

Syllidae (Polychaeta) from the Arctic and sub-Arctic regions

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A collection of over one hundred specimens of Syllidae (Polychaeta) from the Arctic and sub-Arctic regions has been examined and identified. The specimens were obtained from 26 stations in the Barents Sea, some Norwegian fiords and localities of the northern North Sea. A total of 21 species were identified; three species (Myrianida langerhansi (Gidholm, 1967), Syllides longocirrata Örsted, 1845 and Sphaerosyllis taylori Perkins, 1981) are new reports for the Arctic Ocean; 2 species are new to science, Streptodonta exsulis sp. nov. and Trypanosyllis troll sp. nov. Streptodonta exsulis sp. nov. have 4 thick, distally strongly knobbed aciculae on each anterior parapodia, shifting to a single, slender acicula on posterior parapodia; falcigers and pseudospinigers distally bidentate; and pharyngeal tooth located centrally and relatively close to anterior rim of pharynx. Trypanosyllis troll sp. nov. have 2, occasionally 3 straight aciculae in parapodia protruding out from parapodial lobes; falcigers bidentate; and body surface densely covered by numerous, small papillae. Based on the description of these 2 new species, some modifications are proposed in the diagnoses of the genera Streptodonta San Martín & Hutchings, 2006 and Trypanosyllis Claparède, 1864.

Keywords: Annelida, Polychaeta, Syllidae, Arctic, sub-Arctic, new species, *Streptodonta*, *Trypanosyllis*

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INTRODUCTION

Contributions to knowledge of Syllidae in Arctic and sub-Arctic regions are scarce; the first paper in which some species of Syllidae were described is that of Malmgren (1867), who erected three new genera and described 12 new species from the material collected in Spitzbergen, Greenland Island and Scandinavia (although several of these new taxa are not valid). Later, Fauvel (1911) found 5 species in the Kara Sea. Wesenberg-Lund (1947, 1950a, b, 1951, 1953) published several papers about polychaetes from the Arctic and north-west Atlantic Ocean and reported 15 syllid species in total. Ushakov (1955) reported about 30 syllid species in the Russian and North Atlantic sub-Arctic regions. Chamberlin (1920), Grainger (1954) and Pettibone (1954) also made significant contributions to the knowledge of Canadian Arctic and sub-Arctic Syllidae. Other researchers who contributed to the knowledge of sub-Arctic syllids were Saemundsson (1918), Annenkova (1934) and Buzhinskaja (1980).

In spite of the huge geographical area, only about 40 species of Syllidae have been recorded in the whole Arctic and sub-Arctic areas.

The purpose of the present study is to find out the diversity of Syllidae in the Arctic and sub-Arctic regions.

MATERIALS AND METHODS

The syllid specimens were collected from 50 samples obtained at 26 different stations, during the years 1999, 2005 and 2006. Stations are located in the Barents Sea, some Norwegian fiords and the Norwegian Sea. The specimens were collected between 19 and 340 m depth. They were fixed in formalin and posteriorly preserved in ethanol 70%. Data of these localities are shown in Table 1.

The benthic materials were collected by Akvaplan-Niva AS, which provides consultancy, research and laboratory services to companies, authorities, and other clients worldwide (<http://www.akvaplan.niva.no/default.asp>). The material was transferred to the Laboratorio de Biología Marina e Invertebrados de la Universidad Autónoma de Madrid. A part of the collection, including the types of the new species, were deposited at the Museo Nacional de Ciencias Naturales de Madrid (MNCNM); other selected specimens of all species found, except the new ones, were deposited in the Akvaplan collections.

Examinations were made using a binocular compound microscope Nikon XN, a light microscope Olympus CH-2 as well as an optic microscope with interference contrast optics (Nomarsky). Drawings were made using a camera lucida drawing tube. Scanning electron microscope (SEM) observations and photographs were made in SIDI (Servicio Interdepartamental de Investigación) of the Universidad Autónoma de Madrid, Spain.

RESULTS

In this paper, 16 species of Syllidae are reported; 2 new species for the science are described and 3 species are new reports from the Arctic Ocean.

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Table 1. Location, date, number, coordinates, depth and notes of the stations. -, unknown.

Location	Date	Station No.	Coordinates	Depth (m)	Notes
Statfjord	1999	SFEK-8	61°22'37.81"–01°54'28.01"	156	Fine sediment
Gullfaks A	1999	GFA-7	61°10'24.28"–02°10'45.37"	133	Fine sediment
Gullfaks A	2005	GFA-7	61°17.331'–02°17.942'	135	–
Gullfaks B, C	1999	GFB-2	61°11'54.62"–02°12'15.62"	140	Fine sediment
Gullfaks B, C	1999	GFB-3	61°11'40.20"–02°12'33.93"	139	Fine sediment
Gullfaks B, C	1999	GFB-4	61°10'59.44"–02°13'24.31"	139	Fine sediment
Gullfaks B, C	1999	GFB-9	61°12'03.18"–02°11'30.43"	141	Fine sediment
Gullfaks Sat. B	1999	GFLM-12	61°06'20.46"–02°13'21.37"	132	Fine sediment
Gullfaks Sat. B	1999	GFLM-13	61°05'54.13"–02°11'18.30"	134	Fine sediment
Vigdis	1999	VGPT2-15	61°22'36.91"–02°05'41.09"	276	Fine sediment
Vigdis	1999	VGPT1-19	61°24'35.53"–02°05'24.95"	292	Fine sediment
Vigdis	2005	VGPT2-09	61°37.830'–02°10.472'	281	–
Huldra	1999	HU-07	60°51'02.47"–02°37'58.28"	123	Fine sediment
Huldra	1999	HU-13	60°51'26.02"–02°38'46.31"	123	Fine sediment
Alta fjord	2005	SK4	70°20.088'–23°01.500'	151	–
Alta fjord	2005	MO4	70°06.819'–23°13.151'	159	–
Alta kloakk	2005	S2	69°58.786'–23°19.780'	19	–
Alta kloakk	2005	S4	69°57.546'–23°12.747'	26	–
Alta kloakk	2005	S5	69°57.990'–23°14.167'	28	–
Barents Sea (Hopen Bank)	2005	11 05	76°07.1'–23°52.2'	62	–
Barents Sea (Hopen Bank)	2005	12 05	75°55.1'–25°19.2'	111	–
Barents Sea (Hopen Slope)	2005	14 05	75°22.1'–26°37.2'	193	Grabs only. Slope station. Lots of mud, with some pebbles and a few large stones
Barents Sea (East Hopen Trench)	2005	16 05	75°09.3'–28°35.8'	340	Grabs only. Lots of soft mud.
Barents Sea (West Central Banken)	2005	20 05	74°51.2'–33°21.1'	178	Grabs only mixed sand/mud with many pebbles and stones. Lots of fauna
Korsfjord	2006	D2	70°14.03'–23°15.50'	140	–
Korsfjord	2006	D4	70°14.08'–23°19.36'	144	–

SYSTEMATICS

Family SYLLIDAE Grube, 1850

Subfamily EUSYLLINAE Malaquin, 1893

Genus *Eusyllis* Malmgren, 1867*Eusyllis blomstrandii* Malmgren, 1867

Eusyllis blomstrandii Malmgren (1867): 40, pl. 6, figure 43; Fauvel (1923): 293, figure 112 h–m; Imajima (1966): 92, figure 29 a–h; Hartmann-Schröder (1996): 157, figure 68 a–g; San Martín (2003): 112, figure 51 a–f.

MATERIAL EXAMINED

Two specimens (MNCNM 16.01/11218, 11219), Station No. SK4, 1 specimen, Station No. 14-05, 1 specimen, Station No. 20-05, Station No. 11-05.

DISTRIBUTION

Arctic and sub-Arctic; North Atlantic and North Pacific; and Mediterranean Sea.

HABITAT

Common in cold waters and scarce in temperate seas.

Genus *Pionosyllis* Malmgren, 1867*Pionosyllis compacta* Malmgren, 1867

Pionosyllis compacta Malmgren (1867): 40, figure 48; Uschakov (1955): 166, figures 54 I–j; Hartmann-Schröder (1996): 161; San Martín *et al.* (2009): 28, figures 9 & 10.

MATERIAL EXAMINED

Two specimens, Station No. 11-05.

DISTRIBUTION

Arctic (Spitzbergen, Alaska), Bering Sea.

HABITAT

Muddy sediments in low water to 145 m depth.

Genus *Synmerosyllis* San Martín, López & Aguado, 2009*Synmerosyllis lamelligera* (Saint-Joseph, 1887)

Pionosyllis lamelligera Saint-Joseph (1887): 163, pl. 8, figures 30–38; Fauvel (1923): 288, figure 110 a–g; San Martín (2003): 79, figures 30 & 31.

Synmerosyllis lamelligera San Martín *et al.* (2009): 37.

MATERIAL EXAMINED

Two specimens, Station No. GFA-7 (1999) (MNCNM 16.01/11239), 1 specimen, Station No. GFLM-12 (MNCNM 16.01/11237), 1 specimen, HU-07, 1 specimen, HU-13, 2 specimens, Station No. SFEK-8 (MNCNM 16.01/11235, 11236), 1 specimen, Station No. VGPT2-15, 1 specimen, VGPT1-19 (MNCNM 16.01/11238).

DISTRIBUTION

Atlantic European coasts, from France to Cape Verde Islands, Mediterranean Sea, Cuba; Arctic and sub-Arctic.

HABITAT

Algae, kelps, among ascidians, *Posidonia oceanica* beds, calcareous concretions; intertidal to more than 100 m depth.

Genus *Streptodonta* San Martín & Hutchings, 2006

TYPE SPECIES

Opisthodonta pterochaeta Southern, 1914.

DIAGNOSIS

Body long, slender, tapered anteriorly and posteriorly, with numerous segments. Prostomium pentagonal to triangular, with 4 eyes and 2 anterior eyespots. Three antennae. Palps short, fused basally, triangular in shape. Nuchal organs as 2 ciliated grooves between peristomium and prostomium. Two pairs of tentacular cirri. Antennae, tentacular and dorsal cirri elongated, smooth, distally tapered. Ventral cirri triangular. Compound chaetae falcigers and spiniger-like chaetae or only with falcigers. Dorsal simple chaetae present. Ventral simple chaetae present or absent. Aciculae of several anterior parapodia distinctly enlarged. Pharynx and proventricle long, pharyngeal tooth located distally of anterior rim of pharynx to posteriorly. Reproduction by epigamy.

REMARKS

The diagnosis above is a modification of the original in San Martín & Hutchings (2006).

Streptodonta exsulis sp. nov.
(Figures 1–4)

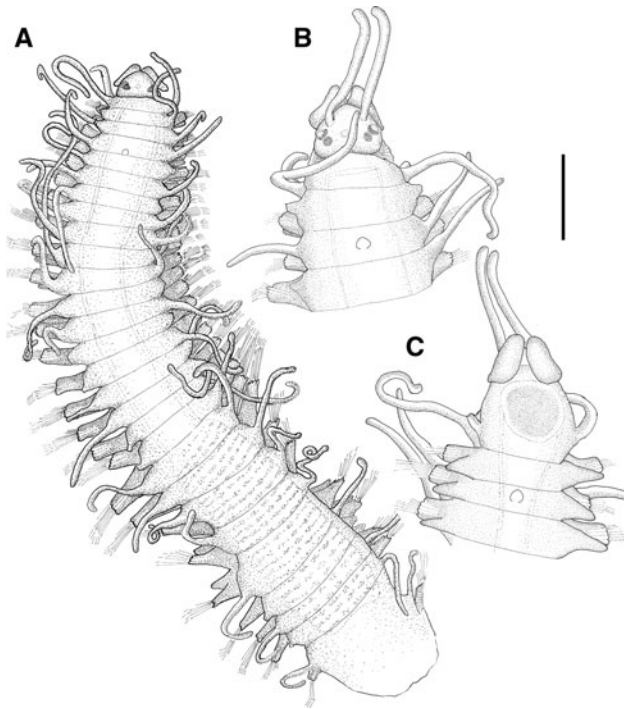


Fig. 1. *Streptodonta exsulis* sp. nov. (A) Anterior part, dorsal view (holotype); (B) anterior end, dorsal view (paratype); (C) anterior end, ventral view (paratype). Scale: A: 0.375 mm, B, C: 0.18 mm.

MATERIAL EXAMINED

Holotype (MNCNM 16.01/11248) and 1 paratype (MNCNM 16.01/11252), Station No. GFB-9, 1 paratype (MNCNM 16.01/11251), Station No. GFA-7 (1999), 1 specimen (MNCNM 16.01/11249), Station No. GFA-7 (2005), 1 paratype, Station No. GFB-2, 1 paratype (MNCNM 16.01/11250), Station No. GFB-4.

DESCRIPTION

Body slender, with numerous segments (Figures 1A, 3A). Holotype incomplete, 4.5 mm long, 1 mm wide, with 27 chaetigers. Prostomium pentagonal to triangular, with 2 pairs of eyes arranged in close trapezoidal pattern. Median antenna inserted in middle of prostomium, lateral antennae in front of anterior eyes (Figure 1B); median antenna detached on all specimens, missing on holotype (Figure 1A), lateral antennae longer than prostomium and palps together. Palps small, triangular, basally fused, shorter than prostomium. Peristomium slightly shorter than following segments; nuchal organs well developed (Figures 1B, 3B). Dorsal tentacular cirri longer than lateral antennae, ventral tentacular cirri shorter than dorsal ones. Dorsal cirri similar in shape to antennae and tentacular cirri, smooth, filiform. Ventral cirri triangular, slightly shorter than parapodial lobes on anterior parapodia (Figure 1C), distinctly shorter than

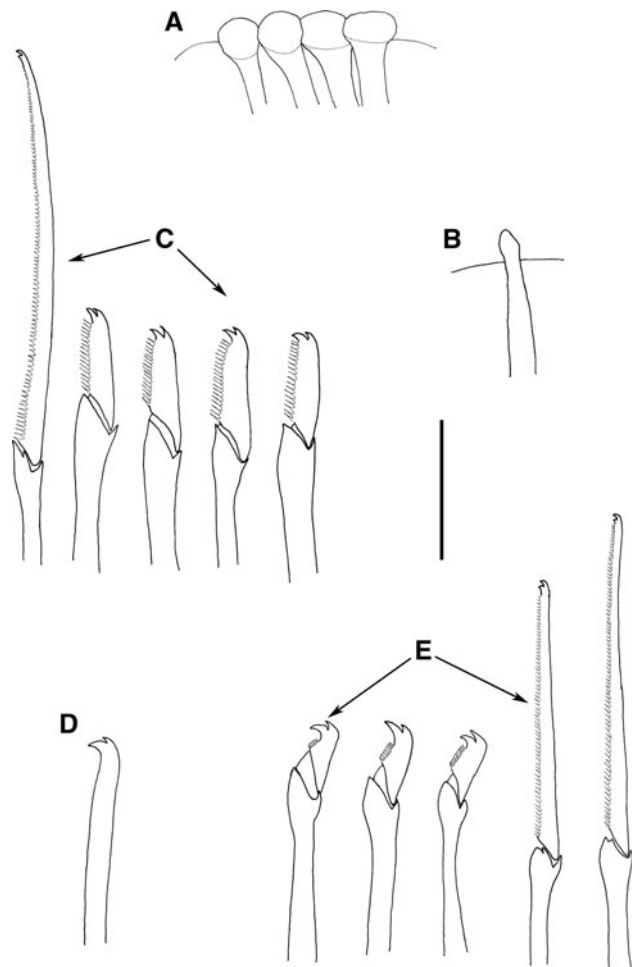


Fig. 2. *Streptodonta exsulis* sp. nov. (A) Aciculae, anterior parapodium; (B) aciculae, posterior parapodium; (C) compound chaetae, anterior parapodium; (D) ventral chaeta; (E) compound chaetae, posterior parapodium. Scale: 20 μ m.

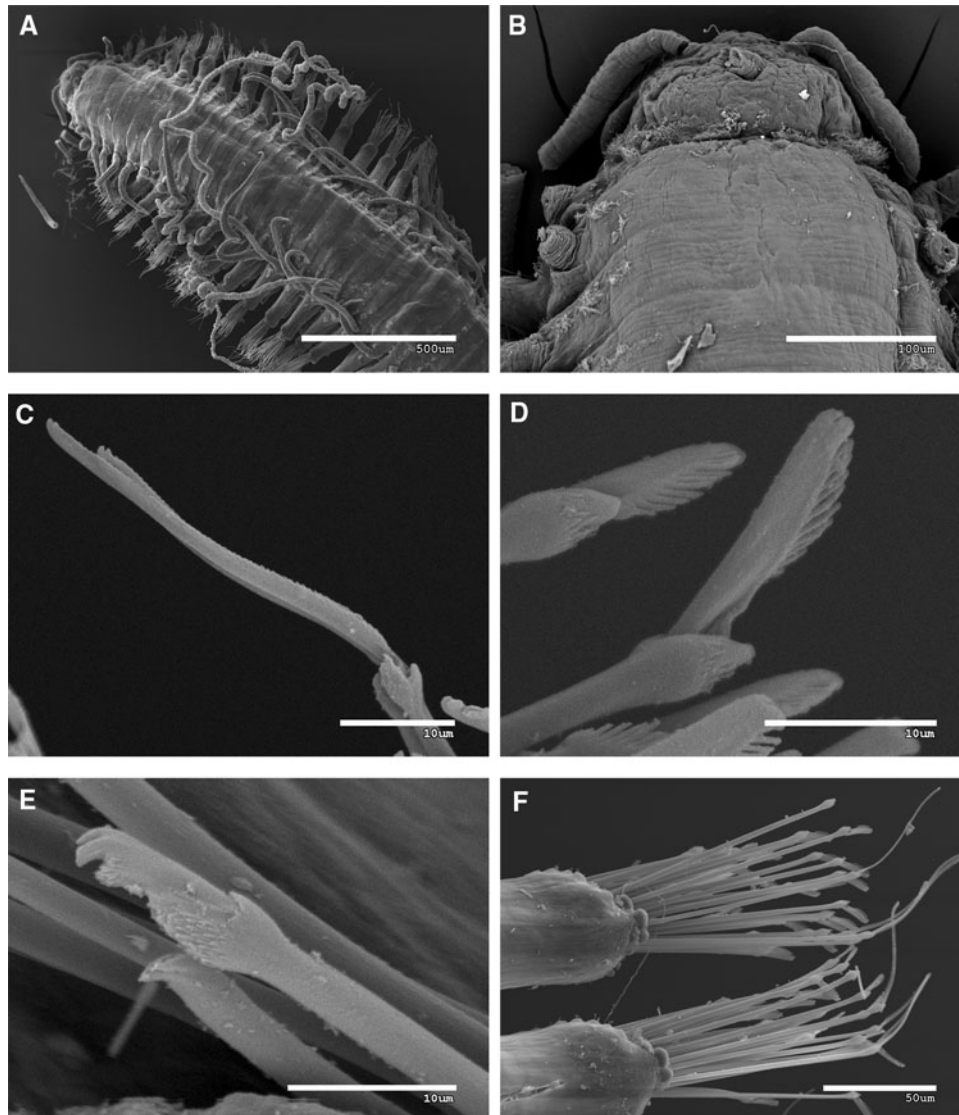


Fig. 3. *Streptodonta exsulis* sp. nov. (A) Anterior part, dorsal view; (B) anterior end, dorsal view; (C) anterior pseudospiniger compound chaeta; (D) anterior falciger compound chaeta; (E) posterior falciger compound chaeta and simple chaeta; (F) anterior chaetigers.

parapodial lobes in posterior region (Figure 4A). Ciliated areas present on dorso-lateral parts of each chaetigers, just above to parapodial lobes (Figure 4B). Compound chaetae with distinctly heterogomph articulation; two types of compound

chaetae, falcigers and pseudospinigers; pseudospinigers numbering about 1–3 per parapodium (Figure 3F); blades indistinctly bidentated (Figures 2C, E, 3C), about 50–56 μm long (Figures 2C, E). Numerous falcigers on anterior

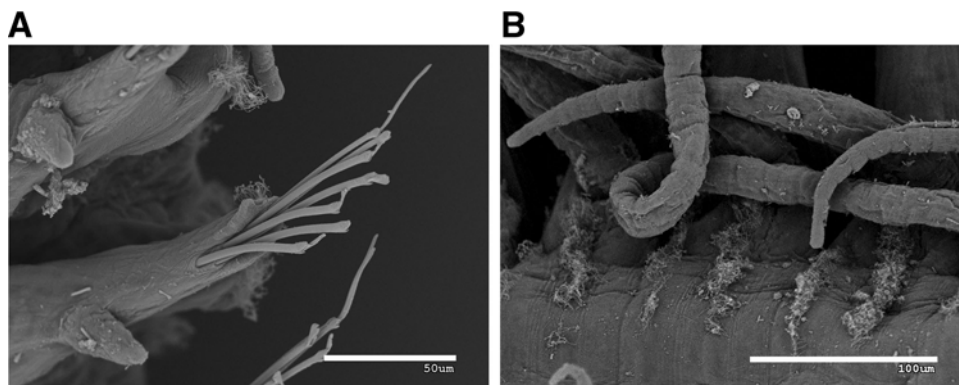


Fig. 4. *Streptodonta exsulis* sp. nov. (A) Ciliated chaetigers; (B) ciliated areas between chaetigers.

parapodia, numbering 15–17 on middle and posterior parapodia; blades of falcigers short, bidentate, with proximal tooth longer than distal one, bending ventrally, especially in posterior segments, measuring about 20 µm on anterior parapodia (Figures 2C, 3D), about 12 µm on posterior parapodia (Figures 2E, 3E); blades of pseudospinigers and falcigers with short spines on cutting edge (Figures 2C, E, 3C–E). Ventral simple chaetae from midbody, bidentate, with proximal tooth longer than distal one and somewhat curved, smooth on margin (Figure 2D). Usually 4 aciculae on each anterior parapodium, thick, distally strongly knobbed, with terminal button (Figure 2A); from segment 24 backwards, acicula solitary, slender, expanded subdistally, somewhat rounded distally (Figure 2B). Pharynx long, through 19–20 segments; pharyngeal tooth small, located medially, relatively close to anterior rim of pharynx (located in about anterior 1/9 of pharyngeal length) (Figure 1A–C). Proventricle through 8–9 segments, with about 29 muscle cell rows (Figure 1A).

REMARKS

Streptodonta exsulis differs from *Streptodonta pterochaeta* (Southern, 1914), the only previously known species of this genus in terms of the morphology of chaetae, in having pseudospinigers (absent in *S. pterochaeta*) and falcigers that are different in anterior and posterior chaetigers (similar in *S. pterochaeta*). *Streptodonta exsulis*, sp. nov. has 4 aciculae in anterior chaetigers (2 in *S. pterochaeta*) and a pharyngeal tooth that is located medially, close to anterior rim of pharynx.

ETYMOLOGY

The specific name comes from the Latin *exsulis* (= exiled), referring to the pharyngeal tooth located differently than the other species of the genus *Streptodonta*.

DISTRIBUTION

Sub-Arctic east North Atlantic Ocean.

HABITAT

Fine sediments. In depths of 133–141 m.

Genus *Syllides* Ørsted, 1845

Syllides longocirrata Ørsted, 1845

Syllides longocirrata Banse (1971): 1470, figure 1;

Hartmann-Schröder (1996): 166, figure 71.

MATERIAL EXAMINED

One specimen, Station No. MO4, 1 specimen, Station No. 11-05.

DISTRIBUTION

Sub-Arctic, North Atlantic, North Pacific, Mediterranean.

HABITAT

Clay, mud, 40–200 m depth.

Subfamily EXOGONINAE Langerhans, 1879

Genus *Exogone* Ørsted, 1845

Exogone naidina Ørsted, 1845

Exogone naidina San Martín (2003): 262, figures 142 & 143.

MATERIAL EXAMINED

One specimen, Station No. GFB-3, 1 specimen, Station No. GFB-9.

DISTRIBUTION

Apparently cosmopolitan.

HABITAT

Any kind of substrate, especially abundant in algae with fine sediment in shallow waters.

Exogone verugeta (Claparède, 1868)

Exogone verugeta San Martín (2003): 271, figures 147 & 148.

MATERIAL EXAMINED

Two specimens, Station No. SFEK-8 (MNCNM 16.01/11243), 2 specimens, Station No. GFB-2, 2 specimens, Station No. GFB-3 (MNCNM 16.01/11240, 11246), 1 specimen, Station No. GFB-4, 5 specimens, Station No. GFB-9 (MNCNM/16.01/11245), 1 specimen, GFML-12 (MNCNM 16.01/1124), 2 specimens, Station No. SK4 (MNCNM 16.01/11241, 11242), 1 specimen, Station No. HU-07, 1 specimen, Station No. 12-05 (MNCNM 16.01/11244).

DISTRIBUTION

Sub-Arctic, North Atlantic, Mediterranean Sea.

HABITAT

Algae, seaweeds, sand, on bryozoans and gorgonians, calcareous concretions.

From intertidal to 1100 m depth.

Genus *Parexogone* Mesnil and Caullery, 1918

Parexogone hebes (Webster & Benedict, 1884)

Exogone (Parexogone) hebes Hartmann-Schröder (1996): 173, figure 74; San Martín (2003): 236, figures 125 & 126.

MATERIAL EXAMINED

One specimen, Station No. GFB-4, 1 specimen, Station No. S5.

DISTRIBUTION

Sub-Arctic, North Atlantic, scarce in the Mediterranean Sea.

HABITAT

Sand, mud, intertidal to sublittoral.

Genus *Sphaerosyllis* Claparède, 1863

Sphaerosyllis bulbosa Southern, 1914

Sphaerosyllis (Sphaerosyllis) bulbosa Hartmann-Schröder (1996): 175.

Sphaerosyllis bulbosa San Martín (2003): 191, figures 98 & 99.

MATERIAL EXAMINED

One specimen, Station No. GFML-12.

DISTRIBUTION

Sub-Arctic, north-east Atlantic, Mediterranean.

HABITAT

Sand and other sediments, intertidal to 70 m.

Sphaerosyllis taylora Perkins, 1981

Sphaerosyllis taylora San Martín (2003): 206, figure 108.

MATERIAL EXAMINED

One specimen, Station No. SFEK-8, 2 specimens, Station No. GFB-9, 1 specimen, Station No. GFLM-12, 1 specimen, Station No. HU-13 (MNCNM 16.01/11220, 11221, 11222).

DISTRIBUTION

North Atlantic; both North America and Europe. Mediterranean Sea.

HABITAT

Sand, especially coarse sand but also on muddy sand. Intertidal to sublittoral.

Genus *Erinaceusyllis* San Martín, 2005

Erinaceusyllis erinaceus (Claparède, 1863), comb. nov.

Sphaerosyllis (Sphaerosyllis) erinaceus Hartmann-Schröder (1996): 175, figure 75.

MATERIAL EXAMINED

Three specimens, Station No. 11-05.

DISTRIBUTION

Sub-Arctic, North Atlantic, North Pacific.

REMARKS

A re-description of this species is currently in preparation.

HABITAT

Algae, among hydrozoans and other sessile invertebrates, sand. Sublittoral.

Subfamily SYLLINAE Grube, 1850

Genus *Syllis* Lamarck, 1818

Syllis armillaris (Müller, 1771)

Syllis (Typosyllis) armillaris Uschakov (1955): 161 (key), figure 51C–G.

Typosyllis (Typosyllis) armillaris Hartmann-Schröder (1996): 152, figure 66.

Typosyllis armillaris Licher (1999): 189, figure 84.

Syllis armillaris San Martín (2003): 423, figures 232 & 233.

MATERIAL EXAMINED

One specimen, Station No. VGPT2-09, 2 specimens, Station No. SK4, 2 specimens, Station No. D2 (MNCNM 16.01/11223).

DISTRIBUTION

Apparently cosmopolitan.

HABITAT

Algae, seaweeds, sediments. Intertidal to sublittoral.

Syllis cornuta Rathke, 1843

Syllis cornuta Rathke (1843): 164, pl. 7, figure 12.

Typosyllis (Ehlersia) cornuta Hartmann-Schröder (1996): 155.

Typosyllis cornuta Licher (1999) (in part): 57, figures 27 & 28.

MATERIAL EXAMINED

One specimen, Station No. 20-05.

DISTRIBUTION

Apparently cosmopolitan.

HABITAT

All kinds of habitats, intertidal to more than 1000 m depth.

Syllis fasciata Malmgren, 1867

Syllis fasciata Malmgren (1867): 161, pl. 8, figure 47, pl. 9, figure 52.

Syllis (Typosyllis) fasciata Uschakov (1955): 162 (key), figures 46B, 51A, B.

Typosyllis fasciata Licher (1999): 241, figure 102.

MATERIAL EXAMINED

One specimen, Station No. SK-4 (MNCNM 16.01/11230), 1 specimen, Station No. S5 (MNCNM 16.01/11232), 10 specimens, Station No. 11-05 (MNCNM 16.01/11231, 11233, 11234), 3 specimens, Station No. 20-05.

DISTRIBUTION

Arctic and sub-Arctic.

HABITAT

Sediment with many pebbles and stones. Sublittoral, at depths ranging from 28 to 178 m.

Syllis heterochaeta Moore, 1909

Syllis (Ehlersia) heterochaeta Moore (1909): 322, pl. 15, figures 1–4.

Syllis (Ehlersia) heterochaeta Uschakov (1955): 161 (key), figure 50B, C.

Typosyllis heterochaeta Licher (1999): 262, figure 109.

MATERIAL EXAMINED

One specimen, Station No. S5.

DISTRIBUTION

North Pacific, from California to sub-Arctic. Mediterranean Sea (Çinar & Ergen, 2002). First report from sub-Arctic North Atlantic.

HABITAT

Sand, mud, among mussels, algae. Intertidal to about 620 m depth.

Syllis oerstedii (Malmgren, 1867)

Chaetosyllis oerstedii Malmgren (1867): 45.

Syllis (Ehlersia) oerstedii Uschakov (1955): 161 (key), figure 50E.

MATERIAL EXAMINED

One specimen, Station No. SK4 (MNCNM 16.01/11224), 1 specimen, Station No. MO4 (MNCNM 16.01/11229), 2 specimens, Station No. S2 (MNCNM 16.01/11225, 11226), 2 specimens, Station No. S4, 2 specimens, Station No. S5 (MNCNM 16.01/11227), 2 specimens, Station No. D4 (MNCNM 16.01/11228).

REMARKS

Our specimens agree with the drawings of *Syllis oerstedii* by Uschakov (1955). However, Licher (1999) considered this species as *nomina dubia*. We consider that this species

might be valid, but further detailed examinations on many more specimens are required for a final decision. A more detailed account and a re-description of this species are currently in preparation, including its habitat and distribution.

Genus *Trypanosyllis* Claparède, 1864

TYPE SPECIES

Syllis zebra Claparède, 1864.

DIAGNOSIS

Body of medium to large size, ribbon-like, strongly dorso-ventrally flattened, with numerous short segments. Dorsum provided with transversal bands of minute spinose papillae (at least some species; only distinct under SEM) or covering all the body (in one species). Prostomium with 4 eyes and 3 antennae. Palps free to each other. Two pairs of tentacular cirri. Antennae, tentacular and dorsal cirri distinctly articulated. Pharynx provided with a trepan, with or without mid-dorsal tooth. Compound chaetae with falcigerous blades; with simple dorsal and ventral capillary chaetae. Pygidium with 2 articulated anal cirri. Reproduction by means of *Tetraglene* stolons.

Trypanosyllis troll, sp. nov.
(Figures 5–8)

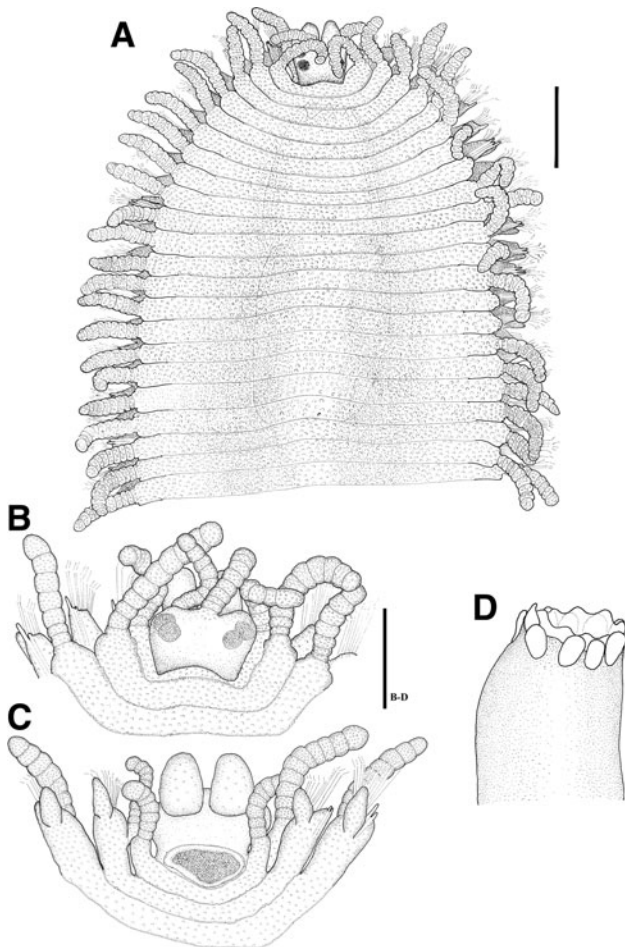


Fig. 5. *Trypanosyllis troll* sp. nov. (A) Anterior part, dorsal view (holotype); (B) anterior end, dorsal view (paratype); (C) anterior end, ventral view (paratype); (D) trepan (paratype). Scale: A: 0.375 mm; B,C,D: 0.18 mm.

MATERIAL EXAMINED

Holotype (MNCNM 16.01/11251), Station No. GFLM-13(MNCNM 16.01/11240, 11246), 1 paratype (MNCNM 16.01/11252), Station No. GFA-7 (2005), 1 paratype (MNCNM 16.01/11253), Station No. GFB-4.

DESCRIPTION

Body long and wide, dorso-ventrally flattened, ribbon-like (Figure 5A). Body covered with scattered minute papillae (Figures 5A–C, 6A, B, 7A–F), some of them arranged forming two rows of papillae on dorsum of each segment (Figure 7A, B, D); papillae densely present on antennae, dorsal cirri, parapodia and dorsum (Figure 7B, C). Largest specimen complete, 6 mm long, 2.5 mm wide, with 65 chaetigers. Prostomium oval, almost circular, with two dorsal lobes or cheeks around eyes, posteriorly bilobed; 4 eyes in close trapezoidal arrangement. Antennae inserted on anterior margin (Figure 5B), shorter than combined length of prostomium and palps; lateral antennae shorter than median antenna, with 9 rounded articles; median antenna with about 9–10 articles, inserted slightly in back to lateral ones. Palps oval, longer than prostomium, completely separated (Figure 5C). Peristomium dorsally reduced, shorter than following segments; dorsal tentacular cirri with 7–8 articles. Dorsal cirri thick, with 7–13 articles, shorter than body width, somewhat

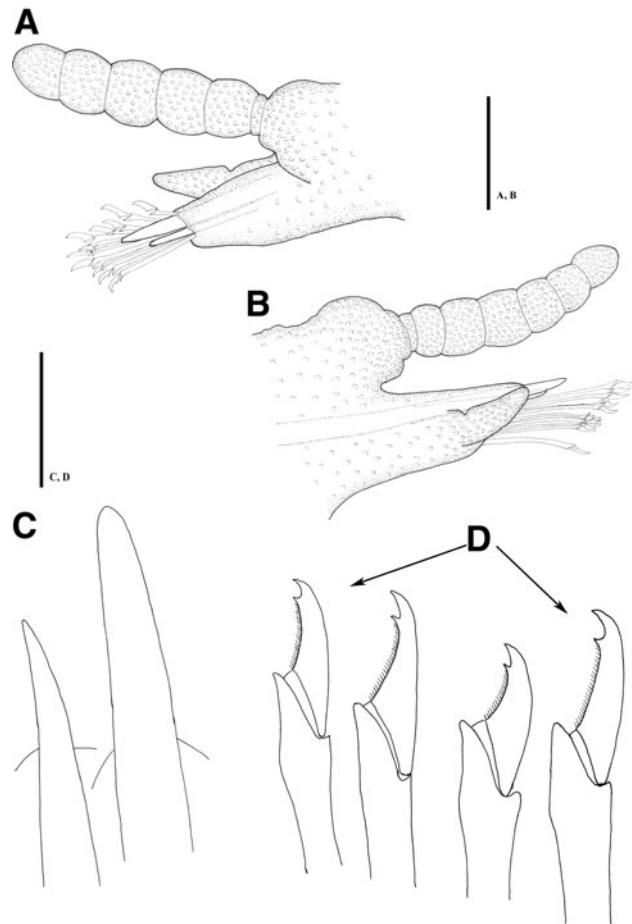


Fig. 6. *Trypanosyllis troll* sp. nov. (A,B) Parapodia, lateral view; (C) aciculae, posterior parapodium; (D) compound chaetae, midbody. Scale: A,B: 92 μ m; C,D: 20 μ m.

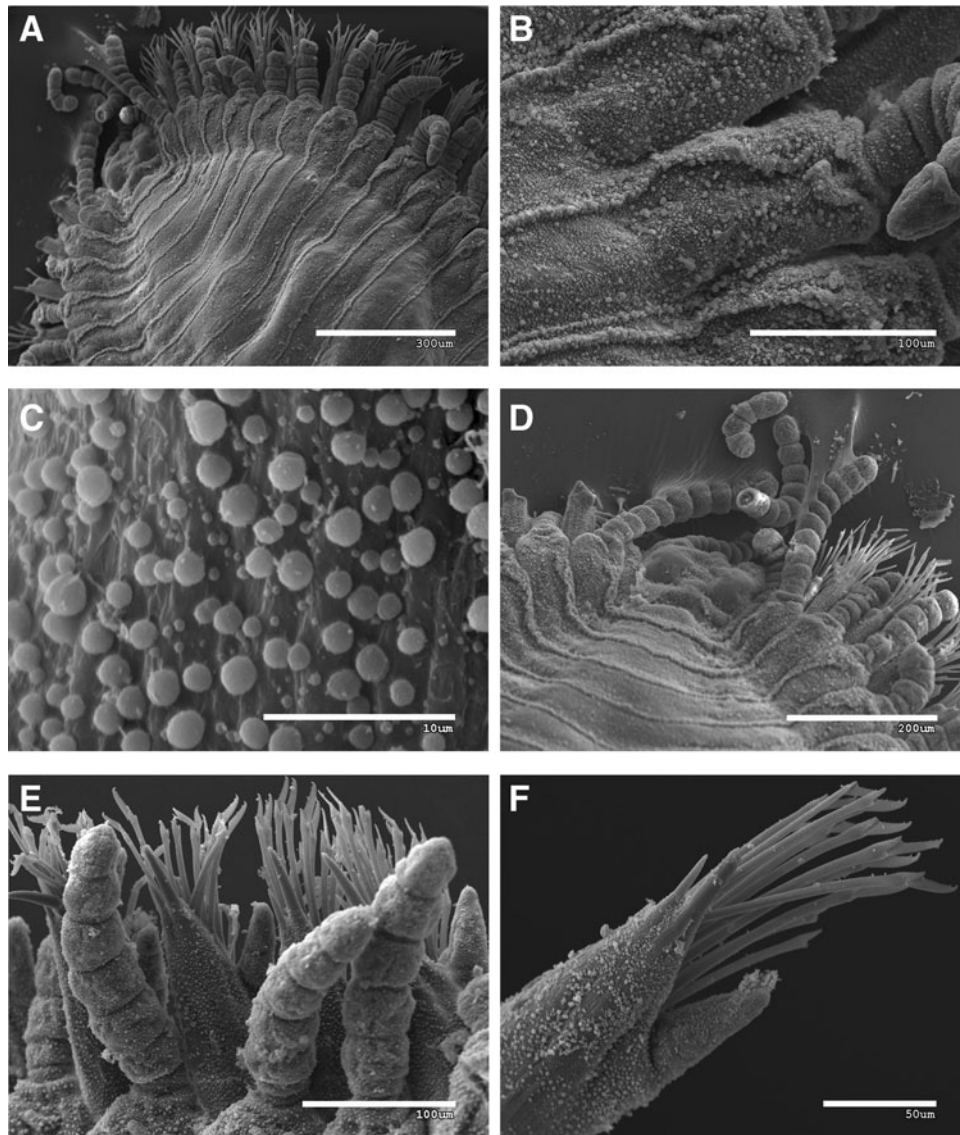


Fig. 7. *Trypanosyllis troll* sp. nov. (A) Anterior part, dorsal view; (B) rows of papillae, dorsal view; (C) papillae; (D) anterior end, dorsal view; (E) dorsal cirri, midbody; (F) aciculae and falcigers, midbody.

enlarged on middle segments, becoming tapered basally and distally (Figure 6A, B); alternating dorsal cirri long and thick with others shorter and slender (Figure 7E). Parapodial lobes distally bilobed. Ventral cirri digitiform, shorter than parapodial lobes (Figure 6A, B), inserted to parapodial lobes

latero-posteriorly (Figure 6A, B). Compound chaetae numerous (Figure 7F), numbering about 17 on midbody parapodia, heterogomph, with almost smooth shafts and short blades; 20–23 μm long, distally acute and curved, bidentate, with proximal tooth minute, and margin with short spines

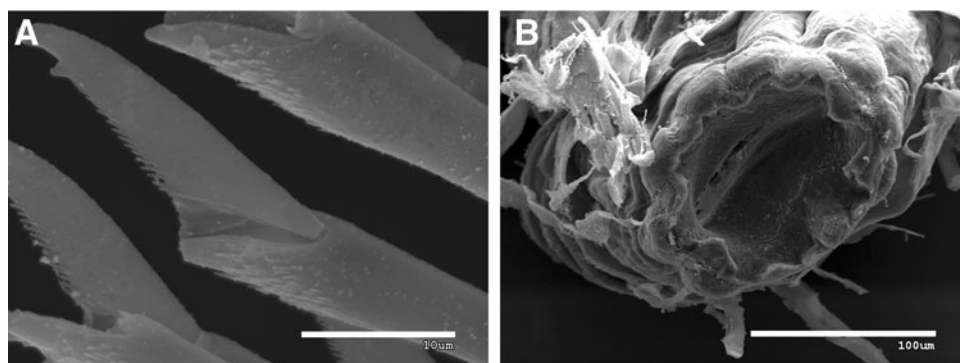


Fig. 8. *Trypanosyllis troll* sp. nov. (A) Compound chaeta, anterior parapodium; (B) trepan.

(Figures 6D, 8A). Anterior parapodia with 2, occasionally 3, straight, acute aciculae, protruding beyond parapodial lobes, one larger and longer than others (Figures 6A–C, 7F). Dorsal and ventral simple chaetae not seen. Pharynx slender and short, through 8–9 segments, with trepan composed of 10 teeth (Figures 5D, 8B), without mid-dorsal tooth. Proventricle similar in size to pharynx, through 9–10 segments, with about 20 muscle cell rows.

REMARKS

This newly described species is similar to *Trypanosyllis rosea* (Grube, 1863) described by Hartmann-Schröder (1979), especially in the morphology of chaetae, the protruding of aciculae and the dense papillae covering body surface. Hartmann-Schröder (1979) probably made some mistakes about this identification. The most important one is that Grube (1863) described a breeding stolon as *Tetraglene rosea*, which does not represent any characteristic features belonging to her specimens. Other authors considered that *T. rosea* corresponds to the reproductive stage of some other species, likely *T. coeliaca*. According to Çinar (2007), no other species of *Trypanosyllis* has such a dense dermal papillation covering the body surface, although detailed observations under SEM of some species reveals transversal rows of minute papillae on dorsum of some segments (San Martín, 2003). Likely, both the Hartmann-Schröder specimen from the Atlantic and ours from Norway could be the same species, but not *Trypanosyllis rosea*. Campoy (1982) reported with doubts *Trypanosyllis rosea* from the Spanish Mediterranean, but he did not find the characteristic epidermal papillae, so this report is considered as doubtful, and probably referred to another species.

ETYMOLOGY

The specific name is given because the scattered minute papillae give it an ugly appearance that could remind us of the *Trolls*, strange beings of Viking mythology.

HABITAT

Fine sediments. In depths of 134–139 m.

DISTRIBUTION

East North Atlantic Ocean (Norway).

Subfamily AUTOLYTINAE Langerhans, 1879

Genus *Myrianida* Milne-Edwards, 1845
Myrianida inermis (Saint-Joseph, 1887)

Myrianida inermis Nygren (2004): 135, figures 65A–E.

MATERIAL EXAMINED

One specimen, Station No. GFB-9.

DISTRIBUTION

North-east Atlantic, north-east Pacific.

HABITAT

On hydroids, bryozoans and tunicates; sublittoral (Nygren, 2004).

Myrianida langerhansi (Gidholm, 1967)

Myrianida langerhansi Nygren (2004): 140, figures 68A–E.

MATERIAL EXAMINED

Five specimens, Station No. 11-05.

DISTRIBUTION

North-east Atlantic, Mediterranean.

HABITAT

On hydroids, bryozoans and tunicates; from low intertidal to sublittoral (Nygren, 2004).

Genus *Proceraea* Ehlers, 1864
Proceraea cornuta (Agassiz, 1862)

Proceraea cornuta Nygren (2004): 47, figures 9A–C.

MATERIAL EXAMINED

Two specimens, Station No. 11-05.

DISTRIBUTION

North Atlantic and North Pacific.

HABITAT

Amongst algae with bryozoans; shallow waters (up to 20 m depth).

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REFERENCES

- Annenkova N.** (1934) Kurze übersicht der Polychaeten der Litoralzone der Bering-Insel (Kommandor-Inseln), nebst Beschreibung neuer Arten. *Zoologischer Anzeiger* 106, 322–331.
- Banse K.** (1971) A new species, and additions to the descriptions of six other species of *Syllides* Örsted (Syllidae: Polychaeta). *Journal of the Fisheries Research Board of Canada* 28, 1469–1481.
- Buzhinskaja G.N.** (1980) Some new data on the fauna of Polychaeta of the Sea of Japan and the Okhotsk Sea. *Zoological Zhurnal of the Academy of Sciences of the USSR* 25, 42–56. [In Russian.]
- Campoy A.** (1982). *Fauna de España. Fauna de Anélidos Poliquetos de la Península Ibérica*. Pamplona: EUNSA (Ediciones de la Universidad de Navarra, S. A.), serie biológica, 781 pp.
- Chamberlin R.** (1920) *Canadian Arctic Expedition 1913–18. Volume IX, B. Polychaeta*. Ottawa: Printed to the King's Most Excellent Majesty, 41 pp.
- Çinar M.E.** (2007) A new species of *Trypanosyllis* (Polychaeta: Syllidae) from the Levantine coast of Turkey (eastern Mediterranean). *Journal of the Marine Biological Association of the United Kingdom* 87, 451–457.

- Çinar M.E. and Ergen Z.** (2002) Faunistic analysis of Syllidae (Annelida: Polychaeta) from the Aegean Sea. *Cahiers de Biologie Marine* 43, 171–178.
- Fauvel P.** (1911) *Campagne arctique de 1907. Annélides Polychètes*. Bruxelles: Imprimerie scientifique Charles BULENS, Editeur, 45 pp.
- Fauvel P.** (1923). *Polychètes Errantes. Faune de France* 5. Paris: Le Chevalier Ed, 488 pp.
- Grainger E.H.** (1954) Polychaetous annelids of Ungava Bay, Hudson Strait, Frobisher Bay and Cumberland Sound. *Journal of the Fisheries Research Board of Canada* 11, 507–528.
- Grube A.E.** (1863). Beschreibung neuer oder wenig bekannter Anneliden. *Archiv für Naturgeschichte* 29, 37–69.
- Hartmann-Schröder G.** (1979) Die Polychaeten der 'Atlantischen Kuppenfahrt' von F.S. 'Meteor' (Fahrt 9c, 1967). 'Meteor' *Forschunge Ergebnisse* 31, 63–90.
- Hartmann-Schröder G.** (1996) *Annelida, Borstenwürmer. Polychaeta*. Jena: Die Tierwelt Deutschlands 58, Gustav Fischer Verlag, 648 pp.
- Imajima M.** (1966) The Syllidae (Polychaetous Annelids) from Japan. III. Eusyllinae. *Publications of the Seto Marine Biological Laboratory* 14, 85–116.
- Licher F.** (1999) Revision der Gattung *Typosyllis* Langerhans, 1879 (Polychaeta: Syllidae). Morphologie, Taxonomie und Phylogenie. *Abhandlungen Der Senckenbergischen Naturforschendend Gessellschaft* 551, 1–336.
- Malmgren A.J.** (1867) Annulata Polychaeta. Spetsbergiae, Groenlandiae, Islandiae et Scandinaviae. *Öfversigt af Konglia Vetenskaps-Akademiens Förhandlingar* 24, 127–135.
- Moore P.** (1909) The Polychaetous Annelids dredged by the U. S. S. 'Albatross' off the coast of Southern California in 1904. I. Syllidae, Sphaerodoriidae, Hesionidae and Phyllococidae. *Proceedings of the Academy of Natural Sciences of Philadelphia* 61, 321–351.
- Nygren A.** (2004) Revision of Autolytinae (Syllidae: Polychaeta). *Zootaxa* 680, 1–314.
- Pettibone M.H.** (1954) Marine polychaete works from Point Barrow, Alaska, with additional records from the North Atlantic and North Pacific. *Proceedings of the United States National Museum* 105, 203–356.
- Rathke H.** (1843) Beiträge zur Fauna Norwegens. *Verhandlungen der Kaiserlichen Leopoldisch-Carolinischen Akademie der Naturforscher* 20, 1–264.
- Saemundsson B.** (1918) Bidrag til Kundskaben om Islands polychaete Borsteorme (*Annulata polychaeta Islandiae*). *Videnskabelige Meddelelser fra den naturhistorisk Forening I København* 69, 165–241.
- Saint-Joseph Baron de** (1887) Les Annélides Polychètes des côtes de Dinard. Première partie. *Annales des Sciences Naturelles* 1, 127–270.
- San Martín G.** (2003) Annelida, Polychaeta II: *Syllidae*. In Ramos M., Alba J., Bellés X., Gosálbez J., Guerra Á, Macpherson E., Martín F., Serrano J. and Templado J. (eds) *Fauna Ibérica*, Volume 21. Madrid: Museo Nacional de Ciencias Naturales, 554 pp.
- San Martín G. and Hutchings P.** (2006) Eusyllinae (Polychaeta: Syllidae) fromm Australia with the description of a new genus and fifteen new species. *Records of the Australian Museum* 58, 257–370.
- San Martín G., López E. and Aguado M.T.** (2009) Revision of the genus *Pionosyllis* Malmgren, 1867, with a cladistic analysis, and the description of six new genera and two new species. *Journal of the Marine Biological Association of the United Kingdom* 89, 1–44.
- Ushakov P.V.** (1955) *Polychaeta of the Far Eastern seas of the USSR*. Moscow–Leningrad Zoological Academy of Sciences USSR 56, 445 pp.
- Wesenberg-Lund E.** (1947) Syllidae (Polychaeta) from Greenland waters. *Meddelelser om Grønland* 134, 1–38.
- Wesenberg-Lund E.** (1950a) *The Danish Ingolf-Expedition. Polychaeta*. 4 (14). Copenhagen, 92 pp.
- Wesenberg-Lund E.** (1950b) *The Polychaeta of West Greenland*. København: C.A. Reitzels Forlag, 171 pp.
- Wesenberg-Lund E.** (1951) *The zoology of Iceland. Volume II, part 19*. Copenhagen and Reykjavik: Ejnar Munksgaard, 182 pp.
- and
- Wesenberg-Lund E.** (1953). Polychaeta. The zoology of East Greenland. *Meddelelser om Grønland* 122, 1–169.

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