

THREE NEW SPECIES OF PILARGIDAE  
(ANNELIDA: POLYCHAETA) FROM THE EAST COAST OF  
FLORIDA, PUERTO RICO, AND  
THE GULF OF MEXICO

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*Abstract.*—A new species of *Litocorsa* Pearson, 1970, and two new species of *Synelmis* Chamberlin, 1919, are described from Puerto Rico, the east and west coasts of Florida, and Texas.

The genus *Litocorsa* Pearson, 1970, was erected for a single species, *L. stremma* Pearson, found off the west coast of Scotland (Pearson 1970) and from the Mediterranean Sea (Katzmann et al. 1974). Wolf (1984:29-41) identified another species, *Litocorsa* sp. A, in material collected in the Gulf of Mexico. This species is here described, and the generic diagnosis is emended.

The genus *Synelmis* Chamberlin, 1919, was recorded from Florida and the Caribbean as *Synelmis albini* (Langerhans 1881) by Pettibone (1966:191, with synonymies); however, judging by her figures of specimens from different localities, it appears she was actually dealing with two or perhaps as many as four species. Wolf (1984) identified three apparently undescribed species of *Synelmis* from the Gulf of Mexico. Two of them are here newly described.

The bulk of the material examined for this study was collected as part of a U.S. Bureau of Land Management (now Minerals Management Service) Outer Continental Shelf baseline study conducted during 1975-1981. MAFLA stations were those designated within the Mississippi-Alabama-Florida portion of the program; SOFLA stations were those located off southwest Florida; STOCS stations were located off the Texas coast (see Uebelacker and Johnson 1984). IXTOC stations were collected as part of the IXTOC Oil Spill As-

essment Study off the southern coast of Texas and were also included in Uebelacker and Johnson (1984). The remaining material was collected under the auspices of the Environmental Protection Agency (EPA) during contracts issues to Battelle, Columbus Laboratories (EPA/Bat stations), Interstate Electronics Corp. (IEC stations) and Science Applications International Corp. (SAI stations) for studies located off Puerto Rico, east and west coasts of Florida, and Texas (see Acknowledgments).

The type material and some additional specimens are deposited in the U.S. National Museum of Natural History, Smithsonian Institution (USNM). Other specimens are in the laboratory museum of Barry A. Vittor & Associates, Inc., Mobile, Alabama.

Figure Abbreviations

a	alimentary canal
anC	anal cirrus
b	brain
cM	circular muscle
dbVe	dorsal blood vessel
dC	dorsal cirrus
dLM	dorsal longitudinal muscle
dLVe	dorsal lateral vessel
dtC	dorsal tentacular cirrus
e	epidermis
lAn	lateral antenna
m	mouth
mAn	median antenna
mvC	midventral cirrus
nC	nerve cord

neAc	neuropodial aciculum
neSp	neuropodial spine
noAc	notopodial aciculum
noSp	notopodial spine
oM	oblique muscle
pa	palp
paSt	palpostyle
t	testis
vbVe	ventral blood vessel
vC	ventral cirrus
vlM	ventral longitudinal muscle
vlVe	ventral lateral vessel
vTc	ventral tentacular cirrus

*Litocorsa* Pearson, 1970

*Type species.*—*Litocorsa stremma* Pearson, 1970:69.

*Diagnosis (emended).*—Palps fused dorsally, with or without ventrolateral palpostyles. Antennae present or absent. Two pairs of small tentacular cirri present. Notopodia each with single acicular spine. Neuropodia with 1–2 stout emergent spines, and slender serrate setae having fine tips. Pygidium smooth, with pair of smooth, slender anal cirri. Body with smooth integument.

*Remarks.*—The above diagnosis is modified from Pearson (1970:69) to include the new species described herein. The pointed prostomium described by Pearson (1970:70) and Katzmann et al. (1974:14) for *Litocorsa stremma* is here interpreted as palps that are fused dorsally.

*Litocorsa antennata*, new species

Fig. 1a–j

*Litocorsa stremma.*—Flint and Rabalais, 1980:195, 197–201 [not Pearson, 1970].

*Litocorsa* sp. A.—Wolf, 1984:29–41, figs. 29–39, 29–40a–j.

*Material examined.*—PUERTO RICO: SAI Sta A1-1, Mar 1984, 18°29.7'N, 66°43.4'W, muddy silt, 145 m, 1 specimen. FLORIDA: SOFLA Sta 4B, D, Aug 1981, 26°45.81'N, 83°32.12'W, medium sand, 56 m, 4 specimens (USNM 86944-5).—Sta 25, Nov 1980, 24°47.95'N, 82°13.26'W, silt/

clay, 24 m, 1 specimen (USNM 86946); MAFLA Sta 2208G, Jun 1976, 27°45'00"N, 83°27'30"W, clayey sandy silt, 30 m, 2 specimens (USNM 86941).—Sta 2209H, Aug 1977, 27°52'30"N, 83°33'59"W, clayey sandy silt, 34 m, 1 specimen (USNM 86943).—Sta 2422C, Jun 1976, 29°30'N, 14°27'W, medium fine sand, 24 m, 26 specimens.—Sta 2423B, C, Jul 1976, 29°37'00.8"N, 84°17'00.2"W, silty fine sand, 19 m, 146 specimens including HOLOTYPE (USNM 98772) and 59 Paratypes (USNM 98773).—Sta 2424C, Jul 1976, 29°13'00.7"N, 85°00'01.4"W, medium sand, 27 m, 1 specimen. TEXAS: IEC Sta 003-006, 28 Sep 1979, 29°32.2'N, 93°47.1'W, sandy clay, 12 m, 1 specimen; Sta 011-009, 28 Sep 1979, 29°26.8'N, 93°42.2'W, sand, 12 m, 3 specimens.—STOCS Sta II/6-3, Aug 1976, 27°24'N, 96°29'W, silty clay, 98 m, 1 specimen (USNM 86948).—Sta III/2-5, Spring 1976, 26°58'N, 96°48'W, silty clay, 65 m, 2 specimens (USNM 86949).—Sta III/4-5, Fall 1976, 26°58'N, 97°20'W, sand, 15 m, 13 specimens (USNM 86951).—Sta III/4-4, same location, Winter 1977, 1 specimen (USNM 86950).—Sta IV/1-6, Winter 1976, 26°10'N, 97°01'W, clayey sand, 27 m, 2 specimens (USNM 86952).—IXTOC Sta S52-6, Nov 1979, 26°10'00"N, 97°01'00"W, silty sand to clayey sand, 27 m, 1 specimen (USNM 86947).

*Description.*—Length to 25 mm, width to 0.2 mm. Largest specimen complete with 107 setigers. Prostomium with minute median and lateral antennae (Fig. 1a). Eyes absent. Palps fused dorsally, with pair of minute ventrolateral palpostyles (Fig. 1b). Dorsal and ventral tentacular cirri short, digitiform, similar in size and shape to dorsal cirri (Fig. 1a–c). Ventral cirri, beginning on setiger 2, slightly smaller than dorsal cirri. Parapodia poorly developed, not set off from body wall (Fig. 1d).

Stout notopodial acicular spines beginning on setigers 6–8, accompanied by slender internal aciculum (Fig. 1d). Slender, serrate neurosetae (Fig. 1e) present throughout,

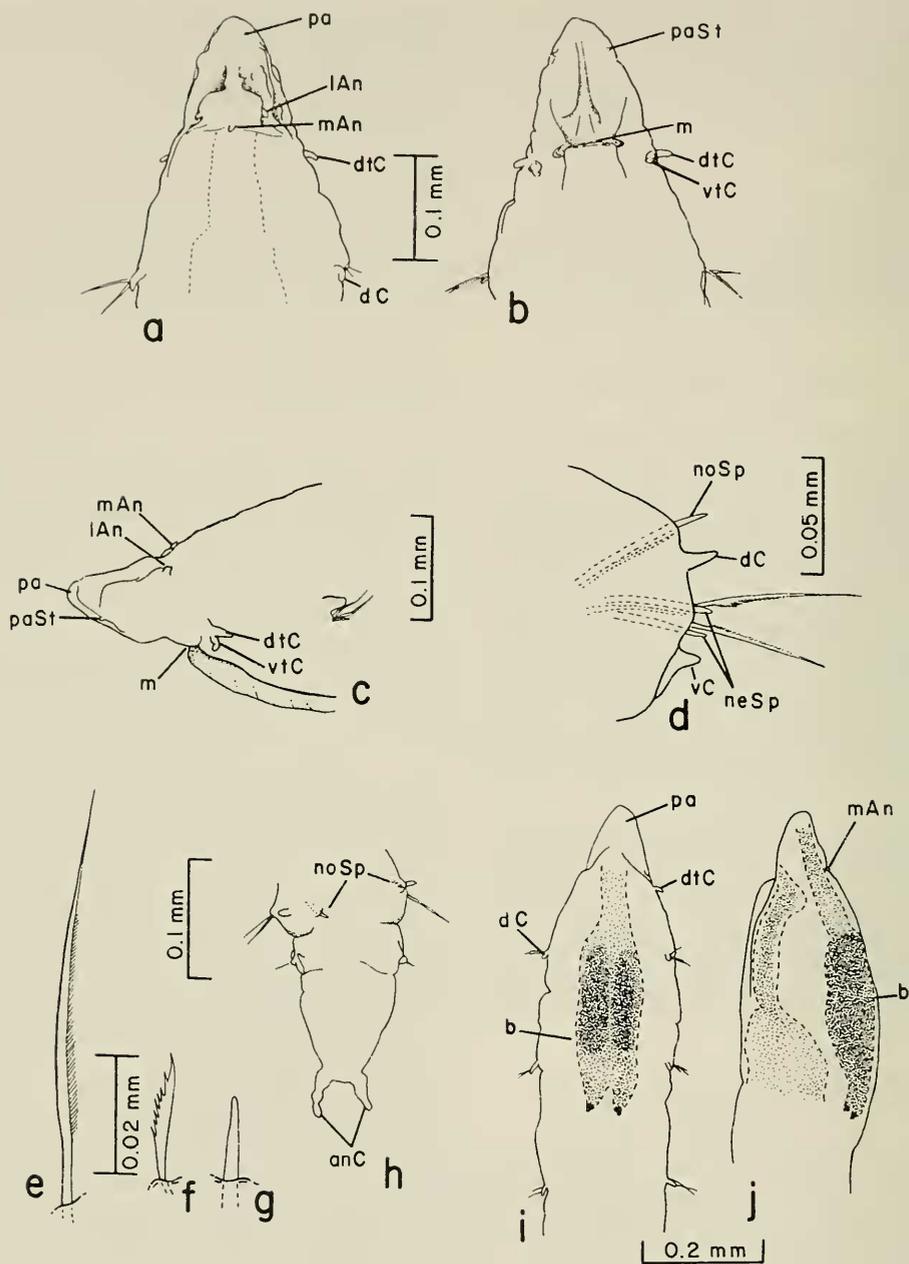


Fig. 1. *Litocorsa antennata*: a, Anterior end, dorsal view; b, Same, ventral view; c, Same, lateral view; d, Middle parapodium, anterior view; e, Upper neuroseta; f, Neuropodial spine from setiger 3; g, Same, from middle setiger; h, Posterior end, dorsal view; i, Anterior end showing brain; j, Same, lateral view. (All figures from Wolf 1984, figs. 29-40a-j.)

accompanied by 1–2 acicular spines. Neuropodial spines serrate on first 1–3 or 4 setigers (Fig. 1f), gradually becoming smooth thereafter (Fig. 1g).

Pygidium with pair of smooth, filiform anal cirri (Fig. 1h).

Brain visible through integument, posteriorly bilobed extending into setiger 3, with lobes divergent, more darkly pigmented at tips (Fig. 1i, j).

*Remarks.*—*Litocorsa antennata* differs from *Litocorsa stremma*, the only other described species in the genus, in having antennae and palpostyles instead of lacking them. Examination of specimens of *L. stremma*, loaned by Dr. Pearson, confirms the absence of any head appendages on his specimens. The setal morphology of both species is identical, including the serrate neuropodial spines of the anterior few setigers.

Pearson (1970:72) and Wolf (1984:29–41) described an internal, dorsal, glandular organ for *L. stremma* and *L. sp. A*, respectively. This “organ” is obviously the brain similar to that already described for some syllids, for example (Perkins 1980:1114).

*Etymology.*—The specific epithet refers to the presence of antennae.

*Distribution.*—Gulf of Mexico, Florida to Texas; Puerto Rico, 12–145 m.

### *Synelmis* Chamberlin, 1919

*Type species.*—*Synelmis simplex* Chamberlin, 1919.

*Diagnosis.*—Palps not fused; palpostyles present. Three antennae present, usually quite small. Two pairs of tentacular cirri present. Acicular notosetae straight or slightly curved. Neurosetae including smooth, straight acicular spines or spines with teeth or serrations; furcate setae; and serrate setae tapering to entire or minutely bifid tips. Pygidium smooth, with a pair of long, slender, smooth, anal cirri. Body with smooth, iridescent integument.

### *Synelmis acuminata*, new species

Fig. 2a–k

*Synelmis* sp. C.—Wolf, 1984:29–39, figs. 29–37, 29–38a–k.

*Material examined.*—PUERTO RICO: IEC Sta 003–006, Jan 1980, 18°30.12'N, 66°09.00'W, silty clay, 220 m, HOLOTYPE (USNM 98766).—Sta 003–005, Jun 1980, same location, 1 Paratype (USNM 98767). FLORIDA: EPA/Bat Port Everglades Sta PE4-1, Feb 1984, 26°06.00'N, 80°04.24'W, sand and coral rubble, 56 m, 2 Paratypes (USNM 98768).—SOFLA Sta 4D, Aug 1981, 26°45.81'N, 83°32.12'W, medium sand, 56 m, 1 specimen (USNM 86991).—MAFLA Sta 2313E, Nov 1977, 28°23'59.3"N, 85°15'03.0"W, clayey sandy silt, 177 m, 1 specimen (USNM 86990).—Sta 2422C, Jun 1976, 29°30'N, 84°27'W, medium fine sand, 24 m, 1 specimen.—Sta 2957G, Nov 1977, 25°40'N, 84°15'W, silty very fine sand, 180 m, 1 specimen. TEXAS: STOCS Sta HR1-5, Fall 1976, 27°32'05"N, 96°28'19"W, 75 m, 1 specimen (USNM 86992).

*Description.*—Length to 13 mm, width to 0.3 mm. Largest specimen complete with 50 setigers. Prostomium (Fig. 2a) with 3 small digitiform antennae, equal in length. Eyes located dorsolaterally near posterior margin of prostomium. Palps with small ventral palpostyles (Fig. 2b, c). Dorsal and ventral pairs of tentacular cirri equal in length, about 1.5 times longer than antennae (Fig. 2b). Dorsal cirri all similar in length, extending just beyond neuropodia (Fig. 2d). Ventral cirri present throughout, smaller than dorsal cirri (Fig. 2d).

Notopodia each with single acicular spine (Fig. 2e) beginning on setiger 5, accompanied by slender internal aciculum (Fig. 2d). Neuropodia of anterior 14–17 setigers with about 9 serrate setae tapering to fine tips (Fig. 2f); thereafter, teeth of middle and lower neurosetae gradually becoming rounded and arranged in 2 rows on convex

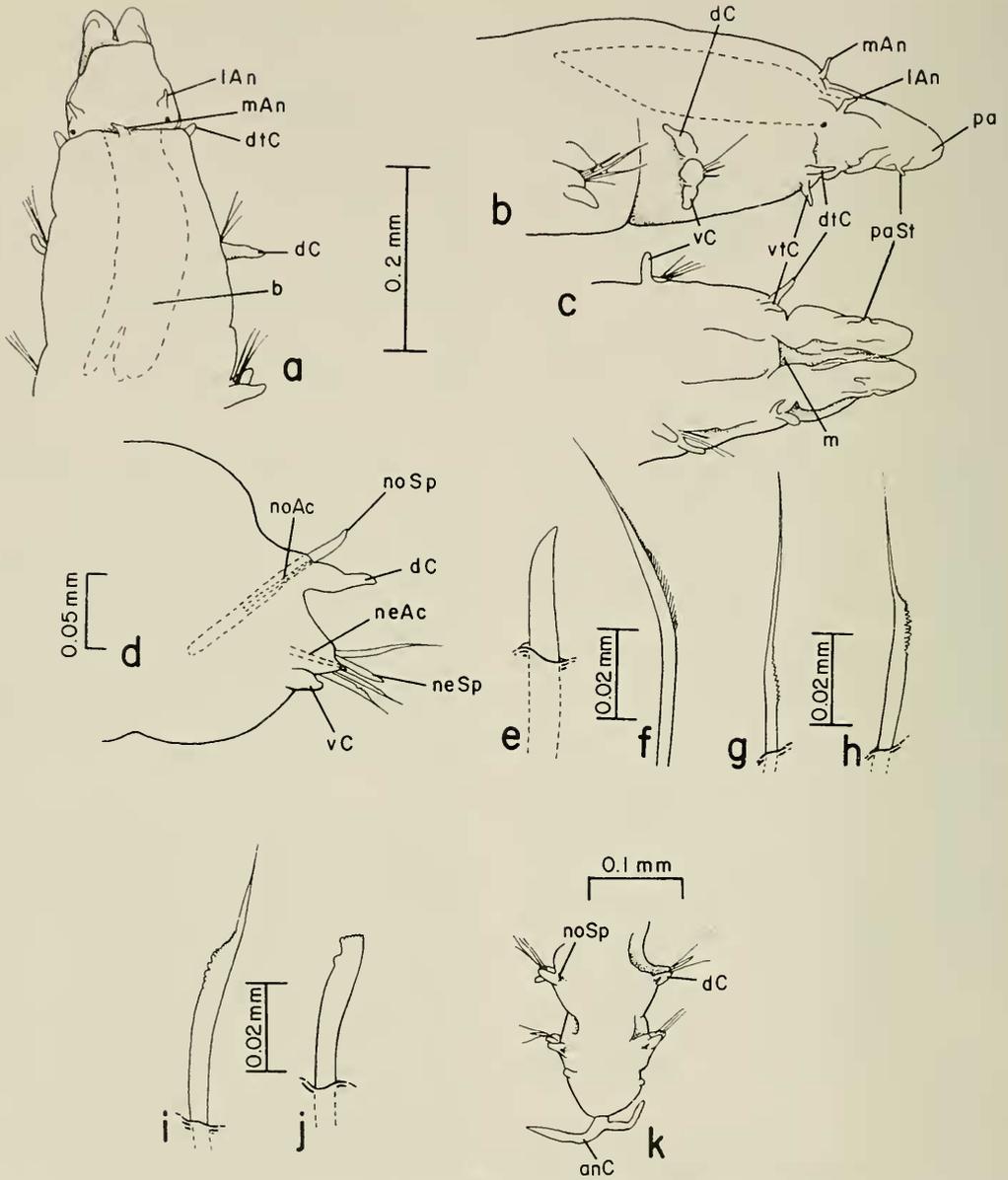


Fig. 2. *Synelmis acuminata*: a, Anterior end, dorsal view; b, Same, lateral view; c, Same, ventral view; d, Middle parapodium, anterior view; e, Notopodial spine; f, Upper neuroseta from setiger 4; g, Middle neuroseta from setiger 15; h, Same, from setiger 20; i, Same, from setiger 30; j, Same, from setiger 38; k, Posterior end, dorsal view. (All figures from Wolf 1984, figs. 29–38a–k.)

margin below an acuminate tip (Fig. 2g, h). Acuminate neurosetae becoming stouter posteriorly and variously shaped (Fig. 29i, j). Larger specimens with supraacicular, smooth, emergent neuropodial spine begin-

ning about setigers 18–25 (Fig. 2d); smaller specimens lacking spines.

Pygidium smooth, with pair of anal cirri (Fig. 2k).

Brain visible through integument, bi-

lobed posteriorly and extending into setiger 2, not pigmented (Fig. 2a, b).

*Remarks.*—*Synelmis acuminata* differs from all other described species of the genus in having acuminate neurosetae with one or two rows of teeth.

*Etymology.*—The species name refers to the peculiar acuminate neurosetae.

*Distribution.*—Puerto Rico; east and west coast of Florida to Texas, 24–220 m.

*Synelmis ewingi*, new species

Fig. 3a–h

*Synelmis albinii*.—Pettibone, 1966:191 [in part], fig. 21a–d.

*Synelmis* sp. B.—Wolf, 1984:29–37, figs. 29–35, 29–36a–f.

*Material examined.*—FLORIDA, off Port Everglades: EPA/Bat Sta PE9-2, Feb 1984, 26°06.05'N, 80°05.00'W, sand, 21 m, 1 specimen.—Off Tampa Bay: EPA/Bat Sta 1135-IV-C1-1, 27°25.36'N, 83°03.12'W, sand, 22 m, Mar 1985, 4 Paratypes (USNM 98770).—Sta 1135-IV-C1-2, same data, HOLOTYPE (USNM 98769) and 5 Paratypes (USNM 98771).—MAFLA Sta 2422C, D, Jun 1976, 29°30'N, 84°27'W, medium fine sand, 24 m, 2 specimens (USNM 86988–9).

*Description.*—Length 28+ mm, width to 0.6 mm. Largest specimen incomplete with 60 setigers. Prostomium (Fig. 3a, b) with 3 small digitiform antennae, equal in length. Eyes minute, located laterally below and anterior to bases of lateral antennae (Fig. 3b). Palps with small ventrolateral palpostyles (Fig. 3b). Dorsal and ventral tentacular cirri equal in length, about twice as long as antennae. Dorsal cirri of anterior setigers broad basally (Fig. 3c), becoming longer and more filiform on posterior setigers (Fig. 3d). Ventral cirri present throughout, similar in length to dorsal cirri anteriorly (Fig. 3c), becoming relatively shorter posteriorly (Fig. 3d).

Notopodia each with single acicular spine becoming emergent by about setiger 17–18,

each spine accompanied by slender internal aciculum (Fig. 3d). Anterior neuropodia with slender serrate setae (Fig. 3e) and 1–2 small emergent spines. Posteriorly, neuropodial spines becoming larger, more prominent, numbering 2 per parapodium (Fig. 3d).

Pygidium smooth, with pair of slender anal cirri (Fig. 3f).

Brain visible through integument, extending into setiger 2, bilobed and pigmented posteriorly (Fig. 3a, b). Subdermal glands present laterally between parapodia, some distinctly pigmented in freshly preserved material (Fig. 3g).

*Remarks.*—A complete juvenile specimen with 34 setigers differs from the adult in having the notopodial spines becoming emergent by setiger 8 instead of 17 or 18.

A cross section of a large, mature male was taken at the parapodia at setiger 15 (Fig. 3h). It shows the body to be made up of three lobes with the dorsal lobe, i.e., the dorsum of the worm, to be the largest. This dorsal lobe contains the alimentary canal suspended in place by about three or four dorsal and ventral mesentery bands. The ventral blood vessel is just ventral to the alimentary canal. The dorsal blood vessel is adhering to the dorsal longitudinal muscle band. A pair of dorsal lateral vessels is located on either side of the alimentary canal. A pair of very wide oblique muscle bands separates the large dorsal lobe from the two ventral lobes. Each ventral lobe contains well-developed ventral longitudinal muscles, a ventral lateral blood vessel, and a testis, covered with a small amount of sperm. In far posterior setigers a larger amount of sperm nearly fills the ventral cavities.

A cross-section suitable for drawing could not be obtained from either *Synelmis acuminata* or *Litocorsa antennata*; however, cursory observations reveal that in both, the body shape is quite similar. One possible difference is that the oblique muscle bands of *S. acuminata* and *L. antennata* are much more narrow than those of *S. ewingi*; how-

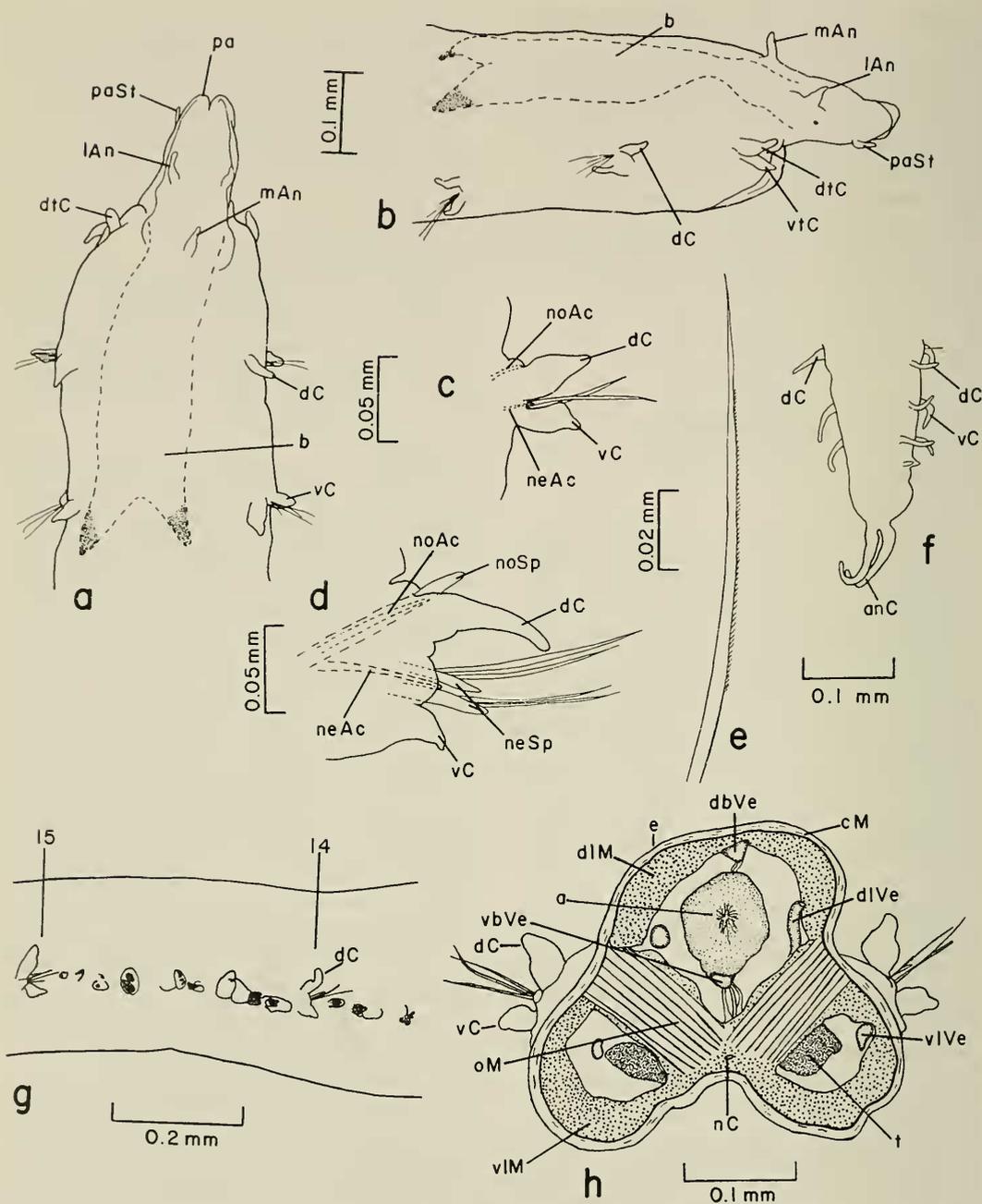


Fig. 3. *Synelmis ewingi*: a, Anterior end, dorsal view; b, Same, lateral view; c, Anterior parapodium, anterior view; d, Posterior parapodium, anterior view; e, Upper neuroseta; f, Posterior end, dorsal view; g, Setigers 14 and 15, lateral view; h, Cross-section of setiger 15, anterior view. (Figures a-f from Wolf 1984, figs 29-36a-f.)

ever, this observation must, for now, stand unconfirmed.

*Synelmis ewingi* includes specimens from Old Tampa Bay, Florida, considered by Pettibone (1966:191, fig. 21a-d) to be a form of *S. albinii* (Langerhans 1881). *Synelmis ewingi* is similar to *S. albinii*; but differs in having two stout emergent spines in the neuropodia instead of lacking them. *Synelmis ewingi* differs from all other described species of the genus in having two stout neuropodial spines in middle and posterior parapodia.

*Etymology*.—This species is named in honor of Mr. R. Michael Ewing, Old Dominion University, a friend, colleague, and talented polychaetologist.

*Distribution*.—East and west coast of Florida, 19–24 m.

#### Acknowledgments

The author wishes to thank Drs. Marian Pettibone and Kristian Fauchald, Smithsonian Institution (USNM), Washington, D.C.; and Dr. Barry A. Vittor, Barry A. Vittor & Associates, Inc., for their reviews of the manuscript.

Dr. T. H. Pearson, Dunstaffnage Marine Research Laboratory, Scotland, kindly loaned specimens of *Litocorsa stremma*.

Some of the material examined was obtained under the following contracts: Puerto Rico material (coll. Mar 1984) under contract from Environmental Protection Agency to Science Applications International Corp. through JRB Associates, McLean, Virginia, contract number 68-0106388; Texas material (coll. Sep 1979) and Puerto Rico material (coll. Jan 1980) under contract from EPA to Interstate Electronics Corp., contract number 68-01-4610; Florida material (coll. Feb 1984 and Mar 1985) under contract from EPA to Battelle, Columbus Laboratories, Columbus, Ohio, contract number 68-01-6986.

Barry A. Vittor & Associates, Inc., Mobile, Alabama, provided monetary and material support for this research.

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