

THE CRINOID GARDEN OF MONTECRISTO ISLAND MARINE SANCTUARY (TUSCAN ARCHIPELAGO NATIONAL PARK, MEDITERRANEAN SEA)

M. Taviani¹, L. Angeletti¹, A. Ceregato^{1*}, B. Gualandi², E. Lipparini¹ and D. Malatesta³
¹ ISMAR - CNR, Via Gobetti 101, I 40129 Bologna, Italy - alessandro.ceregato@bo.ismar.cnr.it
² CNR - Area della Ricerca, Via Gobetti 101, I 40129 Bologna, Italy
³ ROBOMAR S.a.s. & C., I-00187, Rome, Italy

Abstract

A recent ROV exploration of the deepest part of Montecristo Island (Tyrrhenian Sea) documents the occurrence of an extensive crinoid facies dominated by *Leptometra phalangium* (Müller J., 1841). This Atlantic-Mediterranean crinoid forms dense populations up to 10 individuals /m² all around the island in a depth range between ca. 110-130 m, preferentially settling on coarse detrital bottoms.

Keywords: *Tyrrhenian Se, Echinodermata, Zoobenthos, Biodiversity, Bio-Indicators*

Introduction

The tiny island of Montecristo is located in the eastern Tyrrhenian Sea at 42° 19.9'N, 10°18.5'E. Montecristo is part of the Tuscan Archipelago National Park since 1971. A programme designed at the non-invasive exploration of the flanks of Montecristo island was launched in 2008 to check for the possible presence of deep water corals down to its deepest stretches. Two exploratory surveys were conducted in summer 2008 onboard the m/b *Angélique 1945*, using the Remote Operating Vehicle (ROV) *Prometeo Flat Platform 6+* and the *Global Vision* Video Camera (VC), operated by ROBOMAR sas & Co (Fig.1). The ROV exploration identified and documented for the first time the presence of an extensive crinoid facies all around the island starting from 108 m down to a maximum depth of about 132 m.

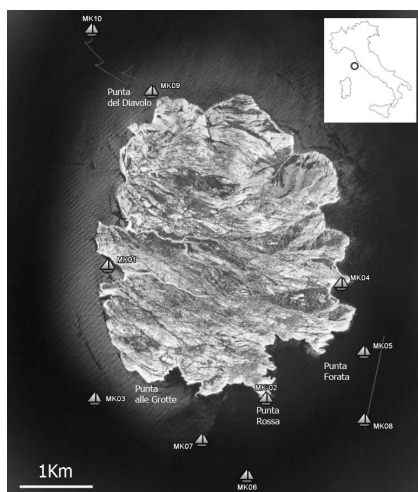


Fig. 1. Island of Montecristo. Map of the surveys

Results and discussion

The most successful transects were carried out at the sites of Punta Rossa, Punta Forata and Punta del Diavolo where the ROV imaged a seabottom characterized by the absolute dominance of crinoids. Spot checks conducted using VC at other locations around Montecristo further confirmed the ubiquity of such crinoid facies that results therefore the most relevant one inhabiting the coarse circalittoral detrital seabottom encircling Montecristo. At the time of our diurnal survey the quasi totality of crinoids were very active in feeding. Since no seabottom sampling was allowed beside corals (not encountered during our ROV investigations) the taxonomic recognition of the crinoid was performed using the video documentation (Fig. 2).

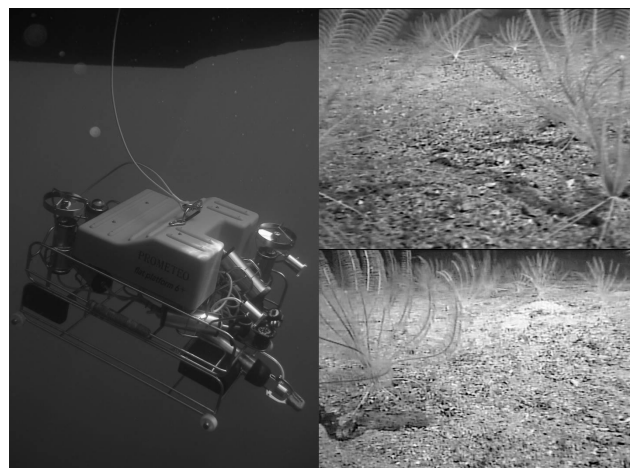


Fig. 2. The ROV during the operations and two snapshots of the "Crinoid garden" taken by the ROV's video equipment

The crinoid has been identified as *Leptometra phalangium* (Müller J., 1841). This is a common echinoderm distributed in the Eastern Atlantic Ocean and Mediterranean Sea ([1], [2], [3], [4]). In the Mediterranean *Leptometra* is well known to contribute to circalittoral communities, and is widespread in the Tyrrhenian Sea, including other sectors of the Tuscan Archipelago ([2]).

Acknowledgements : Thanks are due to the Park authorities for granting permission to work in the waters of Montecristo. SCUBA divers Michele Ghirelli and Antonio Sperottihelped with ROV buoyancy calibration.

References

- 1 - Bianchi C. N., Boero F., Fraschetti S., Morro C., 2005. Marine Fauna (Including Brackish Waters). In: Blasi C., Boitani L., La Posta S., Manes F., Marchetti M. eds. Biodiversity in Italy. *Palombi Ed.*: 312-360.
- 2 - Colloca F., Carpentieri P., Balestri E., and Ardizzone G. D., 2004. A critical habitat for Mediterranean fish resources: shelf-break areas with *Leptometra phalangium* (Echinodermata: Crinoidea). *Mar. Biol.*, 145 (6): 1129-1142.
- 3 - Pellegrini D., Sartor P., 1989. Distribuzione spazio-temporale degli Echinodermi dei fondi molli del Mar Tirreno Settentrionale nel triennio 1985-87. *Nova Thalassia*, 10 (suppl. 1): 603- 605.
- 4 - Pérès J. M., Picard J., 1964. Nouveau Manuel de Bionomie Benthique de la Mer Méditerranée. *Extrait du Recueil des Travaux de la Station Marine d'Endoume*, 31 (47): 1-137.