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FIRST REPORT OF *SYLLIDES ARTICULOSUS* (POLYCHAETA : SYLLIDAE : EUSYLLINAE) FOR THE MEDITERRANEAN SEA

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POLYCHAETA
SYLLIDAE
SYLLIDES ARTICULOSUS
MEDITERRANEAN SEA

ABSTRACT – A species of the genus *Syllides* Oersted 1845 (Polychaeta : Syllidae : Eusyllinae) is described and reported for the first time for the Mediterranean Sea : *Syllides articulatus* Ehlers 1897. The specimens were found in samples of fine sand at Ponza Island (Central Tyrrhenian Sea), Italy. *Syllides articulatus* is characterized by having long, indistinctly bidentate blades of compound setae anteriorly and thick, unidentate, distally hooded dorsal simple setae.

POLYCHAETA
SYLLIDAE
SYLLIDES ARTICULOSUS
MÉDITERRANÉE

RÉSUMÉ. – La description d'une nouvelle espèce du genre *Syllides* Oersted 1845 (Polychaeta : Syllidae : Eusyllinae) pour la Mer Méditerranée, *Syllides articulatus* Ehlers, 1897, est donnée. Les exemplaires de cette espèce ont été recueillis dans les sables fins de l'île de Ponza (Mer Tyrrhénienne Centrale). *Syllides articulatus* se caractérise par de longues soies composées, faiblement bidentées, à hampe fortement hétérogompe et par des soies simples dorsales à crochet unidenté dans la partie antérieure du corps avec un petit capuchon translucide.

INTRODUCTION

A study on the distribution of benthic communities in the Pontine Islands (Ponza, Palmarola, and Zannone) revealed some interesting species of the polychaete family Syllidae (Somaschini & Gravina 1994), including two new species of the genus *Sphaerosyllis* (Somaschini & San Martin 1994). Also, several specimens of the species *Syllides articulatus* Ehlers, 1897 were found in samples of fine sand. The latter was previously known only from antarctic and subantarctic seas, on the coasts of Chile, Antarctica, subantarctica Islands, and South of Australia.

In this paper we describe the specimens collected of this species, including a discussion on its relationships with similar species of the genus.

MATERIAL AND METHODS

The specimens were collected from fine sand at Ponza Island (Central Tyrrhenian Sea, Latium). The sedimental composition of the sampling station is shown in Fig. 1. Description of the study area and details of the methods were previously given by Somaschini (1992), and Somaschini *et al.* (1994).

The specimens were fixed in 10% formaldehyde, sieved over a 0.4 mm mesh, stained with Bengal Rose, and preserved in 70% ethanol. Some permanent microscope mounts of specimens were made using Faure Fluid.

Observations and measurements were made using a microscope with interference contrast optics (Nomarsky). Drawings were made by means of a "camera lucida" drawing tube. Scanning Electron Micrographs (SEM) were taken in the Servicio Interdepartamental de Investigación, of the Universidad Autónoma de Madrid.

Measurements refer to the longest specimen; width was taken at proventricular level, without cirri, parapodia, nor setae.

Two specimens are deposited in the polychaete collection of the Musée Océanographique de Monaco (MOM), numbers 186013 and 186014; the remaining specimens are kept in the author collections.

TAXONOMY

Family : Syllidae Crube, 1850
Subfamily : Eusyllinae Rioja, 1925
Genus : *Syllides* Oersted, 1845

Syllides articulatus Ehlers, 1897 (Figs. 2-4)

Syllides articulatus Ehlers, 1897 : 42, pl. 2, figs. 48-52. Hartmann-Schröder (1965) : 111, figs. 71-73.

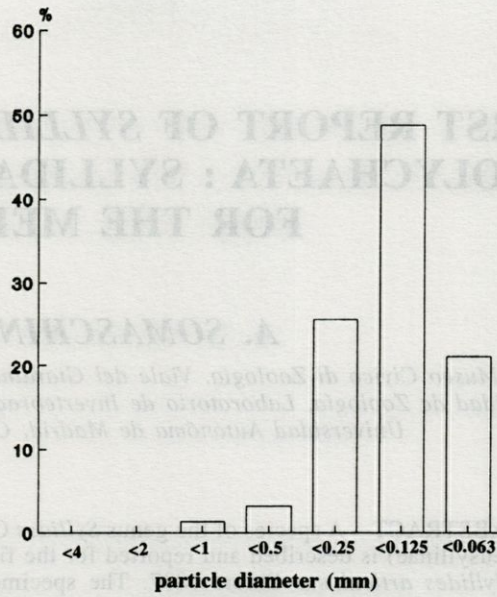


Fig. 1. - Sedimental composition of the sampling station.

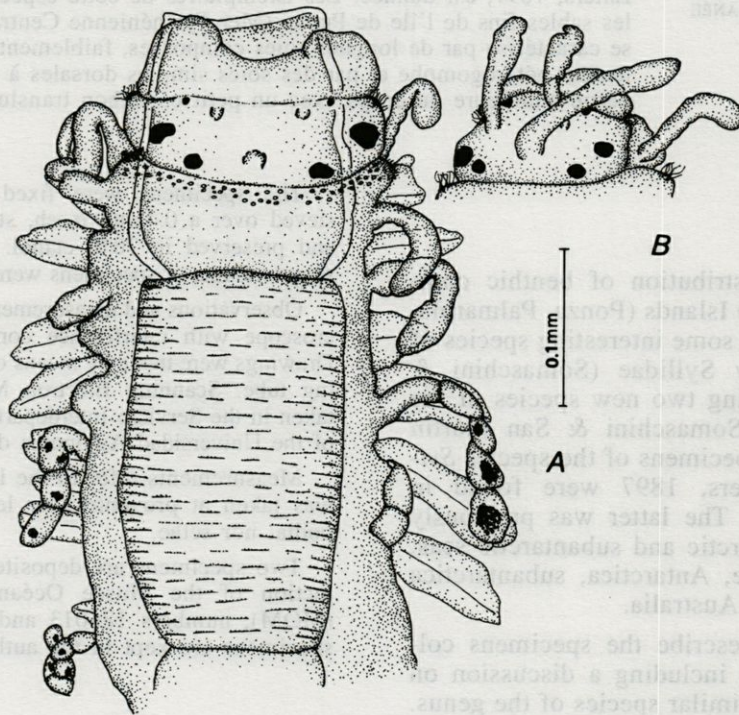


Fig. 2. - *Syllides articulatus* A, anterior end, dorsal view. B, prostomium.

Syllides articulata Banse (1971): 1475.

Syllides sp. 1 Somaschini, Gravina & Ardizzone (1994).

Material examined. - Cala Feola, Ponza Island, Central Tyrrhenian Sea (Latium, Italy); fine sand; 30 m depth, 14 specimens.

Description

Body small, with few segments, fragile without color marking, white to yellowish in alcohol, 1.65 mm long, 0.3 mm wide, for 22 setigers. The prostomium is rectangular to sub-pentagonal, about 3 times as broad as long, with

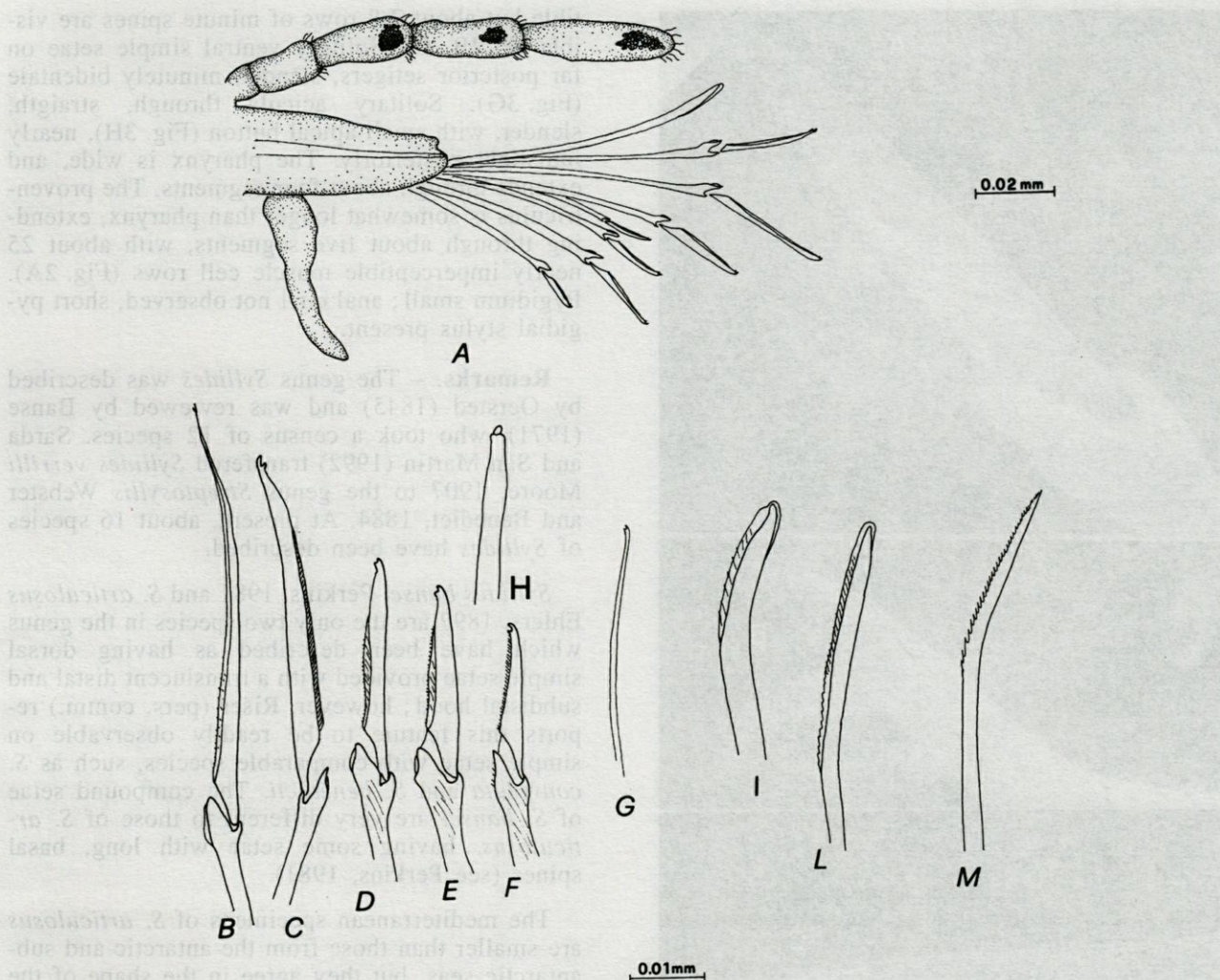


Fig. 3. - *Syllides articulatus* A, midbody-posterior parapodium. B, spiniger-like, anterior setiger. C, dorsal falciger. D-F, medium and ventral falcigers. H, acicula. I-M, anterior, midbody, and posterior dorsal simple setae.

two pairs of large eyes in open trapezoidal arrangement, and one pair of anterior eyespots (Fig. 2A, B) slightly anterior to bases of lateral antennae; the anterior pair of eyes are somewhat larger than the posterior pair. The antennae are club-shaped, without articulations, rugose (lacking in several specimens); the median antenna is somewhat longer than prostomium and palps together, and it originates between the posterior pair of eyes; lateral antennae similar in length to prostomium and palps together, originating close to each other between the posterior pair of eyes, slightly in back of the eyespots. The palps are small, fused at the bases and divergent distally. The peristomium is reduced, and dorsally contains small hyaline inclusions (Fig. 2A). Two pairs of tentacular cirri, club-shaped, similar to antennae, the dorsal slightly longer than the ventral ones. Anterior margin of prostomium and first setiger ciliated (Fig. 2A, B). Dorsal cirri of setiger 1 and 2 similar to

antennae and tentacular cirri; dorsal cirri from setiger 3 are articulated, usually broken, apparently with few, 5-6, egg-shaped to elongate joints, some of them provided with dark, granular inclusions (Fig. 2A, 3A). The parapodia are conical, elongate; the ventral cirri are digitiform, gradually longer posteriorly, where they are longer than parapodial lobes (Fig. 3A). Anterior parapodia each with 2-3 compound, spinigerous setae, with blades long, about 57 μm , thin, indistinctly bifid distally, cutting edge with striate membrane (Fig. 3B), together with 9-10 compound falcigerous setae, bidentate, provided with striate membrane on cutting edge and marked dorsoventral gradation in length, about 47 μm dorsally (Fig. 3C) to 15 μm ventrally (Fig. 3F). The shafts of the compound setae are heterogomph, provided with a small, translucent membrane on the long hinge, indistinct on the most ventral setae (Fig. 3B-F). Progressively, the number of spiniger-like setae

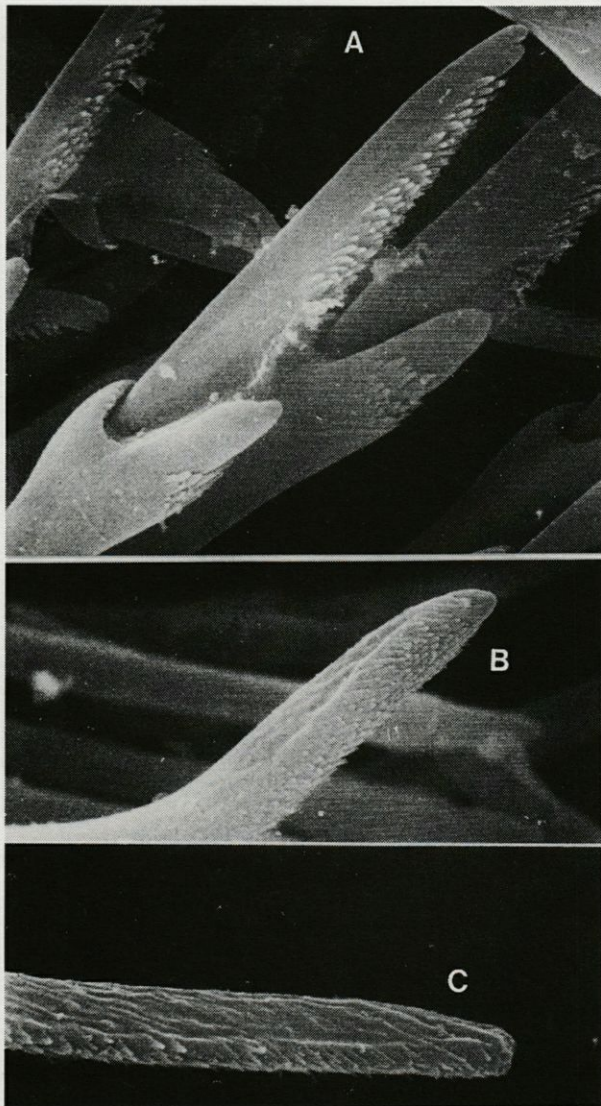


Plate I. – Scanning Electron Microscope of setae. A, medium falciger, anterior parapodium. B, dorsal simple seta, anterior parapodium. C, dorsal simple seta: posterior parapodium ($\times 5000$).

decrease; midbody and posterior parapodia each with about only 6 compound falcigerous, bidentate setae. Under Scanning Electron Microscope (SEM), the membrane of the margin of blades is not perceptible but, however, several (4-5) rows of minute spines are visible; the membrane of the shafts are also indistinct but a few small spines are visible (Pl. IA). Solitary dorsal simple setae from setiger 1, geniculate, with unidentate, rounded tip, thicker anteriorly; anterior dorsal simple setae with translucent distal hood; progressively, the hood is smaller and striate, lacking on the most posterior ones, but they are subdistally finely denticulate (Fig. 3I-M). Under SEM, the hoods of the dorsal simple setae are not percep-

tible but about 7-8 rows of minute spines are visible (Pl. IB, C). Solitary ventral simple setae on far posterior setigers, slender, minutely bidentate (Fig. 3G). Solitary acicula through, straight, slender, with small apical button (Fig. 3H), nearly indistinct posteriorly. The pharynx is wide, and extends through about four segments. The proventriculus is somewhat longer than pharynx, extending through about five segments, with about 25 nearly imperceptible muscle cell rows (Fig. 2A). Pygidium small; anal cirri not observed, short pygidial stylus present.

Remarks. – The genus *Syllides* was described by Oersted (1845) and was reviewed by Banse (1971), who took a census of 12 species. Sarda and San Martin (1992) transferred *Syllides verrilli* Moore, 1907 to the genus *Streptosyllis* Webster and Benedict, 1884. At present, about 16 species of *Syllides* have been described.

Syllides bansei Perkins, 1981 and *S. articulatus* Ehlers, 1897 are the only two species in the genus which have been described as having dorsal simple setae provided with a translucent distal and subdistal hood; however, Riser (pers. comm.) reports this feature to be readily observable on simple setae with comparable species, such as *S. convoluta* and *S. benedicti*. The compound setae of *S. bansei* are very different to those of *S. articulatus*, having some setae with long, basal spines (see Perkins, 1981).

The mediterranean specimens of *S. articulatus* are smaller than those from the antarctic and subantarctic seas, but they agree in the shape of the body and the setae; none of our specimens is a mature worm and perhaps they are smaller for this reason. Ehlers (1897) described and drew specimens of about 10 mm in length, 63-70 setigers, with proventriculus through about 10 segments; our specimens have proportionally shorter proventriculus. We have examined six specimens of this species collected off Livingston Island (South Shetlands, Antarctica) and they agree quite well with our mediterranean specimens; they are somewhat longer (about 3.2 mm, 34 setigers) and the proventriculus extends through 6 segments. Probably, the number of setigers that the proventriculus extends is in relation with the size of one specimen, and then these differences are not of taxonomic significance.

Our specimens are unique in having several rows of spines on the cutting margin of the blades; however, they have been only seen under high magnifications of the SEM, and they are not perceptible under light microscope. Further SEM observations at high magnifications should be made on other species to determinate if this is the true nature of the dentition observed in light microscope.

Hartmann-Schröder (1979) and (1983) described the subspecies *Syllides articulatus spinosus* and *S. articulatus pumilus*, both from the South of Australia, on the bases of differences on the setae and size of the specimens. We have examined 6 specimens of *S. articulatus pumilus*, kindly sent by Dra. Hartmann-Schröder, and they agree quite well with our mediterranean specimens but they are somewhat longer (about 2 mm long, 0.28 mm wide, for 27 setigers) and the translucent membrane of the shafts of the compound setae are lacking, having small spines; we think that this character could not be of taxonomic interest.

We do not give subspecific range to these mediterranean specimens, because they are not mature worms and many characters may change when the worm is mature.

Five species of *Syllides* have been previously reported for the Mediterranean Sea: *S. fulvus* (Marion & Bobetzky, 1875); *S. convolutus* Webster & Benedict, 1884; *S. japonicus* Imajima, 1966; *S. edentulus* Claparède, 1868, and *S. edentatus* Westheide, 1974. *S. articulatus* is new for the Mediterranean fauna.

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REFERENCES

BANSE K. 1971. A new species and addition to the description of six other species of *Syllides* Oersted (Syllidae: Polychaeta). *J. Fish. Res. board. Canada* **28**: 1469-1481.

EHLERS E. 1897. Polychaeten. Hamburger Magalhaenischen Sammelreise. Hamburg, Friedrischen & Co.: 1-148.

HARTMANN-SCHRÖDER G. 1965. Die Polychaeten des Eulitorals. Zur Kenntnis des Eulitorals der Chilenische Pazifikküste und der Argentinischen Küste Südpatagoniens unter besonder Berücksichtigung der Polychaeten und Ostracoden. *Mitt. Hamburg. Zool. Mus. Inst.* **60** (suppl. vol.): 57-169.

HARTMANN-SCHRÖDER G. 1979. Zur Kenntnis des Eulitorals der australischen Küsten unter besonderer Berücksichtigung der Polychaeten und Ostracoden (Teil 2 und Teil 3). *Mitt. Hamburg. Zool. Mus. Inst.* **79**: 75-218.

HARTMANN-SCHRÖDER G. 1983. Zur Kenntnis des Eulitorals der australischen Küsten unter besonderer Berücksichtigung der Polychaeten und Ostracoden. Teil 9. Die Polychaeten der antiborealen Südwestküste Australiens (zwischen Dunsborough im Norden und Denmark in Süden). *Mitt. Hamb. Zool. Mus. Inst.* **80**: 123-167.

OERSTED A.S. 1845. Fortegnelse ver Dyr, samlede i Christianiafjord ved Droebeal fra 21-24 July 1844. *Naturhist. Tidssr. Kjoebenhavn Ser. 2* (3): 400-427.

PERKINS T.H. 1981. Syllidae (Polychaeta), principally from Florida, with description of a new genus and twenty-one new species. *Proc. Biol. Soc. Wash.* **93**: 1080-1172.

SARDA R. and SAN MARTIN G. 1992. Systematic re-description of *Syllides verrilli* as *Streptosyllis verrilli* (Moore, 1907). Life cycle, population dynamics and production from a population of a salt marsh in southern New England (Ma, USA). *Bull. Mar. Sci.* **51** (3): 407-419.

SOMASCHINI A. 1992. Analisi strutturale e funzionale del popolamento ad Anellidi Policheti di una prateria di *Posidonia oceanica* (L.) Delile (strato dei rizomi). Unpubl. Doct. Thesys, Univ. "La Sapienza" Roma: 1-90.

SOMASCHINI A. and GRAVINA M.F. 1994. Ecological analysis of some Syllidae (Annelida Polychaeta) from the Central Tyrrhenian Sea (Ponza Island). In J.C. Dauvin, L. Laubier & D.J. Reish (Eds), Actes 4^e Conf. intern. Polychètes, Angers 1992. *Mém. Mus. natn. Hist. nat.* **162**: 567-573.

SOMASCHINI A., M.F. GRAVINA and ARDIZZONE G.D. 1994. Polychaete depth distribution in a *Posidonia oceanica* bed (rhizome and matte strata) and neighbouring soft and hard bottoms. *Mar. Ecol. P.S.Z.N.I.* **15** (2): 133-151.

SOMASCHINI A. and SAN MARTIN G. 1994. Description of two new species of *Sphaerosyllis* (Polychaeta: Syllidae: Exogoninae) and first report of *Sphaerosyllis glandulata* Perkins, 1981 for the Mediterranean Sea. *Cah. Biol. Mar.* **35**: 357-367.

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