

THE PRE-CORALLIGEN COMMUNITY IN THE MARMARA SEA

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Abstract. Along the westernmost shores of the Marmara Sea, in 16-20 m depth, there is a well developed association of calcareous red algae and sciaphilous soft macrophyta, dominated by Phyllophora nervosa, sheltering rich faunal assemblages. The community belongs to the pre-coralligen unit, proper to secondary hard bottoms of the upper circalittoral zone.

Résumé. Au long des côtes de l'extrémité ouest de la Mer du Marmara, à 16-20 m de profondeur, il y a une association bien développée d'algues rouges calcaires avec des macrophytes sciaphiles molles, dominées par Phyllophora nervosa, abritant des riches groupements des animaux. Cette communauté doit être considérée comme une variante de l'unité pré-coralligène, liée aux fonds secondairement durs de l'étage circalittoral supérieure.

Although essential for the understanding of postquaternary colonisation of the cool-temperate and mesohaline environment of the modern Black Sea with marine immigrants, the structure of the benthos within the littoral system of the Marmara Sea is poorly known. Faunistic research carried out during the past decades concerning this gateway linking the Aegean and Black seas, provided comparatively few data about distributional pattern of benthic species and their relationships with the nature of the substratum, except those of TORTONESE (1959) and TORTONESE & DEMIR (1960), pointing out the dominance of coralligenous (maërl) bottoms on the inner shelf near Istanbul and around of some of the Prince's Islands, in depths not exceeding 35-40 m.

This communication is intended to notify the presence of luxuriantly developed pre-coralligen community along the western shores of the Marmara Sea, near to the northern entrance of the Dardanelles. The community was detected in 1981, in stations sampled at positions $40^{\circ}31'_{2}N$ $26^{\circ}55'E$, $40^{\circ}28'_{5}N$ $26^{\circ}49'_{5}E$ and $40^{\circ}28'_{4}N$ $26^{\circ}47'_{2}E$, in depths between 16-20 m. Here, the original substratum of coarse bioclastic sand and detritic mixture is abundantly covered and cemented together by calcareous Rhodophy-

ceae - chiefly Lithothamnion calcareum (PALL.) ARESCH., L. fruticosum (KÜTZ.) FOSLIE and Lithophyllum racemus (LA.) FOSLIE - supporting in their turn a surprisingly rich settlement of sciaphilous soft algae, dominated by Phyllophora nervosa (DC.) GREV. and its epiphytes, such as Sphaerococcus coronopifolius (GOOD. & WOODW.), Gelidiella nigrescens FELDM. & HAMEL and Poly-siphonia sp. sp. The macrophyta are represented in the community by a total number of 47 species, 36 of them belonging to the Rhodophyceae, including 15 species of calcareous Cryptonemiales (H. SKOLKA and F. VASILIU, pers. comm.). Quantitatively, the mean fresh weight of living Cryptonemiales amounts 22.25 kg/m^2 , while the soft fraction of the algal community weighs 4.75 kg/m^2 - P. nervosa counting for 89 % of the fresh biomass.

More than 100 different taxa of invertebrates, belonging to 32 orders were registered among macrobenthic species attached to or concentrated by the macrophytic substratum, having mean quantitative values of $D = 24,361 \text{ ind/m}^2$ and $B = 106.831 \text{ g/m}^2$; similar figures for the meiobenthos are $D = 54,091 \text{ ind/m}^2$ and $B = 0.913 \text{ g/m}^2$. The most common macrobenthic species occurring in the community are Middendorfia caprearum (SCACCHI), Mangelia purpurea (RISSO), Limapontia sp., Musculus marmoratus FORBES (always on Ascidiella), Apherusa bispinosa (BATE), Caprella danilewskyi CZERN., Athanas nitescens laevirhynchus (RISSO), Macropipus arcuatus (LEACH), Porcellana platycheles (PENN.), Genocidaris maculata (AGASSIZ), Spadella cephaloptera (BUSCH), Ascidiella aspersa (MÜLLER).

This variant of the pre-coralligen unit of the phytal benthos should be considered as being the uppermost level of the circalittoral zone, marking the shoreward limit of the plateau coralligen, comparable with the aspect described by GAMULIN-BRIDA (1967) from the Adriatic Sea.

GAMULIN-BRIDA, H. (1967), *Oceanogr. Mar. Biol.*, 5; 535-568.

TORTONESE, E. (1959), *Natura (Milano)*, 50; 18-26.

TORTONESE, E. & DEMIR M. (1960), *Hidrobiologi (Istanbul)*, 5, 1-2; 3-16.