

# BRYOZOANS AND SERPULOIDEANS IN SUBMARINE CAVES OF THE EASTERN MEDITERRANEAN

Rossana Sanfilippo <sup>1\*</sup>, Antonietta Rosso <sup>1</sup> and Vasilis Gerovasileiou <sup>2</sup>

<sup>1</sup> Catania University Department of Biological, Geological and Environmental Sciences - sanfiros@unict.it

<sup>2</sup> Institute of Marine Biology, Biotechnology and Aquaculture, Heraklion, Crete

## Abstract

Bryozoan and serpuloidean communities have been examined for the first time from two submarine caves of the Aegean Sea. Preliminary results point to a high diversity for bryozoans, represented by 72 species, and a relatively low diversity for serpuloideans, which were present with 18 species. Bryozoan assemblages in the two caves shared only half species and showed different patterns of species distribution and growth adaptations, in agreement with general information for submarine cave habitats. Serpuloidean species richness weakly increased inwards accompanied by replacement of some species.

*Keywords: Polychaeta, Aegean Sea, Bryozoa, Biodiversity*

Bryozoans and serpuloideans from submarine caves of the Eastern Mediterranean Sea are still unknown and this paper is a first contribution to their knowledge. Two submarine caves, i.e. Fara (11-18m) and Agios Vasilios (24-40m), located in Lesbos Island (Aegean Sea), have been examined for their bryozoans and serpuloideans. The former is a 32m long tunnel ending to a dark chamber connected through a fissure with a second cave. The latter is wider in its proximal part and narrows at about 15-20m from the entrance before its blind end [1]. A total of 30 square surfaces of 400cm<sup>2</sup> (20x20cm) were scraped from the walls and ceilings, at progressive distance levels from the entrance, representing different assemblages and facies in the distinct light zones of the two caves [2], [3]. Bryozoans had considerable coverage. A total of 72 living species were identified with cheilostomes (57 spp.), largely prevailing over cyclostomes (14 spp.) and stenostomes, represented by only one species. More than half of them (37 spp.) were found in both caves; 32 other species were exclusively found in Agios Vasilios cave, which, exhibited the highest species richness (69 spp.). On the other hand, only 5 species were found exclusively in Fara cave, which hosted a total of 42 species. Diversity increased from the entrance to the inner zones of Fara cave, whereas the total number of species was quite stable along Agios Vasilios cave, notwithstanding changes in assemblage composition. Noteworthy, several species presented few specimens and in a small number of samples whereas only 20 species made up the bulk of the bryozoan assemblages, representing typical dwellers of cryptic habitats. Both flexible and rigid erect colonies were occasionally present whereas encrusting morphotypes largely prevailed with uni-to multilaminar and celleporiform hemispherical colonies. Spot-like species and runners were also observed. Serpuloideans presented low coverage and were represented by a total of 18 species (13 serpulids and 5 spirorbids). Most of them were present in both caves, but 4 species were exclusively found in Agios Vasilios cave. *Semivermilia crenata* was the commonest species. A weak increase in diversity was observed from the cave entrances inwards, coupled with a marked change in taxonomic composition. Nodular, fungiform and crest-like bioconstructions (up to 3-4cm in height and diameter) were observed, formed by the bryozoans *Hippaliosina depressa*, *Rhynchozoon neapolitanum* and *Parasmittina rouvillei*. Smaller nodular structures were often produced by *Onychocella marioni*, *Hippomenella mucronelliformis*, *Hippopodina ambita*, *Therenia rosei* and *Anarthropora monodon*. Tube aggregates of large-sized *Protula* specimens occurred, forming coiled donuts (up to 6cm in diameter) and plaits (ca. 8cm high and 4cm in diameter), hanging from the ceilings in Agios Vasilios and Fara cave, respectively. Although the observed patterns of bryozoan and serpuloidean species distribution and growth adaptations were in agreement with those recorded in other submarine caves [4 with references], the vast majority of the recorded taxa are new records for the cave fauna of the eastern Mediterranean Sea. Further studies are expected to increase our knowledge on the regional diversity of these understudied sessile groups in the marine cave habitat.

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