

The Cretaceous-Paleogene boundary in turbiditic deposits of the Skole Nappe, Polish Carpathians

M. Adam Gasiński, Alfred Uchman

Institute of Geological Sciences, Jagiellonian University, Oleandry Str. 2a, PL-30-063 Kraków, Poland;
adam.gasinski@uj.edu.pl; alfred.uchman@uj.edu.pl

In the turbiditic sequences of the deep Alpine basins, the K-T boundary is very difficult to identification due to the rare occurrence of index planktonic foraminiferids and strong redeposition causing the occurrence of mixed foraminiferal assemblages. Only in a few cases, the identification was narrowed to some relatively thin intervals. The boundary occurs within about a metre thick interval in the Magura Unit in Moravia, Czech Republic, based on dinocyst assemblages (Bubík et al. 2002). In the Romanian Carpathians, it was identified within tens of meters by means of the calcareous nannoplankton and foraminiferids (Melinte 1999; Chira et al. 2009). Recent studies of the Ropianka Formation in the Skole Unit (Husów area, Bąkowiec section) of Polish Carpathians (Gasiński & Uchman, *in review*), based on 58 samples, allowed recognition the *Gansserina gansseri* and *Abathomphalus mayaroensis* standard biozones. Also the intermediate *Racemiguembelina fructicosa* Zone is distinguished. Moreover, the appearance of Paleocene foraminiferids *Subbotina cancellata* Blow, *Subbotina triangularis* (White), *Eoglobigerina* cf. *edita* (Subbotina) point to the earliest Paleocene zone (P1 Zone sensu Olsson et al. 1999). The latest Maastrichtian (*A. mayaroensis*) and the lowest Paleocene foraminifers occur within a 15 cm thick interval limited to the top of one depositional turbiditic-hemipelagic rhythm and the lower part of the next one. Thus, this is the most precisely determined K-T boundary in turbiditic sediments in the Carpathians. A rapid decrease in abundance and diversity of planktonic foraminifers is noted above the boundary. Qualitative analysis of the studied foraminiferal assemblages has been performed. The correlation of quantitative charts of composition of foraminiferal assemblages between the studied samples and those collected from the Gaj section (next thrust sheet Ropianka Formation, Skole Unit; Gasiński & Uchman, 2009) points to their close similarity, especially in the part dated as the latest Maastrichtian. This suggests that the similar factors influenced boundary section environment in this part of the Skole Basin.

Conclusions: 1. The K-T boundary was identified in the turbiditic sediments with the accuracy of 15 cm for the first time. 2. The *Gansserina gansseri*, *Abathomphalus mayaroensis* (Late Maastrichtian) and P1 (Early Paleocene) standard biozones were recognized in the studied section on the basis of planktonic foraminiferids. 3. The *Racemiguembelina fructicosa* Zone as the Partial Range Zone within the lower part of *A. mayaroensis* Zone has been determined for the first time in the Carpathians and the flysch sediments. 4. Qualitative and quantitative significant fluctuations among the studied foraminiferal assemblages were recognized around the K-T boundary similarly to those indicated in the Gaj section (Skole Nappe, next thrust sheet).

References:

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