Record of *Ellisella paraplexauroides* (Anthozoa: Alcyonacea: Ellisellidae) in Italian waters (Mediterranean Sea)

MICHELA ANGIOLILLO1, MARZIA BO2, GIORGIO BAVESTRELLO2, MICHELA GIUSTI1, EVA SALVATI1 AND SIMONEPIETRO CANESE3

1Istituto Superiore per la Protezione e Ricerca Ambientale (ISPRA) (ex ICRAM), Via di Casalotti 300, 00166 Roma, Italy, 2Dipartimento di Scienze del Mare, Università Politecnica delle Marche, 60131 Ancona, Italy

The occurrence of the candelabrum coral *Ellisella paraplexauroides* in Italian waters (Sicily Strait, Mediterranean Sea), was documented during a remotely operated vehicle cruise, carried out by ISPRA in May 2010 on-board the RV ‘Astrea’. Five specimens were photographed and sampled from 80 to 94 m depth on the north-east coasts of Pantelleria Island, confirming the distribution of this species in the central Mediterranean Sea. A description of the living colonies and other taxonomic and ecological characteristics is provided.

Keywords: *Ellisella paraplexauroides*, mesophotic zone, remotely operated vehicle exploration, biogeography, Pantelleria Island

Submitted 8 August 2011; accepted 27 September 2011

INTRODUCTION

The gorgonians of the genus *Ellisella* Gray, 1958 are widely distributed from tropical to temperate waters (Fabricius & Alderslade, 2001; Weinberg & Grasshoff, 2005). In the Mediterranean Sea, this genus is represented only by one species, *Ellisella paraplexauroides* Stiasny, 1936 (family Ellisellidae), forming brick-red candlestick colonies, up to 2 m high (Carpine & Grasshoff, 1975). The branched colonies have thin, whip-like ramifications arising from a common short stem, heading parallel upwards and dividing dichotomously (Fabricius & Alderslade, 2001). The unbranched or sparsely branched specimens of this species can be confused with *Viminella flagellum* (Johnson, 1863) (Carpine & Grasshoff, 1975; Fabricius & Alderslade, 2001; Giusti et al., in press), the second ellisellid coral found in the Mediterranean basin, but are easily distinguishable by the sclerites shape and for the red colour, contrasting the white-yellow appearance of *V. flagellum*.

*Ellisella paraplexauroides*, similar to *V. flagellum*, has an Atlanto-Mediterranean distribution (Vafidis et al., 1994), however, in contrast with this species, it has been reported in southernmost warm temperate oceanic waters along the western coasts of Africa (Table 1). The first record of *E. paraplexauroides* was made by Stiasny (1936) from Cap Blanco (Mauritania). Following this, the species was reported in several other Atlantic localities including the coasts of Portugal (Stiasny, 1939a), the Gulf of Cádiz (Arroyo Tenorio et al., 2008; Aguilar et al., 2010), several sites along the Moroccan coast (Stiasny, 1939b; Grasshoff, 1972, 1992) and in the whole Canary Archipelago (Brito et al., 1984; Brito, 1985; Aristegui et al., 1987; Grasshoff, 1992; Ocaña et al., 1992; Bianchi et al., 2000; Brito & Ocaña, 2004). It also occurs further south along the African coast (apart from the type locality): in Senegal (Grasshoff, 1992; Miralles et al., 1992), Ivory Coast, Ghana, Nigeria and Angola (Grasshoff, 1992). No records have been given so far for the Azores, Madeira Islands, Great Meteor and Josephine Seamounts and Cape Verde Archipelago, where, on the contrary, *V. flagellum* was found. This led Grasshoff (1972) to suppose that *E. paraplexauroides* was mainly distributed along the continental coasts, excluding the Canary Islands.

*Ellisella paraplexauroides* has been firstly reported in the Mediterranean Sea by Stiasny (1940), examining fragments collected along the Algerian and Tunisian coasts (Grasshoff, 1992). Most of the following records within the Mediterranean Sea came from the Gibraltar Strait (Ocaña et al., 2000; Brito & Ocaña, 2004; Arroyo Tenorio et al., 2008; Torres Gavilá, 2008), Albora Island (Templado et al., 1986, 2006; Aguilar et al., 2008), Alborán Sea (Aguilar et al., 2008) and along the Moroccan coast, in the Chafarinas Islands, where several biological observations were made by SCUBA diving on a rich shallow water population of *E. paraplexauroides* (López et al., 1996; Peña Cantero & García Carrascosa, 2002; Castellanos et al., 2003; González García et al., 2005; Aguilar et al., 2008; Torres Gavilá, 2008; Tocino et al., 2009). A further record was documented from the central Mediterranean Sea, at Sidi Daoud (Tunisia) (Mustapha et al., 2004). Finally, Stiasny (1942) reported *E. paraplexauroides* also from the Bay of Naples (representing the northernmost record so far) even if, on the basis of the known distribution of the species, this record was generally considered doubtful (Grasshoff, 1972) (Figure 1).

Few data are available concerning biology and ecology of *E. paraplexauroides*. This has probably resulted from the analysis of small fragments only (Carpine & Grasshoff, 1975; Ocaña...
Table 1. Biogeographical records for Ellisella paraplexauroides.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Depth (m)</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Ocean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off Sesimbra, Portugal</td>
<td>–</td>
<td>–</td>
<td>Stiasny, 1939a</td>
</tr>
<tr>
<td>Gulf of Cádiz</td>
<td>15–30</td>
<td>Coastline between Chipiona and Rota; on rocks off Huelva and El Terrón (Gulf of Cádiz); off la Caleta, Cádiz</td>
<td>Arroyo Tenorio et al., 2008; Aguilar et al., 2010</td>
</tr>
<tr>
<td>Morocco</td>
<td>–</td>
<td>1 specimen and various fragments (MNHN); 2 colonies (RMNH, 6136, 6142)</td>
<td>Stiasny, 1939b</td>
</tr>
<tr>
<td>Asilah, western Moroccan coast</td>
<td>125</td>
<td>Various fragments collected during the Dana Expedition</td>
<td>Collected in 1921</td>
</tr>
<tr>
<td>Casablanca, Morocco</td>
<td>110–155</td>
<td>Various colonies collected during the Vanneau Expedition (Stations 21, 28, 37, 43, MNHN)</td>
<td>Collected between 1923 and 1926</td>
</tr>
<tr>
<td>Cap Blanc du Nord, Morocco</td>
<td>100–195</td>
<td>Various fragments collected during the Dana Expedition (Station 2020, ZMUC), Meteor 1967 (Station 8-013, SMF2154), CANCAP Expedition (RMNH 17996)</td>
<td>Collected between 1930 and 1967</td>
</tr>
<tr>
<td>Cap Cantin, Morocco</td>
<td>125</td>
<td>1 colony and 2 fragments collected during the Vanneau Expedition (Station 11, MNHN)</td>
<td>Collected between 1923 and 1926</td>
</tr>
<tr>
<td>Cap Sim, Morocco</td>
<td>135–195</td>
<td>Fragments collected during the 1967 Meteor Expedition (Station 9-082, SMF 2106, 2155)</td>
<td>Collected in 1967</td>
</tr>
<tr>
<td>Agadir, Morocco</td>
<td>110–150</td>
<td>1–2 colonies collected during the Vanneau Expedition (Stations 79, 91, 100, 110, MNHN)</td>
<td>Collected between 1923 and 1926</td>
</tr>
<tr>
<td>Cap Blanco (Cap Corveiro), Mauritanita</td>
<td>30–60</td>
<td>Holotype (2 colonies, Amsterdam Museum), 1 colony (5973) and 4 fragments (5940) in the RMNH; 1 colony in the MNHN; fragments collected during the 1975 Meteor Expedition (Station 36-107, SMF 6209-10; Station 118, SMF 3122)</td>
<td>Stiasny, 1936, 1937; collections 1975</td>
</tr>
<tr>
<td>Punta de Guimar, Las Eras and El Socorro, Tenerife, Canary Islands</td>
<td>63–690</td>
<td>Epibiontic Sarcodectyon canariensis encrusting a dead axis of E. paraplexauroides and other specimens entrapped in fishing gears. Found especially on the Dendrophyllia ramea's bottoms</td>
<td>Brito et al., 1984; Brito, 1985; Aristegui et al., 1987; Grasshoff, 1992; Ocaña et al., 1992; Brito &amp; Ocaña, 2004</td>
</tr>
<tr>
<td>Puerto del Carmen, Lanzarote, Canary Islands</td>
<td>~50</td>
<td>Visual census and underwater photography</td>
<td>Bianchi et al., 2000</td>
</tr>
<tr>
<td>Dakar, Senegal</td>
<td>45</td>
<td>Biochemical analysis on E. paraplexauroides's sterols</td>
<td>Miralles et al., 1992</td>
</tr>
<tr>
<td>Dakar, Senegal</td>
<td>45–50</td>
<td>1 colony identified by Kornprobst, 1986 (SMF 5778), 1 fragment (MNHN)</td>
<td>Collected in 1986</td>
</tr>
<tr>
<td>Ivory Coast (Cap Palmas, Bereby, Abidjan)</td>
<td>80–100</td>
<td>Various fragments collected during the Orstom Expedition (MNHN) and the Guinean Trawling Survey (Station 20/6, MNHN)</td>
<td>Collected in 1967</td>
</tr>
<tr>
<td>Ghana (Takoradi Cape Three Points, Accra, Tema)</td>
<td>33–48</td>
<td>1 colony collected during the Mercator Expedition (MNHN); 3 fragments collected during the Pillsbury Expedition (Station 17, 27 NMNH Invertebrate Zoology Collection, 85265–85266)</td>
<td>Collected in 1938 and 1964–1965</td>
</tr>
<tr>
<td>Bight of Benin, Lagos, Nigeria</td>
<td>82–97</td>
<td>2 fragments collected during the Pillsbury Expedition (Station 230 NMNH Invertebrate Zoology Collection, 85267)</td>
<td>Collected in 1964–1965</td>
</tr>
<tr>
<td>Angola (Moita Seca, Ambrizeote)</td>
<td>100</td>
<td>1 colony collected during the Atlantique Sud Expedition (Station 9, MNHN) and 1 colony identified by Gofas, 1985 (SMF, 5779)</td>
<td>Collected in 1948–1949 and 1985</td>
</tr>
<tr>
<td>Mediterranean Sea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gibraltar Strait (Ceuta, Morocco; Punta Carnero, Spain)</td>
<td>20–38</td>
<td>–</td>
<td>Ocaña et al., 2000; Brito &amp; Ocaña, 2004; Arroyo Tenorio et al., 2008; Torres Gavila, 2008</td>
</tr>
<tr>
<td>Alborán Island</td>
<td>70–140</td>
<td>–</td>
<td>Templado et al., 1986, 2006; López et al., 1996; Peña Cantero &amp; García Carrascosa, 2002; Castellanos et al., 2003; González-García et al., 2005; Torres Gavila, 2008; Aguilar et al., 2008; Tocino et al., 2009</td>
</tr>
<tr>
<td>Chafarinas Islands, Alborán Sea</td>
<td>15–35</td>
<td>Study through direct surveys of the associated fauna of E. paraplexauroides: hydroids (Euidendrium rameum, Filellum sp., Aglaophenia pluma, Antennella secundaria, Sertularella polygonus, Clytia linearis, Clytia sp.), ascidians (Clavelina nana and Pycnocladella taureanensis), sylids (Syllis columbretensis, Syllis krohni, Trypanosyllis coelica) and isopods (Paranthura costata and P. nigropunctata). Some found between mattes of Posidonia oceanica</td>
<td>Ocaña et al., 2000; Brito &amp; Ocaña, 2004; Arroyo Tenorio et al., 2008; Torres Gavila, 2008</td>
</tr>
<tr>
<td>Seco de los Olivos, Alborán Sea</td>
<td>100–200</td>
<td>Detritic bottom together with numerous other anthozoan corals</td>
<td>Aguilar et al., 2008</td>
</tr>
</tbody>
</table>

Continued
et al., 1992) or from investigations focused on the associated fauna (López et al., 1996; Peña Cantero & García Carrascosa, 2002; Aguilar et al., 2008; Torres Gavilá, 2008), while in situ observations have been rarely dedicated to this species (Bianchi et al., 2000; Mustapha et al., 2004; Aguilar et al., 2006, 2008, 2010).

Typical of the circalittoral plain, E. paraplexauroides may show a wide bathymetric distribution ranging from 15 to 690 m depth, with the shallowest records found mainly in the Mediterranean Sea and the deepest specimens found in the Atlantic Ocean. In particular, it has been reported on the shelf’s edge at mesophotic depths between 50 and 150 m (Templado et al., 1986, 2006; Tocino et al., 2009), but it can also live at bathyal depths, like in the Canary Islands, where it was observed from 63 to 690 m, mainly associated with the assemblages of the scleractinian Dendrophyllia ramea (Linnaeus, 1758) (Brito & Ocaña, 2004; Arroyo Tenorio et al., 2008). In the Canary Islands it has also been observed that the complexity of the branching pattern and the diameter of the ramifications depends on the type of substrate, as a result the colonies are thinner and sparsely branched when they live on unstable bottoms (Brito & Ocaña, 2004).

In the Gulf of Cádiz, Gibraltar Strait and Alborán Sea there are some sites where E. paraplexauroides was observed in very shallow waters, respectively 15–30 m along the coastline of Cádiz (Aguilar et al., 2010), 15–35 m depth between the Posidonia oceanica ((L.) Delile, 1813) matts, at Chafarinas Islands (González García et al., 2005) and 20–25 m depth in Ceuta, along the Moroccan coast (Ocaña et al., 2000; Brito & Ocaña, 2004).

Quantitative data on the populations of E. paraplexauroides have never been reported in the literature. This species has always been considered very rare and occasional (Grasshoff, 1992; Arroyo Tenorio et al., 2008) and never forming dense meadows, as in the case of V. flagellum (Grasshoff, 1971, 1972, 1977). The richest population known so far is the one at Chafarinas Islands (González García et al., 2005). The tallest colonies reported so far, are from the Mediterranean Sea (Grasshoff, 1992).

---

**Table 1.** Continued.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Depth (m)</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oran and La Calle, Algeria</td>
<td>–</td>
<td>1 fragment collected by Milne Edwards in 1836 (MNHN) and 2 fragments identified by Lacaze-Duthiers in 1836 (MNHN and RMNH, 6081)</td>
<td>Stiasny, 1940</td>
</tr>
<tr>
<td>Tunisia</td>
<td>–</td>
<td>1 fragment collected during the Univers. Expedition (MNHN)</td>
<td>Stiasny, 1940</td>
</tr>
<tr>
<td>Algeria and Tunisia</td>
<td>–</td>
<td>2 colonies about 1 m high and 1 colony about 1.7 m high (MNHN)</td>
<td>Grasshoff, 1992</td>
</tr>
<tr>
<td>Sidi Daoud, Tunisia</td>
<td>47</td>
<td>SCUBA-diving surveys. Ellisella sp. reported on a very rich coastal detritic assemblage</td>
<td>Mustapha et al., 2004</td>
</tr>
<tr>
<td>Naples</td>
<td>–</td>
<td>2 fragments (RMNH, 6331)</td>
<td>Stiasny, 1942</td>
</tr>
<tr>
<td>Pantelleria Island, Sicily Strait</td>
<td>80–94</td>
<td>5 specimens 83–173 cm high on a rocky cliff</td>
<td>Present study</td>
</tr>
</tbody>
</table>

---

**Fig. 1.** Map of the geographical distribution of *Ellisella paraplexauroides* (black dots) in the Mediterranean Sea. Black triangle represents the present record.
The colonies may host numerous epibionts, especially in their basal part and on larger ramifications. The associated fauna, occupying dead portions of the colonies, is mainly composed of encrusting algae, bryozoans (González García et al., 2005), hydroids (Peña Cantero & García Carrascosa, 2002), stoloniferans such as Sarcodictyon canariensis Ocaña, Brito & Nunez, 1992 (Ocaña et al., 1992), and ascidians such as Pycnoclavella taureanensis Brunetti, 1991 and Clavelina nana Lahille, 1890 (Aguilar, 2004; Tocino et al., 2009). Crustacean isopods of the genus Paranthura (Castellanos et al., 2003) and numerous species of polychaetes (López et al., 1996; Torres Gavilá, 2008) are the main components of the vagile fauna. The number of colonies with epibionts or dead colonies of E. paraplexauroides tends to decrease depending on the depth (Tocino et al., 2009).

The aim of this paper is to provide the first detailed record of E. paraplexauroides for the Italian waters. Moreover, some remarks on its distribution, biology and ecology are given on the basis of remotely operated vehicle (ROV) video and photographic samplings and specimens collection.

MATERIALS AND METHODS

The Island of Pantelleria lies along the continental rift system of the Sicily Strait (central Mediterranean Sea). It consists exclusively of volcanic rocks (Villari, 1974) and the entire area is subjected to intensive volcano–tectonic activity. The structural setting of the island is specified by faults and fractures that follow the regional north-west–south-east and north-east–south-west trends (Civetta et al., 1988).

The study site, named Cala Caruscia (locality Punta Spadillo) (36° 49.139' N 12° 01.537’ E), is located on the north-east side of the island (Figure 2) and was explored through a ROV survey conducted in May 2010 on-board the RV ‘Astrea’. The site is characterized by inclined rocky walls...
down to about 200 m depth with the bottom first turning into heavily slitted rocky boulders and then ending in a gently inclined soft-bottom slope.

The ROV ‘Polluce’ was equipped with a digital camera (Nikon D80, 10 megapixel), an underwater strobe (Nikon SB 400), a high definition video camera (Sony HDR-HC7) and a 3-jaw grabber (SeaBotix Inc.) to take samples. Additionally, it had a depth sensor, a compass, and three parallel laser beams 10 cm apart used as a reference scale to assist the observers in estimating: frame area, sizes (height and width) and branching pattern of what was photographed using the software ImageJ, (Brazeau & Lasker, 1988). Colonies of Ellisella paraplexauroides were photographed in the mesophotic zone, between 80 and 94 m depth. Photographs were then analysed to describe the general morphology of the coral colonies and their in vivo appearance. Direct sampling of one specimen was carried out for the species description. Sclerites were analysed with scanning electron microscopy (SEM) after dissolving the coenenchyme in sodium hypochlorite and lastly, a fragment fixed in 95% ethanol was used for the morphological analysis of polyps carried out with SEM and stereomicroscope.

RESULTS

The coral community of Pantelleria Island is mainly composed of a mixed assemblage of three-dimensional anthozoans. The dominant species up to 80 m depth are the gorgonians Paramuricea clavata (Risso, 1826), Eunicella cavolini (Koch, 1887), Corallium rubrum (Linnaeus, 1758) and, occasionally, the zoanthid Savallia savaglia (Bertoloni, 1819). Sparse colonies of the black coral Antipathella subpinnata (Ellis & Solander, 1786) were observed around 100 m depth, while the gorgonians Viminella flagellum and Swiftia pallida Madsen, 1970 were typically distributed in the deepest depth range, below 130 m depth (Giusti et al., in press). In total, five red brick colonies of Ellisella paraplexauroides were found scattered on the explored hard substrate (Figure 3A–D), between 80 and 94 m depth.

Colonies were anchored to the substrata with a large basal plate, about 10 cm wide, sometimes covered by fine sediments and other organisms such as sponges or encrusting algae (Figure 3A). The common stem arising from the plate was about 15 cm long and showed a 2–3 cm wide basal diameter, not bearing polyps. Observed colonies reached considerable dimensions, from 83 to 173 cm in height (130 ± 35 cm average) and from 12 and 42 cm in width (25 ± 12 cm average), being taller than larger because of the typical upward arrangement of their branches (Figure 3A–D). The colonies could show up to 30 terminal branches (basal diameter around 3 mm).

Only one colony showed the basal portion of some branches partially dead (Figure 3D). The naked skeleton was covered by numerous hydroids (unidentified sertularids and eudendrids entrapping a notable quantity of sediment), a colony of Paramuricea clavata, the polychaete Filograna sp. and various encrusting sponges and bryozoans.

During the ROV survey, a sample 35 cm long was collected from a sparsely branched colony 110 cm high. Coenenchyme was red, while polyps, monomorphically and highly contractile, were crowded, cylindrical and whitish. Underwater images showed extended polyps characterized by tentacles almost half the length of the calyxes (Figure 3E). Along the studied apical portion, polyps were arranged in a few longitudinal rows. However, photographs showed multiple rows of calyxes in the most basal parts of the colonies, as already reported in previous descriptions (Grasshoff, 1972; Carpine & Grasshoff, 1975). Polyps emerged from the branches with a sharp inclination and could show a different orientation when compared to the main stem (Figure 3F). Calyxes (up to 1.5 mm high) (Figure 3E, F) were characterized by a thin calyx wall. When contracted, the polyps formed knobs on the surface of the branches.

Surface sclerites were orange-yellow, while subsurface ones were almost colourless (Figure 3G). Sclerites included several types (Figure 3H); symmetrical double heads and thick capsules (up to 50 µm high) (Figure 3Ha-b) were densely packed on the surface of the coenenchyme; thick highly tuberculated caps (between 60 and 70 µm high) (Figure 3Hc) were organized in the subsurface of the coenenchyme; spindles (between 60 and 80 µm high) were found in the wall of calyxes (Figure 3Hd-e); and 50 µm high rods with few tubercles were found in the pharynx of the anthocodiae (Figure 3Hf-g). Sizes of the sclerites were slightly smaller than what has already been reported for some Atlantic specimens (Carpine & Grasshoff, 1975), but quite similar to that reported for the Canary Islands (Brito & Ocaña, 2004).

DISCUSSION

The present record of Ellisella paraplexauroides adds a new species of alcyonacean to the Italian fauna (Morri et al., 2008) (which now accounts for 27 species) and confirms the presence of this species in the central Mediterranean Sea. This record represents also the most eastern report of E. paraplexauroides in the Mediterranean basin. The ROV observations on the small population found in the mesophotic zone of Pantelleria Island confirm previous data regarding size, colour, branching pattern and associated fauna (Grasshoff, 1972; Carpine & Grasshoff, 1975; Arroyo Tenorio et al., 2008). The colonies observed in Pantelleria are also some of the tallest reported in the literature.

Pantelleria Island is situated in a unique area of the Mediterranean Sea, both from the oceanographic and topographic point of view, leading ultimately to an important role in the composition of the benthic fauna (Manzella et al., 1988; Greenpeace International, 2009). In the Sicily Strait, representing the connection between the eastern and western basins of the Mediterranean Sea, two water layers have been observed. The most superficial is composed of the surface Atlantic Waters (AW), running eastward, while the deepest one by the Levantine Intermediate Waters (LIW) flowing in the opposite direction, down to about 500 m (Napolitano et al., 2003). The particular hydrographic conditions of this area probably favours the presence of rich benthic communities of filter-feeding organisms (Bianchi & Morri, 2000).

Ellisella paraplexauroides is a typical Atlanto-Mediterranean species with a wide bathymetric distribution range. The superficial variations in temperature of the Mediterranean waters probably confine this species below 50 m depth in the Sicily Strait, although some populations were locally recorded at very shallow depths (15–35 m in...
The scattered distribution of *E. paraplexauroides* in the explored area was observed in a limited depth range, being the species confined below the distribution limit of the most common gorgonians (*Paramuricea clavata* and *Eunicella cavolinii*) and above the distribution range of *Viminella flagellum* (Giusti et al., in press). Although this species is occasionally considered as characterizing a facies (Gulf of Cádiz, Atlantic Ocean) (Aguilar et al., 2010), it never occurs in dense monospecific meadows and can be considered an occasional element in the lower fringe of the circalittoral assemblage.

The recorded susceptibility of *E. paraplexauroides* to epibiosis may be enhanced by mechanical injuries of the coenenchyme, as already suggested for other deep Mediterranean corals (Tocino et al., 2009). Commercial fishing activities, for example through long-line fishing,
directly damage these corals that are particularly vulnerable because of their arborescent morphology, fragile construction and the general slow growth rate (Bavestrello et al., 1997; Mortensen & Buhl-Mortensen, 2004; Bo et al., 2009).

It is well known that assemblages of colonial anthozoans represent biodiversity hotspots (Mortensen & Buhl-Mortensen, 2004; Ballesteros, 2006; Bo et al., 2009; Cerrano et al., 2010), adding three-dimensional complexity to the habitat and commonly housing a rich associated fauna as well as a great abundance of fish (Tsounis et al., 2006; Mortensen et al., 2008). In the Mediterranean Sea, these communities have been studied mainly in shallow waters, and few data are available for deep environments (Bo et al., 2009, 2010, 2011; Gori et al., 2016).

The complex structure and richness of species of the assemblages hosting E. paraplexauroides, together with their vulnerability to human activities, should motivate the decision of including them within the Mediterranean species and habitat list of conservational relevance.

**ACKNOWLEDGEMENTS**

We thank the crew members of the RV ‘Astrea’ for their precious help and work. This work was financed by Italian Ministry of the Environment, Land and Sea Protection.

**REFERENCES**


Correspondence should be addressed to:
M. Angiolillo
ISPRA (ex ICRAM)
Via di Casalotti 300
00166 Roma, Italy
email: michela.angiolillo@isprambiente.it


