

***Pionosyllis maxima* Monro, 1930, *P. anops* Hartman, 1953, and
P. epipharynx Hartman, 1953, redescribed as *Eusyllis maxima*
(Monro, 1930), a new combination
(Polychaeta: Syllidae: Eusyllinae)**

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Abstract.—Three Antarctic species of *Pionosyllis* Malmgren, 1867 (Polychaeta: Syllidae: Eusyllinae) including *P. maxima* Monro, 1930; *P. anops* Hartman, 1953, and *P. epipharynx* Hartman, 1953, are synonymous. They are redescribed and referred to *Eusyllis maxima* (Monro, 1930), new combination, based on morphological characters, most notably the presence of an incomplete crown of denticles on the opening of the pharynx.

We have recently begun a revision of the genus *Pionosyllis* Malmgren, 1867, and are currently examining all available types to redescribe poorly known species (Jiménez et al. 1994). Examination of *P. maxima* Monro, 1930, *P. anops* Hartman, 1953, and *P. epipharynx* Hartman, 1953, types from South Georgia reveals that they have identical parapodia, aciculae, compound setae and characteristic pharynges. All species are considered to be synonymous, and are referred below to *Eusyllis* Malmgren, 1867, because the rim of eversible pharynx is denticulated. *Pionosyllis epipharynx* and *P. anops* are considered the junior synonyms of *P. maxima*: the latter is redescribed as *Eusyllis maxima* (Monro, 1930) new combination.

All the material examined is preserved specimens or fragments provided by The Natural History Museum (BMNH), London, and the Swedish Museum of Natural History (SMNH), Stockholm. The origins of these specimens are detailed under material examined.

The specimens were examined using a stereomicroscope and a compound microscope provided with differential interference contrast optics (Nomarsky). Drawings

were made by means of a camera lucida drawing tube, using the stereomicroscope for the complete specimens and the compound microscope for the parapodia and setae. Body width measurements were taken across the proventriculus, and exclude parapodia or cirri; body length measurements exclude antennae, palps and anal cirri.

Taxonomy

Family Syllidae Grube, 1850
Subfamily Eusyllinae Rioja, 1925
Genus *Eusyllis* Malmgren, 1867
Eusyllis maxima (Monro, 1930),
new combination
Figs. 1, 2

Pionosyllis maxima Monro, 1930: 92, fig. 29; Hartman 1964: 87, pl. 27, figs. 3–5; Hartmann-Schröder & Rosenfeldt 1988: 39.

Pionosyllis anops Hartman, 1953: 24, fig. 6 a–c; 1964: 85, pl. 26, figs. 5–6.

Pionosyllis epipharynx Hartman, 1953: 23, figs. 3–4; 1964: 87, pl. 27, figs. 3–5; 1967: 58.

Material examined.—South Georgia: 2.7 miles S, 85°E of Jason Light, 238–270

m, grey mud, st. 45, 6 April 1926 (3 specimens, syntypes of *P. maxima*, BMNH 1930.10.8.319–20); Swedish Antarctic Expedition 1901–1903, Cumberland Bay, 252–310 m, grey mud with few stones, st. 34 (syntypes of *P. epipharynx*, SMNH 611, 7 spec. and SMNH 622, 2 spec.); mouth of Westfjord, 54°15'S, 36°25'W, 250 m, st. 18 (as *P. epipharynx*, SMNH 3050, 1 spec.); May Bay, intertidal algae (syntypes of *P. anops*, SMNH 607, 2 spec. and as *P. epipharynx*, SMNH 3045, 1 ant. end); Grytviken, algae (as *P. epipharynx*, SMNH 3044, 1 spec.); Antarctic Bay, 54°12'S, 36°50'W, 250 m, stones, st. 20 (as *P. epipharynx*, SMNH 3032, 3 ant. ends). All examined specimens were fragmented, except SMNH 607.

Description.—Body long, thick, massive, opaque, subcylindrical anteriorly, arched dorsally, flattened ventrally, with well defined segments (Fig. 1A, B). Only one complete specimen: 9.5 mm long, 0.8 mm wide with 52 setigers (*P. anops*, SMNH 607); largest anterior end fragment 15 mm long with 50 setigers. Dorsum with a broad, transverse reddish brown band on anterior part of each segment surrounded by a narrow pale area posteriorly and laterally, giving an overall impression of alternating dark and light transverse stripes (Fig. 1A), sometimes faded and without color in several specimens. Prostomium slightly wider than long, occipital cleft small, usually covered by dorsal flap of first setiger; four lensed eyes in almost rectangular arrangement, anterior pair slightly larger than posterior one. Median antenna arising from middle of prostomium; lateral antennae arising anterior to anterior pair of eyes, somewhat shorter than median antenna. Antennae cylindrical, smooth generally missing or broken. Palps broad, fused basally, divergent, as long as prostomium (Fig. 1A, B). Peristomial ring strongly reduced dorsally, covered by flap from first setiger; dorsal tentacular cirri somewhat longer than body width, ventral tentacular cirri $\frac{2}{3}$ shorter. Antennae, ten-

tacular and dorsal cirri similar in shape, cylindrical, ending in conical tip (Fig. 1C), sometimes coiled over dorsum (Fig. 1A), slender, smooth, somewhat wrinkled distally. Dorsal cirri about two times longer than body width, alternating with shorter cirri, about as long as body width (Fig. 1A) arising from massive cirrophores. Ventral cirri thick, rounded not extending beyond parapodial lobes. Parapodial lobes with a postsetal papilla and a smaller presetal papilla (Fig. 1C, D). Compound setae heterogomph falcigers, numerous, 80–100 per anterior parapodia, progressively decreasing to about ten posteriorly; distal superior surface of shafts spinous, with three or four rows of spines (Fig. 2B, E). Compound setae of anterior parapodia (Fig. 2B) with marked dorso-ventral gradation in shape; dorsal blades bidentate, distal tooth falcate and increasing in size ventrally; ventral blades unidentate, distal tooth with an inconspicuous furrow on the edge; blades about 38 μ m dorsally, 24 μ m ventrally. Posterior setigers provided only with unidentate blades (Fig. 2E), distally curved, falcate; blades on posterior setigers 28 μ m dorsally, 20 μ m ventrally; spines on edge of blades short, upwardly directed. Anterior parapodia each with two or three aciculae, slightly curved distally, with blunt tips (Fig. 2C); posterior parapodia each with one or two aciculae of the same type (Fig. 2F). Solitary dorsal simple seta present from setiger 39 (only found in *P. anops*, SMNH 607), indistinctly bidentate, slender, somewhat curved, finely serrated distally on inferior cutting surface (Fig. 2D). Ventral simple setae not seen. Notoetae and notoaciculae present from setiger 19. Pygidium with paired ventrolateral anal cirri, smooth as long as the last five segments. Pharynx extending through five to ten setigers, with a distal circlet of ten soft papillae surrounding opening and an incomplete crown of about 28 chitinous denticles on the rim; anterior pharyngeal tooth conical with enlarged base (Fig. 2A). Proventriculus barrel-shaped, extending

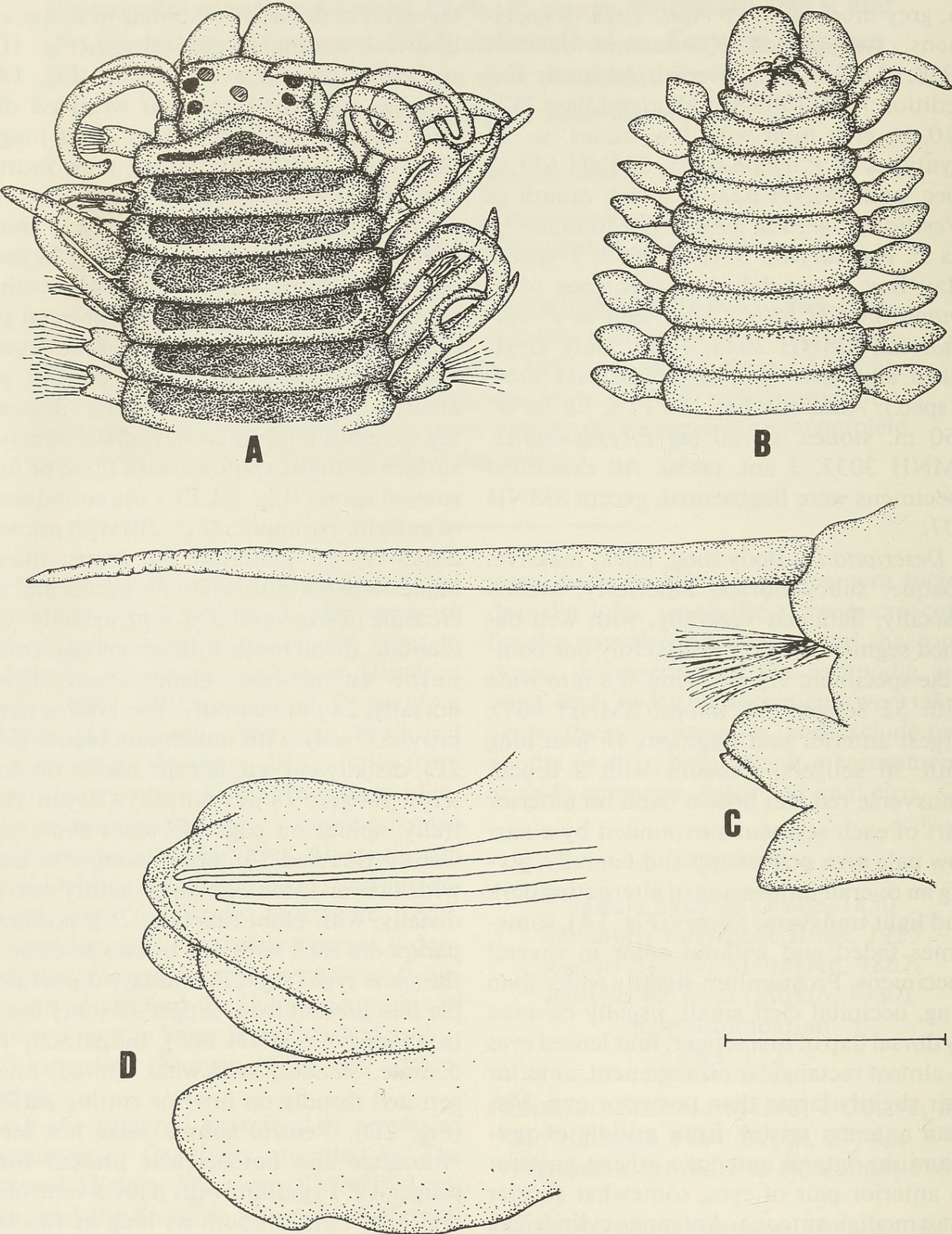


Fig. 1. *Eusyllis maxima* (Monro, 1930) n. comb.: A. anterior end, dorsal view, B. anterior end, ventral view (A, B: *P. maxima*, BMNH 1930.10.8.319–20), C. midbody parapodium, posterior view showing notosetae (neurosetae not drawn) (*P. epipharynx*, SMNH 3044), D. anterior parapodium, posterior view (*P. maxima*, BMNH 1930.10.8.319–20). Scale: A, B: 0.6 mm; C: 0.25 mm; D: 0.2 mm.

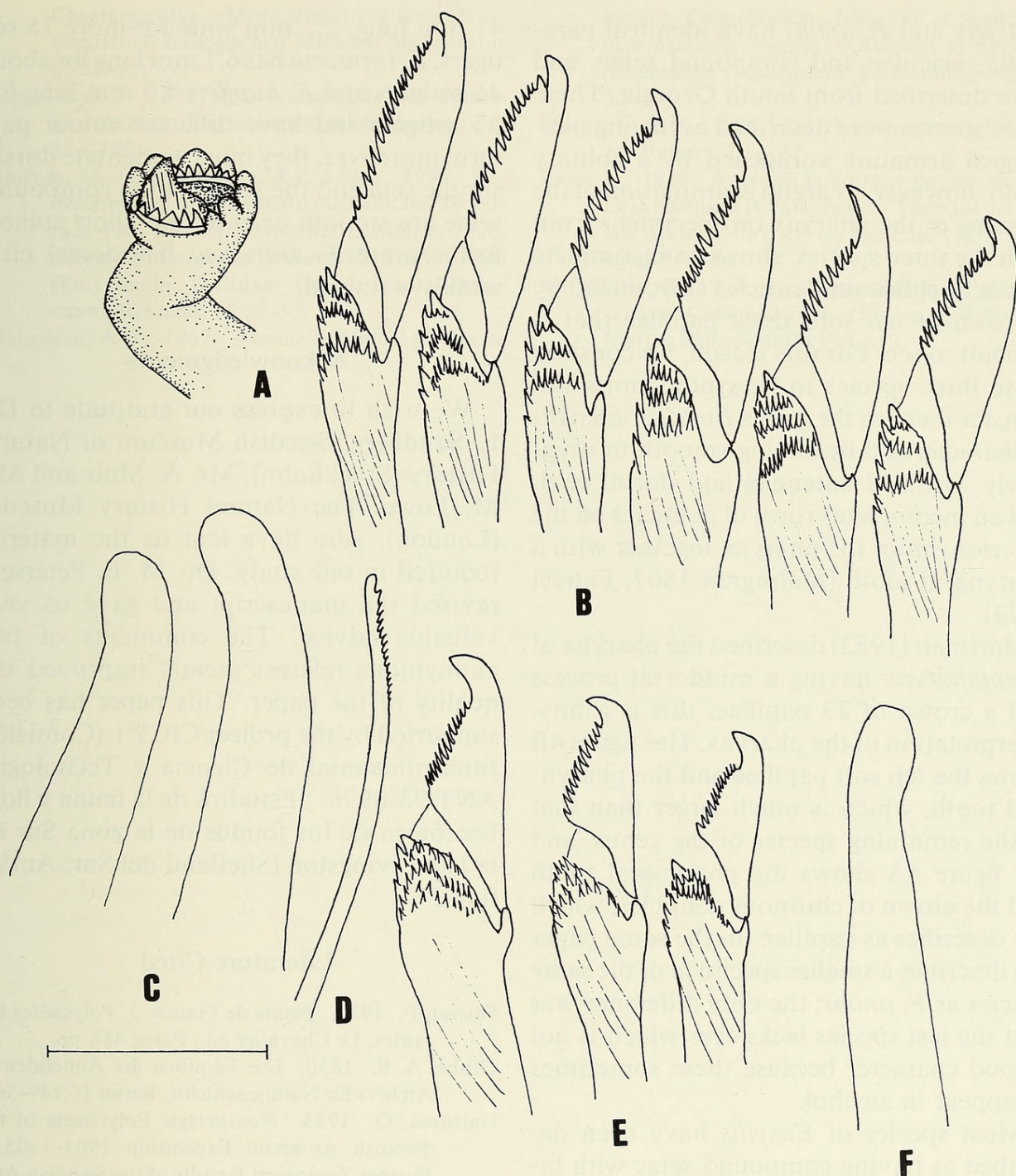


Fig. 2. *Eusyllis maxima* (Monro, 1930) n. comb.: A. pharynx (*P. epipharynx*, SMNH 611), B. dorsal, median and ventral compound setae, anterior parapodium, C. aciculae, anterior parapodium (B, C: *P. maxima*, BMNH 1930.10.8.319–20), D. dorsal simple seta (*P. anops*, SMNH 607), E. dorsal, median and ventral compound setae, posterior parapodium, F. acicula, posterior parapodium (E, F: *P. maxima*, BMNH 1930.10.8.319–20). Scale: A: 0.8 mm; B–F: 20 μ m.

through four to ten setigers, with about 120 muscle cell rows.

Type locality. — East of Jason Light, South Georgia, 238–270 m.

Distribution. — South Georgia: East of Jason Light, May Bay, Cumberland Bay, and

nearby localities; Antarctic; Southern Argentina.

Ecology. — Intertidal with algae to 900 m depth (Hartmann-Schröder & Rosenfeldt 1988, as *P. maxima*) in grey mud.

Remarks. — *Pionosyllis maxima*, *P. epi-*

pharynx and *P. anops* have identical parapodia, aciculae and compound setae, and were described from South Georgia. These three species were described as having pharyngeal armature composed by a solitary tooth; however, a careful examination of the opening of the pharynx on specimens from each the three species, shows an incomplete crown of chitinous denticles surrounded by a crown of ten soft, thick papillae that is difficult to see. For this reason, we consider these three species to be synonymous and transfer them to the genus *Eusyllis*. *Eusyllis* is characterized by having smooth to irregularly wrinkled antennae and dorsal cirri, and an incomplete crown of denticles on the anterior rim of the pharynx together with a pharyngeal tooth (Malmgren 1867, Fauvel 1923).

Hartman (1953) described the pharynx of *P. epipharynx* having a middorsal process and a crown of 23 papillae; this is a misinterpretation of the pharynx. Her figure 4B shows the ten soft papillae and the pharyngeal tooth, which is much larger than that of the remaining species of the genus, and her figure 4A shows the pharyngeal tooth and the crown of chitinous denticles, which she describes as papillae. In the same paper she describes a smaller specimen of the same species as *P. anops*; the only difference was that the last species lacks eyes which is not a good character because these sometimes disappear in alcohol.

Most species of *Eusyllis* have been described as having compound setae with bidentate blades, but *E. maxima* has compound setae falcate and unidentate, except the dorsalmost setae of anterior parapodia; *E. maxima* is close both to *E. kupfferi* Langerhans, 1879 (Langerhans 1879, San Martín 1990) from Madeira, Cuba and Canary Islands and *E. transecta* Hartman, 1966 (Hartman 1969) from California, in having a large pharyngeal tooth and unidentate compound setae. However, these two species are much smaller. Hartman (1953) reported the maximum size for *P. epipharynx*

41 mm long, 2.2 mm wide for more 75 setigers; *E. transecta* has 6.1 mm long for about 46 setigers and *E. kupfferi* 4.5 mm long for 35 setigers and have different colour pattern; moreover, they have unidentate dorsal simple seta and the shafts of the compound setae are smooth or with few, short spines; furthermore *E. transecta* has dorsal cirri weakly wrinkled.

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Literature Cited

- Fauvel, P. 1923. Faune de France. 5. Polychètes Errantes. Le Chevalier ed., Paris, 486 pp.
- Grube, A. E. 1850. Die Familien der Anneliden. — Archivs für Naturgeschichte, Berlin 16:249–364.
- Hartman, O. 1953. Non-pelagic Polychaeta of the Swedish Antarctic Expedition 1901–1903. — Further Zoological Results of the Swedish Antarctic Expedition 4(11):1–83.
- . 1964. Polychaeta Errantia of Antarctica. — Antarctic Research Series 3:1–131. American Geophysical Union Publ. No. 1226.
- . 1967. Polychaetous annelids collected by the USNS Eltanin and Staten Island Cruises, chiefly from Antarctic Seas. — Allan Hancock Monographs in Marine Biology 2:1–387.
- . 1969. Atlas of the errantiate and sedontanate polychaetous annelids from California. — Allan Hancock Foundation, Los Angeles, California.
- Hartmann-Schröder, G., & P. Rosenfeldt. 1988. Die Polychaeten der "Polarstern"-Reise ANT III/2 in die Antarktis 1984. Teil 1: Euphrosinidae bis

- Chaetopteridae.—Mitteilungen aus dem Hamburgischen zoologischen Museum und Institut 85:25–72.
- Langerhans, P. 1879. Die Würmfauna von Madeira.—Zeitschrift für wissenschaftliche Zoologie 32: 513–592.
- Jiménez, M., G. San Martín, & E. López. 1994. Redescriptions of *Pionosyllis neapolitana* Goodrich, 1900 and *Pionosyllis nutrix* Monro, 1936, referred to the genus *Grubeosyllis* Verrill, 1900 (Polychaeta, Syllidae, Exogoninae).—Polychaete Research 16:52–55.
- Malmgren, A. J. 1867. Annulata Polychaeta Spetsbergiae, Groenlandiae, Islandiae et Scandinaviae hactenus cognita.—Ofversigt af Svenska Vetenskaps Academiens Förhandlingar 24:1–127.
- Monro, C. C. A. 1930. Polychaete worms.—Discovery Reports 2:1–122.
- Rioja, E. 1925. Anélidos poliquetos de San Vicente de la Barquera (Cantábrico).—Trabajos del Museo Nacional de Ciencias Naturales. Serie Zoológica 53:1–62.
- San Martín, G. 1990. Eusyllinae (Syllidae, Polychaeta) from Cuba and Gulf of Mexico.—Bulletin of Marine Science 46(3):590–619.



Jiménez, Maria, San Martín, Guillermo, and López, E. 1995. "Pionosyllis Maxima Monro, 1930, P. Anops Hartman, 1953, And P. Epipharynx Hartman, 1953, Redescribed As Eusyllis Maxima (Monro, 1930), A New Combination (Polychaeta: Syllidae: Eusyllinae)." *Proceedings of the Biological Society of Washington* 108, 496–501.

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