

Miscellania dentata gen. et sp.n. (Polychaeta: Syllidae) from the Spanish Mediterranean coast

DANIEL MARTIN, CARMEN ALOS and RAFAEL SARDA

Accepted 25 November 1989

Martín, D., Alós, C. & Sardá, R. 1990. *Miscellania dentata* gen. et sp.n. (Polychaeta, Syllidae) from the Spanish Mediterranean coast.—*Zool. Scr.* 19: 169–172.

Specimens of *Miscellania dentata* gen. et sp.n. were collected in Catalunya, the Balearic Islands, and Strait of Gibraltar. They are characterized by an anterior tooth and an incomplete crown of denticles on the tip of the pharynx, short and smooth antennae and cirri, bases of palps separated, and the presence of compound and simple setae. Specimens were found living inside calcareous algal concretions.

Daniel Martín, Centre d'Estudis Avançats de Blanes (C.S.I.C.), Camí de Sta. Bàrbara s/n, E-17300, Blanes (Girona), Spain.

Carmen Alós & Rafael Sardá, Departament de Biologia Animal (Zoologia, Invertebrats), Facultat de Biologia, Universitat de Barcelona, Diagonal 645, E-08028, Barcelona, Spain.

Introduction

A number of peculiar and small Syllidae were found during biological surveys of the coasts of Catalunya, the Balearic Islands, and the Strait of Gibraltar regions (Spain). They were classified initially as juvenile specimens of *Pionosyllis* spp. (Banse 1959; Sardá-Borroy 1984; Martín-Sintes 1987). *Pionosyllis* is a heterogeneous complex which has generated new genera or has transferred species to related ones in former revisions (Pierantoni 1903; Hartman 1959, 1965; Hartmann-Schröder 1974).

We used scanning electron microscopy as an essential tool to study their morphological characters. Subsequently it became obvious to us that the specimens were not juveniles, and that they differed morphologically from all previously described genera and species. However similarities can be found with species of *Pionosyllis*, *Tripanosyllis*, *Dioplosyllis*, *Pseudosyllis*, *Pseudosyllides*, *Eusyllis* or *Petitia*. A new genus and species of Syllidae is described.

Taxonomy

Family Syllidae Grube, 1850
Subfamily Eusyllinae Rioja, 1925

Miscellania gen.n.

Type species. *Miscellania dentata* sp.n.

Diagnosis. Body very small, with reduced number of segments. Prostomium rounded with 2 pairs of eyes and 2 anterior ocular spots. Three short antennae, the median slightly behind others. Palps separated at bases by almost width of prostomium, divergent, folded ventrally. Tenta-

cular cirri 2 pairs, similar to antennae, on distinct cirrophores. Dorsal cirri smooth, shorter than width of body. Ventral cirri short, digitiform. Setae including compound falcigers and dorsal and ventral simple setae. Pharynx straight, with anterior tooth and incomplete crown of denticles. Proventricle short, barrel-shaped. Pygidium with 2 smooth, short anal cirri.

Miscellania dentata sp.n. (Figs 1–4)

Pionosyllis sp. Banse, 1959: 432–433; Sardá-Borroy 1984: 237, 330–331, 772–773; Martín 1987: 49.

Material examined. Holotype (number 18-22-01, "Museo Nacional de Ciencias Naturales" of Madrid) from 17 m, L'Estartit (Girona), Spain; 2 additional specimens from the same locality. Four specimens collected at 6, 9 and 25 m, Cabo de Creus (Girona). Two specimens collected at 20 m, Cadaqués (Girona). Two specimens collected at 27 m, Arenys de Mar (Barcelona). One specimen collected at 18 m, Menorca (Balearic Islands). One specimen collected at 8 m, Gibraltar (Cadiz).

Etymology. The genus name, *Miscellania*, refers to characters shared with several genera of Syllidae. The species name, *dentata*, refers to the characteristic crown of denticles of the pharynx.

Description. Small body with 10–13 segments, 0.765–1.05 mm long and 132–155 µm wide, measured across proventricle. Prostomium rounded, with 2 anterior en-

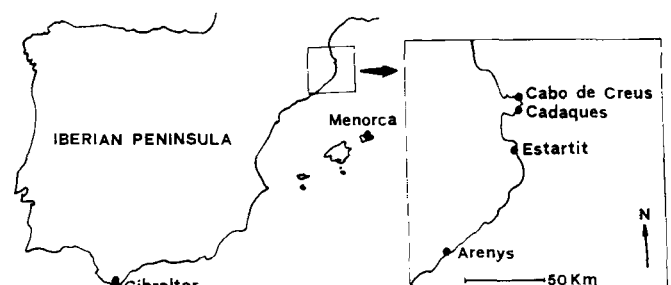


Fig. 1. Locations of the collection areas.

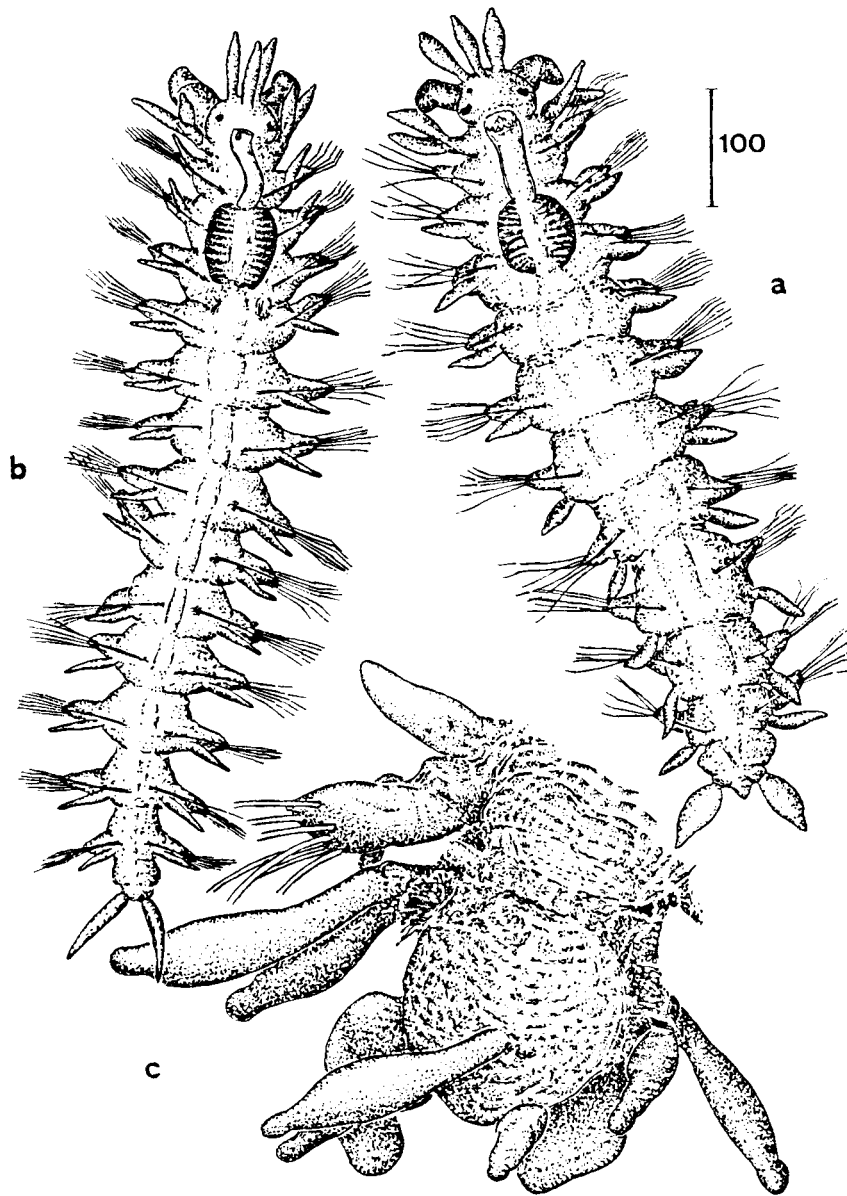


Fig. 2. *Miscellania dentata* gen. et sp.n.—a. Specimen from L'Estartit, dorsal view.—b. Specimen from Gibraltar, dorsal view.—c. Detail of the anterior end. Scale bar in μm .

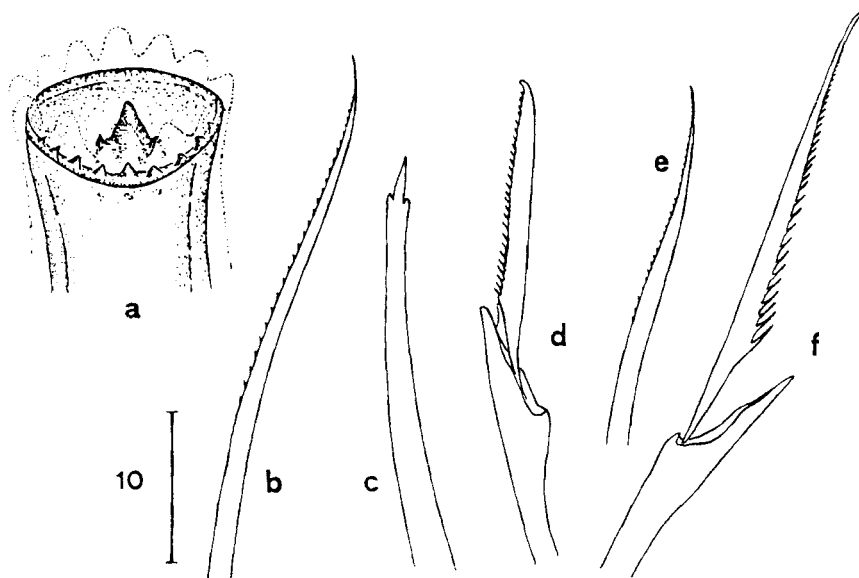


Fig. 3. *Miscellania dentata* gen. et sp.n.—a. Detail of the aperture of the pharynx, dorsal view.—b. Dorsal simple seta.—c. Aciculum.—d. Ventral compound seta.—e. Ventral simple seta.—f. Dorsal compound seta. Scale bar in μm .

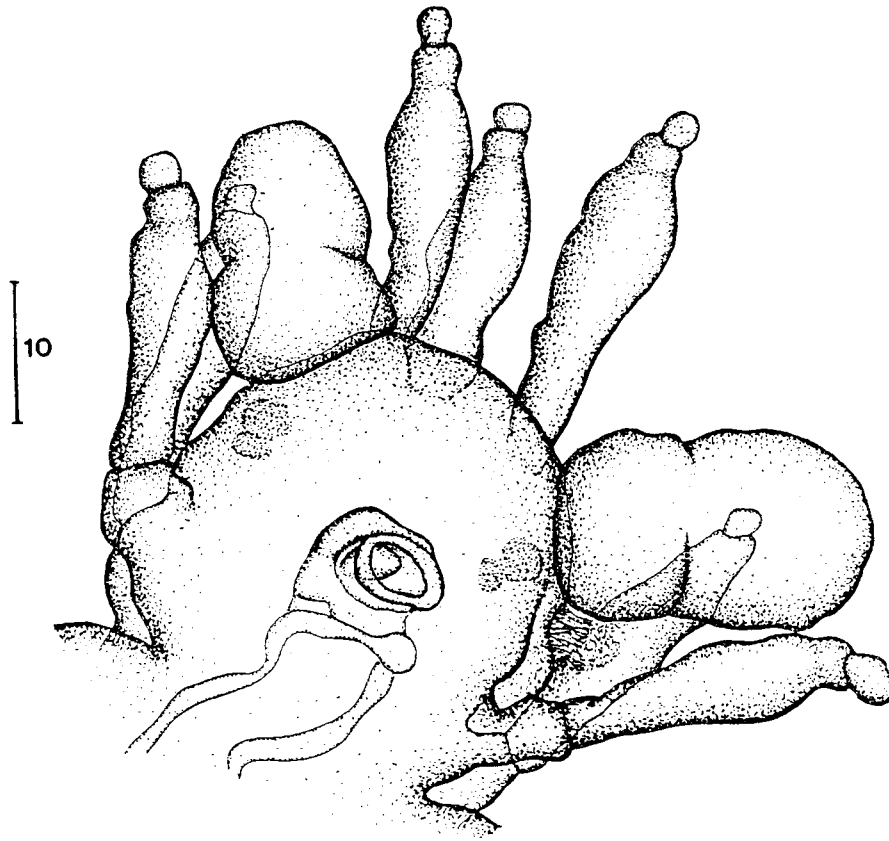


Fig. 4. *Miscellania dentata* gen. et sp.n. Detail of the anterior end, ventral view. Scale bar in μm .

largements harbouring the 4 eyes: posterior eyes larger than anterior ones; 2 small ocular spots on anterior prostomial margin (Fig. 2a), occasionally absent. Prostomium with ciliated nuchal organs laterally (Fig. 2c). Antennae all similar: short, smooth, spindle-shaped, with constricted base and terminal knob (Figs 2a, c, 4). Tentacular cirri 2 pairs, similar to antennae; ventral pair slightly shorter than dorsal pair, both pairs on distinct cirrophores (Figs 2c, 4). Palps somewhat longer than prostomium, with bases separated by almost width of prostomium, divergent and folded ventrally (Figs 2a, c, 4).

Dorsal cirri with pointed tips, shorter than width of body, spindle-shaped, smooth (Fig. 2c). Ventral cirri shorter than dorsal cirri, digitiform. Parapodial lobes pointed, similar in length to dorsal cirri (Fig. 2c).

Compound setae 9–16 per parapodium at proventricle. Blades unidentate with dorso-ventral gradation in length; dorsal ones longer (49–33 μm) and pronouncedly spinulose on base (Fig. 3f); ventral ones, shorter (25–16 μm) and weakly spinulose along entire length (Fig. 3d). Dorsal simple setae long, thin, unidentate, finely spinulose, beginning on first setigers (Fig. 3b). Ventral simple setae similar to dorsal simple setae, shorter and thicker, beginning on setiger 11 (Fig. 3e).

Aciculum (Fig. 3c) with subdistal enlargement and pointed tip. Subdistal enlargement, at higher magnification, consisting of circle of hairs.

Pharynx 69–130 μm in length, longer than proventricle (Figs 2a, b), very thin, with thick anterior tooth and dorsal semicircle of denticles on margin, sometimes resembling a trepan (Fig. 3a). Proventricle barrel-shaped to spherical, length and width about equal, with 13–17 muscular

rows, about $1\frac{1}{2}$ segments long in second and third setiger (Figs 2a, b).

Pygidium triangular, with 2 anal cirri similar to dorsal cirri, although longer and wider (Figs 2a, b).

Discussion. The small size of specimens of *Miscellania dentata* suggests that these animals might be juvenile forms of other species. However, this possibility must be ruled out because of the observation, by transparency, of sexual products in some specimens.

Miscellania dentata gen. et sp.n. shares morphological characters with several genera of Syllidae (Fauvel 1923; Fauchald 1977; San Martín 1984). Specimens examined were initially classified under *Pionosyllis* Malmgren, 1867 (Banse 1959; Sardá-Borroy 1984; Martín-Sintes 1987). However, characters of the pharynx of the new genus and species differ from *Pionosyllis*, in which the anterior margin of the pharynx is smooth. Further, the palps of *Pionosyllis*, although divergent, are joined at the bases.

The dentition of the pharynx of *Miscellania dentata* can be compared with that found in *Eusyllis* Malmgren, 1867, in which the entire pharyngeal margin is dentate. *Eusyllis* also has divergent palps, but they are joined at the bases. Antennae and dorsal cirri of *Eusyllis* tend to be long, and the proventricle is long and provided with many muscular cell rows. Whereas in *Miscellania*, the proventricle is short and has only a few muscular rows, antennae and dorsal cirri are short, and only part of the margin of the pharynx is dentate.

The presence of palps with completely separated bases suggests similarities between *Miscellania* and the genera

Trypanosyllis Claparède, 1864; *Pseudosyllis* Grube, 1863; *Pseudosyllides* Augener, 1927; and *Petitia* Siewing, 1955. The genera *Trypanosyllis* and *Pseudosyllis* have short, oval palps, and their antennae and cirri are moniliform. The teeth on the margin of the pharynx of *Trypanosyllis* form a true trepan with a circle of well-defined teeth surrounding the opening. *Pseudosyllis* has a pharynx with a smooth margin and a single mid-dorsal tooth. The pharynx of *Pseudosyllides* lacks both a mid-dorsal tooth and a trepan.

Petitia seems to be the most similar of all of the above genera to *Miscellania*. Specimens of the only species of this genus, *P. amphophthalma* Siewing, 1955, were examined to evaluate the similarities to our material. The bases of palps of *Petitia*, albeit separated, are very close to each other, and not located laterally on the prostomium as are those of *Miscellania*. Further, we observed no denticles on the pharynx of *Petitia*, in agreement with the original description of Siewing (1955).

Like *Miscellania*, *Dioplosyllis* Gidholm, 1962, has a pharynx with a dorsal semicircle of teeth and a mid-dorsal tooth. *Dioplosyllis*, however, has palps joined at the bases, distinct segmental ciliate bands, and long adhesive dorsal cirri distinct from those in *Miscellania* (Gidholm 1962).

We conclude, therefore, that the suite of characters of *Miscellania dentata* although variously shared with those of several other genera, justify the erection of a new genus and species. The new genus cannot be assigned definitely to an existing subfamily of Syllidae, but we believe that it will be best included within the Eusyllinae because of its similarity to the genera of that subfamily.

Acknowledgements

We thank Dr G. San Martín, Universidad Autónoma of Madrid, for his support and encouragement throughout the duration of this work, and Dr W. Westheide, Universität Osnabrück, for kindly providing specimens of *Petitia amphophthalma* and scientific advice.

References

- Banse, K. 1959. Über die Polychaeten-Besiedlung einiger submariner Höhlen.—*Publ. Staz. Zool. Nap.* 30 (Suppl.): 417–469.
- Fauchald, K. 1977. The polychaete worms. Definitions and keys to the Orders, Families and Genera. *Nat. Hist. Mus. Los Angeles County Sci. Ser.* 28: 1–190.
- Fauvel, P. 1923. Polychètes Errantes. *Faune de France*, 5: 1–488.
- Gidholm, L. 1962. Sur quelques polychètes syllidiens des sables de la région de Roscoff avec description de deux nouvelles espèces. *Cah. Biol. mar.* III: 249–260.
- Hartman, O. 1959, 1965. Catalogue of the Polychaetous Annelids of the world. I, II (1959) and Supplement (1965). *Occ. Pap. Allan Hancock Fdn* 23: 1–197.
- Hartmann-Schröder, G. 1974. Zur Kenntnis des culitorals der afrikanischen Ostküste von Südafrika und Mozambique unter besonderer Berücksichtigung der Polychaeten und Ostracoden. Die Polychaeten des Untersuchungsgebietes. *Mitt. hum. zool. Mus. Inst.* 71: 35–73.
- Martín-Sintes, D. 1987. La comunidad de Anélidos Poliquetos de las concreciones de algas calcáreas del litoral catalán. Caracterización de las especies.—*P. Dept. Zool., Barcelona*, 13: 45–54.
- Pierantoni, U. 1903. La gestazione esterna (Contributo alla biologia ed alla embriologia dei Sillidi. *Arch. Zool. Torino* 1: 231–252.
- San Martín, G. 1984. Estudio biogeográfico, faunístico y sistemático de los poliquetos de la familia Sillidos (Syllidae: Polychaeta) en Baleares. Ph.D. thesis, University of Madrid.
- Sardá-Borroy, R. 1984. Estudio sobre los Poliquetos de las zonas Mediollitoral e Infralitoral en la región del Estrecho de Gibraltar. Ph.D. thesis, University of Barcelona.
- Siewing, R. 1955. *Petitia amphophthalma* n.gen. n.sp. ein neuer Polychaet aus dem sandlückensystem. *Vie Milieu* VI(3): 413–426.