



Evidences of Holocene biostratigraphic and paleoenvironmental modifications based on calcareous nannoplankton in the Black Sea.

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In the framework of the EU ASSEMBLAGE project (EVK3-CT-2002-00090), we conducted a detailed analytical micropaleontological work on four piston cores collected during the BLASON 2 cruise (B2 KS02, B2 KS24, B2 KS38, B2 KS33) and two piston cores collected during the ASSEMBLAGE 1 cruise (MD04 2754, MD04 2770), with the aim to investigate the Late Quaternary evolution of the Black Sea. We analyzed the calcareous nannofossil content of 202 samples with the aim to refine biostratigraphy and explore the paleoenvironmental modifications that occurred in the Black Sea during the last 15,000 years.

The calcareous nannofossil analyses evidenced three intervals recognizable in all the studied cores, either collected in the basin or in the shelf, respectively characterized from the older to the younger by the spotty occurrence, the presence and the acme of *Emiliana huxleyi*.

Moreover, in the older unit we observed the absence of the species *Braarudosphaera bigelowii*. This species, on the contrary, occurs in the two younger units. The co-occurrence of these two marine species suggests a shift from fresh-brackish water to low-salinity marine conditions of the Black Sea.

The spotty rare occurrence of *E. huxleyi* in the lower unit is an important feature never observed before, suggesting the presence of short marine incursions during the lake phase of the basin. Another feature recognized in almost all the cores is the presence of a multi lamina aragonite level, always recorded in the upper part of the Unit III.

Finally, the study we performed on water samples allowed to investigate the modern coccolithophorid assemblage and to compare it to the superficial sediment in order to explore the dissolution effects in the water column. We observed the presence of *Syracosphaera* spp. in the superficial water samples whereas this delicate form is not present in the sediments, suggesting dissolution through the water column. *B. bigelowii*, on the other hand, is a species present in all cores, whereas it is almost absent in the water column and in recent sediment samples. This suggests a change in the water condition in recent time.