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**BIODIVERSITY ASSOCIATED WITH THE CORALLIGENOUS:
THE CASE OF A COLUMNAR BUILD-UP AT 36m DEPTH OFF
MARZAMEMI (SE SICILY, IONIAN SEA)**

Abstract

*This work, within the CRESCIBLUREEF project, focuses on the biodiversity of the coralligenous bioconstructions off Marzamemi (SE Sicily, Ionian Sea), aiming at better understanding which taxa inhabit the build-up and their possible contribution to the framework's formation. Soft and calcareous algae together with the erect bryozoan *Margaretta cereoides* form a canopy at the surface of the structure. Bryozoans are the species-richest taxon, mostly with *Celleporina caminata* and encrusting species. Serpulids are less diversified but some species, such as *Josephella marenzelleri* are very abundant. Sponges, foraminifers, molluscs, crustaceans, brachiopods and hydrozoans are subordinate.*

Key-words: Macroalgae, bioconstruction, benthic assemblages, threatened ecosystem, Mediterranean Sea

Introduction

Coralligenous is a priority habitat of the Mediterranean Sea, whose bioconstructions' framework primarily consists of calcareous algae (Di Geronimo *et al.*, 2002; Bracchi *et al.*, 2022), but invertebrates contribute to the growth of the build-ups, each playing a specific role in the coralligenous construction. Within the FISR project CRESCIBLUREEF – “Grown in the blue: new technologies for knowledge and conservation of Mediterranean reefs”, we focused on coralligenous biodiversity associated with a build-up, aiming at understanding which taxonomic groups form/inhabit it, and their species richness, specifically for bryozoans and serpulids.

Materials and Methods

The build-up studied (CBR2_4_21, nicknamed Di Geronimo, Fig. 1) was collected in August 2021 off Marzamemi (SE Sicily, Ionian Sea) at 36 m depth. The site is characterized by scattered decimetre-sized build-ups that rise from a coarse biogenic bottom. All the erect canopy-forming organisms on the build-up surface were picked, identified and counted.

Results

Several taxonomic groups were found, still many under study. Bryozoans include 72 species (some abundant, e.g. *Celleporina caminata*) and serpulids 20 species (*Josephella marenzelleri* above all). Algae (>100 species, mostly *Flabellia petiolata* and peysonneliaceans) and foraminifers (ca. 30 species) are species-rich. Molluscs

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151

(bivalves including *Gregariella semigranata* and encrusting gastropods with *Vermetus granulatus* are common); brachiopods (*Joania cordata*) and cirripeds (*Verruca spengleri*) are subordinate.

Fig. 1: (A) The build-up studied ; (B) The bryozoan *Margaretta cereoides*; (C) The serpulid *Josephella marenzelleri*

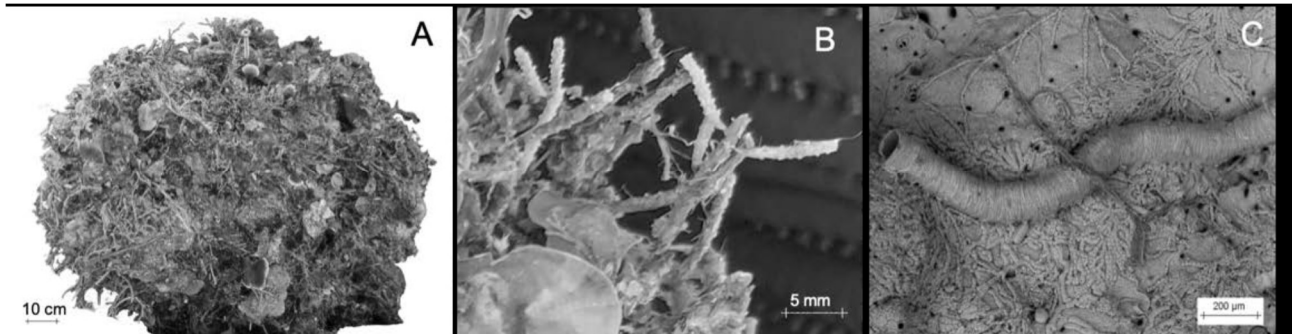


Fig. 1: (A) The build-up studied ; (B) The bryozoan *Margaretta cereoides*; (C) The serpulid *Josephella marenzelleri*

Discussion and conclusions

Although data only refer to few taxonomic groups, the ongoing research points to a high species richness for bryozoans and serpulids, largely above the 9 and 7 species found on a previously studied columnar build-up from the same area (Di Geronimo *et al.*, 2002). Though comparisons are difficult, bryozoans and foraminifers from this single build-up account for more than 1/3 and 1/2 of the total species richness known for the Mediterranean coralligenous (Ballesteros, 2006, and references therein). We expect to increase these figures with the ongoing analyses.

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Bibliography

- BALLESTEROS E. (2006) - Mediterranean coralligenous assemblages: a synthesis of present knowledge. *Oceanography and Marine Biology: an Annual Review* 44, 123–195.
- BRACCHI V.A., BAZZICALUPO P., FALLATI L., VARZI A.G., SAVINI A., NEGRI M.P., ROSSO A., SANFILIPPO R., GUIDO A., BERTOLINO M., COSTA G., DE PONTI E., LEONARDI R., MUZZUPAPPA M., BASSO D. (2022) - The main builders of Mediterranean coralligenous: 2D and 3D quantitative approaches for its identification. *Frontiers in Earth Science, Paleontology* 10:910522.
- DI GERONIMO I., DI GERONIMO R., ROSSO A., SANFILIPPO R. (2002) - Structural and taphonomic analysis of a columnar coralline algal build-up from SE Sicily. *Geobios* 35, 86-95.