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*ONUPHIS SIMONI*, A NEW SPECIES OF POLYCHAETE  
(POLYCHAETA:ONUPHIDAE) FROM  
SOUTH FLORIDA

Stuart L. Santos, Randy Day, and Stanley A. Rice

*Abstract.*—A new species of the polychaete genus *Onuphis*, *O. simoni*, is described from the shallow estuarine habitat throughout south Florida. The new species most closely resembles *Onuphis nebulosa* Moore, 1911.

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Several ecological studies dealing with Florida's west coast (Taylor, 1971; Simon and Dauer, 1972; Santos and Simon, 1974; Dauer and Simon, 1975, 1976; Santos, 1979) revealed that a species of onuphid polychaete was a major component of the benthic infauna. This same species was collected from the Indian River Lagoon on the east coast of Florida (Virnstein *et al.*, unpublished; Santos, unpublished). Examination of the literature and the specimens indicated that they belonged to an undescribed species. This species is described in the present paper.

*Onuphis simoni*, new species

Fig. 1a-e

*Onuphis eremita oculata.*—Santos and Simon, 1974.—Dauer, 1974.

*Onuphis* sp.—Taylor, 1971.—Simon and Dauer, 1977.—Santos and Simon, 1980.—Dauer and Conner, 1980.

*Material examined.*—FLORIDA: West Coast: Seahorse Key near Cedar Key, 1960, J. L. Taylor, 250 specimens (FSBC I 22163). Boca Ciega Bay, 25 September 1963, J. L. Taylor and C. Saloman, 44 specimens (FSBC I 13315). Lower Tampa Bay, 19 October 1963, J. L. Taylor and C. Saloman, 194 specimens (FSBC I 12815). Tampa Bay, 1963, J. L. Taylor, 8 specimens (USNM 45592). Lassing Park, St. Petersburg, 24 January 1970, S. L. Santos, 5 specimens (USNM 55719) and 3 specimens (USNM 50268). Upper Tampa Bay, 10 September 1963, J. L. Taylor and C. Saloman, 17 specimens (FSBC I 12014). Upper Tampa Bay, Courtney Campbell Causeway, ca. 4 km west of the Ben T. Davis municipal beach, ca. 50 m offshore, 22 February 1980, S. L. Santos, R. Lombardo and G. Churchill, holotype (USNM 61098), 35 paratypes (USNM 61099) and 10 paratypes (Allan Hancock Foundation POLY 1326). Big Pine Island, Ft. Meyers, 27 November 1959, R. T. Paine, 10 specimens. Rookery Bay, 5 April 1980, S. L. Santos, L. S. Weinland and K. Thoenke, 21 specimens. Isles of Capri, Big Marco Pass, 28, 29 or 30

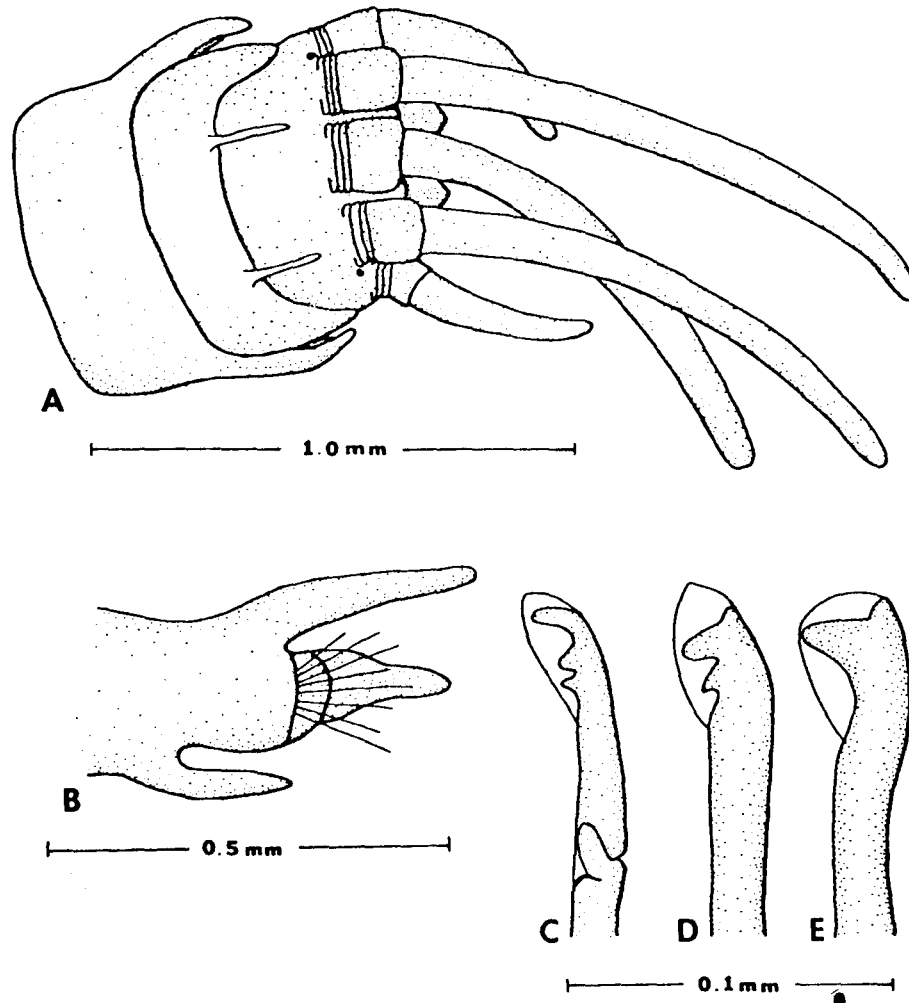


Fig. 1. *Onuphis simoni*: A, Anterior end, dorsal view; B, Third parapodium, left side, anterior view; C, Pseudocompound hooded hook from setiger 2; D, Large simple tridentate hooded hook from setiger 6; E, Subacicular bidentate hooded hook from setiger 18.

December 1965, C. D. Long, 4 specimens (USNM 58168). East Coast: Indian River Lagoon: near St. Lucie Inlet, 10 April 1980, S. L. Santos, 1 specimen. One-half mile south of Sebastian Inlet, 13 February 1980, K. Fauchald and S. L. Santos, 5 specimens and 10 March 1980, S. L. Santos and S. A. Rice, 5 specimens. One-half mile south of Goat Creek, 1979, K. Cairns, M. Capone, P. Mikkelsen and R. W. Virnstein, 3 specimens.

*Description*.—Length of holotype 49.6 mm, width (including parapodia but not setae) 1.04 mm, specimen complete, comprising more than 240 seg-

Table 1.—Summary statistics on variable characters of *Onuphis simoni*. Specimens chosen for examination represent a cross section from all recorded geographic locations. In all cases  $n = 22$ .

	Range	Mean	Standard deviation
Width at widest point (including parapodia)	0.80–1.44 mm	1.15	0.17
<b>Branchiae</b>			
Start on setiger #	6–8	6.55	0.60
Maximum filaments	4	invariant	
Cirriiform ventral cirri to setiger #	6–8	7.36	0.95
Anterior pseudocompound hooks to setiger #	4–6	4.57	0.58
Large hook starts on setiger #	4–6	4.84	0.47
Subapicular hooded hooks start on setiger #	14–18	16.64	1.14

ments. Anterior 8–10 segments cylindrical, median and posterior segments dorsally flattened. Anterior of holotype with dark pigment spots at dorso-lateral intersegmental junctions, transforming to dorsal segmental transverse bars at about setiger 14.

Prostomium (Fig. 1a) small, oval with 2 triangular frontal antennae; 5 occipital antennae with short ceratophores, each having 4 annulations, distalmost being 2–3 times longer than the other 3 combined. Brown pigment ring present at base of styles. Inner lateral occipital antennae longest, reaching to about midlength of setiger 5; median occipital antennae slightly shorter, reaching to setiger 4; outer lateral occipital antennae shortest, only reaching to about setiger 2. Pair of small eyespots between bases of inner and outer lateral occipital antennae. Pair of globular ventral palps and a pair of short peristomial cirri present.

First 2–3 pair of parapodia directed forward. Anterior 12 parapodia with ovoid pre-setal, rounded acicular and conical postsetal lobes (Fig. 1b), following parapodia with acicular and postsetal lobes becoming shorter. Dorsal cirri digitate, longer than postsetal lobe; longest in anterior 10–15 setigers, becoming shorter thereafter. Ventral cirri cirriiform in anterior 6–8 setigers, transitional in next few, and appearing pad-like in remainder.

Branchiae first present from setigers 6–8 (Table 1); first several branchiae single filaments, increasing to a maximum of 4 filaments posteriorly and decreasing to 2 in the far posterior segments.

Pygidium with 2 pairs of anal cirri, both located ventral to anus; dorsal-most pair about 4 times as long as ventral pair. Ventral pair difficult to discern in some specimens.

Limbate and pectinate setae, pseudocompound, large simple and sub-acicular hooks present. Limbate setae present in most setigers, pectinate setae first present from setigers 4–17, number of teeth varying from 6–11,

normally one seta per bundle (1 specimen contained 2 in setiger 6). Tridentate pseudocompound hooded hooks (Fig. 1c) present in first 1–4, 5 or 6 setigers (Table 1), distal tooth larger than others. One large tridentate hooded hook present from setigers 4, 5 or 6 to setigers 14, 15, 16 or 17 (Table 1) shaft 2–3 times as thick as pseudocompound hooks, distal tooth erect. Pair of bidentate hooded subacicular hooks (Fig. 1e) present from setigers 15–17 (Table 1) and continuing to far posterior segments.

Maxillary formulae based on dissection of a large specimen is:

$$1 + 1, 10 + 11, 10 + 0, 5 + 9, 1 + 1$$

**Biology.**—*Onuphis simoni* constructs a tube of fine sand grains, resembling a limp phoronid tube. It is found in the shallow subtidal often in high densities (up to 78,000/m<sup>2</sup>) especially in *Thalassia* beds (Santos and Simon, 1974). The female lays her eggs in the tube and broods the young until they are able to build tubes of their own (usually until they reach a size of 10–20 setigers, SLS, personal observation).

**Type-locality.**—Old Tampa Bay, Tampa, Florida, USA, ca. 4 km west of the Ben T. Davis municipal beach, ca. 50 m offshore in fine sand.

**Distribution.**—West Coast of Florida from Sea Horse Key south to Naples; East coast of Florida in the Indian River Lagoon.

**Etymology.**—This species is named in honor of Dr. Joseph L. Simon, our former graduate advisor, in recognition of his contributions to the fields of Marine Ecology and Invertebrate Zoology.

**Remarks.**—Examination of specimens from many localities revealed a high degree of variability in certain characters, especially in the pigmentation patterns and in placement and number of teeth in the pectinate setae. Some individuals were very heavily pigmented on the dorsal surface of the prostomium and the first 3 setigers; others were not pigmented at all on these surfaces save for the eyespots. In still others, the transverse segmental bands started anteriorly and gradually transformed into dark intersegmental spots located on the dorsolateral surface. We examined the pectinate setae of several individuals with scanning electron microscopy and found extreme variability both as to the anteriormost placement and to the number of teeth. The anteriormost placement ranged from the fourth to the seventeenth setiger; number of teeth ranged from 6–11 with no apparent pattern (i.e. tooth number was not consistent in individual specimens nor in an anterior-posterior gradient). We feel that the pectinate setae are very fragile and easily lost in preserved specimens of *O. simoni*; therefore, we do not advocate the use of this character nor that of pigmentation for a specific diagnosis. While these may be strong characters in some onuphid taxa, we chose to ignore them. Table 1 presents some of the characters used by other investigators to delineate species of *Onuphis*, and the variability of these characters in *O. simoni* collected from various localities throughout its known range.

Because we did not find characters consistently varying, we did not feel that we were dealing with more than one species.

Superficially, *O. simoni* most closely resembles *O. nebulosa* Moore, 1911. It is distinguished from *O. nebulosa* by being about half as large, by the more anterior origination of the subacicular hooks, and by the total absence of compound spinigers.

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