

DETAILED MICROPALAEONTOLOGICAL STUDY OF THE DEEP-SEA CORE TTR3-80G FROM THE OLIMPI MUD-DIAPYRIC AREA (EASTERN MEDITERRANEAN)

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A dynamics of changes in the foraminifera and nannoplankton assemblages during the Quaternary are in common use as a key for an interpretation of climatic fluctuations and biostratigraphy of the Mediterranean region.

Detailed calcareous nannofossil and planktonic foraminifera quantitative analyses were carried out on 51 samples from the deep-sea core TTR3-80G. The core was raised from the Mediterranean Ridge plateau (to the south of Crete) at 33°39.00'N, 24°34.72'E, at a water depth 1877 m. This hemipelagic core includes "marker-bed" (manganese-rich thin black layer, dated as 4 kyrs B.P.), tephra layer Y-5 (40 kyrs B.P.) and 3 sapropels identified by their assemblages of planktonic foraminifera and calcareous nanofossils as S-1, S-5 and S-6.

The stratigraphic time framework is provided by correlation of isochronous lithologies and nannofossil biostratigraphy. The core sediments are represented by two biozones: *Emiliana huxleyi* and *E. huxleyi Acme*. The beginning of the *E. huxleyi Acme* Zone is calibrated with isotope/faunal stage 4 (53-54 kyrs B.P.).

Planktonic foraminifera were studied in a fraction greater than 125 µm. For a quantitative analysis the samples were split to appropriate size, and about 300 specimens were identified and counted in each of the samples. In total 26 species of planktonic foraminifera were identified. Two main groups can be determined for the studied area on the basis of their ecology; "cool-water" assemblage includes such species as: *N. pachyderma*, *T. quinqueloba*, *G. bulloides*; "warm-water" assemblage: *Gs. ruber*, *Gs. acculifer*, *Gs. tennelus*, *G. rubescens*, *Gl. aequalateralis*. *N. dutertrei* was used as an index of surface water refreshing (low salinity index).

Changes in abundance of different calcareous nannoplankton species or pairs of species gives the opportunity to reconstruct the fluctuations between glacial and interglacial conditions over the last 200 kyrs: Riss glaciation (approximately 200-127 kyrs B.P.), Termination II (127-104 kyrs B.P.) and Wurm glaciation (approximately 104-10 kyrs B.P.). A short return to the warm conditions during the Riss glaciation is about 164-150 kyrs B.P., and during the Wurm glaciation - around 40 kyrs B.P. These boundaries are estimated using the rates of sedimentation (2.2-2.5 cm/kyr during the Pleistocene).

All recovered sapropels reveal peculiar assemblages of planktonic foraminifera and calcareous nannofossils. Sapropels S-1 and S-5 are represented by "warm-water" fauna and flora. On the contrary, sapropel S-6 contains "cool-water" assemblage, for planktonic foraminifera consisting of only 5 species. The productivity of foraminifera in that interval is about 10 times higher than in the rest of the core. It is also possible to determine warm - and cool - water intervals inside the sapropels.

The core reveals a great abundance of redeposited miocene-pliocene calcareous nannofossils probably originated from Moscow mud volcano. The absence of this material in sapropel layers shows that sapropels were deposited under the stagnant anoxic conditions.

