

Polychaeta (Annelida) from Muros de Nalón (Asturias, Cantabrian Sea), with three new records for the coast of Asturias.

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Abstract

The benthic Polychaete fauna associated with shallow water macroalgae assemblages from an Asturian littoral beach (northern Spain, central Cantabrian Sea) was studied. Twenty-six species are recorded, including the first records for *Myrianida brachycephala* and *Nudisyllis pulligera* for the Asturian coasts and *Nerilla mediterranea* for the Cantabrian Sea. Relevant taxonomic and ecological remarks are also provided for some of the collected species.

Key words: Annelida, Polychaeta, shallow waters, macroalgae assemblages, Asturias.

Resumen

Se ha estudiado la fauna bentónica de Anélidos Poliquetos asociada a algas macroscópicas de las aguas someras de una playa del litoral asturiano (norte de España, mar Cantábrico). Se ha registrado un total de veintiséis especies, incluyendo las primeras citas de *Myrianida brachycephala* y *Nudisyllis pulligera* para el litoral asturiano y *Nerilla mediterranea* para el mar Cantábrico. También se incluyen notas taxonómicas y ecológicas de relevancia para algunas de las especies colectadas.

Palabras clave: Annelida, Polychaeta, aguas someras, conjuntos de algas macroscópicas, Asturias.

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Laburpena

Asturiaseko itsasertzean (Espainia iparraldean, Kantauri itsasoan) hondartza bateko sakonera gutxiko uretan, alga makroskopikoetara lotuta dagoen Anelido Poliketoen fauna bentonikoa ikertu da. Guztira hogeita sei espezie erregistratu dira, *Myrianida brachycephala* eta *Nudisyllis pulligera* espezieen lehen aipuak Asturiaseko kostaldean eta *Nerilla mediterranea* Kantauri itsasoan. Halaber, bildutako espezie batzuen ohar taxonomikoak eta ekologikoak ere jasotzen dira.

Gako hitzak: Annelida, Polychaeta, sakonera gutxiko urak, alga makroskopiko multzoak, Asturias.



The knowledge of polychaete taxonomy from Asturias is sparse and incomplete. Most of the available information mainly refers to old polychaete catalogues of the Cantabrian Sea, nearby localities or waters surrounding the Iberian Peninsula (e.g. Rioja & LoBianco, 1931; Ibáñez, 1973; Campoy, 1979; Gómez & San Martín, 1985). In addition, there are a few publications related to population ecology (Serrano *et al.*, 2006), influence of anthropogenic activities (Laborda *et al.*, 1991) and taxonomy (Cepeda & Lattig, 2016). According to this, it is necessary to increase the taxonomic knowledge of Polychaetes, completing the catalogue of the group for Asturias, which may also be useful for future conservation efforts. Thus, the main aim of this study is to describe epibenthic polychaetes associated with calcareous and photophilic macroalgae assemblages in the shallow waters of an Asturian beach.

Material was collected in Las Llanas Beach (Muros de Nalón), 43° 33' 39.90" N 6° 06' 15.19" W, in July 2013. Shallow waters macroalgae assemblages of this beach are rather homogeneous, being mainly consisted of three intermingled species: the photophilic *Stypocaulon scoparium* (Linnaeus) Kützing and the calcareous *Corallina elongata* Ellis & Solander and *Lithophyllum incrustans* Philippi. Other photophilic species, such as *Liagora distenta* (Mertens ex Roth) Lamoroux and *Liagora viscida* (Forskal) Agardh, were also present.

Six samples were collected by snorkelling. Each macroalga was cut either manually or with a knife. Samples were individually placed in resealable plastic bags filled with seawater and kept cold until polychaete specimens were removed in the laboratory. Species identification was carried out using a Leica MZ16A stereomicroscope or Carl Zeiss 66649 optical microscope, depending on the size of the sample. Material was identified to the lowest possible taxonomic level using specific taxonomic keys and deposited in the Invertebrates collection of the National Museum of Natural Sciences of Madrid (MNCN). Photographs were taken on the above mentioned optics with a Leica DFC550 and a Nikon DSFi1 camera respectively.

Prior to the present note, only two species were previously known in Las Llanas Beach: *Novafabricia infratorquata* (Fitzhugh, 1973) and *Polycirrus asturiensis* Cepeda & Lattig, 2016. Therefore, this note highly contributes to the knowledge of the Polychaete fauna of the mentioned locality, reporting a total of 26 species belonging to 22 genera and 8 families. Furthermore, *Myrianida brachycephala* (Marenzeller, 1874) and *Nudisyllis pulligera* (Krohn, 1852) are reported for the first time for the Asturian coasts and *Nerilla mediterranea* Schlieper, 1925 for the Cantabrian Sea.

The list below shows the collected species organized in families and ordered according to Rouse & Pleijel (2001) classification. Number of collected specimens per species is indicated in brackets after code of MNCN Invertebrates Collection. Species marked with an asterisk are new reports for the Asturian coast. New information about taxonomy, distribution, reproduction and/or habitat of some of the collected species is also provided as remarks.

Family Cossuridae Day, 1963

Cossura sp. 16.01/16113 (1)

Remarks: The specimen is incomplete, lacking of posterior part and pygidium. This does not allow for a full identification, because pygidial features are essential to distinguish between species (Parapar, 2012). However, the collected specimen likely belongs to *Cossura pygodactylata* Jones, 1956, which has been frequently identified as *Cossura soyeri* Laubier, 1964: the only remarkable difference between these species is the presence of short anal cirri arising from the pygidium in *C. pygodactylata*, which are not present in *C. soyeri*. The revision of the geographical distribution of both species by Bachelet & Laubier (1994) suggested that most *C. soyeri* specimens reported for the Atlantic Ocean are actually *C. pygodactylata*, whereas *C. soyeri* appears to be restricted to the Mediterranean Sea and Gulf of Mexico.

Family Nereididae Blainville, 1818

Subfamily Nereidinae Blainville, 1818

Micronereis variegata Claparède, 1863. 16.01/16096 (1), 16.01/16115 (11), 16.01/16145 (1).

Remarks: Some of the collected specimens are males, with characteristic jaws. However, the pair of copulatory crochets is not present in these specimens, probably because they were detached. In addition, the adult specimens are smaller, with no more than 14 chaetigers, than those described by Rullier (1954): males have 16 to 21 chaetigers and females have 21 chaetigers. Núñez (2004) also described specimens with 14 to 23 chaetigers.

Platynereis dumerilii (Audouin & Milne Edwards, 1834). 16.01/16097 (15), 16.01/16118 (44), 16.01/16130 (22), 16.01/16150 (18).

Family Polynoidae Kinberg, 1856

Subfamily Lepidonotinae Willey, 1902

Lepidonotus clava (Montagu, 1808). 16.01/16144 (1).

Subfamily Polynoinae Kinberg, 1856

Harmothoe impar (Johnston, 1839). 16.01/16095 (2), 16.01/16114 (4), 16.01/16128 (2).

Family Syllidae Grube, 1850

Subfamily Anoplosyllinae Aguado & San Martín, 2009

Syllides fulvus (Marion & Bobretzky, 1875). 16.01/16133 (1).

Subfamily Autolytinae Langerhans, 1879

**Myrianida brachycephala* (Marenzeller, 1874). 16.01/16124 (1).

Remarks: This is the first record of *Myrianida brachycephala* for the Asturian coast, although it has been previously reported for the Cantabrian Sea (Galicia and Basque Country) and western Mediterranean Sea (Gibraltar, Andalucía, Chafarinas Islands, Catalonia and Balearic Islands) (San Martín, 2003). The collected specimen clearly belongs to the mentioned species, meeting the diagnostic characters: (1) Presence of a trepan with 22-30 unequal teeth, one large alternating with one to three smaller and (2) Dorsal cirri with unequal cirrophores and cirrostyles.

Subfamily Exogoninae Langerhans, 1879

Brania pusilla (Dujardin, 1851). 16.01/16093 (1), 16.01/16105 (1), 16.01/16108 (1), 16.01/16112 (3), 16.01/16126 (3), 16.01/16140 (7).

Remarks: The collected specimens are similar to those described by San Martín (2003) from the waters surrounding the Iberian Peninsula. However, some morphological differences are observed: palps are fused dorsally along their entire length (Figure 1A), while in San Martín (2003), the palps are only fused along basal-most third. In the studied specimens, the proventricle is present along 3-4 segments (Figure 1A), while San Martín (2003) mentioned their presence along only two segments. Furthermore, up to 3-5 striking inclusions inside the dorsal cirri of parapodia were observed (Figure 1B), whereas San Martín (2003) described 1-2 inclusions.

Salvatoria clavata (Claparède, 1863). 16.01/16098 (4), 16.01/16104 (2), 16.01/16107 (3), 16.01/16119 (8), 16.01/16131 (11), 16.01/16152 (26).

Salvatoria limbata (Claparède, 1868). 16.01/16099 (1), 16.01/16103 (1), 16.01/16106 (1), 16.01/16120 (5), 16.01/16153 (8).

Sphaerosyllis hystrix Claparède, 1863. 16.01/16100 (1), 16.01/16121 (6), 16.01/16132 (4).

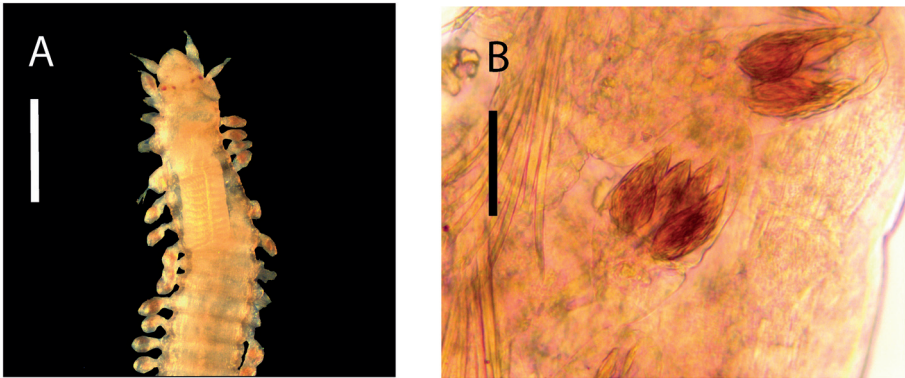


Fig. 1.- *Brania pusilla*. A: Dorsal view of anterior body, scale 250 µm; B: Striking inclusions inside dorsal cirri, scale: 40 µm.

Fig. 1. *Brania pusilla*. A: Vista dorsal de la parte anterior del cuerpo, escala: 250 µm; B: Inclusiones fibrilares de los cirros dorsales, escala: 40 µm.

Subfamily Eusyllinae Malaquin, 1893

Eurysyllis tuberculata Ehlers, 1864. One specimen, deposited on the personal collection of G. San Martín.

**Nudisyllis pulligera* (Krohn, 1852). 16.01/16092 (19), 16.01/16117 (36), 16.01/16149 (2).

Remarks: This is the first record of *Nudisyllis pulligera* for the Asturian coast, although it has been previously reported for the Cantabrian Sea (Galicia and Basque Country) and the Atlantic and Mediterranean waters surrounding the Iberian Peninsula (San Martín, 2003). Most of the studied specimens are fragmented or without cirri. However, chaetal morphology allows for identification. Thus, collected specimens show a strong dorso-ventral gradation of length and morphology of the blades of compound chaetae, which is diagnostic of the species (San Martín *et al.*, 2009): the dorsal-most chaetae are long and have bidentate blades provided with a few distinct spines basally, whereas the ventral-most chaetae are short and have unidentate, smooth blades.

Subfamily Syllinae Rioja, 1925

Syllis garciai (Campoy, 1982). 16.01/16154 (3).

Syllis gracilis Grube, 1840. 16.01/16135 (2), 16.01/16155 (3).

Syllis prolifera Krohn, 1852. 16.01/16101 (12), 16.01/16122 (17), 16.01/16136 (27), 16.01/16156 (8).

Syllis variegata Grube, 1860. 16.01/16102 (1), 16.01/16134 (3), 16.01/16137 (2), 16.01/16157 (1).

Trypanosyllis zebra (Grube, 1860). One specimen, deposited in the personal collection of G. San Martín.

Family Nerillidae Levinsen, 1883

**Nerilla mediterranea* Schlieper, 1925. 16.01/16147 (4).

Remarks: This is the first record of *Nerilla mediterranea* for the Asturian coast and the Cantabrian Sea, although it has been widely reported for the Mediterranean Sea and both western and eastern Atlantic Ocean (Besteiro *et al.*, 2012). The studied specimens agree with the diagnostic characters of the species: (1) Interramal cirri longer than body segments without transversal constrictions and (2) Pygidial cirri divided by transversal constrictions.

Family Sabellidae Latreille, 1825

Amphiglena mediterranea (Leydig, 1851). 16.01/16110 (6), 16.01/16138 (1).

Remarks: *Amphiglena mediterranea* is characterized by having ellipsoid peristomial eyes (Rouse & Gambi, 1997). However, in the studied specimens, the eyes are spherical. The species is also characterized by having thoracic, avicular uncini with well-developed medium handles, but the specimens herein studied have short handles, as also previously observed by Rouse & Gambi (1997).

Family Spionidae Grube, 1850

Aonides oxycephala (Sars, 1862). 16.01/16111 (1), 16.01/16139 (1).

Remarks: The studied specimens vary in the number of prostomial eyes, having one or two pairs. In addition, Ramos (1976) described the species as having four pygidial papillae, but the Asturian specimens have five. Furthermore, the number of branchial chaetigers and total of segments observed in the examined material are less than observed by Ramos (1976), perhaps due to their smaller size.

Dipolydora armata (Langerhans, 1880). 16.10/16109 (9), 16.01/16142 (5).

Family Cirratulidae Carus, 1863

Aphelochaeta cf. marioni. 16.01/16146 (1).

Remarks: The studied specimen is incomplete, lacking of the posterior part, and also bad preserved, being impossible to observe the insertion of palps and the shape of prostomium and peristomium. However, other diagnostic features of the species are present in the studied specimen, including: (1) Groove between dorsum and notopodia slight and (2) Notochaetae and neurochaetae both smooth capillaries, the notochaetae being longer than the neurochaetae.

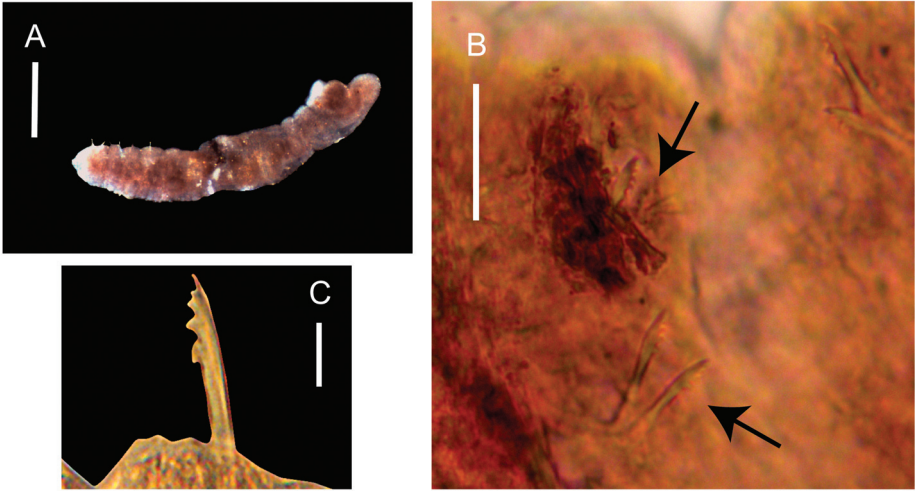


Fig. 2.- *Ctenodrilus* sp. A: General body view, scale: 250 μ m; B: First chaetiger (arrows indicate both notopodia and neuropodia), scale: 40 μ m; C: Chaetae from anterior chaetigers, scale: 30 μ m.

Fig. 2.- *Ctenodrilus* sp. A: Vista general, escala: 250 μ m; B: Primer setígero (las flechas indican la posición del notopodio y del neuropodio), escala: 40 μ m; C: Seda de los setígeros anteriores, escala: 30 μ m.

Ctenodrilus sp. 16.01/16123 (1).

Remarks: The collected specimen (Figure 2A) is similar to *Ctenodrilus serratus* (Schmidt, 1857). However, some notable differences are visible. Salazar-Vallejo *et al.* (1983) and Bastida-Zavala (1994) described the first parapodium as uniramous, while in the examined material all parapodia, including the first (Figure 2B), are biramous. Although Bastida-Zavala (1994) described several anterior parapodia with chaetae with 3 teeth, the Asturian specimen has 4-5 teeth on all chaetae, including anterior ones (Figure 2C). *Ctenodrilus* sp. likely constitutes a new species; however, more material is needed before it can be formally described.

Dodecaceria concharum Örsted, 1843. 16.01/16143 (2).

Remarks: *Dodecaceria concharum* is frequent in dredges or associated with *Lithothamnion* spp., empty tubes of other polychaetes and shells. In the studied locality, *D. concharum* was found attached to macroalgae assemblages.

Tharyx killariensis (Southern, 1914). 16.01/16094 (1), 16.01/16127 (1), 16.01/16141 (1).

Remarks: *Tharyx killariensis* usually lives in muddy bottoms, but the Asturian specimens were found among algae. According to the original description (Southern, 1914) and Worsfold (2009), *T. killariensis* is characterized by having the anterior third of the body wider than the rest. However, our specimens are wider at middle third. Also, Southern (1914) and Worsfold (2009) remarked that capillary chaetae are smooth, while in the studied specimens are moderately dentate.

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