Contribution to the knowledge of Loxosomatidae (Entoprocta) from the Chafarinas Islands (Alboran Sea, Western Mediterranean)

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The composition of the marine benthic community of the Chafarinas Islands, a small group of islands just off the western part of the Moroccan Mediterranean coast, has attracted a high interest, as shown by studies on different animal groups such as Polychaeta (López & San Martín, 1996, 1997; López *et al*., 1996, 1997; López & Tena, 1999; López & Viéitez, 1999), Isopoda (Castellanos *et al*., 2003), Nemertea (Frutos *et al*., 1998), Phoronida (Emig *et al*., 1999), Pycnogonida (Munilla & Nieto, 1999), and Hydroidea (Peña Cantero & García Carrascosa, 2002). Nevertheless, up to now, no studies are available on Entoprocta from these islands.

With the aim to partially fill this gap, solitary entoprocts (the family Loxosomatidae) inhabiting sponges were collected by scuba diving at 7 metres depth at the Chafarinas Islands (Alboran Sea, SW Mediterranean), particularly in Muelle del Titán (Isabel II island) (2º25'44" W, 35º10'46" N) on 22 and 28 June 2008 (Fig. 1). Sponges with entoprocts on the surface were identified as *Ircinia fasciculata* (Pallas, 1766) and *Sarcotragus spinosulus* Schmidt, 1862. Only some of the sponges were covered with entoprocts. Sponge samples of approximately 2 cm^2 with loxosomatids were collected and transported in a refrigerator to the laboratory, where they were photographed *in vivo* and studied further. After photography the specimens were kept in seawater with menthol crystals for approximately 8 hours to obtain a more appropriate relaxation and afterwards

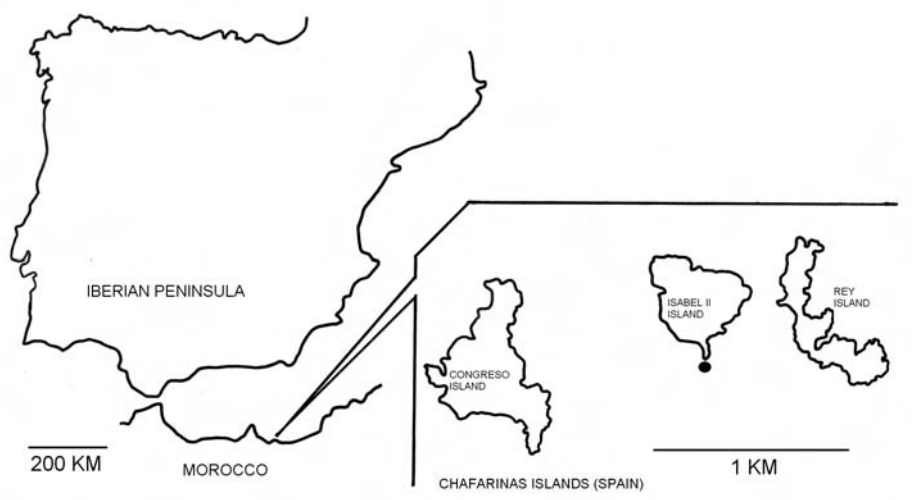

Fig. 1.— Map of the study area.

Fig. 1.— Mapa del área de estudio.

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Table 1.— Measurements (in μm) of some specimens of the studied population of *Loxosomella tethyae* narcotized with menthol crystals and fixed in 4% formalin in sea water.

Tabla 1.— Medidas (en μm) de algunos individuos de la población estudiada de *Loxosomella tethyae* narcotizados con cristales de mentol y fijados en formol al 4% en agua de mar.

Individuals	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Total length	1184	1092	1098	910	773	872	1156	895	749	1051
Stalk length	808	717	725	563	456	546	761	493	385	648
Stalk width	124	102	123	87	88	97	125	97	94	114
Calyx length	375	394	373	347	317	326	395	402	364	403
Calyx width	270	264	263	236	268	224	247	247	238	295
Foot length	263	176	225	252	270	265	278	280	202	258
Length of calyx/length of stalk	0.464	0.55	0.51	0.61	0.69	0.59	0.51	0.81	0.94	0.62
Length/width of calyx	1.38	1.5	1.41	1.47	1.18	1.45	1.59	1.62	1.52	1.36

fixed in 4% formalin in sea water. The study of this material showed the occurrence of three species. Two of them could be clearly identified as *Loxosomella pes* (Schmidt, 1875) (Fig. 3) and *Loxosomella ameliae* Sánchez-Tocino & Tierno de Figueroa, 2009 (Fig. 2). The third taxon could be assigned to the species *Loxosomella tethyae* (Salensky, 1877) (Fig. 4), but the characteristic eight rows of glandular cells of the stalk could not be clearly observed. Nevertheless, all the remaining characteristics [10 tentacles in the calyx, small wings in the calyx (although not well observed in live individuals), stomach with pentagonal shape, glandular cell row around the base of tentacle crown and also in the lateral wings, etc.] and the

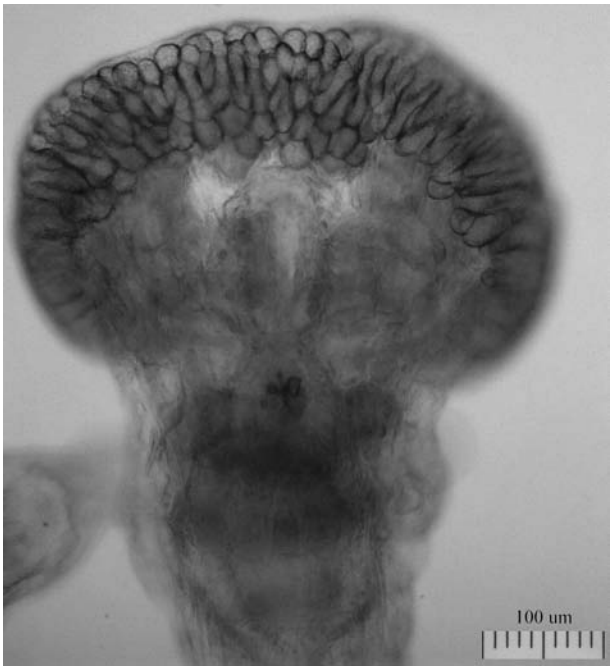

Fig. 2.— Calyx of a live individual of *Loxosomella ameliae* showing the glandular cell rows around the tentacle crown base (scale 100 μm).

Fig. 2.— Cáliz de un ejemplar vivo de *Loxosomella ameliae* mostrando las filas de células glandulares en la base de la corona de tentáculos (escala 100 μm).

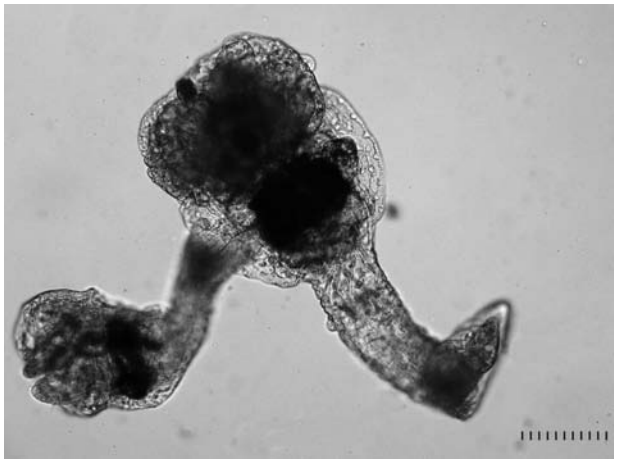

Fig. 3.— Live individual of *Loxosomella pes* showing the large lateral calyx wings and an attached developed bud (scale 100 μm).

Fig. 3.— Ejemplar vivo de *Loxosomella pes* mostrando las grandes alas laterales del cáliz y una yema lateral desarrollada (escala 100 μm).

Fig. 4.— Live individual of *Loxosomella tethyae* showing the small lateral calyx wings, the glandular cell row around the tentacle crown base and an attached developed bud (scale 100 μm).

Fig. 4.— Ejemplar vivo de *Loxosomella tethyae* mostrando las pequeñas alas laterales del cáliz, la fila de células glandulares en la base de la corona de tentáculos y una yema lateral desarrollada (escala 100 μm).

biometric data (see Table 1) led us to identify these individuals as *L. tethyae*.

Loxosomella pes has been previously reported from Italian Tyrrhenic waters (Prenant & Bobin, 1956; Nielsen, 2008), and recently also registered in the Southern Iberian Peninsula, particularly from the Granada province coast (Sánchez-Tocino & Tierno de Figueroa, 2009). This species has been collected previously on sponges of the genera *Euspongia* Bronn, 1859 [now considered a synonym of *Spongia* Linnaeus, 1759], *Sarcotragus* Schmidt, 1862 and *Ircinia* Nardo, 1833 (Nielsen, 2008; Sánchez-Tocino & Tierno de Figueroa, 2009). In our study it was found on *Sarcotragus spinosulus*.

Loxosomella ameliae has only been recorded from the Granada province coast living on *Ircinia fasciculata* (Sánchez-Tocino & Tierno de Figueroa, 2009). In Chafarinas islands, it was also found on the same sponge.

Loxosomella tethyae has been previously reported from sponges of the genera *Tethya* Lamark, 1814 and *Stylotella* Lendenfeld, 1888 (the latter is now considered as a synonym of *Hymeniacidon* Bowerbank, 1858) in some areas of the western Mediterranean Sea (see Nielsen, 2008) and on *Microciona* Bowerbank, 1862 from Atlantic waters of USA (Nielsen, 1966). In our study it was found on *Sarcotragus spinosulus,* where it was the dominant species while only a few individuals of *L. pes* were observed.

In Mediterranean waters only two other species of *Loxosomella* Mortensen, 1911 inhabiting sponges have been reported: *L. cochlear* (Schmidt, 1875) and *L. raja* (Schmidt, 1875) (Nielsen, 2008; Sánchez-Tocino & Tierno de Figueroa, 2009), but they have not been found in our study.

The collection of the three loxosomatid species, *L. ameliae*, *L. pes* and *L. tethyae*, is the first record of Entoprocta from the African Mediterranean coast.

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