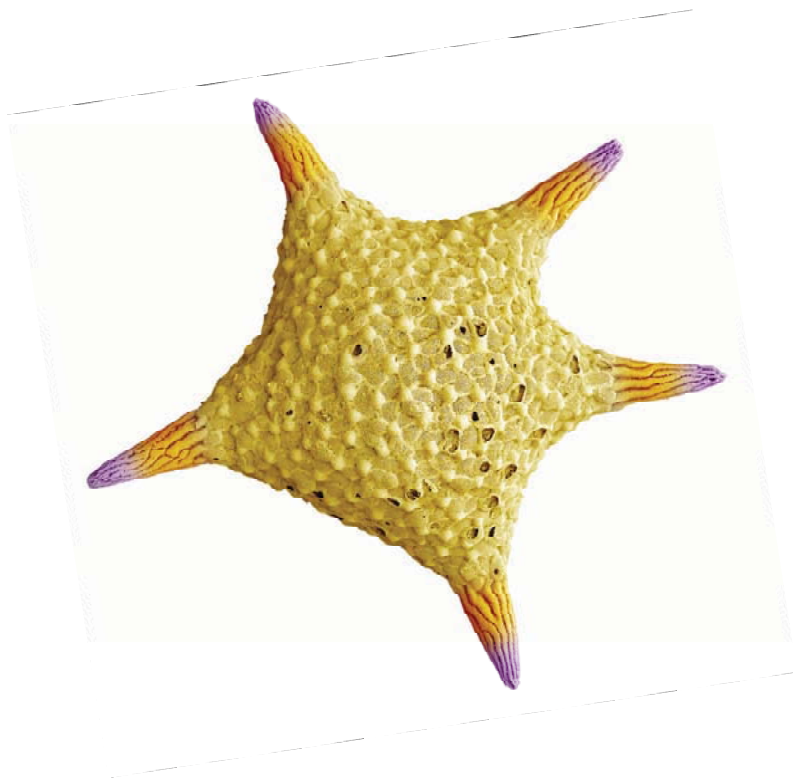

Abstracts Volume with Program

FORAMS 2010

International Symposium on Foraminifera



Rheinische Friedrich-Wilhelms-Universität Bonn
September 5-10, 2010
Germany

Paleoenvironmental dynamics in Southern Pannonian Basin during Middle Miocene marine flooding

Durdica Pezelj¹, Oleg Mandić², Jasenka Sremac³

¹University of Zagreb, Croatia

²Natural History Museum, Austria

³Faculty of Science, Croatia

E-mail: durdica.pezelj@geol.pmf.com

Quantitative analysis has been carried out on 42 bulk sediment samples from the coal pit Ugljevik in NE Bosnia and Herzegovina. The outcrop displays the initial transgression of the Central Paratethys Sea in the southern Pannonian Basin. About 60 m thick section starts with Oligocene lacustrine deposits. Initial marine sediments superpose the angular disconformity. They bear assemblages of late Early Badenian Upper Lagenidae Ecozone passing upward into Middle Badenian *Spirorutilus carinatus* Ecozone, correlating thus with the late Langhian.

Data distinguishing 84 benthic foraminifera species were processed by multivariate statistics. Results supported the definition of 5 upward gradually alternating assemblages. Hence the initial marine deposits comprise *Cibicoides ungerianus* - *Asterigerinata planorbis* assemblage that inhabited high oxidic environment of the inner shelf. Upward gradual deepening trend and ongoing transgression affected the increase in planctonic foraminifera contributions, the increase of infaunal and opportunistic benthic foraminifera species, and the decrease of bottom water oxygen content. Stable medium oxidic conditions on middle to outer shelf install soon. They display the highly diversified *Valvulineria complanata* - *C. ungerianus* assemblage. The occasional organic matter input, triggering oxygen fluctuations along with the nutrient quantity and quality variation, is furthermore marked by alternations of *V. complanata* and *V. complanata* - *Globocassidulina oblonga* assemblages.

Intensive lamination together with almost continuous presence of low oxidic conditions indicates increase in organic matter input during Middle Badenian. The stratification in water column was possibly triggered by fresh water feed likely responsible for increased redeposition of shallow water species. Environmental stress is strongly suggested by increase of dominance and decrease of diversity recorded from *Bulimina subulata* - *B. elongata* - *Valvulineria complanata* - *Bolivina dilatata* assemblage.

The studied marine flooding cycle shows pattern of initial upward deepening, followed by stable high stand conditions. The small scale environmental disturbances recorded therein, turn than finally to continuously stressed low oxidic bottom water conditions.

Live benthic foraminiferal faunas along a bathymetrical transect (280-4800 m) on Portuguese Margin Open Slope (NE Atlantic)

Mark D. Phipps¹, Frans J. Jorissen¹, Henko C. de Stigter², Antonio Pusceddu³

¹University of Angers BIAF, France

²NIOZ, The Netherlands

³Polytechnic University of Marche, Italy

E-mail: mark.phipps@univ-angers.fr

Rose Bengal stained benthic foraminifera were studied from 8 cores collected along a depth transect ranging from 280 to 4806 m water depth near Cape Sines, on the Portuguese continental slope. Total standing stocks (TSS) and species assemblages from both 63-150 µm and >150 µm fractions are compared between stations along the transect and with previous live foraminiferal studies from the Bay of Biscay and Western Iberian margin. Standing stocks generally decreased with water depth, with highest TSS for both size fractions on the outer shelf and upper slope and lowest TSS on the abyssal plain. For both sized fractions, three groups of stations are recognised: (1) A eutrophic group on the upper continental slope (280-1000 m) dominated by *Uvigerina mediterranea/elongata* triata, *Melonis barleanus*, *Trifarina bradyi*, *Epistominella vitrea* and *Cribrostomoides bradyi*. (2) A mesotrophic group on the middle to lower slope (1338-2492 m), dominated by *Uvigerina peregrina*, *Globobulimina affinis* and *Repmanina charoides*. (3) An oligotrophic group on the lower slope and abyssal plain (2924-4806 m) which is in the larger size fraction characterised by *Cibicides kullenbergi* and agglutinated species such as *Reophax fusiformis* and *Recurvoides* sp. 1. The smaller size fraction is dominated by opportunistic calcareous species such as *Bulimina translucens*, *Epistominella exigua* and *Nuttallides pussilus* along with *Reophax fusiformis* and *Chitinosaccus* sp. However, most of these taxa are rare or absent at 4806 m, where *Reophax fusiformis*, *Pullenia okinawaensis* and various monothalamous agglutinates are dominant. Our conclusion that this bathymetrical species succession is mainly a response to a diminishing trophic resources is corroborated by; 1) the clear bathymetrical trend of lower TSS at greater water depth, and 2) the decreasing sediment phytopigment (CPE) concentrations towards deeper sites. The decreasing percentage of perforate calcareous taxa, and increasing percentage of agglutinated taxa with water depth, strongly suggests that in general, perforate calcareous taxa have higher trophic requirements than agglutinated taxa. Our description of small-sized living foraminifera (63-150 µm) is new for the Portuguese margin; the inferred trophic requirements of these taxa may provide additional arguments for the use of benthic foraminiferal assemblage compositions as paleoproductivity proxies.