

Revision of *Synelmis* Chamberlin, 1919 (Annelida, Polychaeta, Pilargidae)

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ABSTRACT

The genus *Synelmis* Chamberlin, 1919 has included only three recognized species: *S. dineti* Katzmann, Laubier & Ramos, 1974, *S. albini* (Langerhans, 1881) and *S. sinica* Sun & Chen, 1990. The first one was described from the Mediterranean Sea and later recorded from Japan, the second has been described from the Canary Islands and is regarded as cosmopolitan, and the third is apparently restricted to China. Examination of specimens collected worldwide has resulted in the restriction of *S. albini*, re-assignment of *S. simplex* Chamberlin, 1919 as a junior synonym of *S. rigida* (Fauvel, 1919) n. comb., the transfer of *S. dineti* to the genus *Pseudexogone* Augener, 1922, re-instatement of two species, and the description of nine new species. Thus, *Synelmis* now includes 15 species: *S. albini* from the eastern Atlantic Ocean, *S. amoureuxi* n. sp. from the Lesser Antilles and northern Brazil, *S. britayevi* n. sp. from the Mozambique Channel, *S. emiliae* n. sp. from the Gulf of California to Costa Rica, *S. gibbsi* n. sp. from the Red Sea to Papua New Guinea and Vietnam, *S. glasbyi* n. sp. from the Mozambique Channel, *S. gorgonensis* (Monro, 1933) n. comb. from western Colombia, Galapagos, and Chile, *S. gracilis* (Hessle, 1924) from Japan, *S. harrisae* n. sp. from California, *S. kirkegaardi* n. sp. from the eastern Atlantic Ocean, *S. knoxi* Glasby, 2003, from New Zealand, *S. levinae* n. sp. from submarine mountains in the Pacific Ocean, *S. rigida* n. comb. from the Red Sea to the Tuamotou Archipelago, *S. sinica* from China, and *S. sotoi* n. sp. from the Caribbean Sea and northern Brazil. One record of *Synelmis* cf. *albini* from the northern Gulf of Mexico might be an undescribed species but more and better specimens are needed to clarify its position. A key is provided for all described species.

KEY WORDS

Annelida,
Polychaeta,
Pilargidae,
Synelmis,
Pseudexogone,
Atlantic Ocean,
Indian Ocean,
Pacific Ocean,
revision,
new species.

RÉSUMÉ

Révision de Synelmis Chamberlin, 1919 (Annelida, Polychaeta, Pilargidae).
Le genre *Synelmis* Chamberlin, 1919 a inclus seulement trois espèces : *S. dineti* Katzmann, Laubier & Ramos, 1974, *S. albini* (Langerhans, 1881) et *S. sinica* Sun & Chen, 1990. La première a été décrite de la mer Méditerranée et a été ensuite signalée du Japon, la deuxième a été décrite des îles Canaries et elle est considérée comme cosmopolite, et la troisième est apparemment limitée à la Chine. Après examen des spécimens du monde entier, les conclusions principales sont que *S. albini* est redéfini, *S. simplex* Chamberlin, 1919 est synonyme de *S. rigida* (Fauvel, 1919) n. comb., *S. dineti* doit être transféré dans le genre *Pseudexogone* Augener, 1922, deux autres espèces sont retenues, et neuf autres sont décrites. Le genre *Synelmis* contient désormais 15 espèces : *S. albini* de l'Atlantique oriental, *S. amoureuxi* n. sp. des Antilles et du nord du Brésil, *S. britayevi* n. sp. du canal de Mozambique, *S. emiliae* n. sp. du golfe de Californie et du Costa Rica, *S. gibbsi* n. sp. de la mer Rouge, de Papouasie-Nouvelle-Guinée et du Vietnam, *S. glasbyi* n. sp. du canal de Mozambique, *S. gorgonensis* (Monro, 1933) n. comb. de la Colombie occidentale, des Galapagos et du Chili, *S. gracilis* (Hessle, 1924) du Japon, *S. harrisae* n. sp. de Californie, *S. kirkegaardi* n. sp. de l'Atlantique oriental, *S. knoxi* Glasby, 2003 de Nouvelle-Zélande, *S. levinae* n. sp. de monts sous-marins dans le Pacifique, *S. rigida* n. comb. de la mer Rouge à l'archipel du Tuamotu, *S. sinica* de la Chine et *S. sotoi* n. sp. de la mer des Caraïbes et du nord du Brésil. Une mention de *Synelmis* cf. *albini* du golfe du Mexique correspond peut-être à une espèce différente mais du matériel additionnel et en meilleur état est nécessaire pour clarifier ce point. Une clé d'identification des espèces est présentée.

MOTS CLÉS

Annelida,
Polychaeta,
Pilargidae,
Synelmis,
Pseudexogone,
océan Atlantique,
océan Indien,
océan Pacifique,
révision,
nouvelles espèces.

INTRODUCTION

The genus *Synelmis* was established by Chamberlin (1919) for a new species from the Paumotu (= Tuamotu) Archipelago, *Synelmis simplex*. Hartman (1959) considered *Synelmis* to be a synonym of *Ancistrosyllis* McIntosh, 1879. While a few similar species were added, the genus remained overlooked for a long time until Pettibone (1966) resurrected it, but *S. simplex* was thought to be a junior synonym of *Ancistrosyllis albini* Langerhans, 1881 together with several similar species. Pettibone was probably following the then widespread concept of cosmopolitan species, even though she noticed several differences in her materials, such as the development of the eyes, the start of dorsal spines and even the presence of emergent neurospines. She listed another species in the genus, originally described as

Glyphohesione klatti Friedrich, 1950, which has been recognized recently as valid genus and species by Licher (1994). Katzmann *et al.* (1974) described *Synelmis dineti* which had simple palps and bidentate curved notospines; a similar species has been recorded from Japan (Imajima 1987). Both species belong to *Pseudexogone* Augener, 1922, a genus previously regarded as a syllid but recently transferred to the Pilargidae Saint-Joseph, 1899 (Ruiz-Ramírez & Salazar-Vallejo 2001) and will be treated in detail in a forthcoming paper. Other species included in *Synelmis* are *S. anamita* Gallardo, 1967, *S. acuminata* Wolf, 1986, *S. ewingi* Wolf, 1986, and *S. sinica* Sun & Chen, 1990. However, in the review by Licher & Westheide (1994) most were moved to *Litocorsa* Pearson, 1970, with the exception of *S. sinica* which should be retained in *Synelmis*. The main difference between these two genera is that

Litocorsa has emergent neurospines in posterior setigers (Fitzhugh & Wolf 1990). Recently, Glasby (2003) has redescribed *S. albini* and described *S. knoxi* from New Zealand.

In this paper, I redefine the genus *Synelmis*, review certain species previously synonymized with *S. albini* (Langerhans, 1881) and similar species from world wide areas, and distinguish between the described species. Three species are reinstated, including *S. gracilis* (Hessle, 1924), *S. sinica* is considered a valid species, and nine are described as new. The cosmopolitan status of *Synelmis albini* is rejected. A key to all species of the world is included.

MORPHOLOGICAL CHARACTERS

The species in *Synelmis* can be separated using several structures. Antennae and cirri can be either cirriform or fusiform, though there are some intergradation between the two conditions. Antennae are considered short if they do not reach the first setiger or long if they either reach it or surpass it. The length and width of the parapodial cirri in comparison to the setal lobes are important and several parapodia should be examined to detect any change along the body.

The lateral antennae can be either cirriform or fusiform. In relation to its proximity to the palps over the prostomium, they can be either anteriorly located or placed around the middle of the prostomium. The degree of contraction of the palps may cause problems as to the placement, but the lateral antennae are considered to be anteriorly located if they arise close to the base of the palps, and they are medially placed if they are farther away. A ventrolateral papilla that stems from the bases of the palpostyles can be short or long; further it can emerge from the center of the palp, more laterally or from a more posterior position on the ventral surface of the palp; if so, the palpostyle is often longer.

The eyes of *Synelmis* are unique in Pilargidae because most of them are provided with lenses. They are mostly dorsal, either as one pair (split or fused) or several ones in a lateral rather perpendi-

cular row, usually three or more eyes per row. They can be distinct or either completely or partly fused to another eye. They are very rarely lateral, placed in a depression and thus difficult to see dorsally. The best way to detect them is to place the full organism in alcohol-glycerol and then observe them through the 40 × lens; if the worm is thick or heavily pigmented, it helps if it is left overnight in that solution and observed after that. The start of notospines is only slightly variable within a species; anterior setigers should be examined carefully because the spines are less exposed in the first few setigers than in more posterior ones. However, regeneration of anterior ends may cause a major alteration in the first appearance of the spines. The notospine can be smaller or longer than the dorsal cirrus and this proportion may vary through the body. In general, the emergent notospine is thicker and longer in middle setigers, but looks longer in posterior segments. The setal lobes can be long or short, and the relative sizes of the emergent portion of the notospine and the dorsal cirrus offer reliable characters. Because the notospine has a constriction in the line limiting the exposed portion, its length is rather stable in relation to either parapodial cirri or setal lobes. The acicular lobe is very delicate; it is acuminate but fragile and subject to wear, thus making it look rather rounded.

Neurosetae include long straight smooth capillaries, long laterally spinulose capillaries and short furcate setae; there are no thick neurospines. However, setae are broken very easily and it makes difficult to see the furcate setae rendering difficult its use as a diagnostic specific feature. However, furcates may be long or short and might be separated into three different types; most are Y-shaped with tines of different length or width (Fig. 1A, D, H, J), others can either have thin tines (Fig. 1C), or its tines can be curved (Fig. 1B). Further, there may be a blade between tines (Fig. 1C, G), or a smaller blade portion or hood along the longer tine (Fig. 1E, F, I). These are important differences indeed, but because of the setal size, orientation and fragility, their use as relevant as it might become, is rather limited under practical situations.

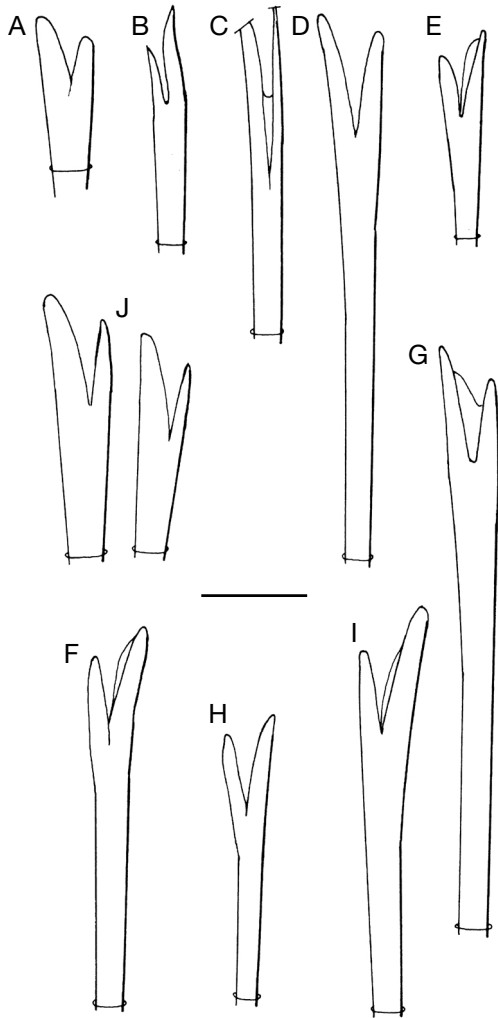


FIG. 1. — Furcate setae from different *Synelmis* species; **A**, *S. britayevi* n. sp. (LACM-AHF-2092); **B**, *S. emiliae* n. sp. (UANL-318); **C**, *S. gibbsi* n. sp. (BMNH-1971.65); **D, E**, *S. gorgonensis* (Monro, 1933) n. comb.; **D**, BMNH-1932.12.24.128; **E**, ZMH-14211; **F**, *S. harrisae* n. sp. (LACM-AHF-2095); **G**, *S. rigida* (Fauvel, 1919) n. comb. (BMNH 1970.310); **H**, *S. rigida* n. comb. (MNHN A71); **I, J**, *S. sotoi* n. sp. (MNHN A888 As296). Scale bar: 30 μ m.

Even though there seems to be two body plans in *Synelmis*, i.e. species provided with fusiform antennae and cirri and species provided with cylindrical antennae and cirri, some of the latter have basally swollen cirri in median body segments. The body can be more or less transparent though there are some heavily pigmented worms.

The length of the pharynx may be a useful character. Among the group of genera that includes *Synelmis* (i.e. Synelminae Salazar-Vallejo, 1987), the pharynx has a different thickness and sometimes has darker pigmentation than the following portion. Further, there is an internal constriction that can be detected without dissection by the sudden change in thickness or coloration of the gut. It can be measured in relation to the body portion it occupies using the number of setigers. In this group, there can be some denticulated bands as have been shown recently in *Talehsapia* Fauvel, 1932 (Salazar-Vallejo *et al.* 2001). Hessle (1924) demonstrated that hesionids and pilargids have an anterior gut which resembles the proventricle of syllids, but the degree of development of the anteriormost portion is very different, being muscular in the first two families and sometimes provided with jaws in hesionids. In syllids, the proventricle is a muscular reinforcement of the anterior portion of the gut; it has a series of muscular cells arranged in regular rings and is never everted. Anterior to the proventricle, syllids have an eversible pharynx. These differences were employed by Hessle (1924) to separate these families; thus, it seems that even though the posterior muscular portion is similar, striking differences exist in the development of the anteriormost gut in these three families which are, however, closely related (Glasby 1993).

METHODS

The specimens were measured with a graduated ruler; width does not include setae but includes parapodia. Length, width and number of setigers were determined with the dissecting microscope, other features such as the start of notospines, the number and position of eyes, and the length of brain or pharynx, were made with the compound microscope (40 \times).

ABBREVIATIONS

BMNH The Natural History Museum, London;
ECOSUR Reference Collection, El Colegio de la Frontera Sur, Chetumal;

IEA	Institut d'Écologie appliquée, Université catholique de l'Ouest, Angers ;
LACM-AHF	Los Angeles County Museum of Natural History, Allan Hancock Foundation Polychaete Collection;
MCN	Museo de Ciencias Naturales, Tenerife;
MNHN	Muséum national d'Histoire naturelle, Paris ;
SMF	Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt;
UANL	Universidad de Nuevo León, Reference collection, Mexico;
USNM	National Museum of Natural History, Smithsonian Institution, Washington DC;
ZMA	Zoologisch Museum, University of Amsterdam;
ZMH	Zoologisches Institut und Zoologisches Museum, Universität Hamburg;
ZMUC	Zoologisk Museum, University of Copenhagen.

SYSTEMATICS

Family PILARGIDAE Saint-Joseph, 1899
Subfamily SYNELMINAE Salazar-Vallejo, 1987

Genus *Synelmis* Chamberlin, 1919

Synelmis Chamberlin, 1919: 177.

Kynephorus Ehlers, 1920: 27.

TYPE SPECIES. — *Synelmis simplex* Chamberlin, 1919, by original designation. It is a subjective junior synonym of *Ancistrostylis rigida* Fauvel, 1919 (see below).

DIAGNOSIS. — Synelminae with three cirriform or fusiform antennae, palps biarticulated with a small ventral papilla associated with palpostyle, eyes lensed, as a single pair, multiple eyes in a row or missing. Two pairs of cirriform or fusiform tentacular cirri. Parapodia with notopodia reduced to dorsal cirri; neuropodia with setal lobe variously developed and ventral cirri in all setigers. Emergent notospines straight, with acute tips. Neurosetae include simple, limbate (laterally spinulose), and furcate setae; without emergent neurospines. Pygidium without anal plate; with two lateral anal cirri. Eversible pharynx without papillae or denticles. Digestive tract straight, without segmental diverticula.

REMARKS

Licher & Westheide (1994: 233) included three traits to define *Synelmis*, but the only potential

autapomorphy is the presence of furcate setae. In fact, they may be homologous to the emergent neurospines that would be, in turn, the autapomorphy for *Litocorsa* Pearson, 1970; these observations were already done by Fitzhugh & Wolf (1990: 12, 13). However, it should be remembered that furcate setae are both transparent and brittle. Five previous records cannot be accounted for in the key below. Rullier (1963: 181, 182) recorded one specimen of *A. rigida*, 3 mm in length, from the Marmara Sea; he did not provide specific features or information on where he deposited his specimen. Hartman (1965: 70) recorded *A. albini* from deep-water in the northwestern Atlantic, and indicated the lack of eyes and the start of notospines in setigers 10-12. Day (1967: 215) indicated that his specimens of *A. rigida* have emergent notospines beginning in setigers 12-20 but he failed to detail the position of antennae and the shape of parapodial cirri. Hartman & Fauchald (1971: 51) recorded six other specimens from deep-water in the northwestern Atlantic but without any other data. The record of *Synelmis albini* which Day (1973) made for North Carolina was re-examined by Gardiner (1976) who found some neuracilae projecting beyond the setal lobes; this damaged specimen has been examined (USNM 51030) and it resembles *Litocorsa antennata* Wolf, 1986.

Synelmis albini (Langerhans, 1881)

Ancistrostylis albini Langerhans, 1881: 107, 108, fig. 16a-e.

Synelmis albini – Pettibone 1966: 191. — Glasby 2003: 9-12, fig. 1.

MATERIAL EXAMINED. — Central eastern Atlantic. Canary Islands, Tenerife, La Tejita, mesolitoral, in algae, 4.IV.1976, J. Núñez, 1 posterior fragment with 72 setigers, 14 mm in length, 0.7 mm in width (MCN-PO-178).

DISTRIBUTION. — Kirkegaard (1988: 75) indicated that the species is present in western Africa and, following Pettibone (1966), in the Indian and Pacific oceans. As will be seen below, specimens from these areas have been found to belong to different species. Therefore, *S. albini* must be regarded as restricted to the eastern subtropical Atlantic Ocean.

REMARKS

Langerhans (1881) described *S. albini* from a single anterior fragment which was probably alive when he observed it, Augener (1927) noticed this and was later cited by Pettibone (1966), who also suggested that differences between this and other species could be attributed to the effects of preservation. The structures that Langerhans drew could only be seen in living organisms, particularly the elongation of palps, shape of the brain and its posterior lobes (Langerhans 1881: fig. 16a), the transition between stomodeum and muscular tube, and the variation in the width of the latter (Langerhans 1881: fig. 16e). Body transparency might also explain the specific name since one of its aceptions is clear or without color ("farblos" in the description). There is not original type material left; the type locality seems to be Puerto de la Orotava, northern Tenerife, in rocky intertidal bottoms (Langerhans 1881: 95). Recently, Glasby (2003) redescribed the species and proposed a neotype.

Synelmis amoureuxi n. sp.
(Fig. 2)

Ancistrosyllis rigida – Augener 1927: 50, 51. — Fauvel 1953b: 7 (*non* Fauvel 1919a).

Synelmis sp. A – Wolf 1984: 29.35-29.37, figs 29.35, 29.36.

Synelmis albini – Pettibone 1966: 191-195, figs 19-21 (*partim*). — Nonato & Luna 1970: 68, figs 10, 11 (material not seen). — Rullier & Amoureux 1979: 160 (*partim*).

Synelmis simplex – Treadwell 1924: 12, 13 (*non* Chamberlin 1919, *partim*).

TYPE MATERIAL. — Holotype: Brazil, *Calypso*, stn 1, off S. Joao Pessoa, 7°29'S, 34°30'W, 45 m, complete specimen (MNHN A885, As 197). Paratypes: Caribbean Sea, Univ. Iowa Barbados-Antigua Expedition, Fort Barclay, English Harbor, Antigua, summer 1918, id. A. L. Treadwell, M. H. Pettibone, 1 paratype (USNM 20306); Caracasbaai, Curaçao, 1.V.1920, C. J. van der Horst, 1 paratype (ZMA V. Pol. 38); West Indies, stn 227-10, 1942, W. Hartman coll., 1 paratype, complete specimen, 15 mm long, 0.2 mm wide with 83 setigers, notospines start in setiger 5 (USNM 49241).

ETYMOLOGY. — Named for Dr Louis Amoureux, a polychaete researcher from the Université catholique

de l'Ouest, Angers, for his many publications on polychaetes and especially his studies on materials collected by the *Calypso* expeditions, including some of these specimens.

TYPE LOCALITY. — Off S. Joao Pessoa, Brazil.

OTHER MATERIAL EXAMINED. — **Caribbean Sea.** N off Martinique Island, *Président Théodore Tissier*, stn 187, 15°15'N, 60°57'W, 90 m, posterior fragment (MNHN AW 646, A900, T 99-41); Fauvel slide collection, 1 slide (IEA-A81'). (There are four parapodia; body wall was desintegrated and the resin has fractured. One of the parapodia has an additional acicula and in two others finely limbate neurosetae can be seen but furcate setae could not be found). — Off Vieques Island, Puerto Rico, stn 6, 28.IV.1978, 347 m, 1 damaged specimen (USNM 56349).

Brazil. *Calypso*, off Fernando de Noronha Island, stn 17, 3°48.6'S, 32°24.8'W, 52 m, 1 specimen in three portions (MNHN A885, As 199); 1 anterior fragment (MNHN A879, Ak 489). — S of Recife, stn 27, 8°25'S, 34°48'W, 33 m, posterior fragment (MNHN A879 Ak 489).

DISTRIBUTION. — Martinique, Curaçao, Lesser Antilles, to Recife, Brazil, including Fernando de Noronha Island, in 33-90 m depth.

DESCRIPTION

Holotype with body dark (MNHN A885, As 197), filiform, 23-32 mm in length, 0.6-0.9 mm in width, 78-106 setigers (and one or two posterior asetigers). Integument smooth but adsorbed salt gives rugose or even spinulose appearance, especially in cirral tips.

Prostomium rectangular, with biarticulated palps separated from each other and both separated from the prostomium, palpostyles massive knobs with smooth tegument and single ventrolateral papillae arising from base of each (Fig. 2A). Three cirriform antennae, lateral antennae emerge at base of palps and reach palpostyle tips; median antenna is slightly longer, emerging from posterior prostomial margin. Two lensed eyes placed slightly laterally. Two pairs of tentacular cirri, cirriform, slightly longer than cirri of setiger 1. Parapodia with cirriform cirri, with basal swelling in all setigers; setal lobe wider and about one third length of the cirri. Notopodia reduced to dorsal cirrus; from setiger 5 straight notospine emerges, becomes posteriorly longer and thicker. Notospines project farther in posterior setigers

but most are broken (Fig. 2B-D). Prepygidial region with one or two asetigerous segments, parapodial cirri long, cirriform. Pygidium simple, anus terminal, and two anal cirri as long as the last two segments (Fig. 2E).

Notosetae restricted to notospines, completely smooth and slightly curved distally. Neurosetae of three kinds, limbate capillaries most abundant, smaller ventrally than dorsally, few long smooth capillaries, and one or two slightly asymmetrical furcate setae. Details difficult to determine because of the adsorbed salt.

Pharynx as long as two setigers when completely everted, non-everted pharynx reaches setiger 10, unpigmented. Posterior gut unpigmented, rings of muscle cells not visible. Brain bilobed, short, reaches slightly past setiger 1.

Other paratype (USNM 20306) is an anterior fragment with two deep cuts over its anterior end to remove several parapodia at the same time. It is 25 mm long, 1.0 mm wide, with 51 setigers. The prostomium has one pair of eyes but the right one is split into two. Notospines start from setiger 5; pharynx is partly everted, about 12 setigers long.

REMARKS

Synelmis amoureuxi n. sp. resembles *S. gibbsi* n. sp. and *S. knoxi* Glasby, 2003, in having cirriform antennae and cirri, and notospines starting from setiger 5, but they differ in the relative length of median antennae and first dorsal cirri being longer in *S. gibbsi* n. sp. and *S. knoxi*; also, in both species, the median setigers have basally swollen cirri.

Synelmis britayevi n. sp. (Figs 1A; 3)

TYPE MATERIAL. — Syntypes: SE Mozambique Channel, Walters Shoal, International Indian Ocean Expedition, *Anton Bruun*, cruise 7, stn AB 381 A, grab sampler, 33°13'S, 43°51'E, 46 m, 30.VIII.1964, 7 syntypes (LACM-AHF-2092).

TYPE LOCALITY. — Mozambique Channel.

ETYMOLOGY. — This species is named for Dr Temir A. Britayev, in recognition of his many publications

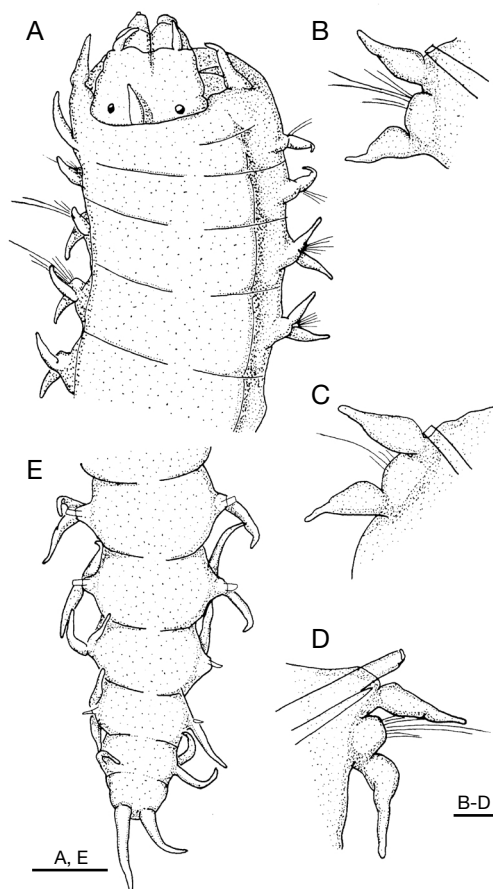


FIG. 2. — *Synelmis amoureuxi* n. sp. from northern Brazil (MNHN A885 As 199); **A**, anterior end in dorsal view (right setiger 5 removed); **B**, setiger 30 in anterior view; **C**, setiger 50 in anterior view; **D**, setiger 80 in posterior view; **E**, posterior end in dorsal view. Scale bars: A, E, 0.3 mm; B-D, 36 μ m.

on polychaetes and polychaete commensalism and especially for his research on pilargids.

OTHER MATERIAL EXAMINED. — **Southwestern Indian Ocean.** SE Mozambique Channel, Walters Shoal, 33°13'S, 43°51'E, International Indian Ocean Expedition, *Anton Bruun*, cruise 7, stn AB 381 B, rock dredge, 30.VIII.1964, 36-40 m, 10 specimens (LACM-AHF).

DISTRIBUTION. — Apparently restricted to the Mozambique Channel.

DESCRIPTION

Body filiform, variously pigmented from pale to dark red or purple probably due to Rose Bengal

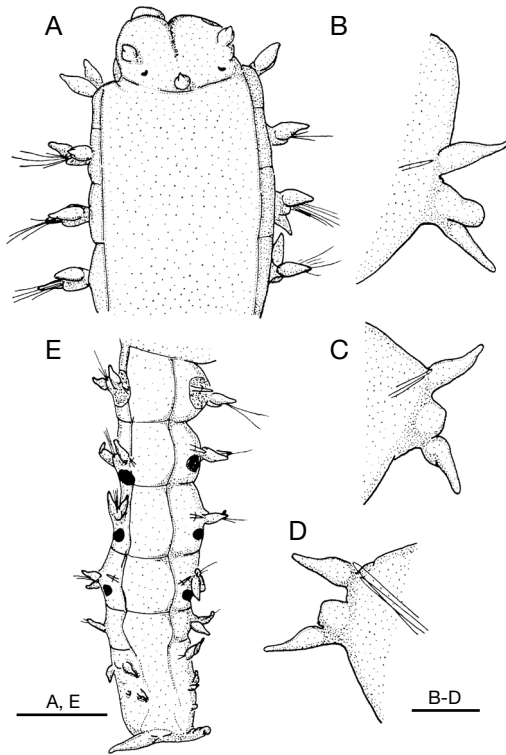


FIG. 3. — *Synelmis britayevi* n. sp. from the Mozambique Channel (LACM-AHF-381B); **A**, anterior end in dorsal view; **B**, setiger 5 in posterior view (LACM-AHF-2092); **C**, setiger 19 in posterior view; **D**, setiger 45 in anterior view; **E**, posterior end in dorsal view. Scale bars: A, E, 0.22 mm; B-D, 50 μ m.

staining; pigment more intense on sides of body and ventrally in paired darker glands. Specimens 4.0–20.5 mm long, 0.3–1.0 mm wide, with 32–92 setigers.

Prostomium rectangular with biarticulated palps well separated from each other, palpostyles rounded, massive, with small ventrolateral papillae. Three similar fusiform antennae, lateral antennae located at middle of prostomium, median placed on posterior margin, very short, not reaching setiger 1 (Fig. 3A). Two well developed eyes, medial to and slightly behind lateral antennae. Of 17 specimens, nine had two well developed eyes, two had one eye duplicated, two had both eyes duplicated, one had one eye split into three eyespots but not arranged in a line, and in two specimens

eyes could not be seen. Two pairs of tentacular cirri, the dorsal one slightly longer than the ventral one and as long as dorsal cirri of setiger 1.

Parapodia with slender fusiform cirri, never thicker than setal lobe. Dorsal cirri and ventral cirri similar in length or ventral cirri slightly shorter. Glandular areas well developed posterior to setal lobe region; starting from setiger 2–3, glands become bigger and better developed posteriorly, continue to end of body; appear circular in frontal view, contain transverse rods. No interramal glands but paired glandular areas ventrally in posterior setigers. Anterior parapodia with setal lobe about half the length of ventral cirri (Fig. 3B). Median (Fig. 3C) and posterior parapodia similar (Fig. 3D) though ventral cirri become usually slightly longer posteriorly.

Notospines slightly emergent even in posterior parapodia; usually first present from setigers 13–18; variation in first occurrence slightly dependent on body size or due to regeneration of specimens (one anteriorly regenerating specimen with 32 setigers had notospines from setiger 6; another one with 54 setigers had notospines from setiger 10). Neurosetae include smooth capillaries, limbate setae, and one or two symmetrical furcate setae per setal bundle (Fig. 1A).

Pygidium with two lateral anal cirri, as long as previous two asetigerous segments (Fig. 3E). Pharynx can be as long as four to nine setigers.

REMARKS

Synelmis britayevi n. sp. resembles *S. harrisae* n. sp.; their main difference is that the former has well developed lateral glands behind setal lobes while the latter lacks such glands. The wide range of first occurrence of notospines due to regeneration may lead to misidentifications. One specimen was regenerating its anterior end but it had already spines in the anteriormost setiger which could be quite misleading. Most specimens (three exceptions) had the first notospines between setigers 10–17. This should be reevaluated with specimens without regeneration.

Synelmis emiliae n. sp.
(Figs 1B; 4)

Synelmis cf. *albini* – Dean 1999: 49-51, fig. 1 (*partim*).

TYPE MATERIAL. — Syntypes: eastern tropical Pacific, Gulf of California, Bahía Concepción, Santispac, 26°46'08"N, 111°53'50"W, intertidal, N. E. González, 15.IX.1983, 1 syntype separated in two pieces (ECOSUR-PILA-2); Bahía Concepción, Santispac, 0.5 m, 18.VII.1985, S. I. Salazar-Vallejo, 1 syntype (UANL-318).

TYPE LOCALITY. — Bahía Concepción, eastern coast of Baja California, Gulf of California.

ETYMOLOGY. — This species is named in honor of my beloved wife, Norma Emilia González, for her strong support, for constantly pushing my development in polychaete taxonomy, and for collecting one of the specimens upon which this description has been based.

OTHER MATERIAL EXAMINED. — **Costa Rica.** Gulf of Nicoya, stn 31-2, 9°44'00"N, 84°59'25"W, 22 m, VII.1980, H. K. Dean, 1 anterior fragment, 9 mm long, 0.2 mm wide, with 29 setigers, 1st notospines in setiger 9, pharynx about 7 setigers long (USNM 79947); stn 31-2, 9°52'00"N, 84°48'10"W, 22 m, 3.VII.1980, H. K. Dean, 1 anterior fragment, 4.5 mm long, 0.2 mm wide, with 27 setigers, 1st notospines in setiger 9, pharynx about 5 setigers long (USNM 79948); stn 34-2, 9°55'30"N, 84°50'05"W, 26 m, 9.VII.1980, H. K. Dean, 5 complete specimens and 5 anterior fragments, 5-17 mm long, 0.1-0.5 mm wide, with 35-74 setigers, 1st notospines in setiger 9 (8-11), pharynx about 6 setigers long (USNM 79951); stn 13-2, 9°52'30"N, 84°43'50"W, 28 m, 10.VII.1980, H. K. Dean, 2 anterior fragments, 1 in poor condition, the damaged fragment was not analysed, the other one is 9 mm long, 0.2 mm wide, with 45 setigers, 1st notospines in setiger 8, pharynx about 5 setigers long (USNM 79955); stn 23-2, 9°48'35"N, 84°43'50"W, 38 m, 10.VII.1980, H. K. Dean, 1 complete specimen, 10 mm long, 0.3 mm wide, with 49 setigers, 1st notospine from setiger 7, pharynx length not discernable (USNM 79959); stn 25-2, 9°50'05"N, 84°52'00"W, 22 m, 10.VII.1980, H. K. Dean, 1 anterior fragment, 4 mm long, 0.3 mm wide, with 19 setigers, 1st notospines from setiger 8, pharynx about 8 setigers long (USNM 79960); stn 27-2, 9°51'57"N, 84°50'50"W, 13 m, 10.VII.1980, H. K. Dean, 1 complete specimen, 8 mm long, 0.2 mm wide, with 45 setigers, 1st notospines from setiger 8, pharynx about 6 setigers long (USNM 79962); stn 29-2, 9°54'55"N, 84°45'15"W, 20 m, 11.VII.1980, H. K. Dean, 7 complete specimens and 2 anterior fragments, 6-42 mm long, 0.2-0.5 mm wide, with 45-122 setigers, 1st notospines from setiger 10 (8-11), pharynx about 6 setigers long (USNM 79969); stn 29A-2, 9°54'55"N, 84°45'15"W, 20 m,

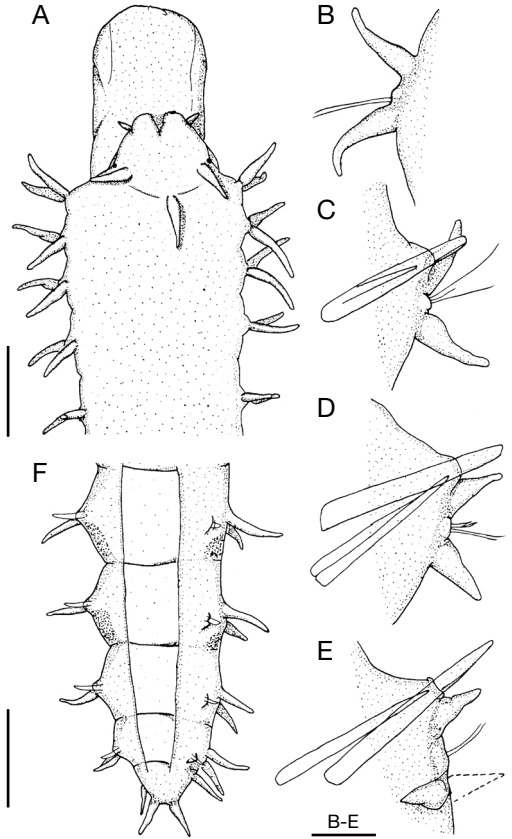


FIG. 4. — *Synelmis emiliae* n. sp. from western Mexico (ECOSUR-PILA-2); **A**, anterior end in dorsal view; **B**, setiger 10 in anterior view; **C**, setiger 25 in posterior view (UANL-318); **D**, setiger 50 in posterior view; **E**, setiger 100 in posterior view; **F**, posterior end in dorsal view. Scale bars: A, F, 0.3 mm; B-E, 63 μ m.

11.VII.1980, H. K. Dean, 9 complete specimens and 4 anterior fragments, 22-42 mm long, 0.5-0.8 mm wide, with 88-130 setigers, 1st notospines from setiger 11 (9-11), pharynx about 7 setigers long (USNM 79970); stn 36-2, 9°55'32"N, 84°45'20"W, 22 m, 11.VII.1980, H. K. Dean, 2 complete specimens, 15-31 mm long, 0.3-0.5 mm wide, with 59-88 setigers, 1st notospines from setiger 8 or 10, pharynx about 7 setigers long (USNM 79972); stn 15-2, 9°57'40"N, 84°47'00"W, 12.VII.1980, 16 m, H. K. Dean, 16 complete specimens and 9 anterior fragments, 9-27 mm long, 0.2-0.5 mm wide, complete ones with 80-102 setigers, 1st notospines from setiger 8-11 (mean setiger 10), pharynx 6-8 setigers long (USNM 79975); stn 35-2, 9°55'42"N, 84°47'40"W, 12.VII.1980, 14 m, H. K. Dean, 8 complete specimens and 3 anterior fragments, 4-17 mm long,

0.2-0.3 mm wide, complete ones with 34-65 setigers, 1st notospines from setiger 7-10 (mean setiger 9), pharynx 6-7 setigers long (USNM 79976).

DISTRIBUTION. — Gulf of California (Bahía Concepción) to Gulf of Nicoya, Costa Rica, in tidal channels in mangrove sites and up to 40 m in depth in shelly or muddy sediments.

DESCRIPTION

Body colorless in alcohol or with lateral pigmented areas surrounding the setal lobes (UANL-318), 50-67.5 mm in length, 0.5-0.6 mm in width, 187-204 setigers.

Prostomium trapezoidal; three cirriform antennae; lateral antennae located posteriorly and slightly smaller than the median one. Palps biarticulated, free from each other, with small rounded palpostyles and long ventral papillae. Two small eyes (seen after staining with methyl green), in a lateral depression (other syntype without eyes). Tentacular cirri cirriform, well developed, dorsal one slightly longer than the ventral one (Fig. 4A). Parapodia with cirriform cirri and short setal lobes. Dorsal and ventral cirri of anterior parapodia (Fig. 4B) similar in length, around setiger 25, dorsal cirri becomes slightly shorter than the ventral one (Fig. 4C), by setiger 50 (Fig. 4D) this difference becomes more evident and by setiger 100, the dorsal cirri is much shorter than the ventral one. Notospines present from setiger 13-14, smooth, acute, slightly bent distally, pointing forward, with oblique line or slit over most of exposed length; length of emergent portion appears to change in relation to body region. By about setiger 50, emergent portion of notospine equal in size to dorsal cirri, spine becomes longer than dorsal cirri in posterior setigers but prepygidial region has relatively longer dorsal cirri (Fig. 4E). Neurosetae smooth straight capillaries, limbate setae, and asymmetric slightly bent furcate setae (Fig. 1B).

Pygidium with two anal cirri, each as long as the preceding segment; one or two asetigerous segments provided with cirriform cirri (Fig. 4F). The pharynx reaches setiger 6 but since anterior portion may be everted, it may be some 8-9 setigers in length. Ova present from about setiger 45.

REMARKS

Synelmis emiliae n. sp. is very similar to *S. sinica* and to *S. glasbyi* n. sp. in general appearance; they have short ventral papillae, short setal lobes, and a similar start of notospines. *S. emiliae* n. sp. differs in having dorsal cirri much shorter than the ventral cirri (lateral eyes are common). Long notospines with an oblique slit, are also present in *S. glasbyi* n. sp. but they are generally distally curved, pointing forwards in *S. emiliae* n. sp., while in the other species they are mostly straight.

Synelmis gibbsi n. sp. (Figs 1C; 5)

Synelmis albini – Gallardo 1968: 61, 62, pl. 12, figs 2-4. — Gibbs 1971: 137 (*partim*). — ?Amoureux 1983: 368. — Rosenfeldt 1989: 221.

Ancistrosyllis rigida – Hartman 1954: 625 (Enirik Island only). — ?Rullier 1963: 181. — Reish 1968: 213 (*partim*).

TYPE MATERIAL. — Syntypes: Komimbo Bay, NW Guadalcanal Island, Solomon Islands, 20.VII.1965, P. E. Gibbs, 2 syntypes (BMNH 1970.308); Enirik Island, Bikini Atoll, Marshall Islands, intertidal, 1946, 1 syntype, anterior fragment (LACM-AHF 2093).

TYPE LOCALITY. — Solomon and Marshall islands.

ETYMOLOGY. — Named after Dr Peter E. Gibbs, for his contributions to the study of polychaetes in general and especially for his work as part of the Royal Society Expedition to the Solomon Islands, which collected part of the specimens upon which this description has been based.

OTHER MATERIAL EXAMINED. — **Indian Ocean.** Red Sea, *Sonné* Expedition, stn 40GKH, 21°13.50'N, 37°39.60'E, 831 m, 18.X.1977, 1 specimen in three pieces (SMF 3805). — Persian Gulf, island off Kuwait, sandy pockets in intertidal rocks, M.-B. M. Mohammad, 1 specimen (BMNH-1971.65). — India, Bay of Bengal, off Honarak (Black Pagoda), Orissa, 2 specimens (MNHN A436).

Western Pacific. Bay of Nha Trang, *Naga* Expedition, *Mao Tien*, stn 138I, small bay NW of Mui Dang Ba, 3 m, coarse shell and coral debris, 1 specimen in two pieces (LACM-AHF 11678); stn 296, northwest of Mui Dang Ba, 4 m, fine and calcareous sand, Vietnam, some fragments (LACM-AHF 11679). — W of Tab Island, Papua New Guinea, 10 m, 1.I.1995, F. Pleijel, 1 specimen (ECOSUR-PILA-3).

DISTRIBUTION. — Red Sea, Persian Gulf, India, Solomon Islands, Vietnam and Papua New Guinea, in

shallow water. The record by Rullier (1963) for the Marmara Sea was on a specimen with 55 setigers and 3 mm long but his record lacks any additional information and requires confirmation. The record by Amoureux (1983), from the Gulf of Aquaba, in coral, is questionably assigned to this species.

DESCRIPTION

Body subcylindrical, pale, largest specimen 52 mm in length, 0.7 mm in width, 167 setigers. Body with dark pigmented glands on lateral sides of setigers 1-2, glands smaller, less pigmented in setigers 3-5.

Prostomium rectangular, longer than wide, with biarticulated palps, well separated from each other, palpostyles small rounded, ventrolateral papillae long. Three antennae about same width, lateral antennae located anteriorly, as long as palps; median antenna longer, placed posteriorly (Fig. 5A). One pair of big dark eyes, sometimes duplicated and appearing fused.

Parapodia with subequal cirriform cirri, slightly swollen basally from setiger 20. Dorsal cirrus of setiger 1 longer (Fig. 5B) than following ones (Fig. 5C). Median setigers with parapodial cirri swollen basally (Fig. 5D) but posterior ones become cirriform (Fig. 5E). Pygidium with dorsal anus (Fig. 5F); two long cylindrical anal cirri, can be as long as the last 3-4 segments.

Notosetae only notospines, starting from setiger 5; neurosetae mostly broken but three kinds are seen: abundant capillaries and limbate setae and one furcate setae with apparently symmetrical tips (Fig. 1C). Everted pharynx up to 0.8 mm in length, length is equivalent to first four setigers; pharynx tip and surface smooth. Posterior pharynx up to 12 setigers in length, followed by rather convoluted stomach as long as 20 setigers.

Comments on other materials

Specimen from the Red Sea, is a complete juvenile torn into three pieces. Together they are only 13 mm in length and 0.2 mm in width, with 49 setigers and two preanal asetigers. There are no eyes. Notospines start at setiger 5. Posterior brain lobes are apparently detached. The anterior gut could not be seen.

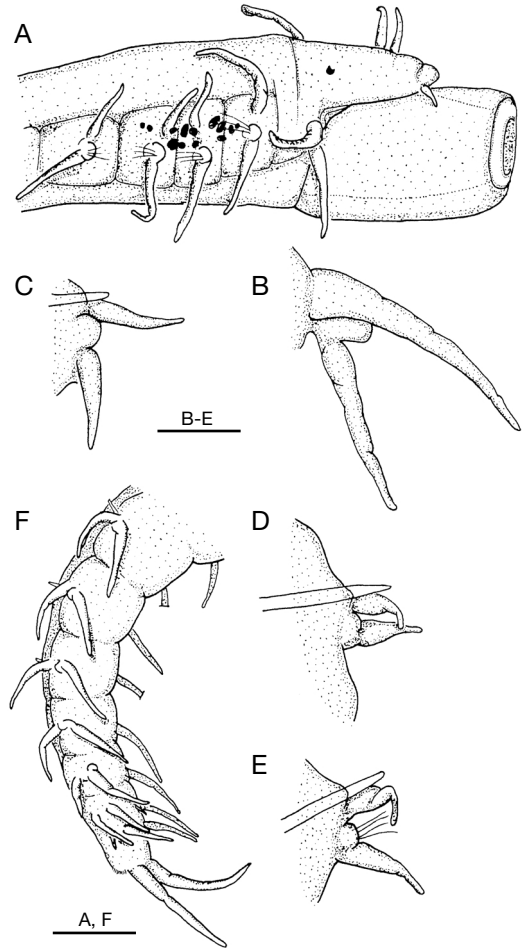


FIG. 5. — *Synelmis gibbsi* n. sp. from the Solomon Islands (BMNH 1970.318); **A**, anterior end in lateral view; **B**, setiger 1 in posterior view; **C**, setiger 10 in posterior view; **D**, setiger 20 in posterior view; **E**, setiger 50 in posterior view; **F**, posterior end in lateral view. Scale bars: A, F, 0.2 mm, B-E, 100 μ m.

Specimen from Kuwait is damaged but the diagnostic features are noticeable. It had apparently been compressed and its median antennae is very wide and thin. Body subcylindrical, tapering towards both ends; complete but almost torn in two around setiger 10 and about the first third of the body. It is 53 mm long, 0.8 mm wide, with 162 setigers.

Specimens from India partly dehydrated; they are anterior fragments, one with everted pharynx is 26 mm in length, 0.8 mm in width and has

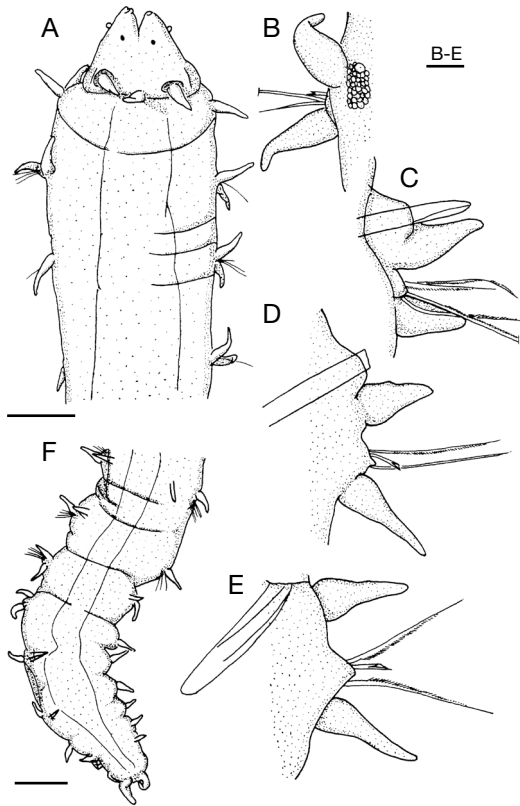


FIG. 6. — *Synelmis glasbyi* n. sp. from the Mozambique Channel (LACM-AHF-2094); **A**, anterior end in dorsal view; **B**, setiger 10 in anterior view; **C**, setiger 21 in posterior view; **D**, setiger 26 in posterior view; **E**, setiger 40 in posterior view; **F**, posterior end in dorsal view. Scale bars: A, F, 0.15 mm; B-E, 100 μ m.

97 setigers; the second is 42 mm long, 0.8 mm wide with 149 setigers; the third one is 33 mm long, 0.6 mm wide with 125 setigers. Segments appear multiannulated due to previous dehydration; eyes are difficult to be detected but glands can clearly be seen before and after each parapodia in median segments.

Specimens from Vietnam are in poor condition. One anterior and one median fragment that might fit are soft, pale. They are about 48 mm in length and 0.3-0.5 mm in width (the difference is because the median fragment is flattened). Setigers total 120. The everted pharynx is 1 mm in length and it should be equivalent to 10 setigers. The other materials dried, consisting of a posterior fragment including the pygidium

and a median fragment that might fit. They had 32 and 21 setigers respectively.

Specimen from Papua New Guinea is a juvenile; it is pale, twisted with its pharynx slightly everted. It is 16 mm in length, 0.5 mm in width with about 80 setigers. It has two eyes. There is a slight coloration in the glands in setigers 1-2. The anterior fragment from the Marshall Islands is 30 mm in length, 1.0 mm in width and has about 94 setigers. It has two eyes but there is no clear pigmentation in its anterior glands.

REMARKS

Synelmis gibbsi n. sp. is closely allied to *S. amoureuxi* n. sp. from the western Atlantic Ocean, and *S. knoxi* from New Zealand, but they differ in that the former has a longer median antenna and a longer dorsal cirrus in setiger 1.

Synelmis glasbyi n. sp. (Fig. 6)

TYPE MATERIAL. — Syntypes: southwestern Indian Ocean, Mozambique Channel off Inhaca Island, 25°07'S, 34°34'E, International Indian Ocean Expedition, *Anton Bruun*, cruise 7, stn AB 372J, 19.VIII.1964, 102 m, 1 complete and 1 anterior fragment (LACM-AHF 2094).

TYPE LOCALITY. — Mozambique Channel.

ETYMOLOGY. — This species is named as an homage to Dr Christopher J. Glasby, for his many publications on taxonomy of polychaetes, especially for his analysis on Nereidiformia and the advice and support he has provided me on the taxonomy of pilargids.

DISTRIBUTION. — Apparently restricted to the Mozambique Channel.

DESCRIPTION

Body transparent in alcohol, complete syntype 17 mm in length, 0.5 mm in width, 62 setigers. Anterior fragment 6 mm in length, 0.4 mm width, 21 setigers, with pharynx slightly everted. Prostomium trapezoidal; three cirriform antennae; lateral antennae placed posteriorly and slightly smaller than median, median antennae short, not reaching setiger 1, slightly more posteriorly placed. Palps biarticulated, free from each

other, with small rounded palpostyles and short ventral papillae. Eyes not seen; colored granules around the base of palps. Tentacular cirri cirri-form, well developed, dorsal slightly longer than the ventral one (Fig. 6A).

Parapodia with cirriform cirri and short setal lobes. Dorsal and ventral cirri of anterior parapodia (Fig. 6B) similar in length, around setiger 26, dorsal cirri become slightly shorter than the ventral ones (Fig. 6C), by setiger 40 (Fig. 6D) dorsal cirri is about 4/5 the length of the ventral ones but more posteriorly, dorsal cirri become enlarged (Fig. 6E). Notospines present from setiger 12, smooth, acute, with oblique line or slit over most of exposed length; length of emergent portion appears to change in relation to body region. By about setiger 21, emergent portion of notospine equal in size to dorsal cirri, spine becomes longer than dorsal cirri in posterior setigers. Pre-pygidial region has longer dorsal cirri (Fig. 6F). Neurosetae finely limbate capillaries, and furcate setae with asymmetric tines.

Pygidium with two anal cirri, each as long as the preceding segment; one or two asetigerous segments provided with cirriform cirri (Fig. 6F). The pharynx reaches setiger 4 but since anterior portion may be everted, it may be some 5-6 setigers in length.

REMARKS

Synelmis glasbyi n. sp. is very similar to *S. emiliae* n. sp. and to *S. sinica* in general appearance; they have short ventral papillae, short setal lobes, and a similar start of notospines. *S. glasbyi* n. sp. differs in having very short median antenna, and dorsal pigmented granules around the bases of palps. Notospines with an oblique slit area also present in *S. emiliae* n. sp. but in that species the spines are distally curved while in *S. glasbyi* n. sp. they are straight.

Synelmis gorgonensis (Monro, 1933) n. comb. (Figs 1D, E; 7)

Ancistrosyllis gorgonensis Monro, 1933: 26-28, text-fig. 12.

Ancistrosyllis rigida – Hartmann-Schröder 1965: 285-287, figs 286-288 (*non* Fauvel 1919a).

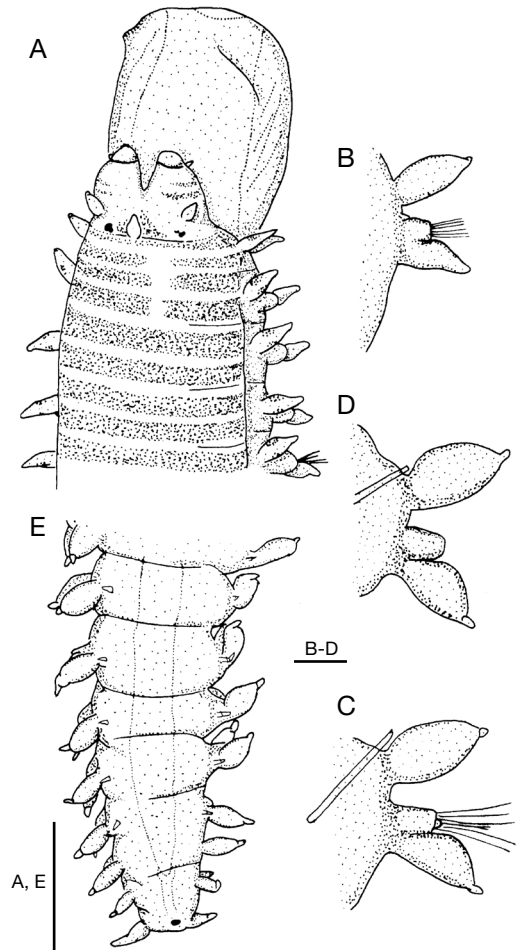


FIG. 7. — *Synelmis gorgonensis* (Monro, 1933) n. comb. from Pacific Colombia (BMNH-1932.12.24.128); **A**, anterior end in dorsal view; **B**, anterior setiger in posterior view; **C**, median setiger in posterior view; **D**, posterior setiger in posterior view; **E**, posterior end in dorsal view. Scale bars: A, E, 0.25 mm; B-D, 100 μ m.

Synelmis albini – Westheide 1974: 223-225, figs 12, 13 (*non* Langerhans 1881).

MATERIAL EXAMINED. — **Eastern Pacific.** *St George Pacific Expedition 1923-1924*, Gorgona Island, 3.00°N, 78.19°W, Colombia, *St Gorgona 3*, C. Crossland, holotype of *Ancistrosyllis gorgonensis* Monro, 1933 (BMNH 1932.12.24.128). — **Chile**, Taltal, 25.24°S, 70.29°W, W. Noodt, 30.I.1959, 0.5 m, 1 anterior fragment and 2 posterior ones (ZMH-14211).

DISTRIBUTION. — Pacific coast of Colombia, the Galapagos Islands, and northern Chile.

DESCRIPTION

Holotype complete but several parapodia missing and body is breaking in two points: towards the middle of the body and in the posterior third of the body; about setiger 50 there is a transverse cut and another longitudinal one that does not reach the gut, but that could cause its fragmentation. The original description and later characteristics by Hartmann-Schröder (1965) and by Westheide (1974) are excellent; a few details are added here. Body pale yellow with fine transverse dark bands, especially towards the anterior end, bands coincide with the setal lobe but the preceding section is colorless. There are paired dark glands along ventral surface starting about the first third of the body. Ventral furrow shallow.

Eyes of different size, in straight transverse line, each with two eyes; external eyes larger than internal ones and left smaller one is double (each is about half the size of the complete one on the right side) in holotype (Fig. 7A). The small juvenile from Chile has lateral eyes fused into a single reniform eye, slightly behind the lateral antennae. Anterior (Fig. 7B), median (Fig. 7C), and posterior parapodia (Fig. 7D) with dorsal and ventral cirri very swollen, much wider than setal lobe; dorsal cirrus has its distal tip well defined and sometimes it appears jointed (even in the juvenile they are wider than the setal lobe). Most cirri have pigmented glands, appear darker than the rest of the body. Pigmented, small glandular areas behind the dorsal cirri in setigers 18-60. Interramal glands present in several anterior and posterior setigers; glands internal, can be seen above the setal lobe in lateral observation of the body.

Notospines start in setigers 9-11 (setiger 9 in juvenile). Furcate setae large but very brittle, they are apparently in the center of the setal bundle, and are slightly asymmetrical (Fig. 1D). Hartmann-Schröder (1965: 286, fig. 288) showed that the setal branches are asymmetrical and that they are fused by a thin blade (Fig. 1E). Posterior end (Fig. 7E) with slightly emergent notospines, one or two asetigerous segments and two lateral anal cirri.

REMARKS

Monro (1933) noted that the type was collected from bottoms with shell debris, coral and pebbles, at 15 fathoms; he illustrated a median parapodium and showed that dorsal cirri were almost three times wider than setal lobe (Monro 1933: text-fig. 12b). Hartman (1947) recorded some specimens from western Mexico, identified them with *A. rigida* Fauvel, 1919, and regarded *A. gorgonensis* as a junior synonym. About the thickness of the dorsal cirri she stated (Hartman 1947: 501): "It is possible that this [Monro] figure was made from a preparation depressed under the cover slip". Western Mexico specimens belong to another species (see *S. harrisae* n. sp., below), but certainly *A. gorgonensis* deserves a specific status. Westheide (1974) examined two specimens and made illustrations from a living one which had longer palps and the distinction between cirrophore and cirrostyle was not clear, the eyes appear at the middle of the prostomium (not posteriorly as in the type), and the pharynx is 4-5 setigers in length. Upon fixation, palps became clearly biarticulated, eyes "moved" towards the posterior margin of the prostomium; the thickness and pigmentation of the body wall prevented observation of the pharynx length. Eyes are duplicated but the degree of fusion may vary; Westheide's specimens had eyes completely fused while in the type they are partly fused. By comparing the drawings by Westheide (1974: 224, fig. 12C), with the figures by Monro, it could be concluded that the relative development of parapodial cirri is affected by fixation or by cover-slip compression, as Hartman (1947) had thought, but in fact the parapodia were taken from different body regions and are not directly comparable, Monro's are from middle and Westheide's are from anterior regions. I conclude that they belong to the same species.

Synelmis harrisae n. sp.
(Figs 1F; 8)

Ancistrosyllis rigida – Hartman 1947: 498-501, pl. 62, figs 1-7 (*non* Fauvel 1919a).

Synelmis albini – Hartman 1968: 393-394, figs 1-5 (*non* Langerhans 1881).

TYPE MATERIAL. — Syntypes: La Jolla, California, shore, 2 syntypes (LACM-AHF 2095); crevices in shale, low tide, 29.III.1938, 1 syntype (LACM-AHF 3029); Melpomene Cove, Guadalupe Island, 28°52'15"N, 118°16'38"W, Mexico, dredge, 34-36 fm, sandy bottom, 19.XII.1949, 3 syntypes (LACM-AHF 1919-49); El Descanso, Baja California, Mexico, shore, 1 syntype (LACM-AHF 2097); Punta Morro, Baja California, Mexico, rocky intertidal, 15.II.1983, Gela & Núñez coll., 1 syntype (ECOSUR-PILA-4).

TYPE LOCALITY. — Southern California and Baja California, Mexico, including the offshore islands, in mixed bottoms in shallow water.

ETYMOLOGY. — This species is named in honor of Leslie H. Harris, for her work on California polychaetes and her generosity in helping me and other Mexican scientists.

OTHER MATERIAL EXAMINED. — **Northeastern Pacific Ocean.** White Cove, Santa Catalina Island, California, shore, R/V *Velero*, stn 1363-41, 12.VII.1941, 1 specimen (LACM-AHF). — Santa Catalina LO3, 8/76, 1 damaged specimen regenerating its anterior end (LACM-AHF). — Santa Catalina M4 8/76, 4 specimens and one anterior fragment (LACM-AHF). — Santa Barbara Island, California (SBI), M1 8/76, 2 specimens (LACM-AHF); SBI, LoI, 8/76, 1 specimen (LACM-AHF); SBI, Mid 2, 8/76, 8 specimens (LACM-AHF); SBI, mid 3 8/76, 2 posterior fragments. — San Clemente Island, L-2 10/76, 1 specimen (LACM-AHF); M-3 10/76, 2 specimens, 1 damaged (LACM-AHF); M-1 10/76, 4 twisted specimens (LACM-AHF).

DISTRIBUTION. — Southern California, USA and northern Baja California, Mexico, though it may be present along the California current ecosystem, in 0-70 m.

DESCRIPTION

Body filiform, variously pigmented from pale to dark red or purple due to Rose Bengal staining but some specimens regenerating their anterior end are uncolored or only slightly colored; pigment more intense on parapodial cirri and darker ventrally in paired glands. Specimens 2.2-17.5 mm long, 0.2-0.9 mm wide, with 29-90 setigers.

Prostomium rectangular with biarticulated palps well separated from each other, palpostyles rounded, massive, distally slightly constricted, and small ventral papillae emerging from the middle of the palp, difficult to see dorsally (Fig. 8A). Three similar fusiform antennae, laterals placed at middle of prostomium, median placed on posterior margin. Two well developed

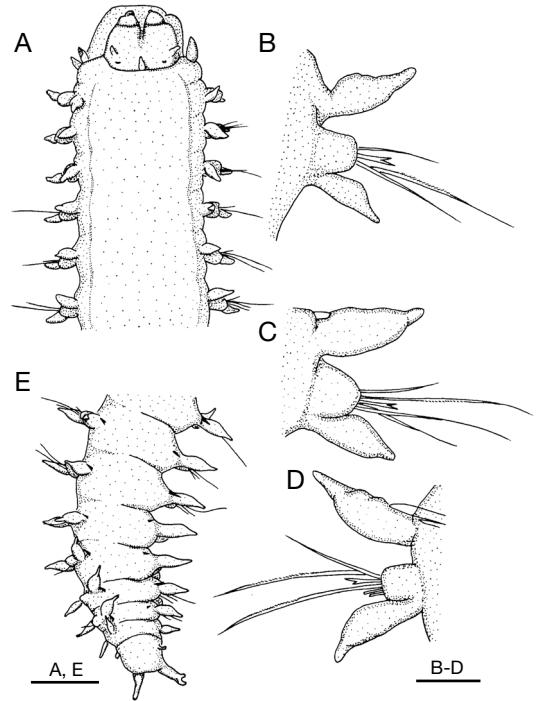


FIG. 8. — *Synelmis harrisae* n. sp. from western Mexico (LACM-AHF-2095); **A**, anterior end in dorsal view; **B**, setiger 10 in posterior view; **C**, setiger 40 in posterior view; **D**, setiger 61 in anterior view; **E**, posterior end in dorsal view. Scale bars: A, E, 0.32 mm; B-D, 75 μ m.

eyes, slightly medial and posterior to lateral antennae. From 21 specimens, 16 had two eyes well developed, five had one eye duplicated, four had one eye split into two or three eyespots but not arranged in a line, and in one specimen eyes could not be seen. Two pairs of tentacular cirri, the dorsal one slightly longer than ventral and about as long as dorsal cirri of setiger 1.

Parapodia with slender fusiform cirri, never thicker than setal lobe. Anterior setigers (Fig. 8B) with thin cirri, becoming slightly wider in median segments (Fig. 8C). Dorsal cirri longer than ventral cirri throughout the body. Glandular areas restricted to paired midventral spots in posterior setigers. No interramal glands.

Notospines first present from setigers 10-16; variation in first occurrence due to regeneration of specimens is present, and one such specimen had spines from setiger 8. Notospines become more

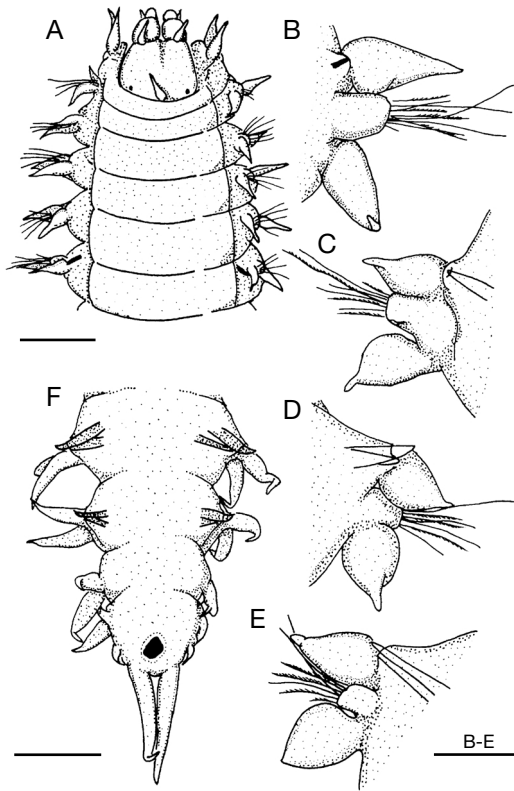


FIG. 9. — *Synelmis kirkegaardii* n. sp. from Cape Verde Islands (ZMUC-905); A, anterior end in dorsal view; B, setiger 5 in posterior view; C, setiger 20 in anterior view; D, setiger 40 in anterior view; E, setiger 60 in anterior view; F, posterior end in dorsal view. Scale bars: A, F, 0.36 mm; B-E, 0.14 mm.

emergent in posterior setigers (Fig. 8D). Neurosetae include smooth capillaries, limbate setae, and one or two asymmetrical furcate setae per setal bundle (Fig. 1F).

Pygidium with two lateral anal cirri (Fig. 8E), as long as previous two asetigerous segments; anal cirri ventrolaterally placed, the right one is distally bifurcated in one specimen. Pharynx can be as long as 5-7 setigers.

REMARKS

On the basis of the specimens examined, *Synelmis harrisae* n. sp. was already found and studied by Hartman (1947) though she identified it as *A. rigida* and included *A. gorgonensis* as a synonym (see above). She regarded the differences

between her specimens and the other described specimens (number of eyes and development of parapodial cirri) as of little importance. However, they are very stable and thus usable to set them apart. The first occurrence of notospines may be related to cropping of the anterior end and later regeneration; it alters the apparent origin of these structures. *S. harrisae* n. sp., *S. albinii* and *S. britayevi* n. sp. are very similar; the latter is easily separated by the presence of the larger lateral glands while *S. albinii* and *S. harrisae* n. sp. can be separated by the type of antennae, being cirri-form in the former and fusiform in the latter.

Synelmis kirkegaardii n. sp. (Fig. 9)

Synelmis albinii – Kirkegaard 1983: 212, 213.

TYPE MATERIAL. — Syntypes: *Atlantide* Expedition, stn 43, Bahía de Praia, São Thiago Island, Cape Verde Islands, 22 m, 84 syntypes (74 complete) (ZMUC-905).

TYPE LOCALITY. — Bahía de Praia, São Thiago Island, Cape Verde Islands.

ETYMOLOGY. — This species is named after Dr Jorgen B. Kirkegaard, from the Zoological Museum of Copenhagen, for his many publications on polychaetes and especially for his work on the materials from the Danish Expedition to tropical West Africa, where these materials came from.

DISTRIBUTION. — Kirkegaard (1988: 75) indicated that *S. albinii* is present in western Africa and, following Pettibone (1966), in the Indian and Pacific oceans. However, specimens from these areas have been found to belong to different species. *Synelmis kirkegaardii* n. sp. is restricted to sublittoral bottoms in the eastern tropical Atlantic Ocean.

DESCRIPTION

Body sub-cylindrical, tapering towards both ends, light brown or yellowish in alcohol, some specimens darker in the anterior end. Body with mid-dorsal elevation, parapodia ventrolateral expansions, and a mid-ventral deep groove, but appearance may vary according to fixation. Length 15-57 mm, width 0.4-1.0 mm, with 49-123 setigers.

Prostomium trapezoidal, with biarticulated palps separated from each other, palpostyles massive

knobs with a ventral papilla on each base (Fig. 9A); ventral longitudinal depression on prostomium that coincides with the separation of the palps. Three similar fusiform antennae, lateral ones anteriorly placed close to the base of palps, median one placed on posterior margin of the prostomium. One pair of dark eyes located close to posterior margin of prostomium but several variations occur. Among the 84 specimens, two lacked eyes or the eyes were colorless (2.4%), three had a single eye (3.6%), eight had one eye duplicated (9.5%), each of which was smaller than the opposite eye, and in two both eyes were double (2.4%). Thus, 13 specimens had their eyes modified. Tentacular cirri fusiform. Parapodia with similar fusiform cirri; setal lobe shorter than cirri, it can be up to half the length of either dorsal or ventral cirri. Notospines from setiger 5, exposed portion of spine up to one third the length of dorsal cirrus (Fig. 9B), becoming slightly more exposed in posterior setigers (Fig. 9C-E). Prepygidial region with thinner cirri (Fig. 9F). Neurosetae of three kinds: limbate setae, capillaries and two or three furcate setae with asymmetrical tines per setiger.

Pharynx short, its eversible portion can be as corresponding to two setigers, without marginal papillae though in two specimens the furrows resemble irregular papillae. Non-eversible portion of pharynx muscular, measuring 8-13 setigers in length, with multiple rows of muscular cells.

REMARKS

Synelmis kirkegaardii n. sp. resembles *S. albini* though it differs by having a more anterior start of notospines and by living in sublittoral bottoms.

Synelmis levinae n. sp. (Fig. 10)

TYPE MATERIAL. — Syntypes: eastern Pacific Ocean, western Mexico, Hoke Seamount, 32°04.36'N, 126°55.57'W, coarse-grained cream-colored calcareous oozes, *Atlantis* with DSRV *Alvin*, cruise 112-13, stn AD1466, 810 m, Box Core 2A, core fraction 0-2 cm, 18.X.1984, 2 syntypes (LACM-AHF-2098).

TYPE LOCALITY. — Hoke seamount (32°04.36'N, 126°55.57'W), western Mexico.

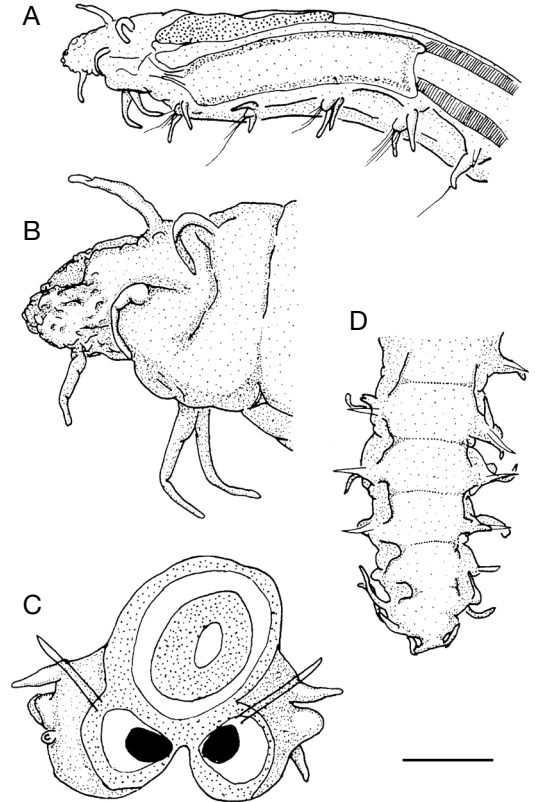


FIG. 10. — *Synelmis levinae* n. sp. from western Mexico (LACM-AHF-2098); **A**, anterior end in sublateral view; **B**, same, enlarged; **C**, median segment; **D**, posterior end in dorsal view. Scale bar: A, D, 0.26 mm; B, 110 μ m; C, 75 μ m.

ETYMOLOGY. — This species is named for Dr Lisa A. Levin, for her many publications on ecology of polychaetes in general, and especially for her studies on seamounts which allowed her to collect this interesting material.

OTHER MATERIAL EXAMINED. — **Eastern Pacific Ocean.** Western Mexico, Hoke Seamount, 32°04.36'N, 126°55.57'W, coarse-grained cream-colored calcareous oozes, *Atlantis* with DSRV *Alvin*, cruise 112-13, stn AD1466, 810 m, Box Core 2A, core fraction 2-10 cm, 18.X.1984, 1 specimen (slide in alcohol-glycerol, LACM-AHF).

DISTRIBUTION. — Apparently restricted to seamounts in western Mexico in 800 m depth.

DESCRIPTION

Body filiform, small, 6-7 mm long, 0.2-0.3 mm wide, 37-39 setigers plus one or two asetigers.

Body pale, translucent, anterior gut dark or black (Fig. 10A). Integument smooth except by palps which are slightly rugose. Ventral longitudinal furrow present.

Prostomium trapezoidal, with separate biarticulated palps, palpostyles massive knobs and long ventrolateral papillae present (Fig. 10B). Three similar cirriform antennae, laterals emerge from middle of prostomium and do not surpass the length of palps; median antenna slightly longer than laterals and placed at posterior prostomial margin. Eyes cannot be detected. Two pairs of long cirriform tentacular cirri, slightly longer than cirri of setiger 1.

Parapodia with cirriform cirri without basal expansions, setal lobe as long as two thirds the length of dorsal cirri. Notopodia reduced to dorsal cirrus; notospines from setiger 5, straight, become thicker and longer posteriorly, protrude slightly more on posterior setigers (Fig. 10C).

Notosetae restricted to notospines, smooth and slightly curved distally. Neurosetae of three kinds, limbate setae more common, become smaller ventrally, in addition one or two smooth straight capillaries and one or two asymmetrical furcate setae. Pre-pygidal region with one or two asetigerous segments, parapodial cirri short, cirriform; two anal cirri about as long as two previous segments (Fig. 10D). Non-everted pharynx about three setigers long, has pigment in transverse fine lines and darker muscular wall. Posterior gut less pigmented but muscle cells easily seen (Fig. 10A). Brain bilobed, about three setigers long.

REMARKS

Synelmis levinae n. sp. belongs to the group of species that have cirriform antennae and cirri, but is distinguished by its lateral antennae which arise from the middle of the prostomium and not from the base of the palps.

Synelmis rigida (Fauvel, 1919) n. comb. (Figs 1G, H; 11A-F)

Ancistrostylis rigida Fauvel, 1919a: 337-339, fig. 1a-e; 1919b: 373, fig. IV; 1920: 206, 210, 211; 1923: 16-

19, fig. 3a-e; 1953a: 110, 111, fig. 53. — Hartman 1954: 625 (only Lidilbut Island). — Reish 1968: 213 *partim*.

Synelmis simplex Chamberlin, 1919: 177-179, pl. 28, figs 1-5.

Kynephorus inermis Ehlers, 1920: 27-29, pl. 3, figs 1-9.

Synelmis albini – Pettibone 1966: 191-195, figs 19-21 (only fig. 20a, b, Saipan). — Gibbs 1971: 137 (both *non* Langerhans 1881, *partim*).

MATERIAL EXAMINED. — **Indian Ocean.** Mission Gravier, Récif Messageries, Djibouti, Red Sea, in corals, 3.I.1904, 1 posterior fragment (MNHN A71); 2 slides of the same fragment in the Fauvel collection (IEA-D63 and D63') (63 has three setigers with duplicate aciculae, cirriform cirri).

Western Pacific Ocean. Mohican Reef, Rangiroa Island, Paumotu (= Tuamotu) Islands, French Polynesia, 23.IX.1899, 2 types of *Synelmis simplex* Chamberlin, 1919 (holotype USNM 19480, paratype USNM 19481). — Mission Seurat, Takaerero Island (perhaps Takarora), Tuamotu Archipelago, French Polynesia, on pearl oyster, 25 m, 25.V.1904, 2 syntypes of *Ancistrostylis rigida* (MNHN A71); 1 slide in the Fauvel collection (IEA-C92'; it indicates Tokaerero b but it has another adhesive tag with San Thomé) four parapodia but three are collapsed, one seems to be the one drawn for the description. — Moluccas Islands, Pulo Edam, Nordwatcher, Amboina, 3.41°S, 128.10°E, Indonesia, 2 syntypes of *Kynephorus inermis* (ZMH-324a). — Marshall Islands, Saipan, Geological Survey stn D-9 1949, P. E. Cloud coll. (id. O. Hartman as *A. rigida*; id. M. Pettibone as *S. albini*), 1 specimen (USNM 26080). — Royal Society Expedition, Martin Island, 4.VIII.1965, P. E. Gibbs, 1 specimen (BMNH 1970.309); Mamara Pt, N Guadalcanal Island, Solomon Islands, 24.VIII.1965, 1 specimen (BMNH 1970.310); Batuona Island, 3.IX.1965, 1 specimen (BMNH 1970.311); Maramasite (= ?Maramasike Passage), Maraita-Maramasike Islands, 26.XI.1965, 2 specimens (BMNH 1970.313); Graham Point, SE Guadalcanal Island, Solomon Islands, 2 specimens (BMNH 1970.312). — Marshall Islands, no further data, 1 complete specimen (LACM-AHF 1504).

DISTRIBUTION. — Tropical central and western Pacific Ocean, Mariana Islands, Solomon Islands, and Tuamotu Archipelagos. In mixed or coralline bottoms or in the sediments over pearl oysters, all in shallow water.

DESCRIPTION

Syntypes of *Ancistrostylis rigida* with subcylindrical body, tapering towards both ends, dark colored in alcohol. Complete syntype 12 mm long,

0.8 mm wide, with 82 setigers and about four asetigers. Posteriorly incomplete syntype slightly distorted anteriorly, setigers 25-28 slightly swollen; 7 mm long, 0.8 mm wide, with 50 setigers.

Prostomium rectangular, wider than long, with palps biarticulated, palpostyles contracted making palps seem completely fused, but in ventral view a longitudinal furrow indicates fusion. Ventral papillae tiny, lateral to palpostyles. Three similar fusiform antennae, laterals emerge from two transverse depressions at middle of prostomium, do not reach the palps tip; median antenna on the posterior margin of prostomium, has a dark spot in its base. After over-night immersion in glycerin, two eyes can be seen, tiny and behind lateral antennae in complete syntype but incomplete syntype has two pairs of fused eyes.

Parapodia with subequal fusiform cirri; setal lobe can be as much as half the length of cirri. Notospines start in setiger 15 in complete syntype and in setiger 13 in anterior fragment. Prepygidial region with slimmer cirri; pygidium with dorsal anus and two anal cirri as long as the two previous segments.

Neurosetae of three kinds; spinulose capillaries which appear limbate most abundant, some straight smooth capillaries and one or two straight nearly symmetrical furcate setae per setal bundle (Fig. 1G, H). Posterior end contracted, segments well marked; one or two asetigerous segments and two ventrolateral anal cirri. Non-everted pharynx around 10 setigers long, followed by a convolute portion of 8-10 setigers long.

Holotype of *Synelmis simplex* (examined by H. K. Dean): body very dark, 43.8 mm long, 0.8 mm wide. Prostomium with tiny eyespots in a line. Pharynx difficult to see but it is about 10 setigers long. Emergent notospines in right setiger 23 and left setiger 19. Most setae broken.

Paratype of *Synelmis simplex*: mature specimen with body dark with a intersegmental dark band between setigers 4-5 and other smaller ones, less pigmented, over the next segments. Interparapodial glandular areas dark purple or black, wider towards the posterior end. Pigmentation less intense in anterior end, darker

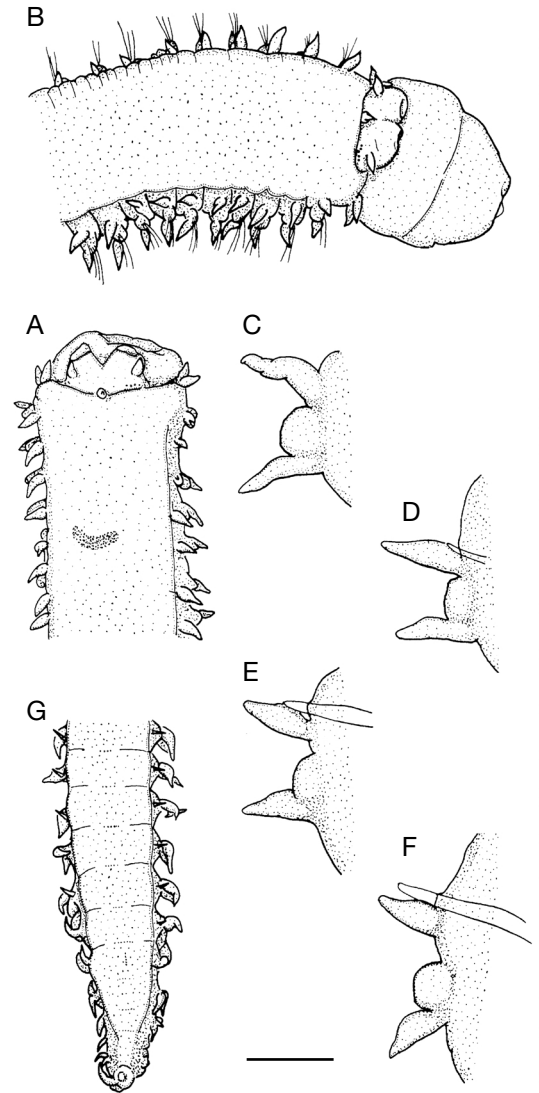


FIG. 11. — *Synelmis rigida* (Fauvel, 1919) n. comb; **A**, paratype of *S. simplex* Chamberlin, 1919, anterior end in dorsal view (USNM 19481); **B-F**, specimen from Solomon Islands (BMNH 1970.312); **B**, anterior end in subdorsal view; **C**, setiger 3 in posterior view; **D**, setiger 20 in posterior view; **E**, setiger 50 in posterior view; **F**, setiger 100 in posterior view; **G**, paratype of *S. simplex*, posterior end in dorsal view. Scale bars: **A**, 0.6 mm; **B**, 0.4 mm; **C-F**, 160 μ m; **G**, 0.5 mm.

from setiger 20. Paratype 43 mm long, 1.1 mm wide, with more than 190 setigers.

Prostomium short, palps biarticulated, separate, palpostyles massive knobs with ventrolateral papilla (Fig. 11A). Three subequal antennae,

laterals arise from base of palps, median one posteriorly placed. Four tiny eyespots on right side of the prostomium (see comments below).

Parapodia with subequal fusiform cirri, setal lobe in median setigers as long as half the length of dorsal cirri, posteriorly becomes slightly longer, towards the pygidium become smaller. Notospines start at setiger 21 (23 on the left side). Pygidium with terminal anus (Fig. 11G); two lateroventral anal cirri as long as the previous three segments. Neurosetae mainly limbate setae but most broken, furcate setae were not seen. Everted pharynx short, globose, smooth, it is two setigers long. Non-everted pharynx about 11 setigers long.

Larger syntype of *Kynephorus inermis* is 46 mm long, 1.0 mm wide, with 152 setigers (224 in the original description, see Ehlers 1920). Prostomium deeply contracted ventrally making difficult to detect the eyes; palps massive, biarticulated with tiny papillae. Antennae fusiform but its tips have been eroded, laterals placed about middle of prostomium and median posterior. Tentacular cirri cirriform and slightly eroded in the tips. First notospine appear in setiger 16. Pharynx reaches setiger 12. Pygidium regenerating, an asetiger and two lateral anal cirri bordering terminal anus. Smaller syntype of *K. inermis* is anterior end and a median fragment; first 10 mm long, 0.9 mm wide (pharynx 3 mm long), and second 21.5 mm long, 1.0 mm wide at about the middle, with 75 setigers.

Another specimen (USNM 26080) lacks posterior end and has some almost transverse cuts over its anterior end; it is 20 mm long, 1.0 mm wide, with 126 setigers. There are three eyes over the left and four eyes over the right sides of the prostomium. Notospines start from setiger 17 and its pharynx is nine setigers long. It has pigmented glands behind the parapodial lobes, they are small in the first 10 setigers and become bigger in posterior setigers. Its ventral furrow is deep and extends over the whole body.

Specimens from the Solomon Islands are 23-62 mm long, 0.9-1.0 mm wide, with 131-167 setigers. Body dark. Prostomium with two lateral almost symmetrical series of two to six eyes

each; series had two eyes in one side in two specimens, three eyes in one side in six specimens, four eyes in one side in three specimens, and there were five or six eyes in one side in two specimens (Fig. 11B). Parapodia with cirriform cirri of about the same length, narrower than the setal lobe. Notospines start in setigers 16-21 (setiger 17 in five specimens), missing in anterior parapodia (Fig. 11C), become progressively longer and more emergent in more posterior setigers (Fig. 11D, E), become as long as the dorsal cirrus by setiger 100. Pharynx can be 11-14 setigers long.

REMARKS

The main differences between *S. rigida* n. comb. and other species in the genus can be noticed in the key; the most important are the development of the cirri, the start of the notospines and the eye development. It is closely related to *S. sotoi* n. sp. but they differ in that the dorsal cirrus is similar to the ventral one in *S. rigida* n. comb. while in *S. sotoi* n. sp., dorsal cirri is smaller than ventral one. On the other hand, the publication by Fauvel (1919a) has priority over the publication by Chamberlin (1919); the first one was deposited in the library of The Natural History Museum, London, on 26 June 1919 while the second one was printed in July 1919 (Muir 1997 pers. comm.). Pettibone (1966) illustrated a specimen from Saipan Island, Mariana Islands, with three or four eyes in a row on either side of the prostomium. This agrees with the description by Chamberlin (1919). The syntypes of *A. rigida* are smaller and heavily pigmented, which might explain the difference in the observed number of eyes between both descriptions.

Synelmis sotoi n. sp. (Figs 11, J; 12)

Synelmis albini – Pettibone 1966: 191-195, figs 19-21 (*partim*). — Rullier & Amoureux 1979: 160 (*partim*).

Synelmis simplex – Treadwell 1924: 12, 13 (*non* Chamberlin 1919, *partim*).

TYPE MATERIAL. — Syntypes: Univ. Iowa Barbados-Antigua Expedition, summer 1918, stn 99, id. M. H. Pettibone, 1 syntype (USNM 20275); West Indies, 1972, stn 160-29, encrusting materials chipped from

rocks, W. Hartman, id. C. D. Long, 1 syntype (USNM 49240); *Edwin Link* Expedition, stn 2779, S Chinchorro Bank, 18°25.91'N, 87°18.93'W, 380 ft, 28.VIII.1990, 1 syntype (ECOSUR-PILA-5); stn 2793, 1 syntype (ECOSUR-PILA-6); ENE Isla Mujeres, 21°16.6'N, 86°38.5'W, 243 ft, 28.VIII.1990, L. A. Soto & E. Escobar, 1 syntype attracted by submersible lights (ECOSUR-PILA-7); Brazil, *Calypso*, stn 23, S of Recife, 8°19'S, 34°42'W, 21.XI.1961, 75 m, among algae and corals, 1 syntype (MNHN A888 As296).

TYPE LOCALITY. — Northwestern Caribbean.

ETYMOLOGY. — Named in honor of Dr Luis A. Soto, a tenacious Mexican promoter of marine sciences in general and of marine invertebrate taxonomy in particular; he was part of the crew who collected part of these materials. His many achievements have received some recognition and I wish to add this homage.

OTHER MATERIAL EXAMINED. — **Florida.** Looe Key National Marine Sanctuary, 24°33'N, 81°24'W, 1 m, X.1983, J. Thomas, 1 complete specimen and an anterior damaged fragment (USNM 98203).

Caribbean. Guayanilla Reef-1, Puerto Rico, C. Buchanan coll., id. C. D. Long, 4 specimens (USNM 50751) severely depressed by the tags, 54–63 mm long, 0.7–1.0 mm wide (wider if more depressed), with 138–164 setigers 1st notospine from setigers 16, 17, 18, 22, four eyes on the left side and two (one specimen)-four eyes on the right side, pharynx about 13 setigers long, some have ventral dark “mitochondria” glands. — *Edwin Link* Expedition, stn 2785, off Punta Gavilán, 18°21'N, 87°47'W, 279 ft, 25.VIII.1990, 1 posterior fragment.

DISTRIBUTION. — Florida, northwestern Caribbean Sea to northern Brazil, in intertidal to shallow depths.

DESCRIPTION

Syntype (MNHN A888 As296): color in alcohol dark; has deep ventral dissection to expose the distal portion of pharynx. Specimen 43 mm long, 1.0 mm wide, with 134 setigers. Eyes arranged in rows: on left side eyes are in continuous line with one set off from the rest, on right side the separated eye is ahead of the line (Fig. 12B). Parapodial cirri with pigmented glands towards bases; cirri subequal or ventral cirri slightly longer, thin, narrower than setal lobe. Notospines emerge from setiger 19; most are broken. Furcate setae slightly asymmetrical (Fig. 11, J). Pharynx is 11 setigers long.

Syntype ECOSUR-PILA-5: complete, 36 mm long, 1.0 mm wide, with 119 setigers. Body

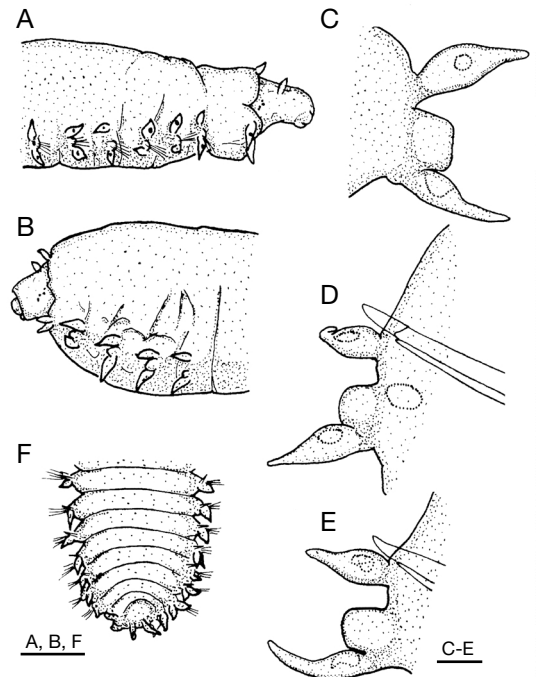


FIG. 12. — *Synelmis sotoi* n. sp.; **A**, NW Caribbean, anterior end in lateral view (ECOSUR-PILA-5); **B**, Brazil, anterior end in lateral view (MNHN A888 As296); **C**, NW Caribbean, anterior setiger in dorsal view (ECOSUR-PILA-5); **D**, same, median setiger in frontal view; **E**, same, posterior setiger in posterior view; **F**, same, posterior end in dorsal view. Scale bars: A, B, F, 0.5 mm; C-E, 113 µm.

cream with pink cirri, though pigment concentrated in glands and some pigmented spots on prostomium. Prostomium truncate cone; palps biarticulated, well separated from each other with small ventral papilla not visible dorsally. Three fusiform antennae, laterals placed about the middle of prostomium, median posteriorly placed. Eyes in lateral row, three on each side. Two pairs of subequal fusiform tentacular cirri (Fig. 12A).

Parapodial cirri with submedial pigmented glands, visible even when cirri are dark (ECOSUR-PILA-6), cirri subequal, narrower than rounded setal lobe. Dorsal cirri wider and bigger in anterior setigers (Fig. 12C), become slightly shorter than ventral cirri in median (Fig. 12D) and posterior segments (Fig. 12E). Notospines start in setiger 22 and protrude up to two thirds of length of dorsal

cirri in posterior setigers. Posterior end truncate, pygidium with dorsal anus and two short ventral anal cirri (Fig. 12F). Pharynx length could not be determined.

Syntype ECOSUR-PILA-6: complete; body pale and cirri dark, even in the posterior regenerating section of the body, which is paler. Specimen 16.5 mm long, 0.9 mm wide, with 76 setigers.

Prostomium bent ventrally with biarticulated palps well separated of each other, palpostyles massive; ventral papillae were not observed. Three fusiform antennae, laterals placed about middle of prostomium and median posteriorly placed. Eyes in two lateral rows, each row with five eyes and at least one pair per row seems to be fused. Tentacular cirri fusiform, longer than cirri of setiger 1.

Parapodial cirri dark with darker glandular medial areas; setal lobe rounded. Anterior setigers with dorsal cirri larger than ventral one, in median setigers become subequal, in posterior setigers ventral cirri slightly longer. Notospines start in setiger 17, become more exposed posteriorly, half as long as dorsal cirrus. Posterior end regenerating. Pharynx length could not be determined because of the thickness of body wall.

Syntype ECOSUR-PILA-7: light complete with everted pharynx. Body thin, colorless and partly dehydrated. Specimen 14.5 mm long, 0.3 mm wide, with 60 setigers.

Prostomium with biarticulated palps widely separated, palpostyles rounded; ventrolateral papilla barely visible dorsally. Three fusiform thin antennae, laterals placed about middle of prostomium, median posteriorly placed. Two pairs of fusiform, subequal tentacular cirri, slightly longer than cirri of setiger 1. Notospines start in setiger 17 and become more exposed posteriorly. Posterior end with one asetigerous, anus terminal and two small anal cirri. Everted pharynx 4 setigers long and non-everted portion 5 setigers long, for total of 9 setigers.

Another syntype (USNM 20275) is complete, 28 mm long, 0.6 mm wide, with 127 setigers. No eyes can be seen. Pharynx is everted and broke the stomodeum wall. Notospines start in setiger 19.

Another syntype (USNM 49240) is complete,

19 mm long, 0.9 mm wide, with 98 setigers. Its lateral antennae are placed medially and its eyes are five on the left and seven on the right side of the prostomium. Notospines appear from setiger 18.

REMARKS

Synelmis sotoi n. sp. belongs to the group of species with fusiform antennae and cirri and lateral antennae placed medially. It is very similar to *S. rigida* n. comb., differing mainly in having median setigers with parapodial cirri thicker than setal lobe.

Synelmis cf. *albini* (Langerhans, 1881)

?*Synelmis* cf. *albini* – Wolf 1984: 29.35, figs 29.31, 29.32.

MATERIAL EXAMINED. — Gulf of Mexico. RV *Columbus Iselin*, stn 2532, 29°45'56.5"N, 86°12'20.5"W, 52 m, 1 complete specimen (USNM 55816).

DISTRIBUTION. — Restricted to two localities off Florida at 37–52 m water depth (Wolf [1984] record is from a nearby station at 37 m).

DESCRIPTION

Body damaged, pale with black glandular areas ventrally in median and posterior setigers. It is complete, 5 mm long, 0.5 mm wide, with 50 setigers. Prostomium with palps biarticulated, well separated from each other, with small ventral papillae. Antennae fusiform, laterals placed about the middle of prostomium. One pair of eyes, single, dorsal. Tentacular and parapodial cirri fusiform. Dorsal cirri become shorter in median and posterior setigers. First notospine in setiger 8. Pygidium with two ventral anal cirri. Pharynx is about eight setigers long.

REMARKS

Synelmis cf. *albini* is morphologically similar to *S. sotoi* n. sp.; they differ in that the former has only two big eyes and notospines start from setiger 8. It also seems to live in mixed bottoms and not in coral-reef environments. This specimen might include the record by Wolf (1984) of *S. cf. albini*, which was coming from a very close site, but he noticed that in his only specimen

(9 mm long) notospines start in setiger 5. If those two specimens belong to the same species, their variability might fit what is known in other *Synelmis* species; however, the difference in the number of eyes between this apparently undescribed species and *S. sotoi* n. sp. is beyond what

has been observed in other species. It might be that the basic pattern is a single pair of eyes that might increase its number with body enlargement, but this has not been seen in any other species. More and better specimens would allow a better recognition of these matters.

KEY TO SPECIES OF *SYNELMIS* CHAMBERLIN, 1919

1. Lateral antennae located anteriorly, close to the base of palpostyles 2
— Lateral antennae located in the middle of the prostomium 6
2. Median setigers with slim cirri, sometimes basally expanded 3
— Median setigers with fusiform cirri, expanded and wider than setal lobe; notospines from setigers 5-6 (sublittoral) *S. kirkegaardi* n. sp. (eastern Atlantic Ocean)
3. Notospines from setiger 5 4
— Notospines from setiger 9; with four eyes *S. gracilis* n. comb. (Japan)
4. Median antenna short, about half prostomial length *S. amoureuksi* n. sp. (Brazil)
— Median antenna long, 1/2-3/4 prostomial length 5
5. Setiger 1 with dorsal cirrus longer than following one; with two eyes
..... *S. gibbsi* n. sp. (Red Sea to Marshall Islands)
— Setiger 1 with dorsal cirrus equal in length to following one; with two large eyes or two patches of ocelli *S. knoxi* (New Zealand)
6. Notospines from setiger 5-8; with two eyes or without eyes 7
— Notospines from setigers 8-16; with two eyes or without eyes 8
— Notospines from setigers 15-23; eyes in a row with three to five eyes each 14
7. Median setigers with cirriform cirri (without eyes) *S. levinae* n. sp.
— Median setigers with fusiform cirri (with two eyes) *S. cf. albini* (Gulf of Mexico)
8. Median setigers with dorsal and ventral cirri wider than setal lobe (notospines from setigers 9-11); with two pairs of fused eyes
..... *S. gorgonensis* n. comb. (eastern subtropical Pacific)
— Median setigers with cirri thin or thick but not markedly wider than setal lobe 9
9. Setal lobe well developed (two eyes) 10
— Setal lobe reduced, setae seem to emerge directly from body wall 12

10. Large lateral glands well developed behind setal lobes over most of the body
 *S. britayevi* n. sp. (Mozambique Channel)
 — Without lateral glands behind setal lobes 11
11. All antennae fusiform (notospines from setigers 10-16)
 *S. harrisae* n. sp. (California to northwestern Mexico)
 — All antennae cirriform (notospines from setigers 10-11)
 *S. albini* (eastern Atlantic Ocean)
12. Parapodial cirri similar in length; notospines smooth, in median setigers are about
 half the dorsal cirrus *S. sinica* (South China Sea)
 — Median setigers with dorsal cirri shorter than ventral cirri; notospines with a longitu-
 dinal depression, in median setigers are as long or longer than dorsal cirrus 13
13. Median antennae long; eyes lateral or absent
 *S. emiliae* n. sp. (eastern tropical Pacific Ocean)
 — Median antenna short, not reaching setiger 1; lateral eyes absent (some dorsal
 granules) *S. glasbyi* n. sp. (Mozambique Channel)
14. Median and posterior setigers with dorsal and ventral cirri similar in length and
 width (notospines from setiger 15-23)
 *S. rigida* n. comb. (Indian and western Pacific oceans)
 — Median and posterior setigers with dorsal cirri shorter and thicker than ventral ones
 (notospines from setiger 17-22) *S. sotoi* n. sp. (Florida, NW Caribbean to Brazil)

REMARKS

— *S. gracilis* n. comb. Its original description was translated to English by Imajima & Hartman (1964: 86).

— *S. amoureuxi* n. sp. It is close to some records by Imajima (1987) as *S. albini*; his specimens from Tanegashima have emergent notospines from setigers 15-23 and are probably an undescribed species; further, according to his figure 4j, one of his specimens from Sagami is a *Litocorsa*.

— *S. albini*. It has been redescribed by Glasby (2003).

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