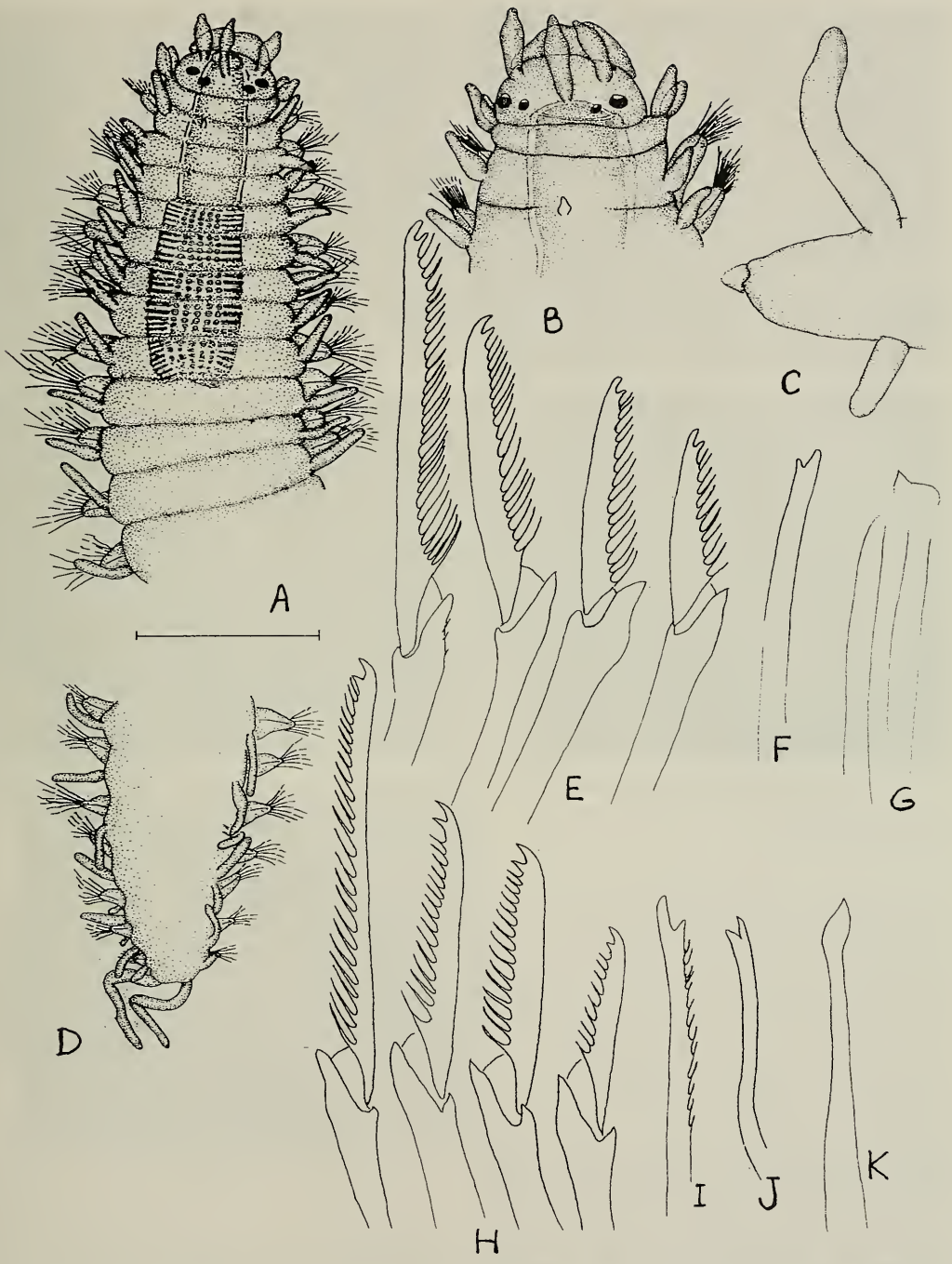

Fig. 2. *Grubeosyllis mediodentata* (Westheide, 1974). A, anterior end, dorsal view. B, detail of prostomium and anterior setigers. C, midbody parapodium. D, posterior end, dorsal view. E, compound setae, anterior parapodium. F, dorsal simple seta, anterior parapodium. G, aciculae, anterior parapodium. H, compound setae, posterior parapodium. I, dorsal simple seta, posteriro parapodium. J, ventral simple seta. K, aciculum, posterior parapodium. Scale: A, D—0.14 mm; B—0.6 mm; E–K—15 μm.

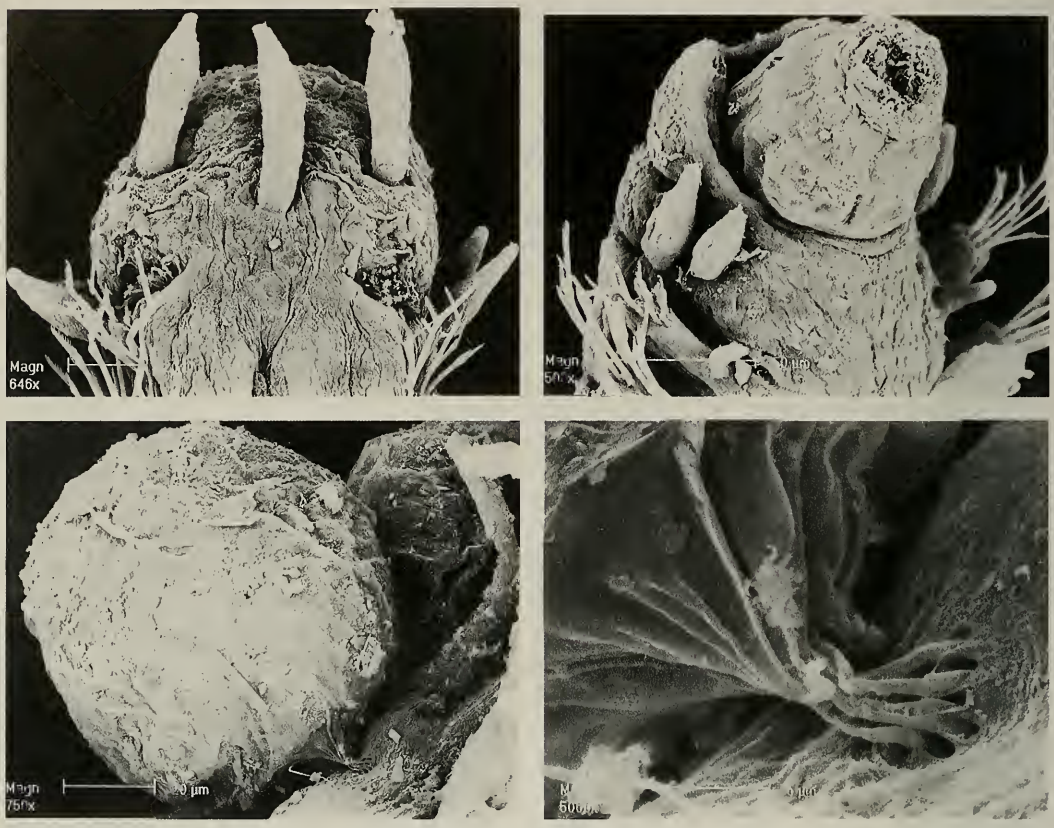

Fig. 3. *Grubeosyllis mediodentata* (Westheide, 1974). SEM. A, detail of prostomium, dorsal view. B, lateroventral view with proboscis everted. C, an egg, attached to body by means of capillary notosetae. D, detail of capillary notosetae.

having more or less elongate dorsal cirri on the midbody, two pairs of eyes and a pair of eyespots on the prostomium, acuminate aciculae, compound setae with bidentate blades and small, inconspicuous papillae on the dorsum, palps and pygidium (e.g., *Sphaerosyllis bilobata* Perkins, 1981, *S. cryptica* Ben-Eliahu, 1977, *S. belizensis* Russell, 1989, and others) (see Perkins 1981, Ben-Eliahu 1977, Russell 1989). However, all these species, as members of the genus *Sphaerosyllis,* are provided with a single pair of tentacular cirri. On the other hand, *Cicese* is also closely related to *Grubeosyllis* (Verrill, 1900), sharing the shape of the aciculae, similar setae, and having two pairs of tentacular cirri. However, *Cicese* has papillae, whereas *Grubeosyllis* has a smooth dorsum, palps and pygidium, a character considered as exclusive to *Sphaerosyllis.*

Etymology.—The name is given in honor of the research center CICESE (Centro de Investigación Científica y Estudios Superiores de Ensenada) located in Baja California, Mexíco.

Cicese sphaerosylliformis, new species
Fig. 5

Material examined.—BSQ R8; Holotype. BSQ R17; 1 paratype. BSQ 23; 1 paratype.

Description.—Body small, short, holotype complete mature female 1.5 mm long, 0.2 mm wide, for 29 setigers, without color markings; dorsum covered with very small papillae, longer on posterior part of body

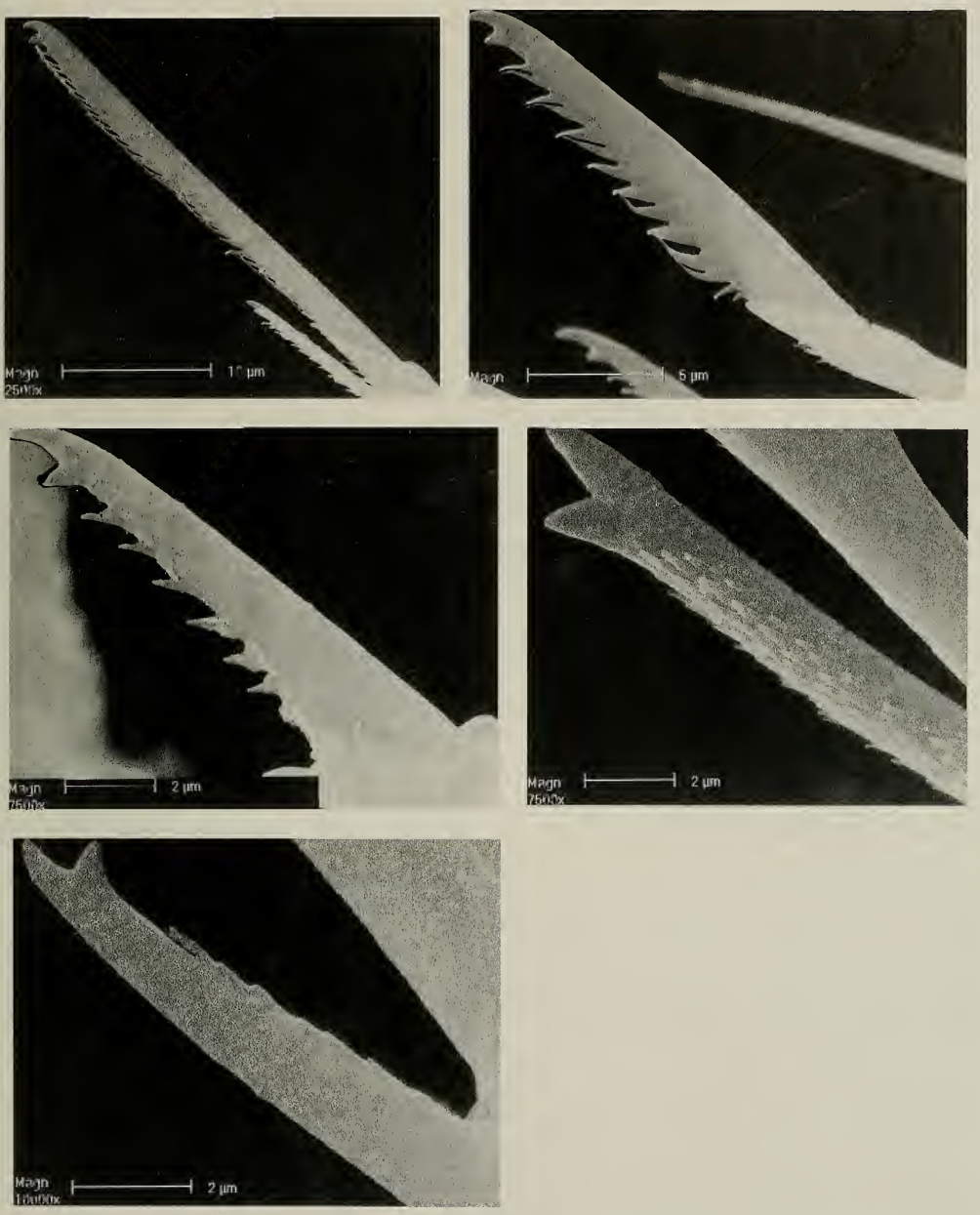

Fig. 4. *Grubeosyllis mediodentata* (Westheide, 1977). SEM. A, dorsal compound seta. B, median compound seta. C, ventral compound seta. D, dorsal simple seta. E, ventral simple seta.

(Fig. 5D, E). Prostomium ovate, more than twice as wide as long (Fig. 5A); two pairs of large, lensed eyes in very open trapezoidal arrangement, nearly on line, anterior pair larger than posterior pair, and two anterior eyespots. Median antenna longer than prostomium and palps together, large at base, enlarged at midlength and with slender tip, originating between posterior eyes; lateral antennae onion-shaped, with bulbous bases and short, slender tips, shorter than median antenna, originating close to eye-

spots. Palps short, fused along entire length, with indistinct dorsal furrow, provided with few very small, papillae dorsally. Tentacular segment shorter than following segments, well defined, covering dorsal posterior part of prostomium, dorsally bilobed; dorsal tentacular cirri similar in length to median antenna, similar in shape to lateral antennae but somewhat more elongate (Fig. 5A); ventral tentacular cirri similar in shape to lateral antennae, but somewhat smaller (Fig. 5B). Dorsal cirri of setiger one similar in shape to dorsal tentacular cirri, somewhat longer. Dorsal cirri of setigers 2 and 3 small, with strongly bulbous bases and short, slender tips. Dorsal cirri from setiger 3 elongate, with slightly enlarged bases and long, slender tips (Fig. 5C), progressively longer and slender; dorsal cirri on midbody only somewhat shorter than body width (Fig. 5A); dorsal cirri from mid-posterior setigers shorter, less elongate, with wider bases (Fig. 5D). Parapodial lobes short, conical; ventral cirri digitiform, shorter than parapodial lobes (Fig. 5C). Compound setae heterogomph, provided with slender, bidentate blades, proximal tooth smaller than distal tooth, with long, thin, erect basal spines on margin, progressively shorter, smooth distally (Fig. 5H, I). Anterior parapodia each with about 10–13 compound setae, blades 34 μm dorsally, 16 μm ventrally; progressively reduced number of compound setae, on each parapodium to 6–7 on posterior parapodia, similar to anterior compound setae. Solitary dorsal simple seta from anterior parapodia (from setiger 3 in holotype), slender, unidentate, provided with short, thin spines on margin (Fig. 5G). Solitary ventral simple seta on far posterior parapodia, slender, sigmoid, bidentate, smooth. Acicula solitary, slender, acuminate, provided with a subdistal enlargement and a long, filiform tip (Fig. 5F). Pharynx slender, everted in holotype (Fig. 5A), with pharyngeal tooth located anteriorly, surrounded by crown of about 10 small soft papillae; a few, probably 5, subdistal papillae on pharynx (Fig. 5B). Proventriculus shorter than pharynx, through about 4 segments, with about 17 roes of muscle cells. Pygidium small, provided with small papillae and two long anal cirri, with bulbous bases, longer than posterior dorsal cirri (Fig. 5D). Holotype carrying eggs dorsally from setiger 11; one paratype mature male, provided with natatory setae from setiger 10.

Remarks.—Rioja (1943) described *Brania limbata arenacea* from the Pacific coast of México with two pairs of tentacular cirri and the dorsum covered by detritus, a character of the genus *Sphaerosyllis*. Apparently, *Brania limbata arenacea* (Rioja, 1943) is a member of *Cicese,* new genus. However, it differs from *Cicese sphaerosylliformis,* new species, by having antennae, tentacular cirri and dorsal cirri all similar, with small differences in lengths, unidentate blades of compound setae and lacking eyespots.

Etymology.—Meaning the form of this species resembles that of *Sphaerosyllis.*

Genus *Sphaerosyllis* Claparède, 1863
Sphaerosyllis californiensis Hartman, 1966

Sphaerosyllis californiensis.—Kudenov & Harris, 1995:28–30, Fig. 1.8.

Material examined.—BSQ 6M (1). BSQ 7R (1). BSQ 8R (1). BSQ 11M (1). BSQ 12M (1). BSQ 14M (4). BSQ 14R (1). 21M (2). BSQ 26R (1). BSQ 28M (2). BSQ 31M (1).

Distribution.—Southern California to Baja California.

Genus *Exogone* Örsted, 1845
Subgenus *Exogone* Örsted, 1845
Exogone (*Exogone*) *lourei* Berkeley & Berkeley, 1938

Exogone (*Exogone*) *lourei* San Martín, 1991:735–737; Kudenov & Harris, 1995: 15–17, Fig. 1.3.

Material examined.—BSQ 3R (6). BSQ 5M (9). BSQ 5R (5). BSQ 6M (47). BSQ 6R (4). BSQ 8M (2). BSQ 8R (14). BSQ

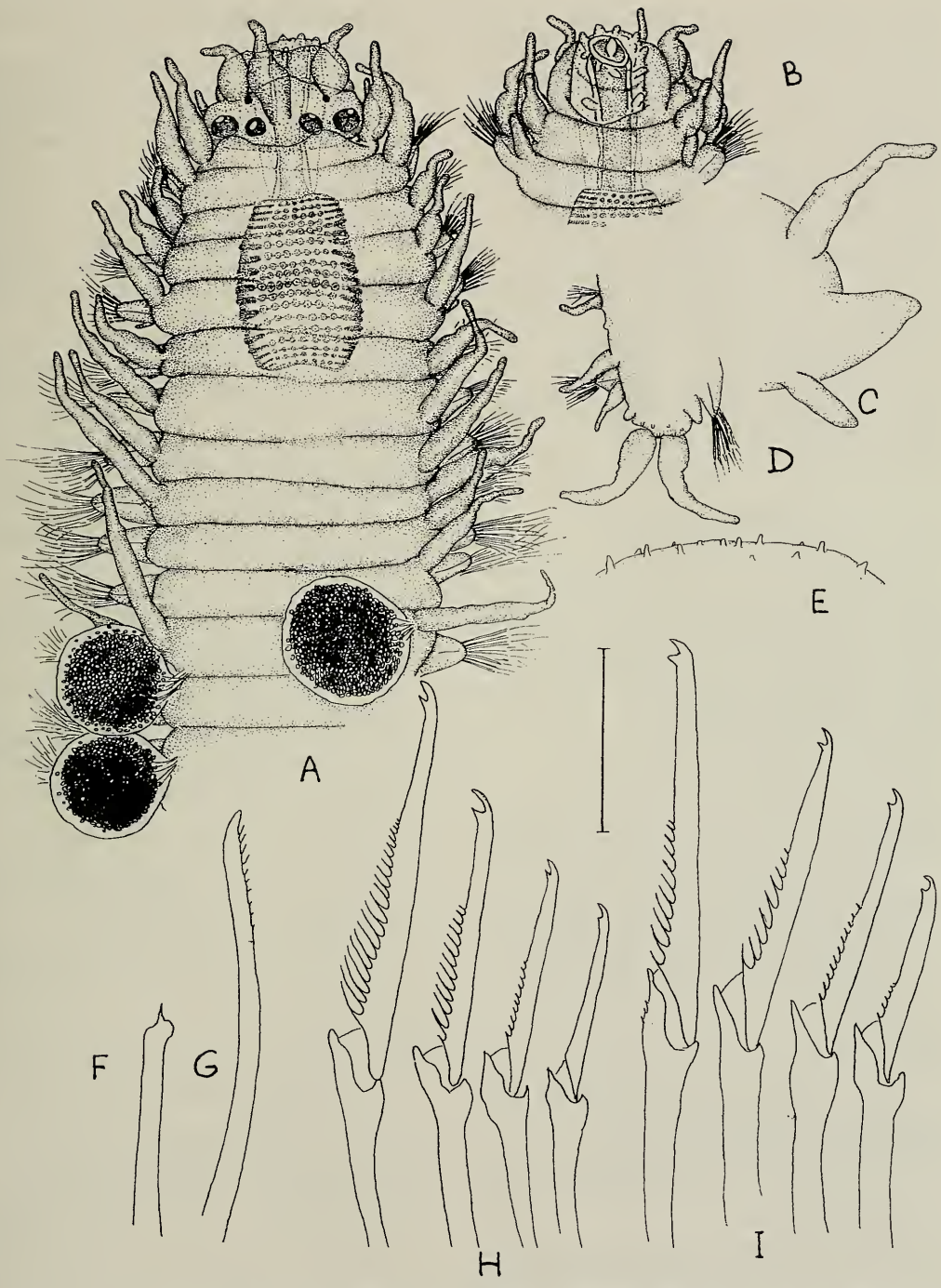

Fig. 5. *Cicese sphaerosylliformis,* new genus, new species. A, anterior end, dorsal view. B, anterior end, ventral view. C, mid-posterior parapodium. D, posterior end, dorsal view. E, detail of surface of dorsum, mid-posterior segments. F, aciculum. G, dorsal simple seta. H, compound setae, anterior parapodium. I, compound setae, posterior parapodium. A, B, F–I, from holotype; C–E, from paratype. Scale: A–E—0.65 mm; F–I—15 μm.

9M (2). BSQ 9R (2). BSQ 11R (4). BSQ 12M (1). BSQ 12R (48). BSQ 13R (4). BSQ 14M (16). BSQ 14R (17). BSQ 15R (18). BSQ 16M (8). BSQ 16R (16). BSQ 17M (56). BSQ 17R (104). BSQ 18R (1). BSQ 19R (4). BSQ 20M (1). BSQ 20R (4). BSQ 21M (1). BSQ 21R (2). BSQ 22M (1). BSQ 22R (12). BSQ 23M (1). BSQ 23R (3). BSQ 24R (1). BSQ 25M (1). BSQ 25R (7). BSQ 26M (2). BSQ 26R (5). BSQ 27M (1). BSQ 27R (2). BSQ 34M (4). BSQ 37R (6). BSQ 39M (6). BSQ 39R (6).

Distribution.—Northeast Pacific, from British Columbia to México. Gulf of México, Cuba, Florida and Canary and Cape Verde Islands.

Acknowledgments

We would like to thank M. Necoechea and G. de la Selva for helping sort the material. Financial and technical support was provided by Centro de Investigación Científica y Estudios Superiores de Ensenada (Baja California, Mexico).

Literature Cited

Barnard, J. 1970. Benthic Ecology of Bahia San Quintin, Baja California.—Smithsonian Contributions to Zoology 44:1–60.

Ben Eliahu, M. N. 1977. Polychaete cryptofauna from rims of similar intertidal vermetid reefs on the Mediterranean coast of Israel and in the Gulf of Elat: Syllinae and Eusyllinae (Polychaeta Errantia: Syllidae).—Israel Journal of Zoology 26:1–58.

Berkeley, E., & C. Berkeley. 1938. Notes on Polychaeta from the coast of western Canada. 2. Syllidae.—Annals and Magazine of Natural History London, series 11, 1:33–49.

Calderón-Aguilera, L. 1992. Analysis of the benthic infauna from San Quintin, with emphasis on its use in impact assessment studies.—Ciencias Marinas 18:27–46.

Claparède, E. 1863. Beobachtungen über Anatomie und Entwicklungsgeschichte wirbelloser Thiere an der Küste van Normandie angestellt. Leipzig, 120 pp.

Day, J. H. 1967. A monograph on the Polychaeta of Southern Africa. Pt. 1. British Museum (Natural History), London, Publication 656, 878 pp.

Fauchald, K. 1977. Polychaetes from intertidal areas in Panama, with a review of previous shallow waters records.—Smithsonian Contributions to Zoology 356:1–109.

———, & A. A. Reiner. 1975. Clave de Poliquetos Panameños con la inclusión de una clave para todas las familias del mundo.—Boletín del Instituto Oceanográfico de la Universidad de Oriente 14:71–94.

Fauvel, P. 1923. Polychètes Errantes, vol. 5. Faune de France. Lechevalier, Paris, 488 pp.

Gidholm, L. 1962. Sur quelques polychètes syllidiens des sables de la region de Roscoff avec la description de deux nouvelles espèces.—Cahiers de Biologie Marine 3:249–260.

Góngora-Garza, G. 1984. Contribución al conocimiento de los sílidos (Polychaeta: Syllidae) de la isla María Madre, Nayarit, México. Tesis Profesional de la Universidad Autónoma de Nuevo León, Facultad de Ciencias Biológicas. 54 pp.

———, & J. A. de León González. 1993. Dos nuevos sílidos (Polychaeta: Syllidae) y nuevos registros para México. Con una clave a las especies de sílidos del Pacífico Mexicano.—Cahiers de Biologie Marine 34:17–28.

Grube, A. E. 1840. Actinien, Echinodermen und Würmer des Adriatischen- und Mittelmeers nach eigenen Sammlungen beschrieben. Verlag von J. H, Bon, Königsberg, 92 pp.

———. 1850. Die Familien der Anneliden.—Archive für naturgeschichte Berlin 16.1:249–364.

Hartman, O. 1966. Quantitative survey of the benthos of San Pedro basin, Southern California. Part 2. Final results and conclusions.—Allan Hancock Pacific Expedition 19:187–456.

———. 1968. Atlas of the errantiate polychaetous annelids from California. Allan Hancock Foundation. University of Southern California Press, Los Angeles, California, 828 pp.

Hartmann-Schröder, G. 1959. Zur ökologie der Polychaeten des Mangrove-Estero-Gebietes von El Salvador.—Beitrage der Neotropischen Fauna 1:70–183.

Hernández-Alcántara, P. 1992. Los Poliquetos (Annelida: Polychaeta) de la Plataforma Continental del Golfo de California, México. Tesis Maestría, UNAM. 427 pp.

Ibarra-Obando, S. 1990. Lagunas costeras de Baja California.—Ciencia y Desarrollo 16:39–49.

Inclán-Rivadeneyra, R., & M. Acosta-Ruiz. 1988. La comunidad incrustante en balsas para el cultivo de ostión japonés *Crassostrea gigas* en Bahia San Quintin, Baja California, México.—Ciencias Marinas 15:21–38.

Kudenov, J., & L. Harris. 1995. Family Syllidae Grube, 1850 *in* J. A. Blake, B. Hilbig, & P. H. Scott, eds., Taxonomic atlas of the benthic fauna of the Santa María basin and Western Santa Barbara Channel, vol. 5. The Annelida, Part 2, 99 pp.

Kuper, M., & W. Westheide. 1998. External gestation in Exogoninae species (Annelida: Polychaeta): dorsal egg attachment by means of epitokous chaetae.—Invertebrate Biology 117:299–306.

López, E., G. San Martín, P. Cladera de Codina, & M. Capa. 1997. La Fauna de Anélidos Poliquetos del Parque Nacional de Coiba (Panamá). Pp. 57–73 *in* S. Castroviejo, ed., Flora y fauna del Parque Nacional de Coiba (Panamá). Inventario preliminar. AECI (Agencia Española de Cooperación Internacional), 267 pp.

Moore, J. P. 1909. The polychaetous annelids dredged by the U. S. S. "Albatross" off the coast of southern California in 1904. I. Syllidae, Sphaerodoridae, Hesionidae and Phyllodocidae.—Proceedings of the Academy of Natural Sciences of Philadelphia 61:321–351.

Örsted, A. S. 1845. Über die Entwicklung der Jungen bei einer Annelide und über äusseren Unterschiede zwischen beiden Geschlechten.—Archive für naturgeschichte Berlin 11.1:20–23.

Parapar, J., & G. San Martín. 1992. *Grubeosyllis celiae,* a new species of Exogoninae (Syllidae: Polychaeta) from off Ceuta, (Spain).—Proceedings of the Biological Society of Washington 105:112–115.

———, G. San Martín, V. Urgorri, & C. Besteiro. 1993. Anélidos Poliquetos mesopsámicos sublitorales de la costa de Ceuta (España).—Cahiers de Biologie Marine 34:363–381.

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 Pacifico de México.—Anales del Instituto de Biologia de México 12:669–746.

———. 1943. Estudios Anelidológicos. VII. Aportaciones al conocimiento de los Exogóninos (Anélidos Poliquetos) de las costas Mexicanas del Pacífico.—Anales del Instituto de Biología de México, UNAM 14:207–227.

———. 1947a. Estudios Anelidológicos. XVII. Contribución al conocimiento de los Anélidos Poliquetos de Baja California y Mar de Cortés.—Anales del Instituto de Biología de México, UNAM 033 18:197–220.

———. 1947b. Estudios Anelidológicos. XVIII. Observaciones y datos sobre algunos Anélidos Poliquetos del Golfo de California y costas de Baja California.—Anales del Instituto de Biología de México, UNAM 18:517–531.

———. 1959. Estudios Anelidológicos. XXIII. Contribución al conocimiento de los Anélidos Poliquetos de las islas de Revillagigedo.—Anales del Instituto de Biología de México, UNAM 30: 243–259.

———. 1962. Estudios Anelidológicos. XXVI. Algunos Anélidos Poliquetos de las costas del Pacífico de México.—Anales del Instituto de Biología de México, UNAM 33:131–229.

Russell, D. E. 1989. Three new species of *Sphaerosyllis* (Polychaeta, Syllidae) from mangrove habitats in Belize.—Zoologica Scripta 18:375–380.

———. 1991. Exogoninae (Polychaeta: Syllidae) from the Belizean barrier reef with a key to species of *Sphaerosyllis.*—Journal of Natural History 25:49–74.

San Martín, G. 1984. Descripción de una nueva especie y revisión del género *Sphaerosyllis* (Polychaeta: Syllidae).—Cahiers de Biologie Marine 25:375–391.

———. 1991. *Grubeosyllis* and *Exogone* (Exogoninae, Syllidae, Polychaeta) from Cuba, the Gulf of Mexico, Florida and Puerto Rico, with a revision of *Exogone.*—Bulletin of Marine Science 49:715–740.

Savigny, J. C. 1818. Annelids. No. 3 *in* J. B. de Lamarck, ed., Histoire naturelle des Animaux sans vertébres. Paris. V., 612 pp.

Treadwell, A. 1945. New species of polychaetous annelids from Massachusetts and California.—American Museum Novitates, 1280:1–3.

Verrill, A. E. 1900. Additions to the Turbellaria, Nemertina and Annelida of the Bermudas, with revisions of some New England genera and species.—Transactions of the Connecticut Academy of Arts and Sciences 10:595–671.

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