

SCIONELLA PAPILLOSA, A NEW SPECIES OF
POLYCHAETE (POLYCHAETA: TEREBELLIDAE)
FROM THE SOUTHWEST FLORIDA
CONTINENTAL SHELF

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Abstract.—*Scionella papillosa*, a new species of terebellid polychaete from the southwest Florida continental shelf is described. It more closely resembles the only other Atlantic species, *S. lornensis* Pearson, 1969, than the Pacific species, *S. japonica* Moore, 1903, *S. estevanica* Berkeley & Berkeley, 1942, and *S. vinogradovi* (Ushakov), 1955, in lacking a ridge on segment 4, but it differs from all four in having densely packed small digitiform papillae on the ventrolateral surfaces of the second segment.

From collections made in December, 1983 on the southwest Florida continental shelf by Environmental Science and Engineering, and LGL Ecological Research Associates under a contract with the Minerals Management Service, U.S. Department of the Interior, there were segregated a number of specimens of an unidentifiable terebellid polychaete whose closest affinities seemed to be with the genus *Scionella* Moore, 1903. This genus had hitherto been known only from the cold waters of the North Pacific and Scotland.

Family Terebellidae
Subfamily Amphitritinae
Scionella Moore, 1903

Type species.—*Scionella japonica* Moore, 1903, by monotypy.

Material examined.—North Atlantic Ocean, Gulf of Mexico, 26°17'4.5"N, 082°19'57"W, 16 m, 6 Dec 1983 (Environmental Science and Engineering, Inc., Tampa, Florida and LGL Ecological Research Associates, Inc., collectors). Holotype, USNM 99376, paratype USNM 99377, numerous other specimens in the collections of the senior author.

Description.—Holotype, complete speci-

men with 20 thoracic and about 65 abdominal segments, 17 mm long and 1 mm wide. Body cylindrical in section. No distinct ventral glandular scutes. Fused prostomium and peristomium forming a collar surrounding terminal mouth. Numerous tentacles arising from dorsal and lateral surfaces of collar. Eyespots lacking. First segment bearing small lateral lappets. Second segment having large, translucent lateral lappets, ventrolateral surfaces of which covered with densely packed, small digitiform papillae (Fig. 1a). Second segment also with median, V-shaped, opaque pad accentuating appearance of lateral lappets of this and following segments. From anterior dorsal edge of second segment, one pair of bottle-brush branchiae arising, each consisting of stout, ringed stalk bearing on its distal $\frac{2}{3}$ a cluster of filaments arranged in whorls, too densely packed to reveal manner of insertion (Fig. 1b).

All specimens having one small and one large branchia, smaller being about $\frac{1}{3}$ size of larger. In holotype, larger equal in length to first 7 segments.

Third segment bearing largest lateral lappets. Smallest on fourth, on which appearing first notosetae, continuing through segment 20. In anterior setigers, notopodia very

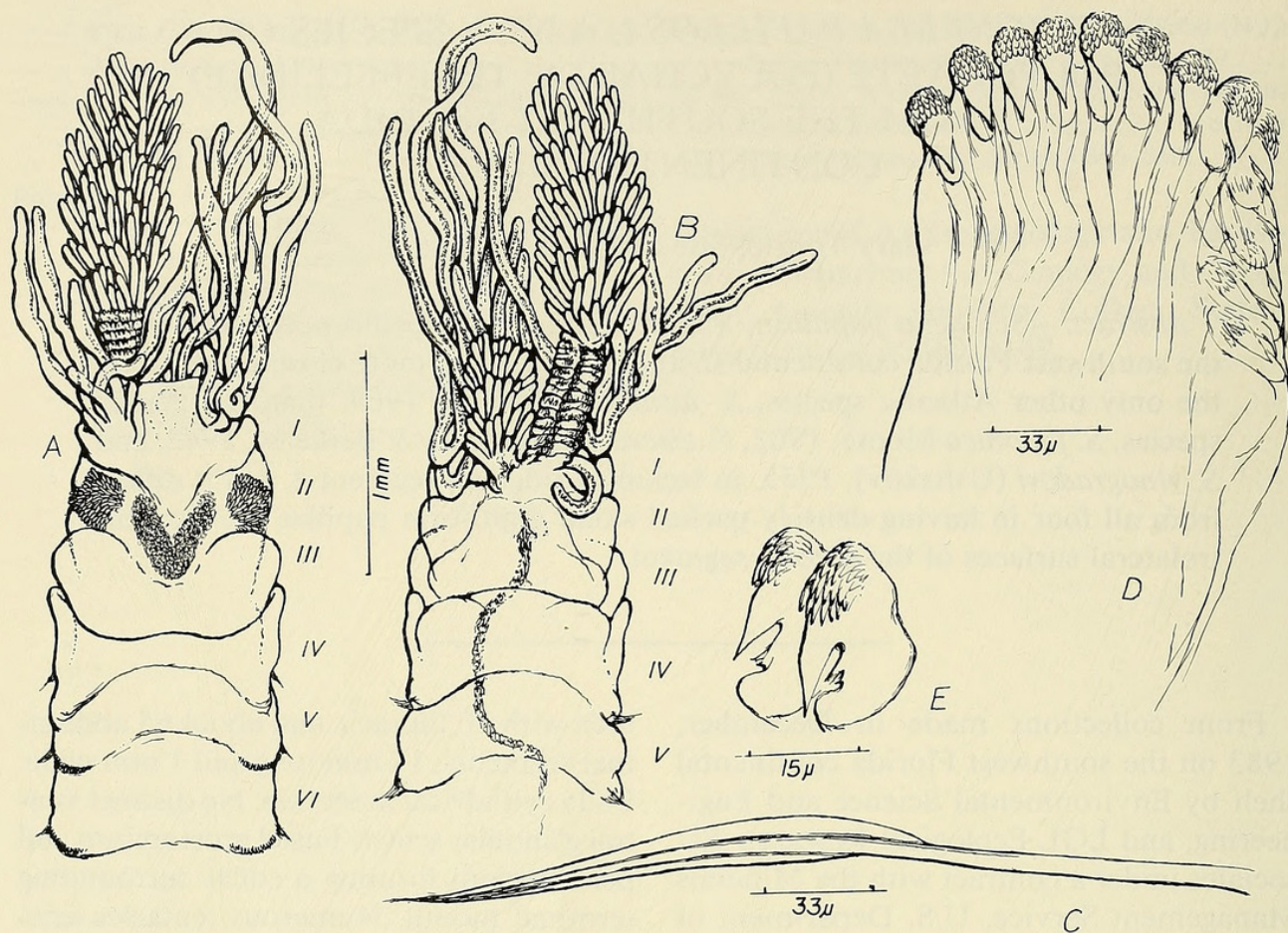


Fig. 1. *Scionella papillosa*, holotype. A, Anterior end, ventral view; B, Anterior end, dorsal view; C, Notoseta; D, Abdominal uncinigerous pinnule; E, Thoracic uncinus.

short, each bearing 6–7 smooth-tipped bilimbate setae. Limbs on one side slightly wider than on opposite (Fig. 1c). In posterior thorax, notopodia somewhat more prominent, although still no more than short rounded protuberances bearing up to 12 similar setae. Avicular uncini, none of which having elongate basal stalks, as in *Pista*, borne in single rows of 25–30 on segments 5–10 and in double rows of 10–20, interlocking face to face, on segments 11–20. Abdominal uncini occurring in single rows, having prominent suspensory ligaments and borne on well-developed, flap-like pinnules (Fig. 1d). Throughout, uncini having several rows of denticles forming a crown above main fang (dental formula MF:8:9:10:~) (Fig. 1e). Terminal anus surrounded by 4 short, rounded protuberances.

Etymology.—The specific name, *papillosa*, derived from Latin, refers to the patches of digitiform papillae on the ventrolateral surfaces of the second segment.

Remarks.—The most useful treatment of the genus *Scionella* is that of Pearson (1969). In his key (pp. 513–514) the four species then known fall into two groups, those with a dorsal ridge on segment 4 (*S. japonica* Moore, 1903, *S. estevanica* Berkeley & Berkeley, 1942, and *S. vinogradovi* (Ushakov, 1955)), and those without (then only *S. lornensis* Pearson, 1969). Perhaps some significance may be attached to the fact that the first group occurs only in the Pacific, whereas the second has been found only in Atlantic waters. *Scionella papillosa*, also an Atlantic species and lacking a dorsal ridge on the fourth segment, may be grouped with

S. lornensis. *Scionella papillosa*, however, differs from the latter in having lateral lappets on the first 4 segments; in that the lateral lappets on the second segment are less prominent than those on the third, a condition which is reversed in *S. lornensis*; in that it lacks well-developed ventral glandular scutes; and in that none of its gill filaments are dichotomously branched.

It is not possible to state how *S. papillosa* compares with the others with respect to nephridia. This character which was given much weight by Pearson and was a principal basis for classification by Hesse (1917) has not been useful in dealing with the generally very small polychaetes from the Gulf of Mexico offshore continental shelf. Certainly, *S. papillosa* does not have the large bottle-shaped nephridial papillae on the fourth segment, as depicted by Hartman (1969) for a California specimen of *S. japonica*.

The number of uncini per segment, much larger in *S. japonica* (up to 160 thoracic and 65 abdominal) than in *S. papillosa*, may not be a significant difference, the numbers possibly being a function of the size of the specimens.

The collar-like fused prostomium and peristomium of *S. papillosa* bears little resemblance to the trefoil-shaped structure in *S. japonica*, as described by Moore and figured by Hartman (1969:635, fig. 1) or, presumably, to these structures in *S. estevanica*.

Were it not for the dorsal ridge on the fourth segment, *S. estevanica* would easily fit in with the *S. papillosa*, *S. lornensis* group, for its gills also arise from segment 2 and, apparently, its lateral lappets lack the alate configuration and increasingly more dorsal insertion which set off the other two species so plainly.

In any case, *S. papillosa* is distinguished from all the others by the patches of papillae on the second segment.

Accordingly, Pearson's key may be updated as follows:

Key to the Species of
Scionella Moore, 1903

- 1a. Segment 4 with a prominent dorsal ridge 3
- 1b. Segment 4 without a ridge .. 2
- 2a (1b). Lateral lappets on the first three segments
..... *S. lornensis* Pearson
- 2b (1b). Lateral lappets on the first four segments *S. papillosa*, n. sp.
- 3a (1a). Gills carried on segment 4 . 4
- 3b (1a). Gills carried on segment 2 ..
..... *S. estevanica* Berkeley & Berkeley
- 4a (3a). Edges of segment 4 lappets crenulate
..... *S. vinogradovi* (Ushakov)
- 4b (3a). Edges of segment 4 lappets smooth *S. japonica* Moore

Ecology and distribution. — *Scionella papillosa* has been dredged from relatively shallow depths in the subtropical waters of the Gulf of Mexico, whereas the other four species have been found in greater depths in the cold waters off California, Japan, Western Canada, the Sea of Okhotsk, and Scotland. It lives in mucous tubes adorned with fine sand grains, buried in medium to fine, mainly calcareous, sediments. The salinity of the overlying water was 35.1‰ and the dissolved oxygen 7.3 mg/liter. It is associated with other polychaetes: *Cirrophorus* sp., *Axiiothella mucosa*, *Mediomastus californiensis*, *Exogone dispar*, *Pseudovermilia* sp.; the amphipods *Ampelisca* sp., *Tiron tropakis*, and *Eudeuenopus honduranus*; the cumaceans *Oxyurostylis smithi*, and *Cyclaspis* spp.; the decapod *Lucifer faxoni*; and the cephalochordate *Branchiostoma caribaeum*.

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Literature Cited

- Berkeley, E., & C. Berkeley. 1942. North Pacific Polychaeta, chiefly from the west coast of Vancouver Island, Alaska, and Bering Sea.—Canadian Journal of Research 20:183–208, 6 figs.
- . 1952. Annelida Polychaeta sedentaria. Canadian Pacific Fauna.—Fisheries Research Board of Canada 9b(2):1–139.
- Hartman, O. 1969. Atlas of the sedentary polychaetous annelids from California. Allan Hancock Foundation, University of Southern California, Los Angeles, California, 812 pp.
- Hessle, C. 1917. Zür Kenntnis der terebellomorphen Polychaeten.—Zoologiska Bidrag fran Uppsala 5:39–258.
- Moore, J. P. 1903. Polychaeta from the coastal slope of Japan and from Kamchatka and Bering Sea.—Proceedings of the Academy of Natural Sciences, Philadelphia 55:401–490, pls. 23–27.
- Pearson, T. H. 1969. *Scionella lornensis* sp. nov., a new terebellid (Polychaeta: Annelida) from the west coast of Scotland with notes on the genus *Scionella* Moore, and a key to the genera of the Terebellidae recorded from European waters.—Journal of Natural History 3:509–516.
- Ushakov, P. 1955. (Polychaetous annelids of the far eastern seas of the USSR.) [In Russian.]—Akademiya Nauk SSSR, Keys to the Fauna of the USSR 56:1–433 (translated 1965 by the Israel Program for Scientific Translations, Jerusalem).

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