

ABSTRACT

The Badenian-Sarmatian siliciclastic Machów Formation (Fm) belongs to supra-evaporitic succession of the Polish Carpathian Foredeep Basin (PCFB). The research presented in this work were concentrated in the eastern part of the PCPB, in the Sieniawa-Rudka area (Ryszkowa Wola high). The objective of the study was the qualitative (taxonomic) and quantitative analysis of the calcareous nannoplankton assemblages, occurring in samples collected from the following boreholes: RUDKA-7, RUDKA-8, RUDKA-10, RUDKA-11, RUDKA-13, PISKOROWICE 3K, WYLEWA-1, DOBRA-5. On this basis the Machów Fm deposits were assigned to combined NN6-NN7 zone. Conclusive determination of NN7 zone was problematic due to the absence of rare zonal marker species, determining its lower and upper boundary (*Discoaster kugleri* and *Catinaster coalithus*, respectively). The autochthonous assemblages were characterized by low species diversity and were restricted to a few species with high abundance. Quantitative analysis, based on relative abundance of individual nannofossils taxa, in majority of samples indicated shallow, coastal environment with high nutrient supply in upwelling regime. High percentage of reworked taxa and presence of damaged elements pointed to a higher erosion rate and sedimentation milieu close to the shoreline. The calcareous nannofossils from samples collected from DOBRA-5 borehole, from lower depths just above exaporites, indicated the deepening of the basin. The origin of reworked nannofossils suggested the overthrusting Carpathian accretionary wedge from the SW and Miechów Trough from the N as the Sarmatian supply areas.

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Key words: calcareous nannoplankton, Middle Miocene, Carpathian Foredeep, biostratigraphy.