Assessment of benthic foraminiferal assemblages from Oligocene Afales Basin, Ithaki Island, western Greece and palaeoceanographic implications *(Poster)*

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The Oligocene epoch is critical for understanding the Earth climate system because together with the Eocene, it corresponds to a transitional phase between the early Paleogene greenhouse and the Neogene icehouse. Studies of the Oligocene paleoenvironment of the lower bathyal eastern Mediterranean are relatively rare, yet, it is important to investigate paleoenvironments in various water depths and regions to understand the behaviour of the Eastern Mediterranean to the Oligocene climate.

In this study, smaller benthic foraminifera from the Afales section (Ithaki island, western Greece) were studied in order to obtain more data about paleoceanographic conditions that existed in the Oligocene Hellenide foreland basin. The studied section comprises an expanded succession of upper Priabonian (upper Eocene) to Chattian (upper Oligocene) hemipelagic marls interbedded with well-bedded, beige-coloured, detrital limestone beds. The hemipelagic marls contain abundant planktic foraminifera, common small benthic foraminifera, some ostracodes and rare fragments of echinoids and molluscs. These deposits have been designated as flysch or flysch-like beds.

Twenty-six samples from the marls were used for quantitative faunal analyses. For the counting procedures the 125 μm to 600 μm of each sample was used. Preservation was so bad in some samples that determination of the specimens had to be limited to the generic of even to subfamily level. Factor and cluster analyses were performed on relative abundance data of the highest-ranked species, which are present in at least two samples with a percentage of 2% or more in at least one sample. In particular, Q-mode cluster analysis using Ward's Minimum Variance method helped identify sample groups explained by each biofacies.

Throughout the section the P/B-ratio remains persistently high.

As a whole, a normal marine, mainly muddy and low-energy environment may be regarded as the habitat of the foraminiferal associations. The consistent high presence of *Cibicidoides mundulus-praemundulus*, *Oridorsalis* spp. and *Gyroidinoides* spp. indicate a cold and well-oxygenated environment, where the carbon flux to the sea floor is low. However, the upper part of the record is characterized by high relative abundances of *Nuttallides umbonifera* (Cushman) and *Stilostomella* spp. The nature and timing of this benthic foraminiferal change based on species distribution, abundance and diversity patterns indicate environmental changes. Based on published data, *Nuttallides umbonifera* is abundant where other taxa cannot grow optimally, either as a result of a very low food supply (extreme oligotrophy), or a high carbonate corrosivity.