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The hidden worms on the beach: interstitial Syllidae (Annelida) from the Indo-Pacific

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Abstract.—Based on collections of interstitial Syllidae (Annelida) from several areas of the Indo-Pacific Ocean (Madagascar, Andaman Islands, South China, Hong-Kong, the Philippines, and New Zealand), we report a total of 49 species belonging to 19 genera. Most of these species are already known in the Indo-Pacific area, but these reports extend their distributional ranges. Nine species are described as new: *Parexogone javieri* (from New Zealand), *Parexogone viejoi* (from the Philippines), *Prosphaerosyllis fittoni*, *Sphaerosyllis dieteri*, *Syllis kai*, *Perkinsyllis tsilo* (from Madagascar), and *Megasyllis chiki*, *Syllis dominguezi*, and *Syllis escribanoi* (from China). Two species, previously described as *Streptosyllis* Webster & Benedict, 1884 are transferred to the genus *Streptospinigera* Kudenov, 1983: *S. baolingi* (Ding & Westheide, 1994), new combination, and *S. hainanensis* (Ding & Westheide, 1994), new combination, both from China. One species is transferred to *Syllis* [*Typosyllis botosaneanui* (Hartmann-Schröder, 1973)], new combination.

Keywords: annelids, Indo-Pacific, meiofauna, taxonomy

Marine life extends from the surface of the ocean to the very deep sea and contains hundreds and thousands of marine life forms still unknown. Excluding the very deep ecosystem and looking for wonders of marine life closer to us, the life in between small grains of sand can still hide many surprises. Interstitial marine life includes different taxa, including viruses, bacteria, diatoms, and also larger life forms such as Kinorhyncha, Cnidaria, Mollusca, Crustacea, and Annelida. In fact, only a few phyla are not represented in this environment (e.g., Phoronida and Ctenophora), and some are exclusive to it (e.g., Kinorhyncha and Loriciphera). These very small animals can move in the substrate without disturbing the grains of sediment and could give the impression of a low capacity for distribution. However, interstitial life can move in three-dimensional space. As McLachlan & Brown (2006) point out, the fauna of interstitial environments such as sandy beaches "has a deep vertical distribution, and recognizable strata can penetrate several meters into the sand … The lacunar interstitial system is complex and three dimensional, often having great vertical extent in the sand body." Looking inside the little pools in between the different types of sediments with the proper optical tools, a new world of life is very close and unknown to us. The meiofauna (interstitial fauna) are

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defined as those metazoan animals passing undamaged through 0.5–1.0 mm-mesh screens and retained on 30–65 μm-mesh screens (McLachlan & Brown 2006, Schmidt-Rhaesa 2020). On sandy beaches, there may be as many as 25 interstitial species for every macrofaunal species (Armonies & Reise 2000). The reason for this diversity is the greater stability and complexity of the interstitial habitat (McLachlan & Brown 2006).

Interstitial marine annelids (usually known as polychaetes) are able to live in the interstices of sediments because of their small body dimensions and, especially, their small diameters (Westheide 1971). However, not all small polychaetes live in sediments; there are numerous small species of the same size as the interstitial species that live on other non-sedimentary habitats, such as among algae, inside porous rocks, sponges, dead corals, etc. (Westheide 1988). Some polychaete families are exclusively interstitial; their origin and evolution is extremely interesting (see Westheide 1984, 1987; Worsaae & Kristensen 2005, Worsaae et al. 2021).

Syllidae is one of the most complex and difficult families of polychaetes, with a large number of described genera and species (San Martín & Aguado 2014). The number of taxa of Syllidae is continuously growing (Böggemann & Westheide 2004, Pamungkas et al. 2019), both by the discovery of new species and sometimes also genera. The use of new techniques, such as molecular taxonomy, sometimes demonstrate that widely reported species are, in fact, groups of different species (Westheide & Hass-Cordes 2001). Splitting traditional genera also leads to increased syllid diversity. Syllids are usually meiobenthic species with small to medium-sized slender bodies (Westheide 1988). They are extremely diverse and numerous in all marine habitats, and numerous species live interstitially. However, there are relatively few taxa (in relation to the total number of species) that live exclusively as interstitial in sediments, and often the same species can be found both in sediments and other habitats.

In this paper, we report on the syllids found during different collecting trips in several areas from the Indo-Pacific Ocean. There are several previous papers dealing with interstitial syllids from this huge area, profusely cited in the present paper in the taxonomic account of each species. Other papers on interstitial syllids from the area are those of Ohwada (1988), Westheide (1990a, b), Zhao & Wu (1991), Men et al. (1993), Sun (1996), and Martínez & San Martín (2020).

Materials and Methods

Samples from New Zealand and the Philippines were collected during the project "Caracterización Taxonómica y Sistemática de la familia Syllidae (Polychaeta) basada en datos moleculares y morfológicos. El problema de las especies cosmopolitas y Biodiversidad en el Pacífico" by the Ministerio de Ciencia e Innovación of the Spanish Government, Project number CGL2009-12292 BoS. These samples, all subtidal, were taken by scuba diving by means of a core of 5 L capacity. The specimens were sorted alive using a binocular microscope (NIKON SMZ-800), fixed in 7% formalin, and transferred to 70% alcohol. Samples from Madagascar, China, and the Andaman Islands were collected by one of the authors (WW) from intertidal and subtidal sediments using a core and extracting the specimens alive. Specimens were fixed in 10% formalin and transferred to 70% alcohol. Some specimens of the Madagascar collection were photographed alive by WW. A detailed description of the study area and collection methods of the fauna collected in Madagascar is in Thomassin (1969). All sampled areas are shown in Fig. 1.

Fig. 1. Map of the Indo-Pacific showing the sampling areas. Taken from Google Earth Pro, modified with Photoshop 8.0. 1. Tulear Reef, Madagascar 2. Andaman 3. Hainan, China 4. Hong-Kong and Xiamen, China 5. Qingdao, China 6. Luzon Island, Philippines 7. Palawan, Philippines 8. North Island, New Zealand 9. South Island, New Zealand

Specimens were identified at the UAM (Universidad Autónoma de Madrid) using a compound light microscope (Nikon Eclipse microscope) with differential interference contrast system (Nomarsky), an ocular micrometer, and camera lucida drawing tube; drawings were later digitized and edited in Photoshop 8.0 and 10.0. After identification and study, all specimens were deposited at the Museo Nacional de Ciencias Naturales (MNCN), Madrid, Spain.

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Results

Family Syllidae Grube, 1850

Subfamily Anoplosyllinae Aguado & San Martín, 2009

Anoplosyllinae Aguado & San Martín, 2009:395.—San Martín & Aguado, 2014.

Genus *Streptospinigera* Kudenov, 1983

Kudenov, 1983:84.—Olivier et al., 2013:1501.

Type species.—*Streptospinigera heteroseta* Kudenov, 1983.

Olivier et al. (2013) considered four species as belonging to *Streptospinigera*. The two species reported here raise the number of known species in this genus to six. Other species described as *Streptosyllis* could, in fact, belong to *Streptospinigera*.

Streptospinigera baolingi (Ding & Westheide, 1994), new combination

Streptosyllis baolingi Ding & Westheide, 1994:304, Figs. 1, 2.

Material examined.—China, Xiamen, Huangchu Beach, 25 Sep 1994, sand, intertidal, 11 specimens, (MNCN 16.01/18989).

Remarks.—The original description is detailed enough, with good drawings, showing that this species has the characters that fit it in the genus *Streptospinigera*; it is not necessary to add a new description.

Distribution.—South China.

Habitat.—Interstitial in sand flats. Intertidal and shallow depths.

Streptospinigera hainanensis **(**Ding & Westheide, 1994), new combination

Streptosyllis hainanensis Ding & Westheide, 1994:308, Fig. 3.

Material examined.—China, Hainan, Sanya Island, 6 Oct 1994, sand, intertidal, 1 specimen (MNCN 16.01/18990).

Remarks.—As with the above species, the original description shows the characters of *Streptospinigera*, and it is not necessary to add a new description of this specimen.

Habitat.—Sublittoral and intertidal sand patches.

Distribution.—South China.

Genus *Streptosyllis* Webster & Benedict, 1884

Streptosyllis Webster & Benedict, 1884: 711.—Southern, 1914:25—San Martín, 2003:120.—San Martín & Hutchings, 2006:354.—Faulwetter et al., 2008:2.—San Martín & Aguado, 2014.

The genus was emended by Southern (1914). Faulwetter et al. (2008) presented a synoptic table and a key for all previously described species.

Type species.—*Streptosyllis arenae* Webster & Benedict, 1884.

Streptosyllis aequiseta Hartmann-Schröder, 1981

Streptosyllis aequiseta Hartmann-Schröder, 1981:32, Figs. 53–58, 1983:131, Fig. 15, 1984:21, 1985:70, 1989:26.—Böggemann et al., 2003:21, Figs. 3, 4.—San Martín & Hutchings, 2006:355, Figs. 82, 83.

Material examined.—Madagascar, Tulear reef, 15 Jan 2002, sand, intertidal, 1 specimen (MNCN 16.01/18991), same locality and habitat, 18 Jan 2002, 1 specimen (MNCN16.01/18992).

Distribution.—Australia (Western Australia, South Australia, Tasmania, New South Wales), Seychelles Islands, Madagascar.

Habitat.—Interstitial in coralline and fine sand, mud, on algae. Intertidal to shallow depths.

Genus *Syllides* Ørsted, 1845

Syllides Ørsted, 1845a:408.—Fauvel, 1923:284.—Day, 1967:259.—Banse, 1971:1469.—San Martín, 2003:136.—San Martín & Hutchings, 2006:358.—San Martín & Aguado, 2014.

Remarks.—Banse (1971) revised the genus, but several species have been described since then.

Type species.—*Syllides longocirrata* Ørsted, 1845.

Syllides bansei Perkins, 1981

Syllides bansei Perkins, 1981:1147, Figs. 29, 30.—Alós, 1989:335, Fig. 6.—Núñez et al., 1995:3, Fig. 2.—San Martín, 2003:145, Fig. 71.—Böggemann & Westheide, 2004:427.

Material examined.—Madagascar, Tulear Reef, seagrass meadows, subtidal, 14 Jan 2002, 3 specimens (MNCN16.01/18993).

Distribution.—West (Florida) and East Atlantic (Madeira), Western (NE Spain) and Eastern Mediterranean, Madagascar.

Habitat.—Intertidal to about 11 m depth, in coarse sand and roots of seagrasses.

Subfamily Eusyllinae Malaquin, 1893

Eusyllinae Malaquin, 1893:66.—Fauvel, 1923, in part:273.—San Martín, 2003,

in part:47.—San Martín & Aguado, 2014.

Genus *Eusyllis* Malmgren, 1867

Eusyllis Malmgren, 1867:159.—San Martín, 2003:112.—San Martín & Hutchings, 2006:271.—San Martín & Aguado, 2014.
Desmosyllis Verrill, 1900:635.
Eudontosyllis Knox, 1960:105.

Type species.—*Eusyllis blomstrandi* Malmgren, 1867

Eusyllis lamelligera Marion & Bobretzky, 1875

Eusyllis lamelligera Marion & Bobretzky, 1875:33, pl. 3, Fig. 9A–C.—Fauvel, 1923:294, Fig. 113.—Cognetti, 1957:48, pl. 1, Fig. 8.—Pettibone, 1963:120, Figs. 33, 34a–d.—Núñez & San Martín, 1996:205–206, Fig. 2K–R.—San Martín, 2003:117, Figs. 54, 55.—San Martín & Hutchings, 2006:278, Figs. 15, 16.
Eusyllis dentata Hartmann-Schröder, 1990:50, Figs. 13–16.
Eusyllis habei Imajima, 1966a:97, text-fig. 31a–k.

Material examined.—China, Hong-Kong, intertidal sand, 14 May 1995, 11 specimens (MNCN16.01/18994), New Zealand, North Island, Maitai Bay, Kari Kari Peninsula, subtidal algae, 31 Jan 2012, 2 specimens (MNCN 16.01/18995).

Distribution.—Apparently, this species is distributed worldwide. East and West North Atlantic, Mediterranean Sea, Australia, New Zealand. Japan, China.

Habitat.—Occurring in a wide variety of substrates and depths, intertidally to depths greater than 500 m.

Genus *Odontosyllis* Claparède, 1863

Odontosyllis Claparède, 1863:47.—San Martín, 2003:101.—Fukuda & Nogueira, 2006:224.—San Martín & Hutchings, 2006:281.—Verdes et al., 2011:29.—Fukuda et al., 2013:143.—San Martín & Aguado, 2014.—Paresque et al. 2015:313.
Umbellisyllis Sars, 1869:254.
Parautolytus Ehlers, 1900:213.
Alluaudella Gravier, 1905:372.
Atelesyllis Pruvot, 1930:39.
Pharyngeovalvata Day, 1951:26.
Odontoautolytus Hartmann-Schröder, 1979:112.
Synpalposyllis Hartmann-Schröder, 1983:132.

Type species.—*Syllis fulgurans* Audouin & Milne Edwards, 1833.

Odontosyllis detecta Augener, 1913

Odontosyllis detecta Augener, 1913:236, pl. III, Fig. 33, text-fig. 34, 1927:153.—Haswell, 1920:105.—Imajima, 1966a:103, Fig. 33a–m.—Hartmann-Schröder, 1985:69.—San Martín, 1990:613, Fig. 16.—San Martín & Hutchings, 2006:286.—Aguado et al., 2015:37.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 1 specimen (MNCN 16.01/18996).

Distribution.—Australia (Western Australia, South Australia, New South Wales), Japan, Cuba, New Zealand.

Habitat.—Sand, seagrass, algae. Intertidal to shallow depths.

Genus *Opisthodonta* Langerhans, 1879

Opisthodonta Langerhans, 1879:547.—Fauvel, 1923, in part:273.—Hartmann-Schröder, 1971a, in part:100.—San Martín, 2003, in part:51.—San Martín & Hutchings, 2006:300.—San Martín & Aguado, 2014.—Fukuda et al., 2015:525.

Type species.—*Opisthodonta morena* Langerhans, 1879.

Opisthodonta sp.

Material examined.—New Zealand, South Island, Akaroa Light House, fine sediment, intertidal, 5 Feb 2012, 1 anterior fragment (MNCN16.01/18997).

Remarks.—Similar to *Opisthodonta rousei* (San Martín & Hutchings, 2006), from Australia, but the specimen is not in good enough condition for a more detailed description.

Subfamily Exogoninae Langerhans, 1879

Exogoneae Langerhans, 1879:561.

Genus *Brania* Quatrefages, 1866

Brania Quatrefages, 1866:18.—San Martín 2003:150, 2005:102.—San Martín & Aguado, 2014.

Type species.—*Exogone pusilla* Dujardin, 1851.

Brania arminii (Langerhans, 1881)

Grubea arminii Langerhans, 1881:105, pl. 4, Fig. 11.
Pionosyllis oculata Hartmann-Schröder, 1960:93, pl. 10 Fig. 85, pl. 11 Figs. 83, 84.—Tenerelli, 1964:236, Fig. 4.
Brania oculata Hartmann-Schröder, 1974a:131, pl. 12, Figs. 107–110.—Westheide, 1974:9, Fig. 5.—Ben-Eliahu, 1977:66, 79, Fig. 2.—San Martín, Viéitez, & Campoy, 1981:69, Fig. 10.—Campoy, 1982:259–262, pl. 16.
Brania arminii Núñez et al., 1992:44.—San Martín, 2003:153, Figs. 75, 76.

Material examined.—Madagascar, Tulear, 15 Jan 2002, 1 specimen (MNCN 16.01/18998). Same locality, 22 Jan 2002, 1 specimen (MNCN16.01/18999).

Distribution.—Widely distributed species, mainly circumtropical. Atlantic Ocean, Pacific Ocean, Indian Ocean, Red Sea, Madagascar.

Habitat.—Found in a high diversity of substrates: biogenic concretions, algae, rhizomes of seaweeds, and coarse sand with detritus, among mussels, vermetid and sabellarian reefs. Shallow depths and intertidal.

Genus *Erinaceusyllis* San Martín, 2005

Erinaceusyllis San Martín, 2005:73.

Type species.—*Sphaerosyllis erinaceus* Claparède, 1863.

Erinaceusyllis carrascoi Soto & San Martín, 2017.

Erinaceusyllis carrascoi Soto & San Martín, 2017:531, Fig. 6.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 2 specimens (MNCN16.01/19000).

Distribution.—Chilean Patagonia, from Concepción Channel to Magellan Strait, New Zealand.

Habitat.—Shallow subtidal, in fine sand with algae and sponges. Inside tubes of *Chaetopterus* cf. *variopedatus* in fjords and channels from Patagonia.

Erinaceusyllis hartmannschroederae San Martín, 2005

Erinaceusyllis hartmannschroederae San Martín, 2005:82, Figs. 38, 39.
Sphaerosyllis erinaceus non Claparède, 1863.—Hartmann-Schröder, 1982:69, 1983:134, 1984:22, 1985:70, 1986:43, 1989:28, 1991:39.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 10 specimens (MNCN16.01/19001), New Zealand, North Island, Maitai Bay, Kari Kari Peninsula, fine sand and mud, 6 m, 31 Jan 2012, 1 specimen (MNCN16.01/19002).

Distribution.—Australia, New Zealand.

Habitat.—A wide variety of sediments, intertidal to about 15 m depth.

Genus *Exogone* Ørsted, 1845

Exogone Ørsted, 1845b:20.
Exogona Dujardin, 1851:pl. 5.
Microsyllis Claparède, 1863:42.
Exotokas Ehlers, 1864:251.

Oophylax Ehlers, 1864:252.
Spermosyllis Claparède, 1864:552.
Gossia Quatrefages, 1866:49.
Schmardia Quatrefages, 1866:65.
Paedophylax Claparède, 1868:520.
Exogone (*Exogone*) San Martín, 1991:728, 2003:254, 2005:122.

Type species.—*Exogone naidina* Ørsted, 1845.

Remarks.—San Martín (1991) proposed the division of this genus into subgenera. Böggemann & Westheide (2004) erected *Exogone* and *Parexogone* Mesnil & Caullery, 1918 as different genera.

Exogone africana Hartmann-Schröder, 1974

Exogone verugera africana Hartmann-Schröder, 1974a:137, Figs.164–168, 1979:108, Figs. 164–168, in part, 1980a:57, 1981:39, 1982:74, 1983:136, 1984:25, 1985:73, 1986:46, 1989:32, 1990:56, 1991:42.
Exogone verugera Claparède, 1868.—Haswell, 1920:219, pl. 17.
Exogone africana San Martín, 2005:143, Figs. 90, 91.—Aguado et al., 2015:43.

Material examined.—Philippines, Luzon, Batangas, Balayan Bay, "House reef", in front of resort, 3 m, dead coral, 4 Dec 2010, 1 specimen (MNCN16.01/19003).

Distribution.—Angola, Namibia, USA (Hawaii), Japan, Australia, Philippines.

Habitat.—Present on all intertidal and shallow substrates (sand, algae, dead coral, etc.).

Exogone breviantennata Hartmann-Schröder, 1959

Exogone breviantennata Hartmann-Schröder, 1959:125, Figs. 75–78.—Zottoli & Long, 2000:502, Figs. 1–5.—Böggemann & Westheide, 2004:430.
Exogone (*Exogone*) *breviantennata* San Martín, 1991:730, Fig. 8, 2005:141, Figs. 81E, 89.—Pascual et al., 1996:70.—Brito et al., 2001:92.
Exogone ovalis Hartmann-Schröder, 1960:106, Figs. 131–133.
Exogone breviantennata ovalis Hartmann-Schröder, 1974b:28.
Exogone occidentalis Westheide, 1974:305, Fig. 52.—Russell,1991:59, Fig. 4.
Exogone verugera non Claparède, 1868.—Haswell, 1920:219, pl. 17, Figs. 7–10.—Berkeley & Berkeley, 1948:78, Fig. 116.—Day, 1967:272, Fig. 12.10g–l.—Gardiner, 1975:132, Fig. 11a–e.—Imajima, 1966b:399, Fig. 3.—Rioja, 1943:221, Figs. 12–16.

Material examined.—Philippines, Luzon, Batangas, "Sombrero Island", Balayan Bay, 3 m, dead coral, 6 Dec 2010, 2 specimens (MNCN16.01/19004). Same locality and substrate, 17 m, 6 Dec 2010, 1 specimen (MNCN16.01/19005).

Distribution.—Presumably circumtropical.

Habitat.—Present on a variety of substrates, from fine to coarse sand, algae, seagrasses, inside dead corals, sponges. Intertidal to about 49 m depth.

Exogone fustifera Haswell, 1920

Exogone fustifera Haswell, 1920:218, pl. 17, Figs. 1–6.—San Martín, 2005:147, Fig. 95.
Exogone spinisetosa Hartmann-Schröder, 1981:39, Figs. 77–79, 1982:74, 1983:135, 1984:25, 1985:72, 1986:46, 1987:43, 1990:56, 1991:42.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 155 specimens (MNCN16.01/19006).

Distribution.—Australia, New Zealand.

Habitat.—All substrates in intertidal and shallow waters.

Exogone goorapuranga San Martín, 2005

Exogone (*Exogone*) *goorapuranga* San Martín, 2005:131, Figs. 80, 81B–D.

Material examined.—Philippines, Palawan, El Nido, Popollcan. South Entalula, 18 m, dead coral, 15 Dec 2010, 3 specimens (MNCN16.01/19007), Twin Rocks, inside sponge (elephant ear), 12 m, 18 Dec 2010, 1 specimen (MNCN16.01/19008), Luzon Island, Koala Point, dead coral, 16 m, 5 Dec 2010, 1 specimen (MNCN16.01/19009).

Distribution.—Australia (Queensland, Western Australia), Philippines (Palawan).

Habitat.—On fine to coarse sediment, inside dead corals and sponges; intertidal to 33 m depth.

Exogone heterosetoides Hartmann-Schröder, 1979

Exogone heterosetoides Hartmann-Schröder, 1979:110, Figs. 171–174.—San Martín, 2005:126, Figs. 75, 76.—Soto & San Martín, 2017:523.

Non *Exogone heterosetoides* Hartmann-Schröder, 1987:42, Figs. 17–19.

Exogone heterosetosa non McIntosh, 1885.—Ehlers, 1897:51, pl. 3, Figs. 61–65.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 90 specimens (MNCN16.01/19010), New Zealand, North Island, Maitai Bay, Kari Kari Peninsula, sand and mud, intertidal, 31 Jan 2012, 1 specimen (MNCN16.01/19011), Philippines, Palawan, El Nido, Popollcan, South Entalula, 18 m, dead coral, 15 Dec 2010, 3 specimens (MNCN16.01/19012), Luzon Island, Koala Point, Balayan Bay, dead coral, 16 m, 5 Dec 2010, 1 specimen (MNCN16.01/19013), Luzon Island, House reef (in front of resort), dead coral, 3 m, 4 Dec 2010, 1 specimen (MNCN16.01/19014), Luzon Island, Manif Point, between Balayan Bay and Batangas Bay, dead coral, 20 m, 8 Dec 2010, 4 specimens (MNCN16.01/19015).

Distribution.—Australia, New Zealand, Philippines, Chile (southern areas).

Habitat.—Common on all shallow bottoms: algae, sand, seagrass, dead corals, mud, etc.; intertidal to 33 m depth.

Exogone heterosetosa McIntosh, 1885

Exogone heterosetosa McIntosh, 1885:205, pl. 33, Figs. 15, 16, pl. 34A, Fig. 11.—Haswell, 1920:221, Figs. 11–17.—Hutchings & Murray, 1984:32.—Blankensteyn & Lana, 1986:63.

Exogone heterochaeta Ehlers, 1897:51, pl. 31.—Augener, 1913:247, 1927:156.

Exogone (*Exogone*) *heterosetosa* San Martín, 2005:124, Fig. 74.

Material examined.—Philippines, Luzon, Batangas, Balayan Bay, House reef, in front of resort, 3 m, dead coral, 4 Dec 2010, 1 specimen (MNCN16.01/19016).

Distribution.—Subantarctic seas, Australia, Philippines.

Habitat.—All substrates: mud, sand, gravel, dead corals, algae, sponges; shallow water to about 600 m depth.

Exogone lourei Berkeley & Berkeley, 1938

Exogone lourei Berkeley & Berkeley, 1938:44, Figs. 6–12.—Rioja, 1941:703, pl. 3, Figs. 10–13.—Hartman, 1968:425, Figs. 1–5.—Banse, 1972:200, Fig. 5a–d.—Perkins, 1981:1092.—Uebelacker, 1984, in part:30–39, Figs. 30–34a–f.

Exogone (*Exogone*) *lourei* San Martín, 1991:728, 735.—Núñez et al., 1992:45, Fig. 2.—Kudenov & Harris, 1995:15, Fig. 1.3.—San Martín, 2005:129, Fig. 78.

Material examined.—Philippines, Luzon, Batangas, between Balayan Bay and Batangas Bay, "Sepok Wall", 6 m, dead coral, 4 Dec 2010, 1 specimen (MNCN16.01/19017).

Distribution.—Pacific coast from British Columbia to Panamá; Caribbean area: Florida, Gulf of México, Belize, Cuba, Eastern Atlantic (Canary Islands), Australia, Philippines.

Habitat.—Interstitial in coarse to medium sand and inside dead corals; intertidal to about 30 m depth.

Exogone naidina Ørsted, 1845

Exogone naidina Ørsted, 1845b:20, Figs. 1–14.—Hartmann-Schröder, 1971b:171, Fig. 56a–c, 1979:108, Fig. 163, 1980a:56, 1981:38, 1982:74, 1984:25, 1986:45.—Gardiner, 1975:132, Fig. 11j–n.—Gillandt, 1979:39, Fig. 12.—Kirkegaard, 1992:246, Fig. 121.

Exogone (*Exogone*) *naidina* Hartmann-Schröder, 1996:170, Fig. 73.—San Martín, 2003:262, Figs. 142, 143, 2005:130, Fig. 79.

Exogone gemmifera Pagenstecher, 1862.—Fauvel, 1923:305, Fig. 117a–d.—Day, 1967:274, Fig. 12.10p–v.—Ben-Eliahu, 1977:78, Fig. 7.—Rioja, 1943:223, Figs. 38–46.—Berkeley & Berkeley, 1948:79, Fig. 118.—Ushakov, 1955:192, Fig. 56C, D.—Cognetti, 1957:56, pl. 2 Fig. 11.—Imajima, 1966b:397, Fig. 2.

Material examined.—Hong Kong, sand, intertidal, 12 Oct 1995, 5 specimens (MNCN16.01/19018).

Distribution.—Apparently cosmopolitan.

Habitat.—Shallow water, on algae, fine to coarse sand, seagrasses.

Exogone naidinoides Westheide, 1974

Exogone naidinoides Westheide, 1974:301, Figs. 50, 51e–f.—Russell, 1991:57, Fig. 3.

Exogone (*Sylline*) *naidinoides* San Martín, 1991:737, Fig. 11A–F.—Ruíz-Ramírez & Salazar-Vallejo, 2001:128, Fig. 4 (66–76).—San Martín, 2005:146, Figs. 93, 94.

Material examined.—Philippines, Palawan, El Nido, Popollcan, South Entalula, dead coral, 3 m, 15 Dec 2010, 1 specimen (MNCN16.01/19019), Luzon, Batangas, "Sombrero Island", Balayan Bay, 3 m, dead coral, 6 Dec 2010, 1 specimen (MNCN16.01/19020), New Zealand, South Island, North Akaroa Bay, sponges inside stones, intertidal. 7 Feb 2012, 2 specimens (MNCN16.01/19021).

Distribution.—Ecuador (Galápagos Islands), Caribbean Sea (Cuba, Belize), Australia (Western Australia), New Zealand, Philippines.

Habitat.—Interstitial in sand and fine sediments, on mangrove roots, dead corals, algae, inside sponges. Shallow depths.

Genus *Parexogone* Mesnil & Caullery, 1918

Parexogone Mesnil & Caullery, 1918:131.

Exogone (*Parexogone*) San Martín, 1991:723, 2003:235, 2005:108.

Type species.—*Paedophylax hebes* Webster & Benedict, 1884.

Parexogone exmouthensis (Hartmann-Schröder, 1980)

Exogone exmouthensis Hartmann-Schröder, 1980a:57, Figs. 45, 46, 1992a:60, Figs. 18–20.

Non *Exogone* (*Parexogone*) *exmouthensis* San Martín, 1991:726.

Parexogone exmouthensis San Martín, 2005:109, Figs. 62, 69E.

Material examined.—Philippines, Palawan, El Nido, Twin Rocks, dead coral, 3 m, 17 Dec 2017, 1 specimen (MNCN16.01/19022), El Nido, Koala Point, Balayan Bay, dead coral, 12 m, 18 Dec 2010, 1 specimen (MNCN16.01/19023), Philippines, Luzon, Batangas, Koala Point, Balayan Bay, 2 m, dead coral, 5 Dec 2010, 1 specimen (MNCN16.01/19024).

Distribution.—Australia, Polynesia, Philippines.

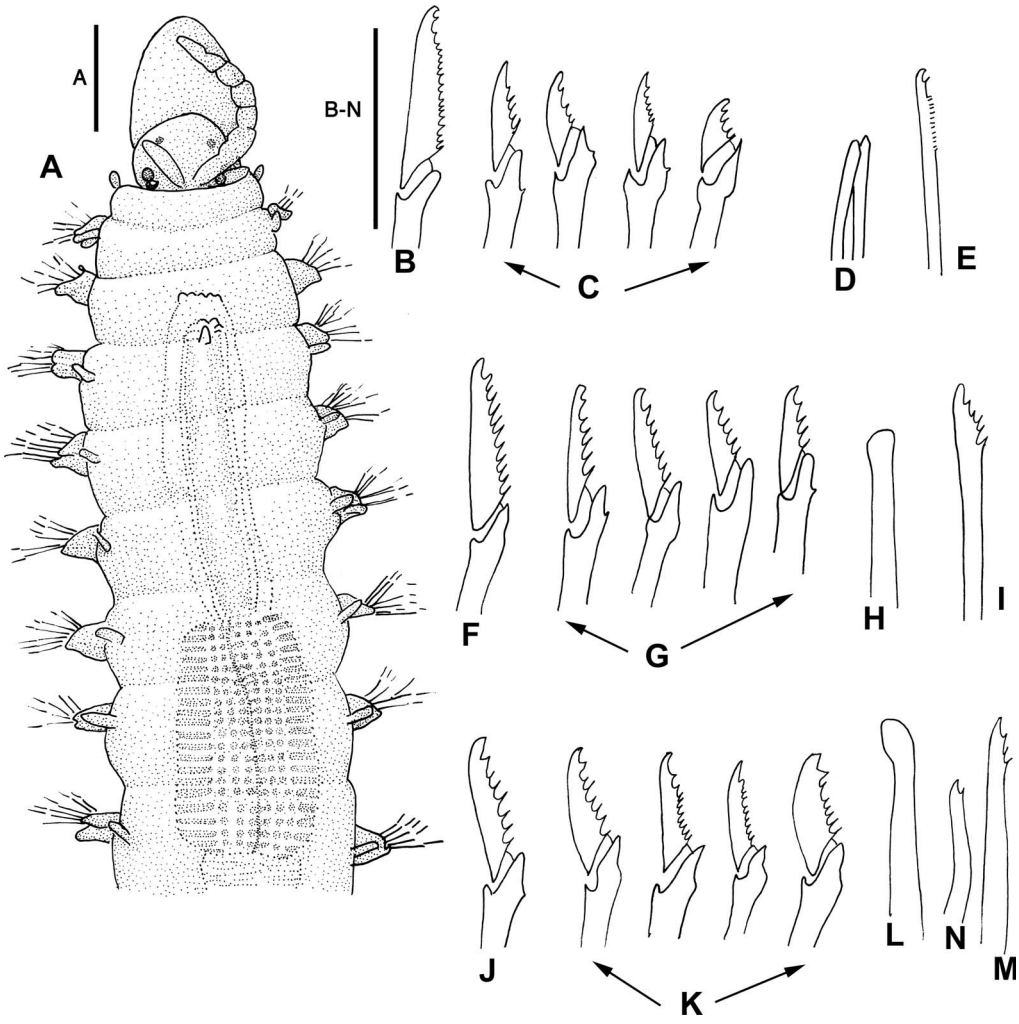


Fig. 2. *Parexogone javieri*. A, anterior end, dorsal view. B, most dorsal compound chaeta, anterior parapodium. C, remaining compound chaetae, anterior parapodium. D, aciculae, anterior parapodium. E, dorsal simple chaeta, anterior parapodium. F, most dorsal compound chaeta, midbody parapodium. G, remaining compound chaetae, midbody parapodium. H, acicula, midbody parapodium. I, dorsal simple chaeta, midbody parapodium. J, most dorsal compound chaeta, posterior parapodium. K, remaining compound chaetae, posterior parapodium. L, acicula, posterior parapodium. M, dorsal simple chaeta. N, ventral simple chaeta. Holotype (MNCN 16.01/19026). Scale bars: A = 0.1 mm, B–N = 20 μm.

Habitat.—Among algae, corals, seagrass, sand. Intertidal to about 30 m depth.

Parexogone javieri, new species
Fig. 2

Zoobank LSID.—urn:lsid:zoobank.org:act:7FCA02BC-F897-4146-806D-CD4C0EAB0E7E

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, Holotype (MNCN16.01/19026).

Description.—Body small, about 3.5 mm long, 0.21 mm wide, 37 chaetigers. Prostomium semicircular; four eyes in trapezoi-

dal arrangement, and two large anterior eyespots (Fig. 2A); antennae inserted close to each other, on posterior margin of prostomium, between posterior eyes (Fig. 2A); median antenna long, cylindrical, slightly longer than prostomium and palps together, irregularly and weakly wrinkled; lateral antennae oval, distinctly shorter than prostomium (Fig. 2A). Palps broad, completely fused along their length, without median scar, longer than prostomium, forming oval triangular piece, similar to a shield (Fig. 2A). Peristomium shorter than subsequent segments; tentacular cirri papilliform, much shorter than lateral antennae. Dorsal cirri papilliform, shorter than parapodial lobes, slightly larger than tentacular cirri, absent on second chaetiger (Fig. 2A). Anterior parapodia each with one compound chaeta with distinctly longer and slender blade than remaining, dorsally situated, indistinctly bidentate, subdistal tooth small, marginal spines short (Fig. 2B), about 18 μm long, in addition 6–7 compound falcigers, with short blades, slight dorso-ventral gradation, 8 μm above, 6 μm below, minutely bidentate (Fig. 2C) and short marginal spines. Remaining segments with similar chaetae, but less marked difference between dorsal compound chaeta and remaining ones, more markedly bidentate and longer spines on margin (Fig. 2F, G, J, K); mid-body parapodia with one dorsal chaeta with blade 17 μm long (Fig. 2F) and five compound chaetae 13 μm above, 11 μm below (Fig. 2G); posterior parapodia with single dorsal chaeta (Fig. 2J), 15 μm long, and 4–5 compound chaetae with slight dorso-ventral gradation in length (Fig. 2K), 12 μm above, 10 μm below. Dorsal simple chaetae from first chaetiger, slender, minutely bidentate, with short marginal spines, thicker and more strongly serrated from midbody posteriorly (Fig. 2E, I, M). Ventral simple chaetae on posterior parapodia, slender, sigmoid, smooth, slightly bidentate (Fig. 2N). Anterior parapodia with two slender, distally stout aciculae (Fig. 2D); remaining parapodia with solitary aciculum, distally rounded (Fig. 2H, L). Pharynx through about 3–4 segments, pharyngeal tooth on anterior rim, surrounded by crown of soft papillae (Fig. 2A). Proventricle shorter than pharynx, with midline and 22 rows of muscle cells, through 2–3 segments.

Remarks.—Parexogone javieri is characterized by its large palps; antennae inserted close to each other on the posterior margin of the prostomium, with the median one distinctly longer than the lateral ones; large eyespots; small, papilliform dorsal cirri that are absent on chaetiger two; and compound chaetae, including one somewhat longer than the others on each segment (less marked on posterior parapodia); falcigers slightly bidentate (more distinctly bidentate on posterior parapodia) and with short spines on the margins; and the lack of aristae (distinctly long spines on chaetal margin) on dorsal and ventral simple chaetae.

Parexogone sanmartini Ruíz-Ramírez & Salazar-Vallejo, 2001, from the Mexican Caribbean Sea has a similar body and chaetae, but the lateral antennae are inserted in front of the anterior eyes, and the median antenna is inserted between the anterior eyes in the middle of the prostomium; furthermore, the chaetae are all similar (Ruíz-Ramírez & Salazar-Vallejo 2001).

Some species from Australia are similar to *P. javieri*. *Parexogone patriciae* San Martín, 2005, has a similar body, with a similar arrangement of antennae, but the median antenna is longer than that of *P. javieri*; the dorsal cirri are larger and present on the second chaetiger; it has spiniger-like chaetae, and the ventral simple chaeta is much thicker, with a very long and large proximal tooth and long spines on the subdistal margin. *Parexogone annamurrayae* San Martín, 2005, has very similar compound chaetae, but the lateral antennae are longer than those of *P. javieri*. It has dorsal cirri on chaetiger two,

and the dorsal and ventral simple chaetae have aristae. *Parexogone gambiae* Lanera, Sordino, & San Martín, 1994, from the Mediterranean and Australia, has a very similar body and arrangement of antennae, with similar dorsal cirri, also absent on chaetiger two, and a short proventricle; the chaetae are also very similar, but the dorsal compound chaetae of anterior segments have distinctly longer blades, and the ventral simple chaetae are larger and more distinctly bidentate. Also, *Parexogone sexoculata* Hartmann-Schröder, 1979 is very similar, but the lateral antennae are much shorter than those of *P. javieri*, the dorsal simple chaetae are much larger, and there is not a dorsal compound chaeta on each parapodium markedly longer than the remaining ones. Finally, *Parexogone homosetosa* Hartmann-Schröder, 1965, from Chile and Australia, has similar simple and compound chaetae, but the antennae are inserted near the anterior margin of the prostomium and the proventricle is longer (San Martín 2005).

Parexogone lineata Ding & Westheide, 2008, from China, has very similar compound chaetae, although lacking the dorsal one with longer blade, the median antenna is longer, it has a median scar on the palps, and the pharynx and proventricle are longer than those of *P. javieri* (Ding & Westheide 2008).

Parexogone seychellensis Böggemann & Westheide, 2004 has similar simple and compound chaetae but without the dorsal one with a longer blade, the palps are elongated, and the pharynx and proventricle are longer than those of *P. javieri* (Böggemann & Westheide 2004).

Parexogone acutipalpa Kudenov & Harris, 1995, from California, has elongated and acute palps, the dorsal simple chaetae are unidentate, and the compound chaetae have longer blades (Kudenov & Harris 1995).

Although we only have a single specimen, it is in very good condition, and it does not match any previously described species; therefore, we are describing it as a new species.

Etymology.—The species is named after Javier Ignacio Sánchez Almazán, curator of the collections of Invertebrates at the MNCN of Madrid, Spain, colleague and friend, whose job in the collections of the Museum is of great importance.

Distribution.—New Zealand, South Island.

Habitat.—Fine sand with algae and sponges, subtidal.

Parexogone lineata Ding & Westheide, 2008

Parexogone lineata Ding & Westheide, 2008:151, Fig. 17.

Material examined.—China, Xiamen, Huangchu Beach, 5 Oct 1994, 20 specimens (MNCN16.01/19025).

Distribution.—South East China.

Habitat.—Sandy beaches. Intertidal.

Parexogone viejoi, new species
Fig. 3

Zoobank LSID.—urn:lsid:zoobank.org:act:B41785E2-06EC-411F-BA8D-ECFCD5696EC4

Material examined.—Philippines, Palawan, El Nido, dead coral, 12 m, 18 Dec 2010, Holotype (MNCN16.01/19027).

Description.—Body long and slender, filiform, 5.5 mm long, 0.2 mm wide, with 74 chaetigers. Prostomium ovate, wider than long, with four small eyes in trapezoidal arrangement; antennae short, small, somewhat elongated to oval, all similar; median antenna inserted on posterior margin of prostomium, lateral antennae inserted in front of anterior eyes (Fig. 3A). Palps long and broad, dorsally fused, except for a distal deep notch (Fig. 3A). Peristomium dorsally covering posterior margin of prostomium, including base of median antenna; tentacular cirri ovate, shorter than antennae. Dorsal cirri on all

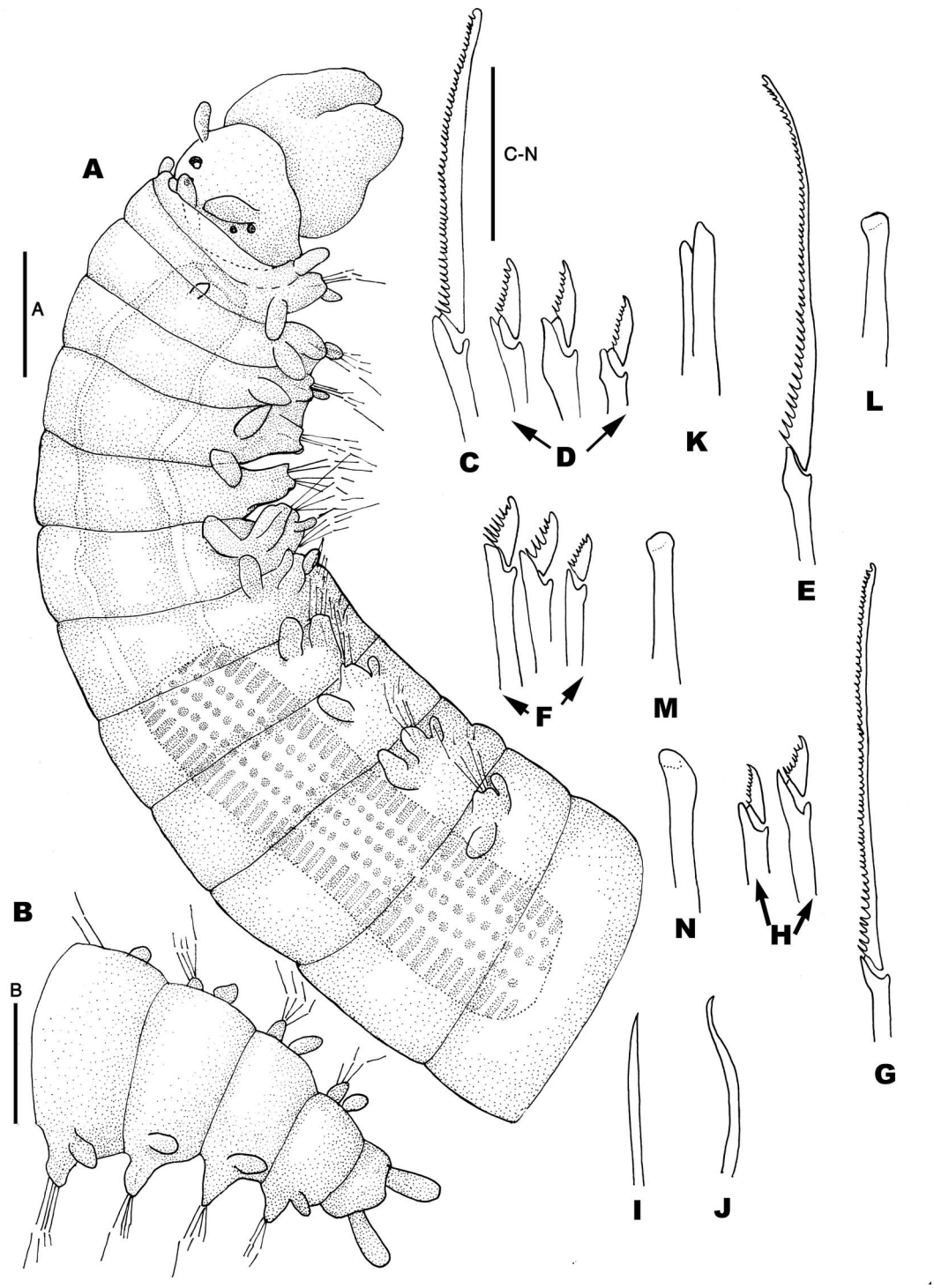


Fig. 3. *Parexogone viejoi*. A, anterior end, dorsolateral view. B, posterior end, dorsal view. C, spiniger-like compound chaeta, anterior parapodium. D, falcigers, anterior parapodium. E, spiniger-like compound chaeta, midbody parapodium. F, falcigers, midbody parapodium. G, spiniger-like compound chaeta, posterior parapodium. H, falcigers, posterior parapodium. I, dorsal simple chaeta. J, ventral simple chaeta. K, aciculae, anterior parapodium. L, acicula, midbody parapodium. M, N, acicula, posterior parapodium. Holotype (MNCN 16.01/19027). Scale bars: A, B = 0.1 mm, C–N = 20 μm.

parapodia, ovate to egg-shaped (Fig. 3A, B). Compound chaetae including one spiniger-like, distally slightly bidentate (Fig. 3C, E, G), and short falcigers, with heterogomph, smooth shafts and short, triangular blades, provided with short subdistal tooth and moderately long to short marginal spines, longer on dorsalmost compound chaetae (Fig. 3D, F, H); anterior parapodia each with one short spiniger-like chaeta, blades 38 μm long (Fig. 3C), and 3–4 falcigers, blades 8–10 μm long (Fig. 3D); number of falcigers decreasing posteriorly to 2–3 on mid-body (Fig. 3F) and two on each posterior parapodium (Fig. 3H), similar in shape and length to those of anterior; blades of spiniger-like chaetae on mid-body and posterior parapodia longer than those on anterior parapodia (Fig. 3E, G), about 48 μm long; some posterior parapodia with two spiniger-like chaetae. Dorsal simple chaetae on posterior segments smooth, pin-shaped (Fig. 3I). Ventral simple chaetae on far posterior parapodia sigmoid, smooth, unidentate (Fig. 3J). Acicula solitary, distally expanded and rounded (Fig. 3L, M, N); two slender aciculae on anteriormost parapodia (Fig. 3K). Pygidium small, with two short, oval anal cirri, similar to dorsal cirri but larger (Fig. 3B). Pharynx long, through about seven segments; pharyngeal tooth on anterior rim (Fig. 3A). Proventricle long and slender, similar in length to pharynx, through about five segments, with about 34 rows of muscle cells.

Remarks.—*Parexogone viejoi* is very similar to *P. exmouthensis* Hartmann-Schröder, 1980, from Australia, Philippines, and Polynesia (see above); the body is almost identical, including a long proventricle, although the dorsal cirri are somewhat elongated in *P. viejoi*; it is also very similar to *P. anserforbaensis* Böggemann & Westheide, 2004 from Seychelles, but that species has a much shorter proventricle. The falcigers in the three species are very similar, almost identical, but *P. viejoi* also has one (occasionally two) spiniger-like chaeta on each parapodium, which *P. exmouthensis* and *P. anserforbaensis* lack. Furthermore, the dorsal simple chaetae are bidentate in these two species and unidentate in *P. viejoi*.

Etymology.—The species is named after Dr. José Luis Viejo, colleague, friend and enthusiastic entomologist, at the University Autónoma, Madrid.

Distribution.—Only known from the type-locality, El Nido, Philippines.

Genus *Prosphaerosyllis* San Martín, 1984

Sphaerosyllis (*Prosphaerosyllis*) San Martín, 1984a:377.

Prosphaerosyllis San Martín, 2003:216, 2005:59.

Prosphaerosyllis fittoni, new species
Figs. 4, 5, 6A–C

Zoobank LSID.—urn:lsid:zoobank.org:act:37079329-356E-4262-B33B-141E3AF20155

Material examined.—Madagascar, Tulear Reef, coralline sand, 15 m, 23 Jan 2002. Holotype (MNCN16.01/19028) and 9 paratypes (MNCN16.01/19029), 22 Jan 2002, 5 paratypes (MNCN16.01/19030), 10–35 m, 30 Jan 2002, 4 paratypes (MNCN16.01/19032), unknown depth, 1 Feb 2002, 8 paratypes (MNCN16.01/19031).

Description.—Holotype an incomplete male with natatory chaetae, 1.2 mm long, 14 chaetigers; longest paratype 2.3 mm long, 0.55 mm wide, 25 chaetigers. Body minute, broad anteriorly (Fig. 6A), provided with small scattered dorsal and ventral papillae (Fig. 4A, B) on anterior segments, papillae somewhat longer posteriorly (Fig. 4C); papillae more numerous from proventricular level (Fig. 4A). Prostomium oval to subrectangular, posteriorly partially covered by peristomium (Fig. 4A); four large eyes in trapezoidal arrange-

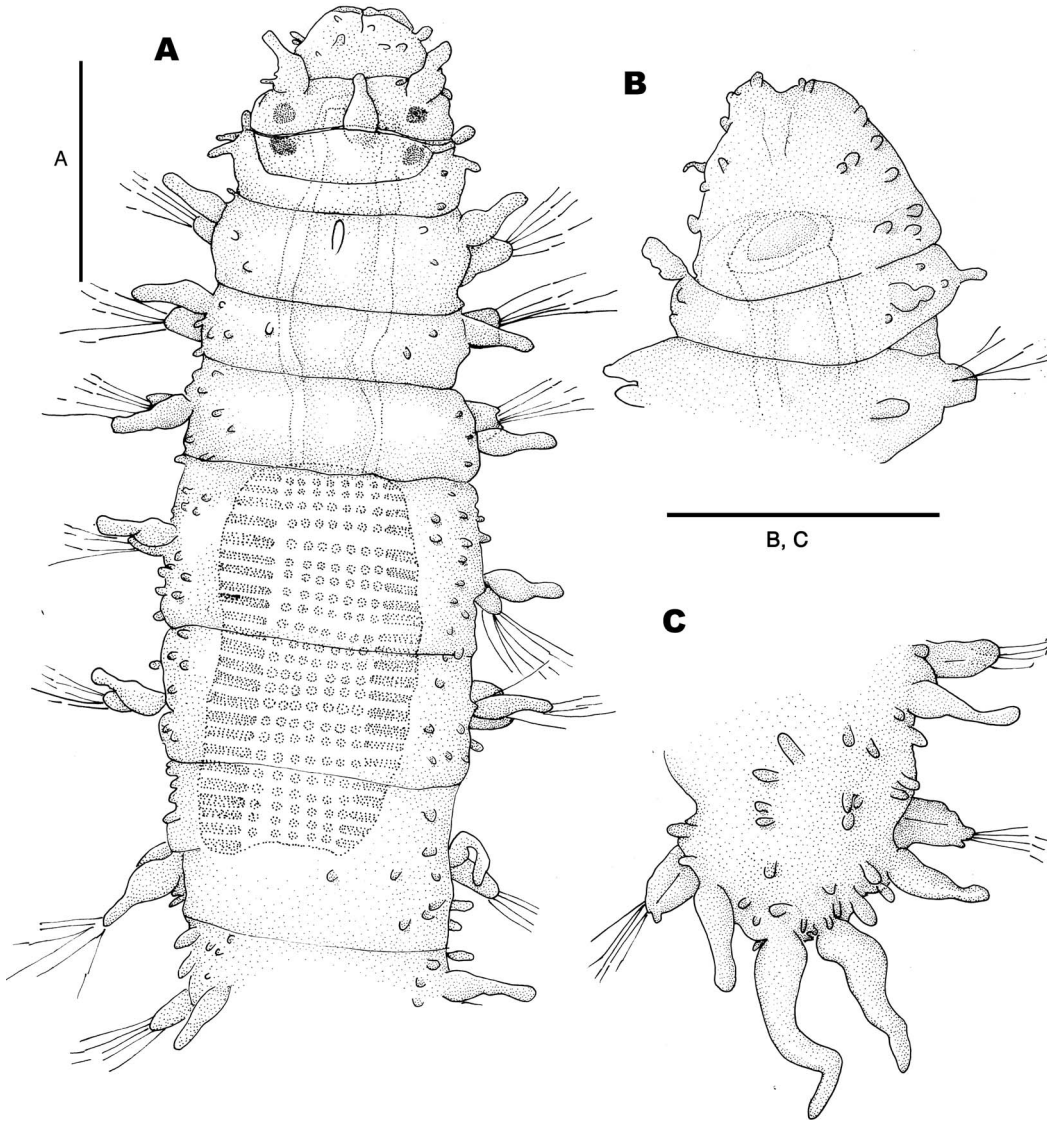


Fig. 4. *Prosphaerosyllis fittoni*. A, anterior end, dorsal view. B, prostomium and most anterior segments, ventral view. C, posterior end, dorsal view. Holotype (MNCN 16.01/19030). Scale bars = 0.1 mm.

ment and two anterior eyespots (Figs. 4A, 6B). Antennae small, pyriform, all similar in shape and size, with bulbous bases and short tip; median antenna inserted in middle of prostomium, lateral antennae in front of anterior eyespots (Fig. 4A). Palps short, totally fused along their length, with a small distal notch, with a few papillae (Fig. 4A, B). Peristomium covering dorsal posterior half of prostomium; tentacular cirri smaller than antennae, difficult to see, hidden dorsally by some papillae (Fig. 4A, B). Dorsal cirri on all segments, similar to antennae but more elongated (Fig. 4A, C); from mid-body onwards, dorsal cirri slightly more elongate (Fig. 4C). Parapodial lobes relatively short. Compound chaetae heterogomph, with strong articulation, with smooth shafts, and minute, unidentate, smooth

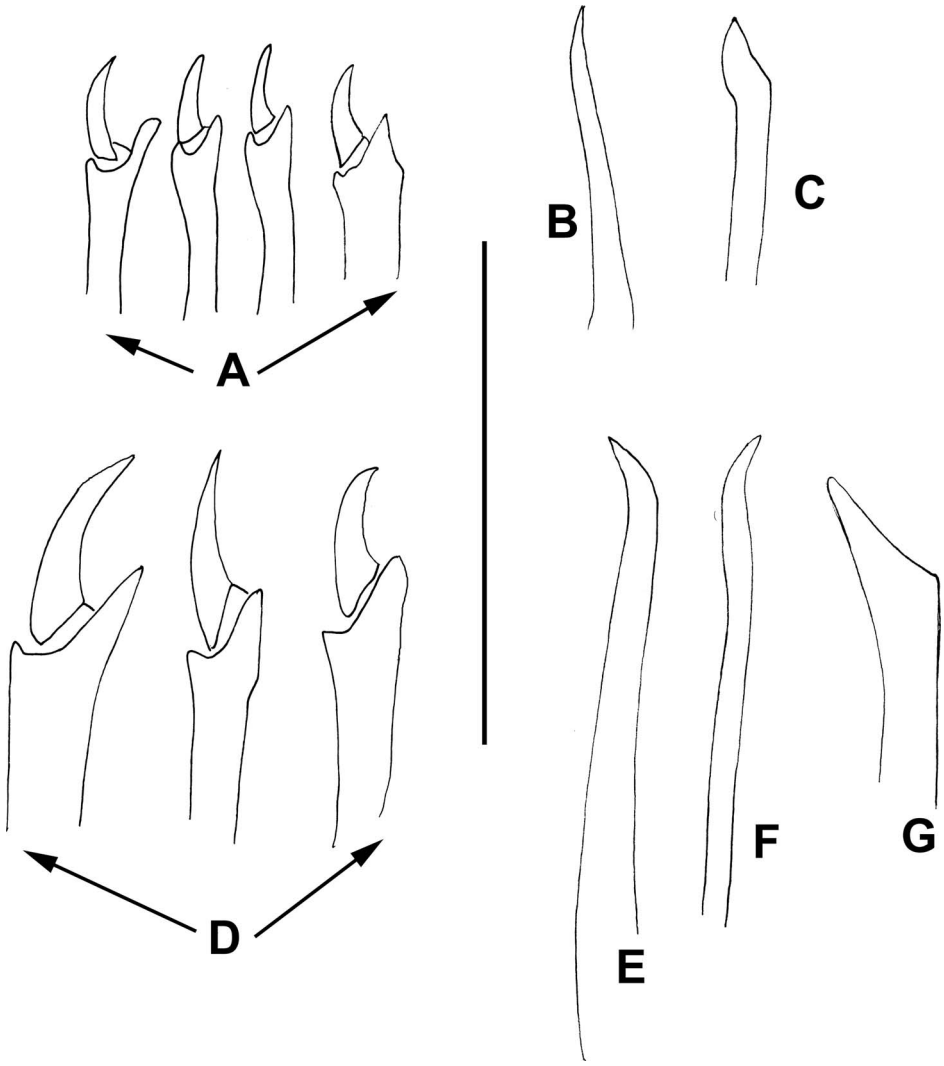


Figure 5. *Prosphaerosyllis fittoni*. A, compound chaetae, anterior parapodium. B, dorsal simple chaeta, anterior parapodium. C, acicula, anterior parapodium. D, compound chaetae, posterior parapodium. E, dorsal simple chaeta, posterior parapodium. F, ventral simple chaeta, posterior parapodium. G, acicula, posterior parapodium. Holotype (MNCN 16.01/19030). Scale bar = 20 μm.

blades (Fig. 5A, D). Anterior parapodia each with five compound chaetae, reduced to three on posterior parapodia. All blades similar in size, 6–8 μm. Dorsal simple chaetae from anterior segments, usually from chaetiger 1, unidentate, smooth, thin (Fig. 5B, E). Ventral simple chaetae on posterior parapodia, sigmoid, smooth (Fig. 5F). Acicula solitary, acuminate (Fig. 5C, G). Pharynx slender, through five segments; pharyngeal tooth oval, very small, located on middle of pharynx (Figs. 4A, 6A, B). Proventricle shorter and wider than pharynx, through 2–3 segments, with 25 rows of muscle cells. Pygidium subcircular, with two anal cirri, longer than dorsal cirri (Figs. 4C, 6C).

Remarks.—Prosphaerosyllis fittoni is characterized by its minute size, pyriform dorsal cirri similar throughout the body

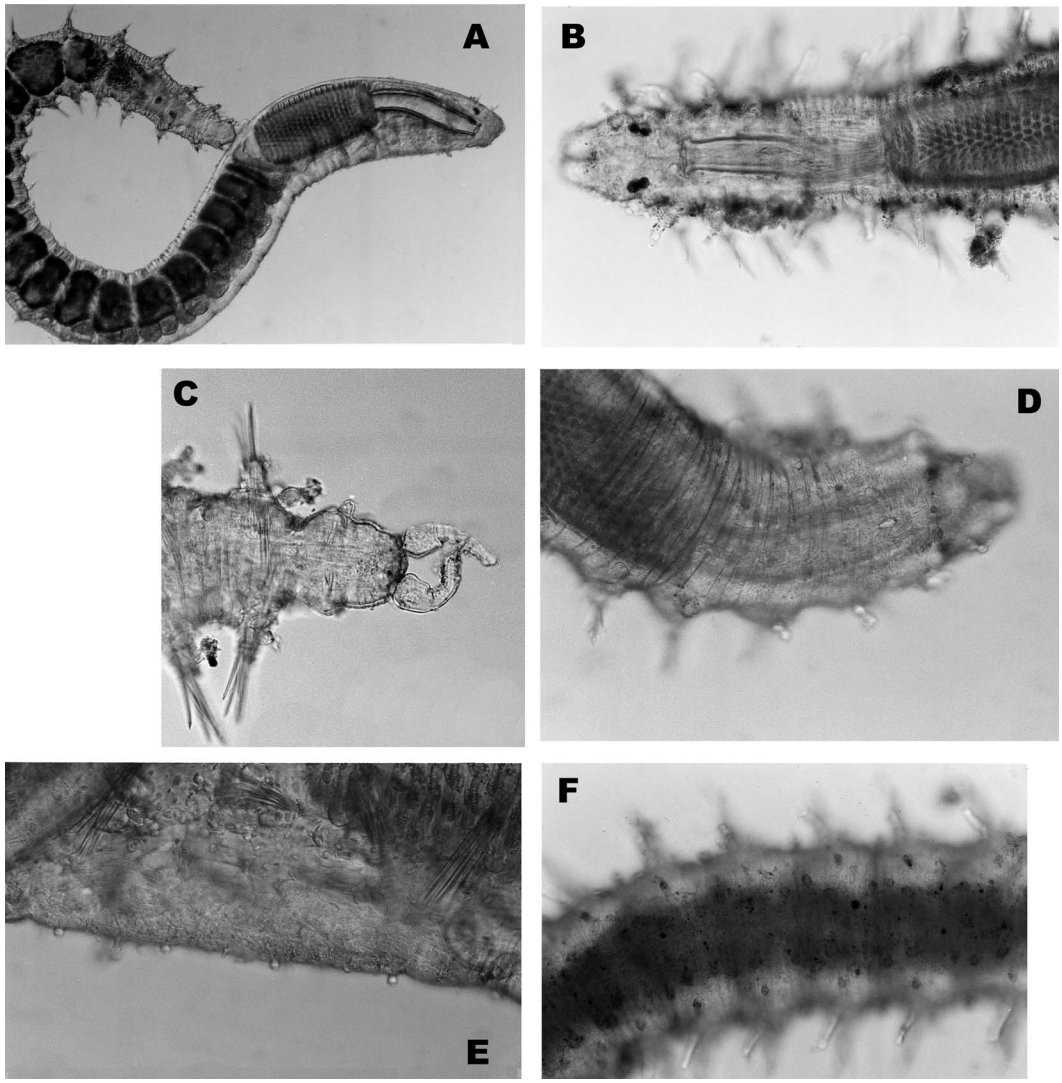


Fig. 6. Photos of live specimens. *Prosphaerosyllis fittoni*: A, complete specimen. B, anterior end, dorsal view. C, posterior end, dorsal view. *Prosphaerosyllis semiverrucosa*: D, anterior end, dorsal view. E, detail of anterior papillae. F, midbody, dorsal view. No scales.

without a distal retractile part, small scattered papillae, small pharyngeal tooth situated on the middle of the pharynx, and smooth unidentate blades. The most similar species is *Prosphaerosyllis laubieri* Olivier, Grant, San Martín, Archambault, & McKindsey, 2011, from the English Channel. However, that species is more densely papillated, especially on the palps, the dorsal cirri have a distinct narrowing between the basal and distal parts, the pharyngeal tooth is situated more anteriorly, and the proventricle is longer than that in *P. fittoni* (Olivier et al. 2011). *Prosphaerosyllis opisthoculata* (Hartmann-Schröder, 1979), from Australia, has similar compound chaetae and dorsal cirri, small papillae on the palps, and scattered papillae on the body surface, but the arrangement of antennae is very different,

with the median antenna very close to the anterior margin of the prostomium (Hartmann-Schröder 1979, San Martín 2005). *Prosphaerosyllis isabellae* (Nogueira, San Martín, & Amaral, 2001) from Brazil and Australia also has papillated palps and smooth compound chaetae. However, the palps are more densely papillated, the dorsal cirri are mamillate, and the pharynx and proventricle are much longer (Nogueira et al. 2001, San Martín 2005). *Prosphaerosyllis fujianensis* Ding & Westheide, 2008, from China, is also a small species with scattered papillae on the palps and smooth compound chaetae. However, the dorsal cirri are different, with a long basal part and a small distal rounded tip (Ding & Westheide 2008). Remaining species of the genus are easily distinguished from *P. fittoni* because in those species with dorsal cirri having two well-differentiated parts, the distal one is usually retractile.

Etymology.—*Prosphaerosyllis fittoni* is named after Nigel Fitton, English teacher, enthusiastic protector of urban wildlife, and a good friend of the second author.

Distribution.—Madagascar.

Habitat.—Sandy beaches, intertidal.

Prosphaerosyllis jungei (Ding & Westheide, 2008), new combination

Sphaerosyllis jungei Ding & Westheide, 2008:143, Fig. 11.

Material examined.—China, Xiamen, Huangchu Beach, sand, sublittoral, 29 Sep 1994, 31 specimens (MNCN16.01/19033).

Distribution.—South China.

Habitat.—Subtidal sediments, with sand and shells.

Prosphaerosyllis longipapillata (Hartmann-Schröder, 1979)

Sphaerosyllis longipapillata Hartmann-Schröder, 1979:106, Figs. 148–150, 1982:71, 1984:23, 1985:71, 1986:43, 1991:40.

Sphaerosyllis (*Prosphaerosyllis*) *longipapillata* Hartmann-Schröder, 1987:41.

Prosphaerosyllis longipapillata San Martín, 2005:61, Figs. 17, 18.—Aguado et al., 2015:44.

Material examined.—Philippines, Palawan, El Nido, Twin Rocks, 6 m, dead coral, 17 Dec 2010, 1 specimen (MNCN16.01/19034), Luzon, Batangas, Sepok Wall, between Balayan Bay and Batangas Bay, dead coral, 2 m, 17 Dec 2010, 1 specimen (MNCN16.01/19035).

Distribution.—Australia, Philippine Islands.

Habitat.—Common on all substrates, from corals to mud. Intertidal to 466 m depth.

Prosphaerosyllis magnoculata (Hartmann-Schröder, 1986)

Sphaerosyllis magnoculata Hartmann-Schröder, 1986:45, Figs. 29–31.

Non *Sphaerosyllis magnoculata* Hartmann-Schröder, 1989:29, Fig. 37. *Prosphaerosyllis magnoculata* San Martín, 2005:69, Figs. 24, 25A–C.

Material examined.—New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 4 specimens (MNCN16.01/19036), New Zealand, North Island, Maitai Bay, Karikari Peninsula, medium sediment, subtidal, 31 Jan 2012, 4 specimens (MNCN16.01/19037), Cavalli Islands, Smokes House Bay, sediment, 15 m, 2 Feb 2012, 3 specimens (MNCN16.01/19038), Philippines, Luzon, Batangas, Koala Point, Balayan Bay, 16 m, fine to medium sediment, 5 Dec 2010, 1 specimen (MNCN16.01/19039).

Distribution.—Australia, New Zealand, Philippines.

Habitat.—Intertidal to about 37 m depth, on a variety of substrates: algae, sand, mud, seagrasses, tunicates.

Prosphaerosyllis semiverrucosa (Ehlers, 1913)
Figs. 6D–F, 10A, B

Sphaerosyllis semiverrucosa Ehlers, 1913:483, pl. 32, Figs. 5–9.—Day, 1967:276, Fig. 12.11a–e.
Prosphaerosyllis semiverrucosa Verdes et al., 2013:2114, Fig. 4.

Material examined.—Madagascar, Tulear Reef, sand, 15 m, 23 Jan 2002, 3 specimens (MNCN16.01/19040), same locality, sand, intertidal, 1 Feb 2002, 1 specimen (MNCN16.01/19041), same locality, substrate and depth, 16 Jan 2002, 6 specimens (MNCN16.01/19042), 17 Jan 2002, 6 specimens (MNCN16.01/19043), 30 Jan 2002, 1 specimen (MNCN16.01/19044), 1 Feb 2002, 1 specimen (MNCN16.01/19045).

Remarks.—A very distinctive species, with minute anterior dorsal cirri and antennae (Fig. 6D) which became longer from mid-body (Fig. 6F) and posteriorly (Fig. 10A), and minute papillae on anterior segments (Fig. 6E), being longer from mid-body (Fig. 6F). Compound chaetae with very small unidentate blades (Fig. 10B).

Distribution.—South Africa. Madagascar.

Habitat.—Sediments.

Genus *Salvatoria* McIntosh, 1885

Salvatoria McIntosh, 1885:188.—San Martín, 2003:156, 2005:49.
Grubea Quatrefages, 1866:19.
Grubeosyllis Verrill, 1900:633.
Protogrubea Czerniavsky, 1881:414.
Pseudobrania San Martín, 1984b:150.
Brania non Quatrefages, 1866 in part Fauvel, 1923:296.—in part Kudenov & Harris,1995:9.

Type species.—*Salvatoria kerguelensis* McIntosh, 1885.

Salvatoria koorineclavata San Martín, 2005

Salvatoria koorineclavata San Martín, 2005:55, Figs. 11, 12.—Ding & Westheide, 2008:128, Fig. 3.

Material examined.—Philippines, Palawan, El Nido, Twin Rocks, 6 m, dead coral, 17 Dec 2010, 3 specimens (MNCN16.01/19046), same locality, sponge "elephant ear", 12 m, 18 Dec 2010, 1 specimen (MNCN16.01/19047), New Zealand, South Island, Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 14 specimens (MNCN16.01/19048).

Distribution.—Australia, all coasts, China, from north to south, Philippines, New Zealand.

Habitat.—Common in shallow waters on a variety of substrates (sand, algae, dead corals, inside sponges, etc.) to 29 m depth.

Salvatoria longisetosa (Hartmann-Schröder, 1979)

Brania longisetosa Hartmann-Schröder, 1979:102, Figs. 136, 137, 1980a:54, 1981:34, 1982:67, 1983:133, 1984:22, 1985:70, 1986:42, 1987:39, 1989:27, 1991:38, Figs. 62–64, 1992a:59.
Grubea kerguelensis non McIntosh Haswell, 1920:223, pl. 17, Figs. 18–20.
Salvatoria longisetosa San Martín, 2005:52, Fig. 7.

Material examined.—Philippines, Palawan, El Nido, Twin Rocks, 6 m, dead coral, 17 Dec 2010, 1 specimen (MNCN16.01/19049).

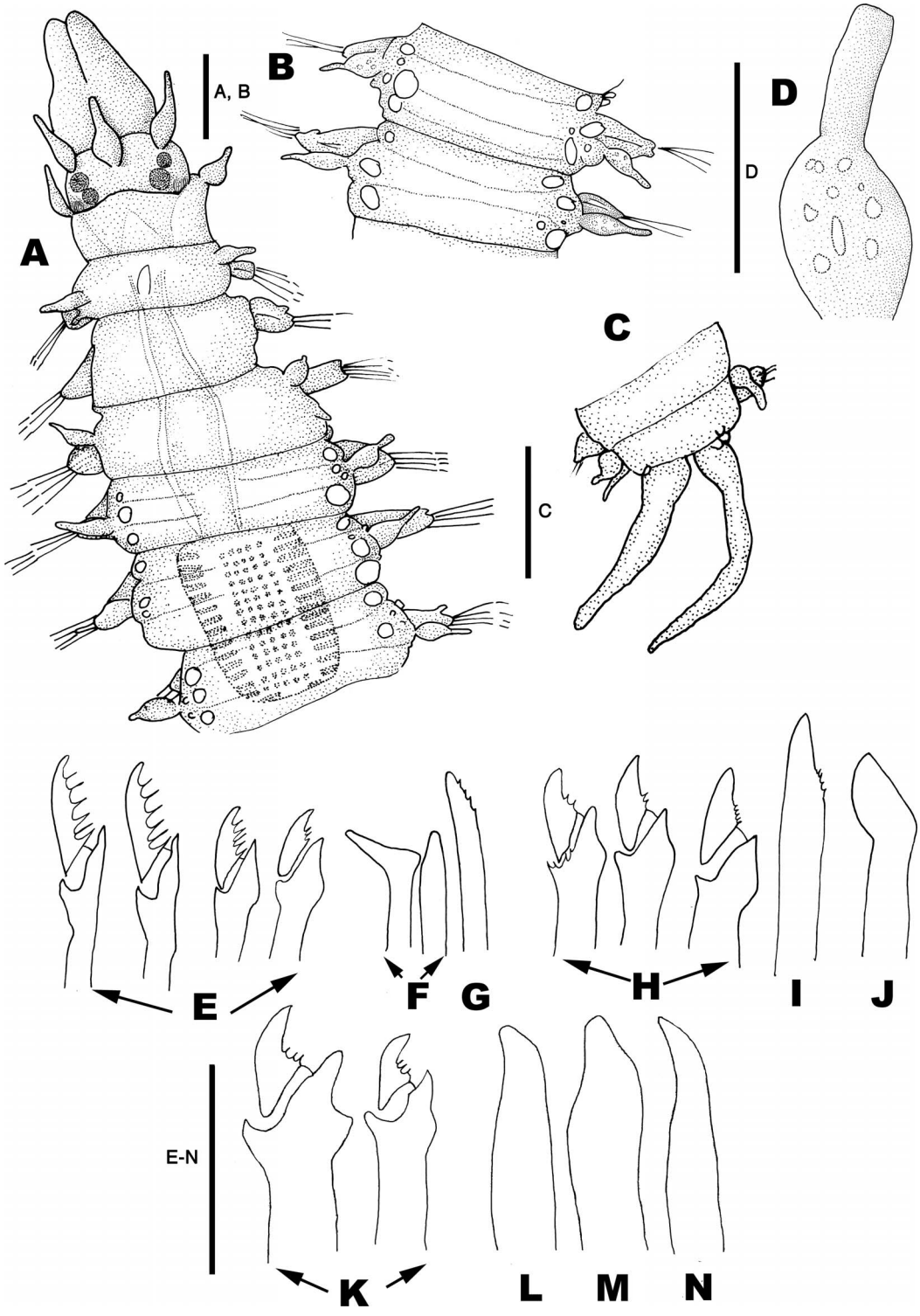
Distribution.—Australia, Polynesia, Philippines.

Habitat.—On all shallow substrates: corals, sand, among algae, seagrass.

Salvatoria opisthodentata (Hartmann-Schröder, 1979)

Brania opisthodentata Hartmann-Schröder, 1979:101, Figs. 134, 135, 1981:35.—Non Hartmann-Schröder, 1991:38, Figs. 65–67.
Salvatoria opisthodentata San Martín, 2005:57, Fig. 13.

Material examined.—Madagascar, Tu-



lear Reef, sand, intertidal, 15 Jan 2002, 1 specimen (MNCN16.01/19050).

Distribution.—Australia, Madagascar.

Habitat.—Coarse and fine sand, sand and shell, intertidal to 29 m depth.

Genus *Sphaerosyllis* Claparède, 1863

Sphaerosyllis Claparède, 1863:45.—San Martín, 2003:187, 2005:86.

Sphaerosyllis dieteri, new species
Figs. 7, 10C–E

Zoobank LSID.—urn:lsid:zoobank.org:act:3D4829BF-35F9-46C9-8758-9E13AD1C65F5

Material examined.—Madagascar, Tulear Reef, sand, 15 m, 23 Jan 2002, Holotype (MNCN16.01/19051) and 2 paratypes (MNCN16.01/19052), same locality and substrate, 35 m, 22 Jan 2002, 1 paratype (MNCN16.01/19053).

Description.—Body relatively long for a member of this genus; holotype complete specimen, 5.6 mm long, 0.4 mm wide, 49 chaetigers; dorsum covered with small, scattered papillae, only perceptible laterally (Fig. 7A). Prostomium rectangular, posterior margin covered by peristomium (Fig. 7A); four large eyes in trapezoidal arrangement. Palps elongated, longer than prostomium (Figs. 7A, 10C, D). Antennae similar in length to prostomium, shorter than palps, all similar, with bulbous bases and moderately long tips; lateral antennae inserted on anterior margin, median antenna inserted slightly posteriorly (Fig. 7A). Tentacular cirri shorter than antennae. Peristomium similar in length to subsequent segments. Nuchal organs visible laterally, between prostomium and peristomium as rows of cilia; posterior lobes of brain visible internally, reaching end of peristomium (Fig. 7A), forming a W shape. Segments from proventricular region slightly divided into three parts by two grooves (Fig. 7A, B). Dorsal cirri short, similar to tentacular cirri, with a bulbous base suddenly narrowing to slender tip, absent from chaetiger 2, those of mid-body with granular inclusions (Fig. 7B, D). Parapodial glands (located laterally on dorsum) of different sizes, more-or-less circular, sometimes large, with granular or hyaline inclusions, (Figs. 7A, 10C, E), usually both kinds of material in the same segment; most anterior segments without parapodial glands, glands appearing on third chaetiger, one or two on each side of segment, then three on each side from proventricular segments, larger and more obvious (Figs. 7A, B, 10E). Anterior parapodia each with about four compound chaetae, blades unidentate, provided with long, straight marginal spines, longer on dorsal chaetae (Fig. 7E), with small dorsoventral gradation in length, about 13 μm above, 8 μm below. Number of compound chaetae on each parapodium decreasing to three on midbody parapodia, with larger shafts and shorter blades about 11–9 μm long, smooth or provided with short marginal spines (Fig. 7H). Posterior parapodia each with two, occasionally three, compound chaetae, with larger shafts and minute blades, 7–11 μm long, almost smooth (Fig. 7K). Dorsal simple chaetae from first chaetiger, unidentate, provided with short marginal spines on anterior parapodia (Fig. 7G), becoming

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Fig. 7. *Sphaerosyllis dieteri*. A, anterior end, dorsal view. B, midbody segments, dorsal view. C, posterior end, dorsal view. D, midbody dorsal cirrus. E, compound chaetae, anterior parapodium. F, aciculae, anterior parapodium. G, dorsal simple chaeta, anterior parapodium. H, compound chaetae, midbody parapodium. I, dorsal simple chaeta, midbody parapodium. J, acicula, midbody parapodium. K, compound chaetae, posterior parapodium. L, dorsal simple chaeta, posterior parapodium. M, acicula, posterior parapodium. N, ventral simple chaeta, posterior parapodium. Holotype (MNCN 16.01/19051). Scale bars: A–C = 0.1 mm, D = 0.04 mm, E–N = 20 μm.

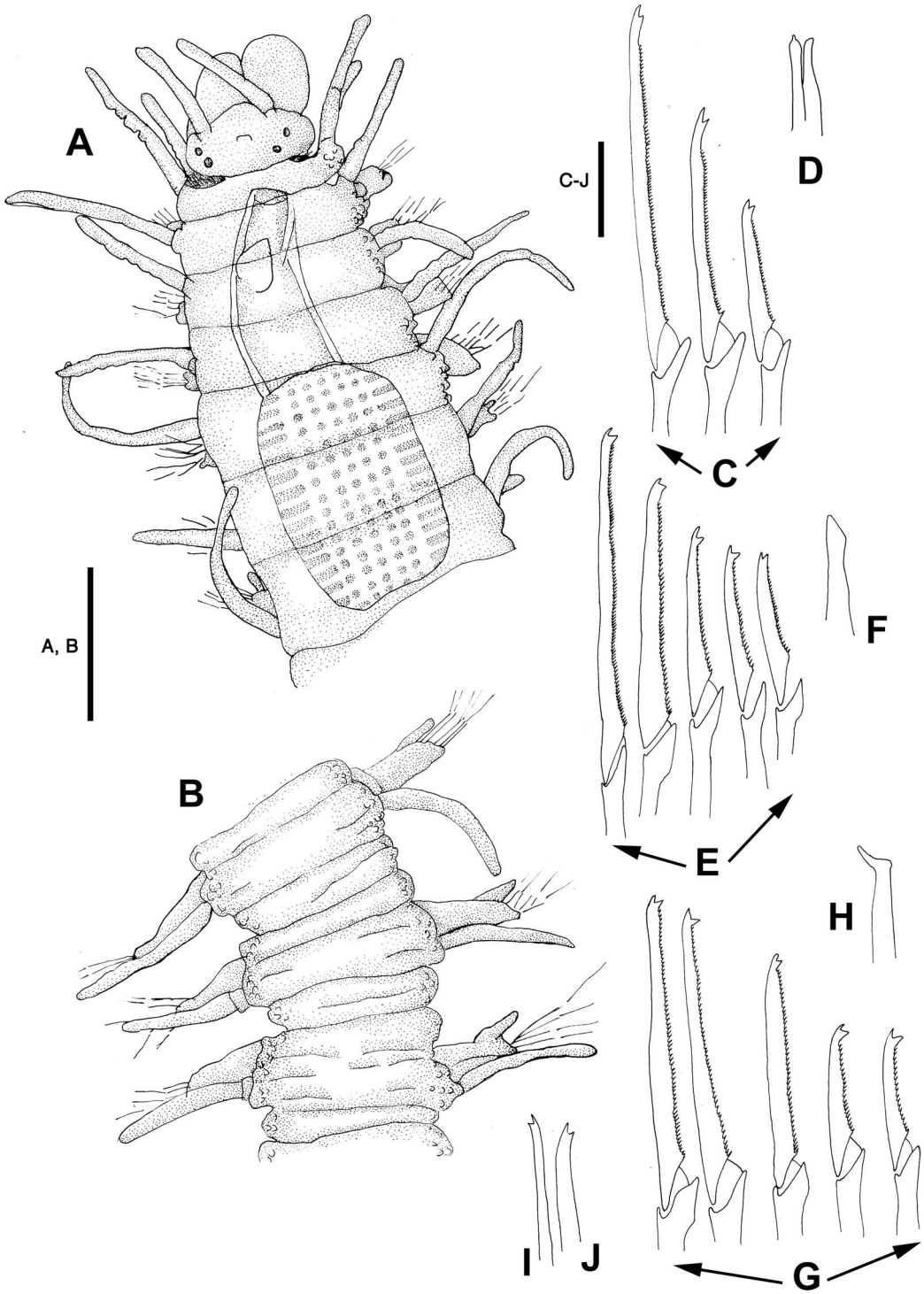

Fig. 8. *Megasyllis chiki*. A, anterior end, dorsal view. B, midbody segments, dorsal view. C, compound chaetae, anterior parapodium. D, aciculae, anterior parapodium. E, compound chaetae, midbody parapodium. F, acicula, midbody parapodium. G, compound chaetae, posterior parapodium. H, acicula, posterior parapodium, I, dorsal simple chaeta. J, ventral simple chaeta. Holotype (MNCN 16.01/19075). Scale bars: A, B = 0.2 mm, C–J = 20 μm.

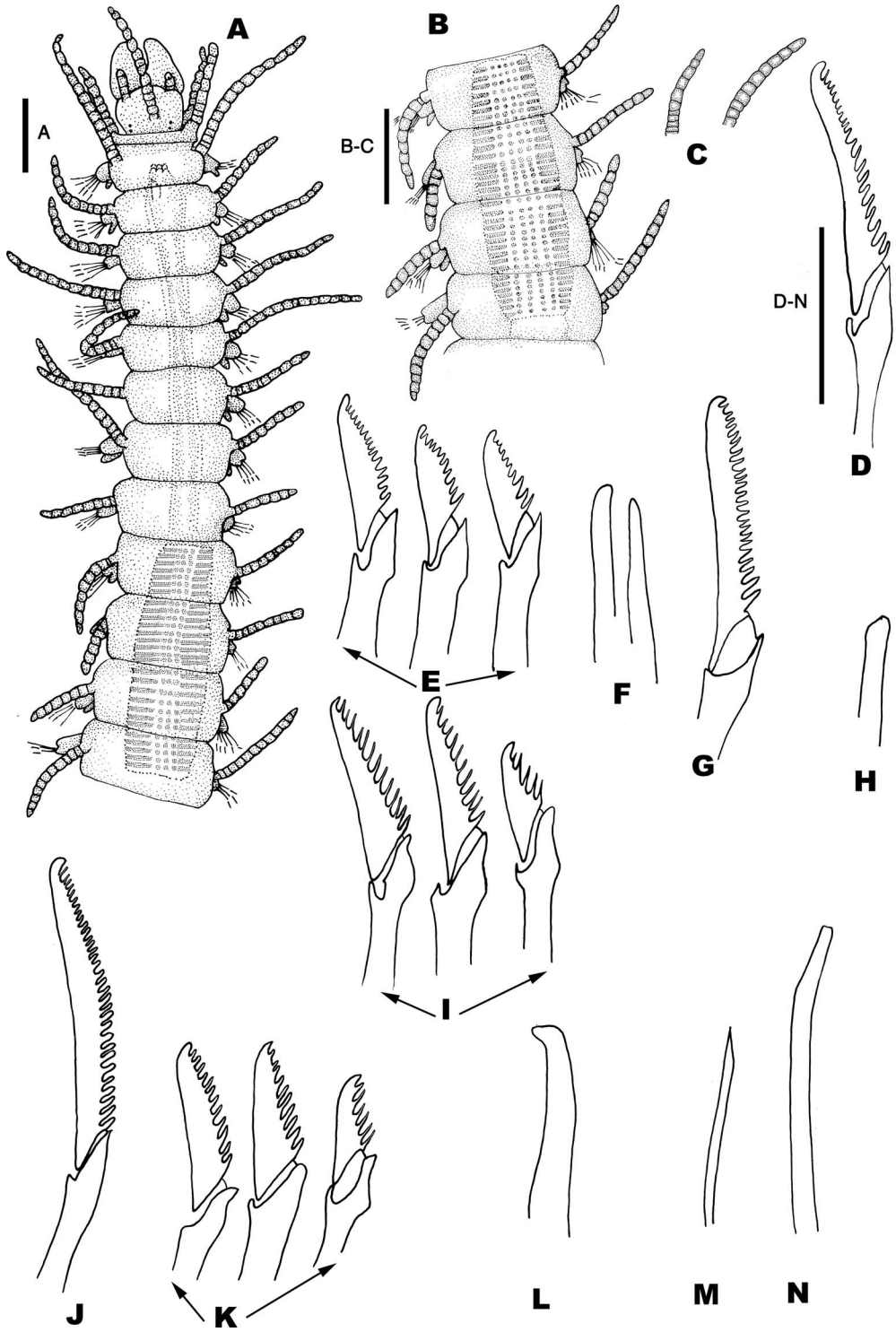

Fig. 9. *Syllis dominguezi*. A, anterior end, dorsal view. B, detail of proventricular segments. C, midbody dorsal cirri. D, dorsal compound chaeta, anterior parapodium. E, falcigers, anterior parapodium. F, aciculae, anterior parapodia. G, dorsal compound chaeta, midbody parapodium. H, acicula, midbody parapodia. I, falcigers, midbody parapodium. J, dorsal compound chaeta, posterior parapodium. K, falcigers, posterior parapodium. L, acicula, posterior parapodia. M, ventral simple chaeta. N, dorsal simple chaeta. Holotype (MNCN 16.01/19075). Scale bars: A = 0.2 mm, B, C = 0.2 mm, D–N = 20 μm.

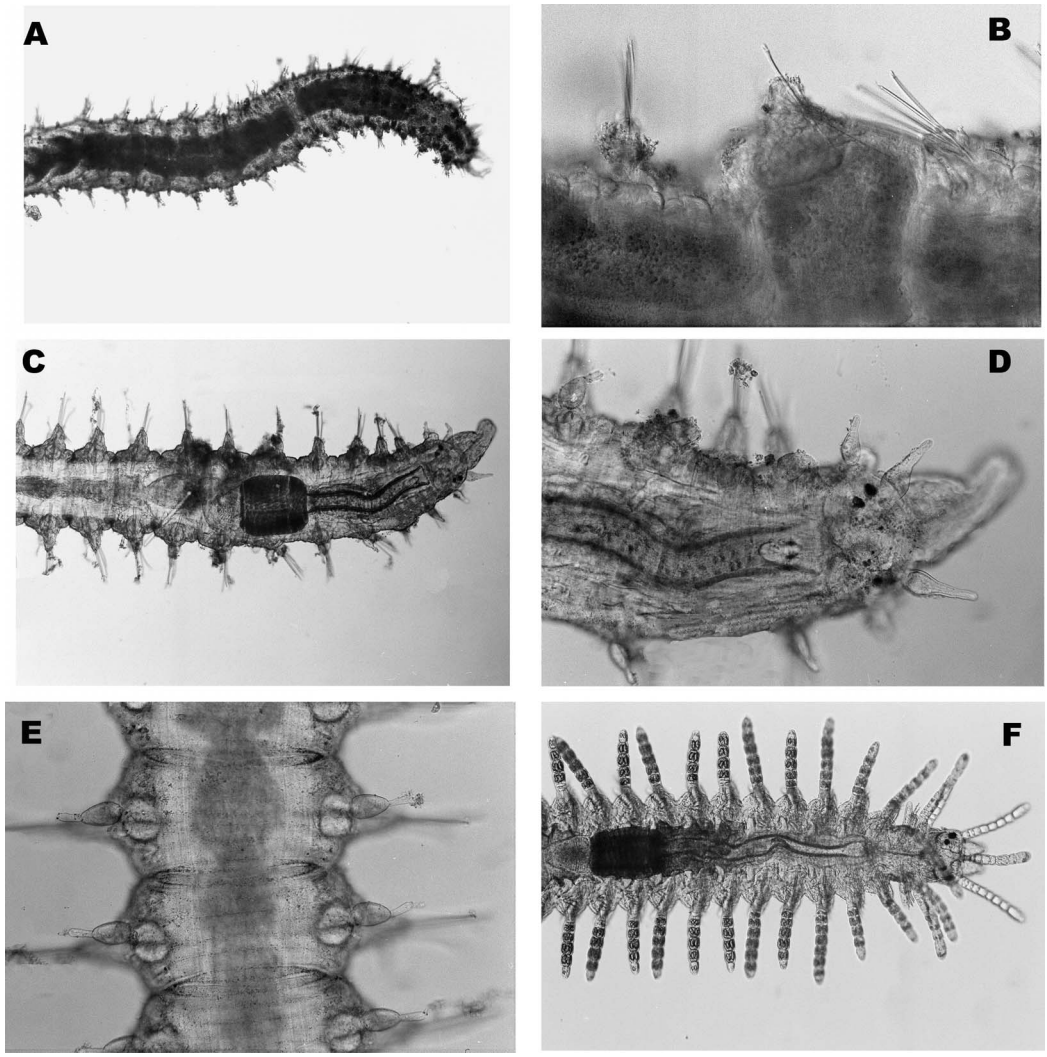

Fig. 10. Photos of live specimens. *Prosphaerosyllis semiverrucosa*: A, posterior end, dorsal view. B, chaetae. *Sphaerosyllis dieteri*: C, anterior end, dorsal view. D, detail of prostomium and anterior segments. E, mid-body, dorsal view. *Pseudosyllis brevipennis*: F, anterior end, dorsal view. No scales.

larger and smooth on mid-body and posterior parapodia (Fig. 7I, L). Ventral simple chaetae on posterior parapodia, sigmoid, unidentate, smooth (Fig. 7N). Anterior parapodia each with two aciculae, one straight, pointed, and other bent in right angle (Fig. 7F); from proventricular segments posteriorly, acicula solitary, with tips slightly bent, relatively thick (Fig. 7J, M). Pygidium small, provided with two elongated anal cirri (Fig. 7C). Pharynx slender, through four segments; pharyngeal tooth conical, located anteriorly (Figs. 7A, 10D). Proventricle small, through two segments (Figs. 7A, 10C), with 14 muscle cell rows.

Remarks.—*Sphaerosyllis dieteri* is characterized by having segments posterior to the proventricle divided into three annuli by two grooves, two to three small parapodial glands of two kinds on most segments, with either granular or hyaline

inclusions, and dorsal cirri with bulbous bases, a sudden narrowing, and a filiform tip.

There are some other species of this genus with segments divided into several annuli. *Sphaerosyllis* sp. from the Mediterranean Sea (San Martín 2003) is a larger species, with a much longer proventricle, and four annuli per segment; the dorsal cirri are different, progressively narrowing from bases to tips, and parapodial glands with only granular material. *Sphaerosyllis tetralobata* Salcedo-Oropeza, San Martín, & Solís-Weiss, 2016, from the Southern Mexican Pacific, also has four annuli per segment and parapodial glands with granular material (Salcedo-Oropeza et al. 2016). *Sphaerosyllis dubiosa* Hartmann-Schröder, 1962, from southern Chile has a colored pattern, lacks parapodial glands and the compound chaetae have a distinct dorso-ventral gradation in length (Hartmann-Schröder 1962). Finally, *Sphaerosyllis annulata* Nogueira, San Martín, & Fukuda, 2004, from Brazil, has four annuli per segment, much more marked than the three in *S. dieteri*, the palps are shorter, has only granular parapodial glands, and the dorsal cirri have a much more marked difference between the bases and tips than *S. dieteri* (Nogueira et al. 2004).

Etymology.—The species is named after Dr. Dieter Fiege, colleague and friend, who has made important contributions to the knowledge of the polychaetes around the world.

Distribution.—Madagascar.

Habitat.—Sandy bottoms, subtidal, 15–35 m.

Sphaerosyllis capensis Day, 1953

Sphaerosyllis hystrix var. *capensis* Day, 1953:420, Fig. g–l.

Sphaerosyllis capensis Day, 1967:276, Fig. 12.II.g–j.—Hartmann-Schröder, 1974a:133, pl. 12, Figs. 111–115.—San Martín, 2005:94, Figs. 49C–F, 50.

Sphaerosyllis cuticulata Hartmann-Schröder, 1991, in part:41.

Material examined.—Madagascar, Tulear Reef, coral rubble, 14 Jan 2002, 4 specimens (MNCN16.01/19054), same locality, substrate, and date, intertidal, 1 specimen (MNCN16.01/19055), same locality, substrate and depth, 16 Jan 2002, 1 specimen (MNCN16.01/19056).

Distribution.—South Africa, Angola, Mozambique, Red Sea, Australia, Madagascar.

Habitat.—In muddy sand, coralline algae, and dead coral, in shallow waters.

Sphaerosyllis georgeharrisoni San Martín, 2005

Sphaerosyllis georgeharrisoni San Martín, 2005:97, Figs. 53D–F, 54A–H.

Material examined.—Philippines, Luzon, Batangas, Sepok Wall, between Balayan Bay and Batangas Bay, dead coral, 6 m, 10 Dec 2010, 2 specimens (MNCN16.01/19057).

Distribution.—Australia (Western Australia), Philippines.

Habitat.—Associated with dead corals, also in medium sand on coral reefs, in shallow waters.

Sphaerosyllis glandulata Perkins, 1981

Sphaerosyllis glandulata Perkins, 1981:1123, Figs. 18, 19.—Uebelacker, 1984:30, 33–34, Figs. 25, 26.—Somaschini & San Martín, 1994:361, Fig. 3.—San Martín, 2003:Fig. 100.

Sphaerosyllis cf. *glandulata* Ding & Westheide, 2008:131, Fig. 5.

Material examined.—Madagascar, Tulear Reef, sand, intertidal, 1 Feb 2002, 1 specimen (MNCN16.01/19058), same locality, substrate and depth, 22 Jan 2002, 2 specimens (MNCN16.01/19059), same locality, substrate and depth, 30 Jan 2002, 2 specimens (MNCN19060), same locality and substrate, 35 m, 22 Jan 2002, 4 specimens (MNCN16.01/19061).

Distribution.—USA (Florida, Gulf of México, North Carolina), Cuba, North

Atlantic, Mediterranean Sea, Madagascar, China.

Habitat.—Coarse sand, fine sand, also on corals. Usually subtidal (10–30 m) but also up to 120 m depth.

Sphaerosyllis hirsuta Ehlers, 1897

Sphaerosyllis hirsuta Ehlers, 1897:48, pl. 3, Figs. 58–60, 1908:66.—Augener, 1913:249, 1927:156.—Fauvel, 1917:201.—Haswell, 1920:226.—Ushakov, 1955:190, text-fig. 55.—Imajima & Hartman, 1964:116, pl. 27, Fig. F–L.—San Martín, 2005:99, Figs. 55, 56.

Material examined.—Philippines, Palawan, El Nido, Popollcan, South Entalula, dead coral, 3m, 15 Dec 2010, 1 specimen (MNCN16.01/19062), Luzon, Batangas, Koala Point, Balayan Bay, 2 m, dead coral, 5 Dec 2010, 2 specimens (MNCN16.01/19063), Luzon, Batangas, Sepok Wall, between Balayan Bay and Batangas Bay, dead coral, same data, 2 m, 1 specimen (MNCN16.01/19064), Luzon, Batangas, House reef, in front of resort, Balayan Bay, 2 m, dead coral, 7 Dec 2010, 1 specimen (MNCN16.01/19065), New Zealand, South Island, Akaroa Light House, fine sediment, intertidal, 5 Feb 2012, 5 specimens (MNCN16.01/19066), Dunedin, Otago Peninsula, Wellers Rock, fine sand with algae and sponges, 7 m, 7 Feb 2012, 14 specimens (MNCN16.01/19067), South Akaroa, sponges and ascidians, intertidal, 5 Feb 2012, 15 specimens (MNCN16.01/19068), South Island, North Akaroa, rhizoids of laminarians, subtidal, 0.5 m, 7 Feb 2012, 22 specimens (MNCN16.01/19069).

Distribution.—This species is widely distributed, reported from the Pacific coasts of South America, New Zealand, Japan, Russia (Kurile Islands), Australia, Philippines.

Habitat.—All substrates, from dead coral, algae, encrusting organisms, to seagrasses and sand. Intertidal to 45 m depth.

Sphaerosyllis lateropapillata Hartmann-Schröder, 1986

Sphaerosyllis capensis lateropapillata Hartmann-Schröder, 1986:44, Figs. 22–28.

Sphaerosyllis (*Sphaerosyllis*) *capensis lateropapillata* Hartmann-Schröder, 1987:40.

Sphaerosyllis lateropapillata lateropapillata Hartmann-Schröder & Rosenfeldt, 1988:43.—Hartmann-Schröder, 1989:29, Figs. 34–36, 1990:54.

Sphaerosyllis lateropapillata San Martín, 2005:96, Figs. 52, 53A–C.

Material examined.—New Zealand, South Island, Akaroa, Light House, algae, intertidal, mud, 5 Feb 2012, 1 specimen (MNCN16.01/19070).

Distribution.—Australia, New Zealand, Antarctica.

Habitat.—Among algae, in sponges and dead corals, sediment. Intertidal to about 76 m depth.

Sphaerosyllis magnidentata Perkins, 1981

Sphaerosyllis magnidentata Perkins, 1981:1130, Fig. 22.—San Martín, 1991:232.

Material examined.—China, Hainan, Sanya Island, sand, intertidal, 18 Dec 1991, 1 specimen (MNCN16.01/19071), Madagascar, Tulear Reef, sand, intertidal, 16 Jan 2002, 1 specimen (MNCN16.01/19072), same locality, substrate and depth, 14 Jan 2002, 1 specimen (MNCN16.01/19073).

Distribution.—U.S.A. (Florida), Cuba, Madagascar, China.

Habitat.—Sand.

Subfamily Syllinae Grube, 1850

Genus *Megasyllis* San Martín, Hutchings, & Aguado, 2008

Megasyllis San Martín, Hutchings, & Aguado, 2008:5.—San Martín et al., 2014:333.

Type species.—*Syllis corruscans* Haswell, 1885.

Megasyllis chrissyae San Martín, Aguado, & Álvarez-Campos, 2014

Megasyllis chrissyae San Martín, Aguado, & Álvarez-Campos, 2014:334, Figs. 2, 3.

Material examined.—Philippines, Luzon Island, between Balayan Bay and Batangas Bay, fine sediment, 19 m, 1 specimen (MNCN16.01/19074).

Distribution.—Only known from Luzon Island, Philippines.

Habitat.—Coral rubble, fine sediment.

Megasyllis chiki, new species
Fig. 8

Zoobank LSID.—urn:lsid:zoobank.org:act:EDA4194C-243A-44EA-A4AB-FCCFFB18EDED

Material examined.—China, Hong-Kong, sand, subtidal, 20 Jan 1998, Holotype (MNCN16.01/19075).

Description.—Holotype incomplete specimen, 10 mm long, 0.39 mm wide, with 52 chaetigers. Body long and slender, anteriorly stout, dorsally convex, with marked dorsal rugosities laterally on each segment (Fig. 8A); posteriorly, each segment becoming tri-annulated by means of two marked grooves, each ring with some incomplete smaller grooves (Fig. 8B). Without color markings. Prostomium ovate, broader than long, provided with two pairs of small eyes in open trapezoidal arrangement. Median antenna detached, inserted between anterior eyes; lateral antennae inserted on anterior margin of prostomium, relatively short, shorter than prostomium and palps together (Fig. 8A). Palps short, broad, fused basally with a dorsal scar. Peristomium well defined, slightly shorter than subsequent segments; dorsal tentacular cirri somewhat longer than lateral antennae; ventral tentacular cirri shorter than dorsal ones (Fig. 8A). Antennae, tentacular cirri and dorsal cirri smooth to rugose, some very weakly articulated. Dorsal cirri slightly shorter than body width, indistinctly alternating long and short cirri (Fig. 8A, B). Ventral cirri triangular to digitiform, as long as parapodial lobes (Fig. 8A, B), inserted on midlength of parapodial lobes. Parapodial lobes conical. Compound chaetae heterogomph falcigers, with blades elongated, slender, bidentate, with short marginal spines (Fig. 8C, E, G); some blades with distal tooth upwards directed. Anterior parapodia each with about 12 compound chaetae, diminishing to 8–10 on mid-body parapodia and to six on posterior parapodia; blades bidentate, with teeth well separated, distal tooth acute; proximal tooth slightly larger and longer than distal one, especially on mid-body and posterior parapodia (Fig. 8E, G), except on anterior chaetae, with proximal teeth shorter than distal ones (Fig. 8C), slightly curved on some blades. Blades with dorso-ventral gradation in length: blades of dorsal and ventral compound chaetae on anterior parapodia 80 and 35 μm long, respectively (Fig. 8C); blades of dorsal and ventral compound chaetae on mid-body parapodia 70 and 33 μm long, respectively (Fig. 8E); blades of dorsal and ventral compound chaetae on posterior parapodia 65 and 33 μm long, respectively (Fig. 8G). Dorsal simple chaetae on posterior parapodia thin, slender, smooth, bidentate with teeth similar to those of blades, but proximal teeth not so markedly longer than distal ones (Fig. 8I). Ventral simple chaetae on posterior parapodia stout, sigmoid, smooth, bidentate, with both teeth acute (Fig. 8J). Two aciculae in anterior parapodia, one acuminate and other with oblique tip (Fig. 8D); one acuminate, oblique distally, in mid-body and posterior parapodia (Fig. 8F, H). Pharynx relatively short, extending through about four segments; pharyngeal tooth large, triangular, placed behind anterior rim (Fig. 8A). Proventricle barrel shaped, shorter than pharynx, with about 25 rows of muscle cells, without midline.

Remarks.—*Megasyllis chiki* is characterized by having triannulate segments on mid-body and posterior segments, with

some rugosities laterally of each segment, a short pharynx with a very large, acute, triangular pharyngeal tooth, and elongated compound chaetae, bidentate with a long and wide proximal tooth on midbody and posterior segments and short spines on the cutting margin. Several species of *Megasyllis* have several annuli per segment, as *Megasyllis procera* (Hartman, 1965), from the Caribbean and Bermuda; *M. multiannulata* (Aguado, San Martín, & Nishi, 2008), from Japan; *M. chrissyae* San Martín, Aguado, & Álvarez-Campos, 2014, from the Philippines; *M. eduardoi* San Martín, Aguado, & Álvarez-Campos, 2014, from New Zealand; *M. glandulosa* (Augener, 1913), from Australia; *M. nipponica* (Imajima, 1966c) from Japan; *M. corruscans* (Haswell, 1885), from Australia, *M. inflata* (Marenzeller, 1879), from Japan and Australia; *M. heterosetosa* (Hartmann-Schröder, 1991) from Australia, and others. However, none has the lateral rugosities and long, slender and elongated compound chaetae with proximal tooth longer than distal one, which is somewhat upwards directed as happens in *M. chiki* (see San Martín & Estapé 1993, Aguado et al. 2008, San Martín et al. 2008, 2014). In spite of having only a single specimen, we describe it as a new species.

Etymology.—The species is named after Dra. Patricia Álvarez Campos ("Chiki"), colleague and friend, whose contributions have greatly increased our knowledge of the family Syllidae.

Distribution.—China (Hong-Kong).

Habitat.—Interstitial in subtidal sediments.

Genus *Pseudosyllis* Grube, 1863

Pseudosyllis Grube, 1863:44.—Álvarez-Campos et al., 2017:511.
Trypanosyllis Claparède, 1864, in part.

Type species.—*Pseudosyllis brevipennis* Grube, 1863.

Pseudosyllis brevipennis Grube, 1863
Figs. 10F, 14A

Pseudosyllis brevipennis Grube, 1863:44.—Álvarez-Campos et al., 2017:511.
Syllis (*Typosyllis*) *brevipennis* Amoureux, 1974:439.
Trypanosyllis coeliaca Claparède, 1868:513.—San Martín, 2003:308, Figs. 169, 170.

Material examined.—Madagascar, Tulear Reef, sand, intertidal, 15 m, 23 Jan 2002, 1 specimen (MNCN16.01/19076).

Remarks.—Álvarez-Campos et al. (2017) resurrected the genus *Pseudosyllis*, and considered *P. brevipennis* as a senior synonym of *Trypanosyllis coeliaca* Claparède, 1868, a widely reported species, which perhaps forms a group of cryptic syllids. Our specimen from Madagascar agrees perfectly with the previous description of *T. coeliaca*. This genus is small in size, with minute teeth on the trepan, a mid-dorsal pharyngeal tooth, and short dorsal cirri (Figs. 10F, 14A), but the characterization of the genus was made on the basis of a molecular analysis. It is also possible that other similar species described as *Trypanosyllis* Claparède, 1864, and also living interstitially, belong, in fact, to *Pseudosyllis*, such as *T. parvidentata* Perkins, 1981 and *T. savagei* Perkins, 1981, from Florida, as well as *T. microdenticulata* Salcedo-Oropeza, San Martín, & Solís-Weiss, 2011, from Southern Mexican Pacific.

Distribution.—East Atlantic Ocean, from Northern Europe to equatorial Africa, Mediterranean Sea, USA (Gulf of México and Florida), Pacific Ocean (French Polynesia). Madagascar.

Habitat.—A variety of substrates: algae, corals, vermetid reefs, among hydrozoans, inside sponges, on seaweeds, coarse sand, and sand with mud. Infralittoral to about 760 m depth.

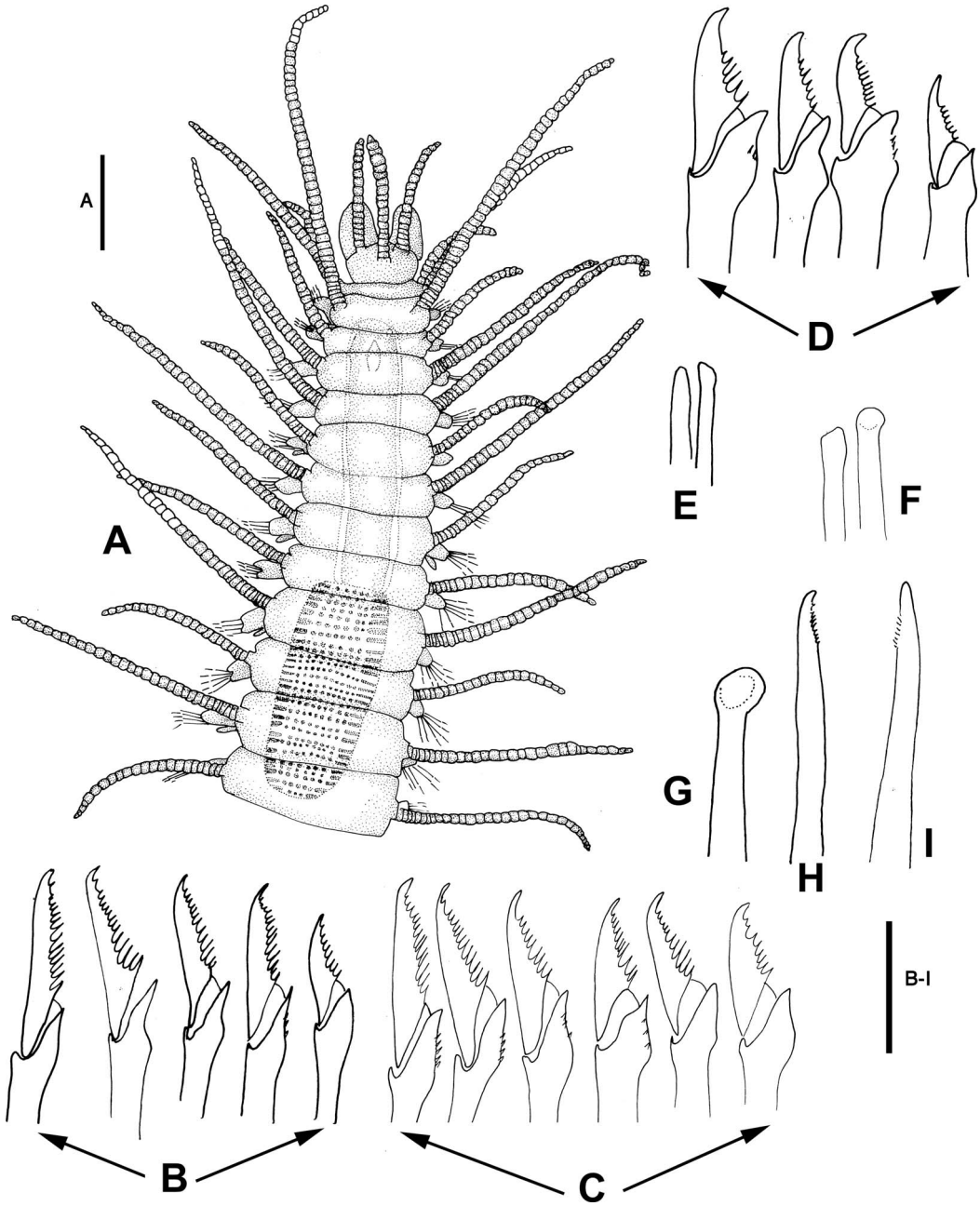

Fig. 11. *Syllis escribanoi*. A, Anterior end, dorsal view. B, compound chaetae, anterior parapodium. C, compound chaetae, midbody parapodium. D, compound chaetae, posterior parapodium. E, aciculae, anterior parapodium. F, aciculae, midbody parapodium. G, acicula, posterior parapodium. H, dorsal simple chaeta. I, ventral simple chaeta. Holotype (MNCN 16.01/19079). Scale bars: A = 0.4 mm, B–I = 20 μm.

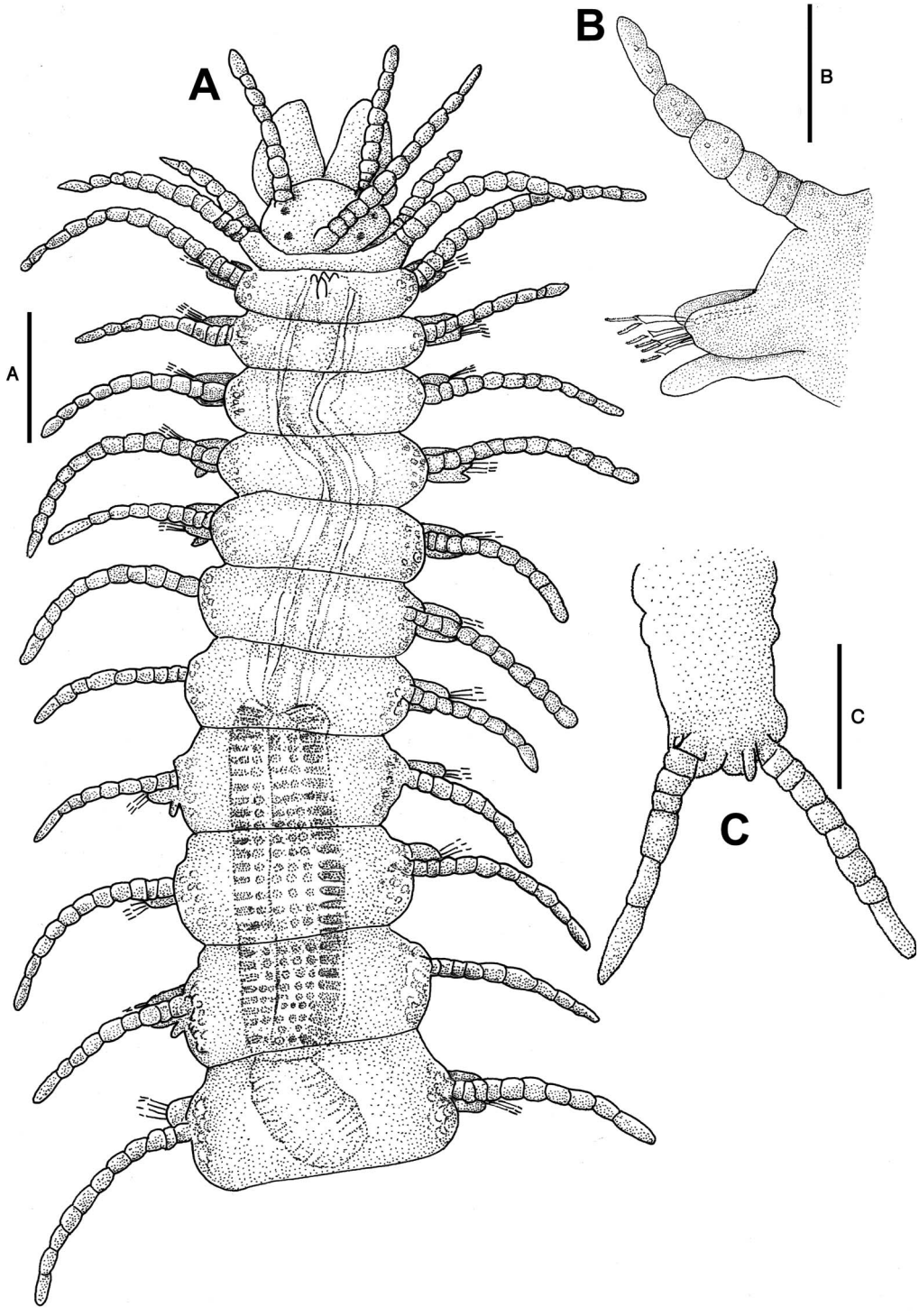

Fig. 12. *Syllis kai*. A, anterior end, dorsal view. B, midbody parapodium. C, posterior end, dorsal view. Holotype (MNCN 16.01/19081). Scale bars = 0.2 mm.

Genus *Syllis* Savigny *in* Lamarck, 1818

Syllis Savigny *in* Lamarck, 1818:318.—San Martín, 2003:336.—Álvarez-Campos et al., 2015a:321, 2015b:302.
Ioida Johnston, 1840:231.
Gnathosyllis Schmarda, 1861:69.
Trichosyllis Schmarda, 1861:73.
Heterosyllis Claparède, 1863:44.
Isosyllis Ehlers, 1864:251.
Aporosyllis Quatrefages, 1865:87.
Ehlersia Quatrefages, 1865:104.
Pagenstecheria Quatrefages, 1865:17.
Eurymedusa Kinberg, 1866:249.
Laomedora Kinberg, 1866:250.
Thoe Kinberg, 1866:249.
Chaetosyllis Malmgren, 1867:44.
Typosyllis Langerhans, 1879:528–529.
Langerhansia Czerniavsky, 1881:395.
Paratyposyllis Hartmann-Schröder, 1962:95.
Reductotyposyllis Hartmann-Schröder 1974a:123.

Type species.—*Syllis monilaris* Savigny *in* Lamarck, 1818:317.

Syllis botosaneanui (Hartmann-Schröder, 1973), new combination

Typosyllis botosaneanui Hartmann-Schröder, 1973:90, Figs. 5–8, 1977:55, 1980b:391.—Licher, 1999:68, Fig. 31.

Material examined.—India, South Andaman Islands, sand, intertidal, date unknown, 12 specimens (MNCN16.01/19077).

Distribution.—Caribbean Sea, central Atlantic (Ascension Island), Indian Ocean.

Habitat.—Interstitial in fine and coarse sand. Sublittoral.

Syllis dominguezi, new species
Fig. 9

Zoobank LSID.—urn:lsid:zoobank.org:act:89F9604F-E22C-4337-8C8E-4D67BC9FD467

Material examined.—China, Quingdao, sand, intertidal, 25 Nov 1991, Holotype (MNCN MNCN16.01/19075), 1 Paratype (MNCN16.01/19078).

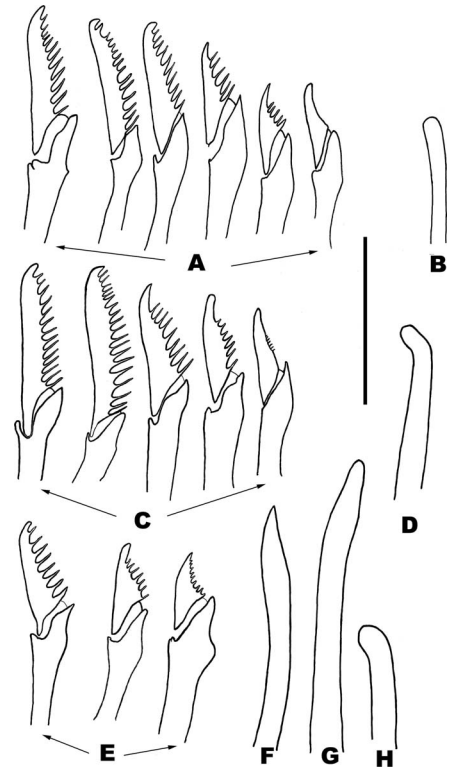

Fig. 13. *Syllis kai*. A, compound chaetae, anterior parapodium. B, acicula, anterior parapodium. C, compound chaetae, midbody parapodium. D, acicula, midbody parapodium. E, compound chaetae, posterior parapodium. F, dorsal simple chaeta. G, ventral simple chaeta. H, acicula, posterior parapodium. Holotype (MNCN 16.01/19081). Scale bar = 20 μm.

Description.—Holotype incomplete, longest specimen, 7 mm long, 0.31 mm wide, with 58 segments. Body elongated, slender, without color pattern (Fig. 9A). Prostomium sub-pentagonal, longer than wide, with two pairs of minute eyes on posterior part of prostomium (Fig. 9A) in rectangular arrangement. Median antenna inserted slightly posterior of middle of prostomium, slightly longer than combined length of prostomium and palps, with 12 articles; lateral antennae inserted on anterior margin of prostomium, much shorter (probably broken), with 3–4 arti-

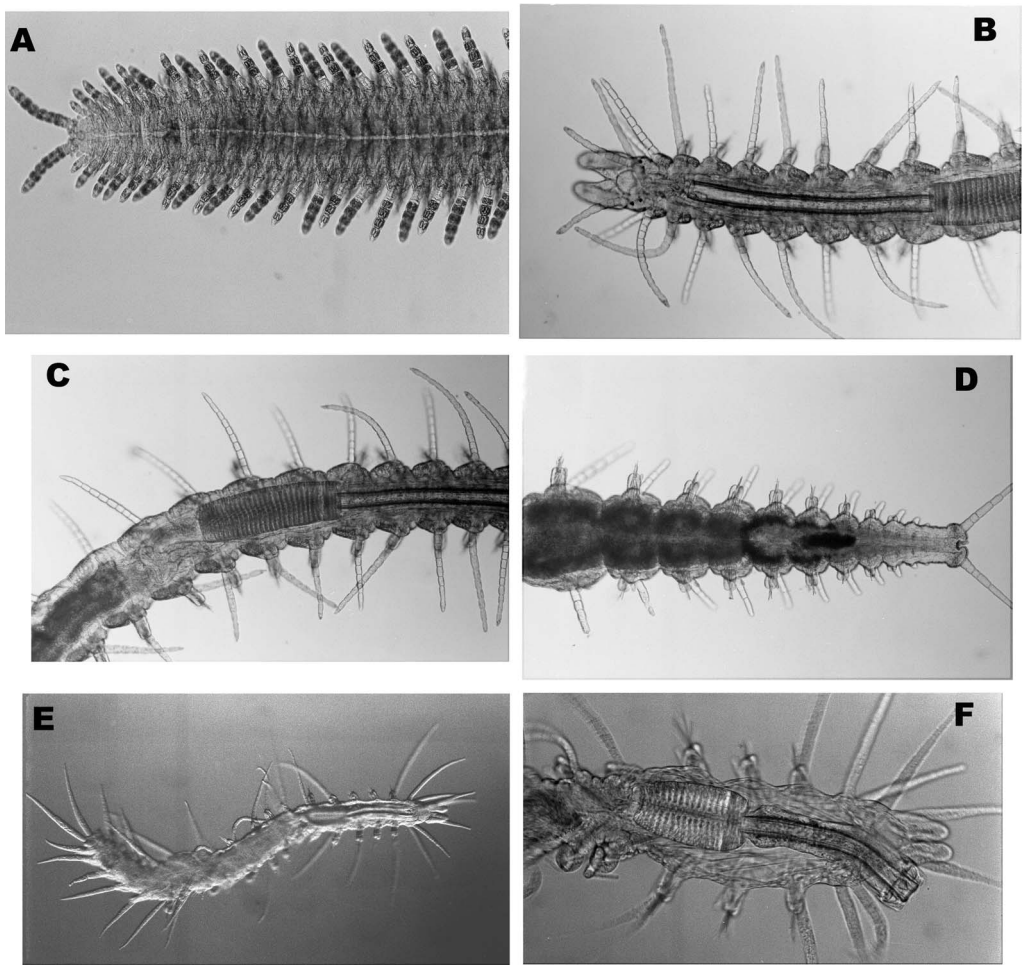

Fig. 14. Photos of live specimens. *Pseudosyllis brevipennis*: A, posterior end, dorsal view. *Syllis kai*: B, anterior end, dorsal view. C, midbody. D, posterior end, dorsal view. *Perkinsyllis homocirrata*: E, complete specimen, ventral view. F, anterior end, ventral view. No scales.

cles (Fig. 9A). Triangular palps similar in length to prostomium. Peristomium shorter than subsequent segments (Fig. 9A). Dorsal tentacular cirri with 12 articles, ventral ones shorter, with six articles. Dorsal cirri of first chaetiger distinctly longer than remaining, with 14 articles; remaining dorsal cirri alternating long (about nine articles) and short (seven articles) on mid-body and posterior segments (Fig. 9A, B), all shorter than body width. All chaetigers with morphologically similar heterogomph falcigerous chaetae, with 1–2 dorsal-most chaetae elongated with bidentate blades, distal tooth distinctly larger than proximal one, distally blunt, with coarse spines on margin (Fig. 9D, G, I–K), blades 30–35 μm. Anterior and mid-body parapodia with eight and posterior ones with six chaetae with distinctly shorter blades, bidentate, proximal tooth very small, short to moderate spines on margin; blades of chaetae throughout with dorsoventral gradation in length (18–15 μm on anterior chaetigers, 21–14 μm on mid-body and posterior ones) (Fig. 9D, E, G–K). Dorsal simple chaetae on posterior parapodia only, distally slightly truncate

(Fig. 9N). Ventral simple chaetae on posteriormost parapodia very slender, sigmoid, unidentate (Fig. 9M). Anterior parapodia with two aciculae each, distally blunt (Fig. 9F); mid-body and posterior parapodia with only one distally curved in right angle aciculum per parapodium (Fig. 9H, L). Pharynx slender, longer than proventricle, through eight segments; pharyngeal tooth on anterior margin, margin surrounded by crown of 10 soft papillae (Fig. 9A). Proventricle extending for four segments, with about 33 rows of muscle cells (Fig. 9A).

Remarks.—*Syllis dominguezi* belongs to a group of species with the posterior aciculae foot-shaped, distally forming a right angle, truncate dorsal simple chaetae, and usually some dorsal falcigers distinctly longer than the others in the fascicle but not so long as to be considered spiniger-like. *Syllis rosea* (Langerhans, 1879) (from Madeira, Mediterranean Sea, and Australia), *Syllis mariae* San Martín, 1992 (from Cuba), and *Syllis edensis* (Hartmann-Schröder, 1989) (from Australia) have spiniger-like chaetae, but they are distinctly shorter than the spiniger-like chaetae found in other species of the genus (Hartmann-Schröder 1989, San Martín 1992, 2003; Álvarez-Campos et al. 2015b, San Martín et al. 2017). Species of this group reproduce by means of tetracerous stolons (but the kind of reproduction is known only for a few species). In *Syllis rosea* it has been shown that the female stolons brood the eggs until hatching (Langeneck et al. 2020). The compound chaetae of *Syllis dominguezi* are very similar to those of *Syllis pulvinata* (Langerhans, 1881) from the Eastern Atlantic, Mediterranean Sea, and Red Sea, *Syllis albanyensis* (Hartmann-Schröder, 1984) from Australia, *Syllis truncata* Haswell, 1920 from Australia, Indonesia, and Brazil, but these species are more robust, with longer dorsal cirri, (Haswell 1920, Hartmann-Schröder 1984, Nogueira & San Martín 2002, San Martín 2003, San Martín et al. 2017). *Syllis tyrrhena* (Licher & Kuper, 1998) is also a slender interstitial species reported from the Mediterranean and Brazil (Licher & Kuper 1998, Nogueira & San Martín 2002, San Martín 2003), but the compound chaetae are shorter, with finer spines on the cutting margin of the long falcigers, and the dorsal simple chaeta is more distinctly truncate.

Etymology.—*Syllis dominguezi* is named after Luis Miguel Domínguez, famous Spanish naturalist, wildlife defender, wildlife documentary director, and friend of the second author.

Distribution.—China, Yellow Sea.

Habitat.—Interstitial in sand.

Syllis escribanoi, new species
Fig. 11

Zoobank LSID.—urn:lsid:zoobank.org:act:CE4644ED-1DA9-4351-B5D5-E382A53AE96C

Material examined.—China, Qingdao, sand, intertidal, May 1982, Holotype (MNCN16.01/19079) and 7 Paratypes (MNCN16.01/19080).

Description.—Holotype longest complete specimen, 9 mm long, 0.7 mm wide, 52 chaetigers. Body of medium size, elongate, cylindrical, without color pattern. Prostomium subpentagonal, apparently without eyes or eyespots (Fig. 11A). Palps triangular, broad, as long as prostomium. Antennae, tentacular cirri, and dorsal cirri slender and distinctly articulated (Fig. 11A), with small distal articles. Median antenna longer than prostomium and palps together, with about 18–20 articles, arising on middle of prostomium; lateral antennae somewhat shorter than median one, with about 16–18 articles, originating near anterior margin of prostomium (Fig. 11A). Peristomium shorter than subsequent segments; dorsal tentacular cirri distinctly longer than antennae, with about 33 articles, ventral pair shorter, about one-half length of dorsal ones, with about 17 articles. Dorsal cirri longer than

body width, longer on anterior segments, with about 45, 20, 30, 38, articles on first four segments, and alternating in length in mid-body and posteriorly, with about 34–36 articles for longer ones, 20–22 articles for shorter ones (Fig. 11A), diminishing in length posteriorly; articles of dorsal cirri with some small spiralized inclusions. Ventral cirri short, digitiform, not extending beyond parapodial lobes. Parapodial lobes distally bilobed (Fig. 11A). All falcigers heterogomph, bidentate with very small proximal tooth to unidentate, distally slightly hooked, with moderately long, thin spines on margin, especially on anterior parapodia and dorsally, numbering 10 per parapodium anteriorly, 8 in mid-body, and 4–8 on posterior parapodia; marked dorso-ventral gradation in length and size, most dorsal ones having longer spines on margin and more unidentate ventrally (Fig. 11B–D); blades 30 μm above, 16 μm below on anterior and mid-body parapodia (Fig. 11B, C); posterior chaetae with stouter shafts and less marked dorso-ventral gradation in length of blades, 25–16 μm (Fig. 11D). Dorsal simple chaeta on posterior chaetigers, relatively thick, distally unidentate, with minute spines on margin (Fig. 11H); ventral simple chaetae slightly thinner, sinuous, finely bidentate, with short spines on margin (Fig. 11I). Aciculae distally rounded and hollow, two in each anterior and mid-body parapodium (Fig. 11E, F), solitary in mid-posterior and posterior parapodia, larger and more distinctly distally hollow than those of anterior and mid-body parapodia (Fig. 11G). Pharynx long, extending through eight segments; pharyngeal tooth conical, elongate, situated near anterior margin (Fig. 11A). Proventricle shorter than pharynx, extending through four segments, with about 40 rows of muscle cells, without midline (Fig. 11A). Pygidium rounded, anal cirri lost in all specimens. Holotype is developing a female, diecious stolon.

Remarks.—*Syllis escribanoi* belongs to a group of species with a characteristic aciculum on posterior parapodia that is distally knobbed, rounded, apparently hollow on the tip; most of the species of this group have the pharyngeal tooth set away from the anterior margin, as in *Syllis prolifera* Krohn, 1852, *Syllis vivipara* Krohn, 1869, two widely recorded species; *Syllis pectinans* Haswell, 1920, widely reported through the Pacific Ocean, and also present in the Mediterranean and NW Spain; *Syllis unzima* Simon, San Martín, & Robinson, 2014, from South Africa; and *Syllis antoniae* Salcedo-Oropeza, San Martín, & Solís-Weiss, 2012, from Southern Mexican Pacific. *Syllis escribanoi* has the pharyngeal tooth set much farther anteriorly than all other species of this group, very close to the anterior margin; furthermore, all other species have eyes on the prostomium, which apparently are absent in *S. escribanoi*.

The compound chaetae of *S. prolifera* are distinctly bidentate (Licher 1999, Nogueira & San Martín 2002, San Martín 2003), whereas the chaetae of *S. escribanoi* are unidentate or almost unidentate and very similar to those of the other above mentioned species. *Syllis unzima* and *S. pectinans* have a distinct color pattern (Simon et al. 2014, San Martín et al. 2017) that *S. escribanoi* lacks. *Syllis vivipara* has similar compound chaetae, but they are more hooked, and the spines on margin are not as long as in *S. escribanoi*. Also, *S. vivipara* is a viviparous species (as is *S. unzima*) (Goodrich 1900, San Martín 1992, 2003). *Syllis escribanoi* seems not to be viviparous, since one specimen (the holotype) is developing a female stolon, and there are no signs of viviparism in any specimen. Finally, *S. antoniae* has compound chaetae very similar to those of *S. escribanoi*, but the proximal tooth is longer, it has two pairs of eyes, and the pharyngeal tooth is located more posteriorly (Salcedo-Oropeza et al. 2012).

Etymology.—*Syllis escribanoi* is named after David Escribano Pérez, friend and Taekwondo coach of the second author.

Distribution.—China.

Habitat.—Intertidal sand.

Syllis kai, new species
Figs. 12, 13, 14B–D

Zoobank LSID.—urn:lsid:zoobank.org:act:258800A0-DE20-4CD4-8B3E-95FC5A990EA9

Material examined.—Madagascar. Tulear Reef, sand, 35 m, 22 Jan 2002, Holotype and 5 Paratypes (MNCN16.01/19081).

Description.—Holotype longest complete specimen, 6.5 mm long, 0.45 mm wide, with 47 chaetigers. Body small, delicate, long and slender, without color pattern (Fig. 14B–D). Prostomium oval; four small eyes in trapezoidal arrangement. Palps slightly longer than prostomium, only very basally joined (Fig. 12A). Median antenna arising between posterior eyes of prostomium, with 11–12 articles, somewhat longer than combined length of prostomium and palps; lateral antennae shorter than median one, with nine articles. Peristomium shorter than subsequent segments (Fig. 12A). Dorsal tentacular cirri similar in length to median antenna, with about 11–12 articles; ventral tentacular cirri about two-thirds as long as dorsal ones, with eight articles. Lateral areas of segments rugose, with some small glands (Fig. 12A). Parapodia conical, bilobed, with both lobes similar (Fig. 12B). Dorsal parapodial cirri similar in width at base and tip, similar in length to body width, except for those of anterior chaetigers, which are somewhat longer; articles subrectangular, except the elongate final one, with small, spherical, hyaline inclusions in some articles (Fig. 12B). Dorsal parapodial cirri of anterior five chaetigers with 15–9–10–14–10 articles, respectively (Fig. 12A). Subsequent and mid-body dorsal parapodial cirri alternating in length, longer ones with about 11–12 articles and shorter cirri with 8–9 articles; posterior dorsal cirri shorter, with about 5–6 articles (Fig. 12B). Ventral parapodial cirri digitiform, slightly longer than parapodial lobes (Fig. 12B). Compound chaetae heterogomph falcigers with short blades, dorsal ones bidentate with proximal tooth thin, fine, with moderately long, straight spines on margin; blades gradually decreasing in size, becoming unidentate, with shorter marginal spines, even almost smooth on most ventral chaetae, similar throughout body, but slightly longer and slender anteriorly (Fig. 13A, C, E). Anterior parapodia each with 10 compound chaetae, blades 17–20 μm long above, 10–12 μm long below (Fig. 13A); mid-body parapodia with 7–8 compound chaetae each, similar to those of anterior parapodia (Fig. 13C); posterior parapodia with three compound chaetae each, similar to those of mid-body but stouter, with shorter blades; blades 14 μm long above, 9 μm long below (Fig. 13E). Dorsal simple chaetae on posterior parapodia, smooth, unidentate, distally broad (Fig. 13F). Ventral simple chaetae on most posterior segments, sigmoid, smooth, unidentate (Fig. 13G). Acicula solitary, distally broad or slightly bent, with rounded tip (Fig. 13B, D, H). Pharynx long, slender, extending through about seven segments; pharyngeal tooth on anterior margin of pharynx, surrounded by a crown of papillae (Fig. 12A). Proventricle shorter than pharynx, through 3–4 segments, with about 30 muscle cell rows. Pygidium with two anal cirri, with 6–8 articles, and median stylus (Figs. 12C, 14D).

Remarks.—*Syllis kai* is a slender, filiform species with short dorsal cirri, lateral areas of segments rugose and provided with small glands, distally rounded aciculae, and compound falcigers with short bidentate blades with moderately long spines on the margin, these falcigers becoming progressively shorter, smooth, and unidentate ventrally. No other species

of the genus has this combination of characters.

Syllis thyrrena Licher & Kuper, 1998 is similar in being a slender, filiform, interstitial species, but the chaetae are all bidentate, with shorter spines on margin, truncate dorsal simple chaetae, and a shorter proventricle (Licher & Kuper 1998, Nogueira & San Martín 2002, San Martín 2003). *Syllis gerundensis* (Alós & Campoy, 1981), from the Mediterranean Sea, also has short dorsal cirri and short falcigers, but they are markedly bidentate, with short spines on the margin (Alós & Campoy 1981, Campoy 1982, San Martín 2003).

Syllis glandulata Nogueira & San Martín, 2002, from Brazil, also has laterals of segments rugose, with glands; however, these glands are larger, more marked and distinct than those in *S. kai*; both species have short dorsal cirri but those of *S. glandulata* are thicker, the compound chaetae are more distinctly bidentate and the aciculae are distinctly acuminate (Nogueira & San Martín 2002).

Etymology.—*Syllis kai* is named after Kai Garrido Lucas, beloved nephew of the second author.

Distribution.—Madagascar.

Habitat.—Sediments, 35 m.

Incertae Sedis

Genus *Paraehlersia* San Martín, 2003

Paraehlersia San Martín, 2003:61.—San Martín & Hutchings, 2006:309.

Type species.—*Ehlersia ferrugina* Langerhans, 1881.

Paraehlersia ehlersiaeformis (Augener, 1913)

Pionosyllis ehlersiaeformis Augener, 1913:225, Figs. 31, 32.

Syllis (*Ehlersia*) *ferrugina*: Haswell, 1920:101, pl. 12, Figs. 3–10.—Non Langerhans, 1881:104.

Typosyllis (*Langerhansia*) *ferrugina* Hartmann-Schröder, 1981:30, 1987:37, 1989:23, 1991:33.—Non Langerhans, 1881:104.

Paraehlersia ehlersiaeformis San Martín & Hutchings, 2006:309.

Material examined.—New Zealand, North Island, Maitai Bay, Kari Kari peninsula, sediment, 12 m, 31 Jan 2012, 1 specimen (MNCN16.01/19082).

Distribution.—Australia, New Zealand.

Habitat.—Reported from a wide variety of substrates, especially abundant in algae and coralline concretions, from shallow waters to depths greater than 100 m. Also in sediments.

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

Perkinsyllis San Martín, López, & Aguado, 2009:1479.—Fukuda & Nogueira, 2013:973.—Paresque et al., 2015:325.

Perkinsyllis homocirrata (Hartmann-Schröder, 1958)
Fig. 14E, F

Eusyllis homocirrata Hartmann-Schröder, 1958:235, pl. 38, Figs. 8–11.—Westheide, 1974:71, Fig. 32.

Pionosyllis homocirrata Ding & Westheide, 1997:284, Fig. 5.—Núñez et al., 2001:62, Fig. 1.—Böggemann & Westheide, 2004:423.

Perkinsyllis homocirrata San Martín et al., 2009:1480.

Material examined.—Madagascar, Tulear Reef, sand, intertidal, 21 Jan 2002, 8 specimens (MNCN16.01/19083).

Remarks.—This is the only known small sized species of the genus, with few segments, lacking dorsal cirri on the second chaetiger (Fig. 14E, F), and found interstitially on sandy beaches. The pharynx is provided with a single tooth, opening surrounded by a crown of soft papillae (Fig. 14F).

Distribution.—Circumtropical: Bimini Islands, Galápagos Islands, India, South

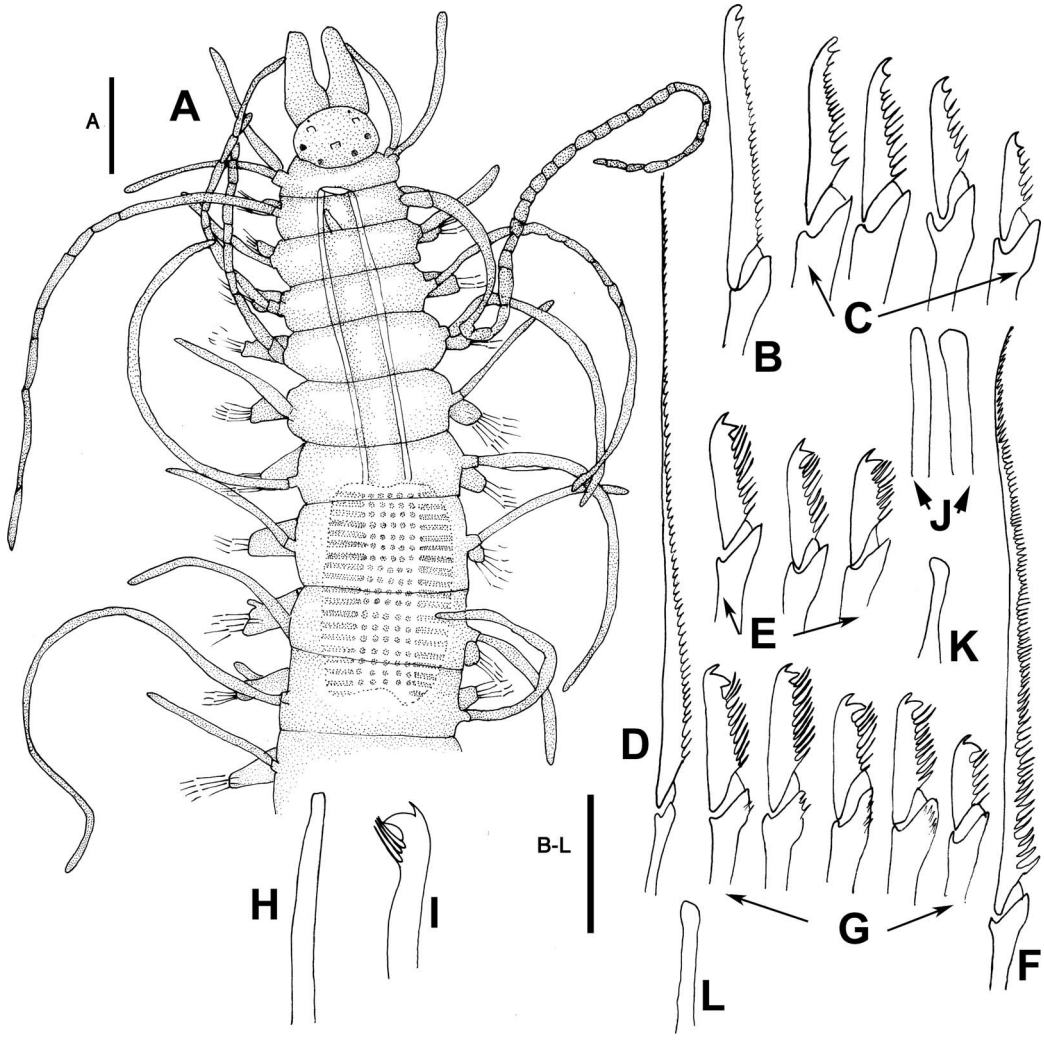

Fig. 15. *Perkinsyllis tsilo*. A, Anterior end, dorsal view. B, spiniger-like compound chaeta, anterior parapodium. C, falcigers, anterior parapodium. D, spiniger-like compound chaeta, midbody parapodium. E, falcigers, midbody parapodium. F, spiniger-like compound chaeta, posterior parapodium. G, falcigers, posterior parapodium. H, dorsal simple chaeta. I, acicula, anterior parapodium. J, aciculae, midbody parapodium. K, ventral simple chaeta. L, acicula. Holotype (MNCN 16.01/19084). Scale bars: A = 0.2 mm, B–L = 20 μm.

China, Cuba, Bahamas, Angola, Canary Islands, Seychelles, Madagascar.

Habitat.—Interstitial on exposed intertidal tropical and subtropical beaches.

Perkinsyllis tsilo, new species
Fig. 15

Zoobank LSID.—urn:lsid:zoobank.org:act:635809B9-3B4B-4D00-AC09-1E22E748796E

Material examined.—Madagascar. Tulear Reef, sand, intertidal, 16 Jan 2002, Holotype (MNCN16.01/19084).

Description.—Holotype complete specimen, 7.5 mm long, 0.34 mm wide, 65 chaetigers. Prostomium circular, with four eyes in open trapezoidal arrangement and two small anterior eyespots (Fig. 15A); antennae detached, only ceratophores remain; median antenna inserted slightly

posterior to middle of prostomium; lateral antennae inserted in front of anterior eyes. Palps longer than prostomium (Fig. 15A). Peristomium similar in length to subsequent segments; dorsal tentacular cirri elongated, filiform, ventral tentacular cirri slightly shorter. Dorsal cirri elongated, slender, smooth, filiform, those of first chaetiger very long, weakly pseudoarticulated, those of chaetigers three, four and six long; remaining dorsal cirri alternating long, distinctly longer than body width, and short, similar in length to body width (Fig. 15A). Parapodia broad to conical. Ventral cirri digitiform. Compound chaetae heterogomph falcigers (Fig. 15C, E, G) and spiniger-like chaetae (Fig. 15D, F) on each parapodium; those of anterior parapodia similar to falcigers but more elongate (Fig. 15B), distinctly shorter than those of mid-body and posterior parapodia. Anterior parapodia with about three spiniger-like chaetae, with relatively short blades, 40–42 μm long, bidentate, with short spines on margin (Fig. 15B), and numerous, about 13, falcigers, distinctly bidentate, both teeth similar and well separated, with moderately long spines on cutting margin, longer distal spines on some blades (Fig. 15C); spiniger-like chaetae progressively longer and thinner, becoming unidentate and pointed; falcigers progressively with longer spines on cutting margin, distally directed, distal spines longer, surpassing level of proximal tooth, and proximal tooth longer and larger than distal one, with dorso-ventral gradation in length; mid-body parapodia each with 1–2 spiniger-like chaetae, blades 95 μm long (Fig. 15D), and 6–8 falcigers, blades 21 μm above, 18 μm below (Fig. 15E); posterior parapodia with one spiniger-like blade 86 μm long (Fig. 15F), and seven falcigers, with proximal tooth distinctly longer and wider than distal one, and long, upwards directed spines on cutting margin, especially most distal ones, surpassing level of proximal tooth; blades 23 μm above, 14 μm below (Fig. 15G). Dorsal simple chaetae on posterior segments, distally truncate (Fig. 15H). Ventral simple chaetae on posterior segments, bidentate, proximal tooth prominent, much longer than distal tooth, large, curved, with four thin spines on margin, reaching or even surpassing level of distal tooth (Fig. 15I). Anterior parapodia each with two aciculae, one distally rounded and other pointed (Fig. 15J); from mid-body posteriorly, acicula solitary, distally slightly knobbed (Fig. 15K, L). Pharynx slender, through six segments (Fig. 15A). Proventricle through three segments, with about 25 rows of muscle cells.

Remarks.—According to Fukuda & Nogueira (2013) and Paresque et al. (2015), there are 11 known species of this genus. The former paper also included a key for identification of all species. *Perkinsyllis tsilo* belongs to the group with spiniger-like compound chaetae, blades of falcigers without double curvature, relatively short blades on the compound chaetae, but aciculae in this species without two unequal lobes.

Perkinsyllis heterochaetosa (San Martín & Hutchings, 2006), from Australia, has similar chaetae, but the blades of the falcigers have the proximal tooth smaller and shorter than in *P. tsilo*, and the dorsal and ventral simple chaetae are different, distally rounded and serrated the dorsal one and the ventral one with no so large proximal tooth in *P. heterochaetosa*. *Perkinsyllis spinisetosa* (San Martín, 1990), from Cuba and the Gulf of México, has more elongated blades of compound chaetae, not so marked a difference of size between proximal and distal tooth and, as happens in the above discussed species, the dorsal simple chaeta is serrated, not almost smooth and truncate, as in *P. tsilo*. Perhaps the most similar species is *Perkinsyllis biota* Fukuda & Nogueira, 2013 from Brazil; in both species, the anterior dorsal cirri are very long and pseudoarticulated and have similar chaetae; the dorsal and ventral simple chaetae are almost identical;

however, *P. tsilo* has much longer proximal teeth on the falcigers of posterior segments and distinctly longer spines on the margins.

Etymology.—The specific name comes from the Malagasy language, meaning thorny, because of the long spines on the margins of the compound chaetae.

Distribution.—Madagascar.

Habitat.—Interstitial in intertidal sand.

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

Westheidesyllis San Martín, López & Aguado, 2009:1492.

Type species.—*Eusyllis heterocirrata* Hartmann-Schröder, 1959.

Westheidesyllis corallicola (Ding & Westheide, 1997)

Pionosyllis corallicola Ding & Westheide, 1997:285, Fig. 6.—Böggemann & Westheide, 2004:422.—San Martín & Hutchings, 2006:328, Fig. 59.

Westheidesyllis corallicola San Martín et al., 2009:1493.

Material examined.—Philippines, Luzon, Batangas, Sepok Wall, between Balayan Bay and Batangas Bay, coarse sand, 11 m, 10 Dec 2010, 1 specimen (MNCN 16.01/19080).

Distribution.—China (Hainan Islands), Australia (Western Australia), Philippines.

Habitat.—Occurring interstitially in coralline sand.

Westheidesyllis heterocirrata (Hartmann-Schröder, 1959)

Eusyllis heterocirrata Hartmann-Schröder, 1959:118, Figs. 64–66.

Pionosyllis heterocirrata Hartmann-Schröder, 1992b:224, Figs. 11–15.

? *Eusyllis spirocirrata* Hartmann-Schröder, 1959:121, Figs. 67–69.

Westheidesyllis heterocirrata San Martín et al., 2009:1493.

Material examined.—Madagascar. Tulear reef 22 Jan 2002, 1 specimen (MNCN16.01/19085). Madagascar, Tulear Reef, 10–35 m, 30 Jan 2002, 2 specimens (MNCN16.01/19086).

Distribution.—Circumtropical: Pacific Ocean (El Salvador), central Atlantic Ocean (Ascension Island), Indian Ocean (Tanzania, southern Africa), Madagascar.

Habitat.—Sediments in mangrove forests, fine to coarse sand, green algae. Intertidal to 35 m.

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