

Bioevents at the Paleocene-Eocene boundary in flysch sediments of the Outer Western Carpathians, Czech Republic.

Miroslav Bubík¹, Lilian Švábenická²

Czech Geological Survey

¹Leitnerova 22, 602 00 Brno

²Klárov 131/3, 118 21 Praha

Paleocene-Eocene boundary (PEB) in the flysch sediments of the Bílé Karpaty Unit, Magura group of nappes, was found at the Blatnička section (Bubík et al. 2001). Thin to thick turbidites in the 17 m thick section consist of 2 to 14 cm thick fine-grained calcareous sandstones (mostly Tc turbidite members), brown grey siltstones (Td) and prevailing 6 to 200 cm thick grey, brown grey, rarely green grey calcareous clays/claystones (Te). Hemipelagites are 0.5 to 7 cm thick mottled grey green non-calcareous clays. Turbidite clays/claystones bear calcareous nannofossils and planktonic foraminifers while the hemipelagite clays contain autochthonous agglutinated foraminifers, poorly preserved radiolarians and fish teeth.

The P/E boundary interval has nannofossil record. *Discoaster multiradiatus*, *Rhomboaster cuspis* and rare specimens of genus *Fasciculithus* (*F. schaubii*, *F. thomasi*, *F. tympaniformis*) occur in the uppermost Paleocene zone NP9. Transitional forms *Rhomboaster-Tribrachiatus*, *T. contortus* and *T. cf. "digitalis"* sensu Egger (1997) indicate the Eocene zone NP10, while the genus *Fasciculithus* is missing. Assemblages may be compared with the lower part of P/E BI sensu Aubry (1999).

Low-diversity communities of agglutinated foraminifers (surface-dwelling detritus feeders) can be compared with "low-oxygen" biofacies of various authors. In the Blatnička section, diversity of agglutinated foraminifers and their feeding strategies increase from the upper part of NP10 zone. The bioevents at the PEB may be influenced by high productivity of phytoplankton connected with decrease in oxygen content. The stratigraphically important taxa of agglutinated foraminifers within the Upper Senonian-Paleocene interval (rzhakinids, some hormosinids, *Glomospirella grzybowskii*, etc.) disappear in the NP9 zone and marker Eocene taxa such as *Pseudonodosinella nodulosa*, *P. elongata* appear in the upper NP10 zone. The lack of these species in the interval close to the PEB was probably caused by restricted conditions in the bottom waters.

At the Paleocene-Eocene transition, different fossil groups underwent major faunal turnover. Global changes in deep-sea agglutinated foraminifer assemblages are especially prominent. Many agglutinated taxa became extinct (some hormosinids, rzhakinids, *Annectina grzybowskii*, *Praesphaerammina gerochi*, etc.) and other taxa appeared (*Saccamminoides carpathicus*, *Pseudonodosinella nodulosa*, *P. elongata*).

References:

- Aubry M.P. (1998): Early Paleogene Calcareous Nannoplankton Evolution: A Tale of Climatic Amelioration. In: Aubry M.P., Lucas S., Berggren W.A. (eds.): Late Paleocene-Early Eocene Climatic and Biotic Events in the Marine and Terrestrial Records. *Columbia University Press*, pp. 158-203.
- Bubík M., Švábenická L., Uchmann A. (2001): B.10. Blatnička. In: Bubík M.: Fossil record of agglutinated rhizopods (foraminifers, testaceans) on the territory of the Czech Republic. *Field trip guide of the 6th IWWF, Prague*, 78-79.
- Egger H., Bichler M., Draxler I., Homayoun M., Huber H.J., Kirchner E. Ch., Klein P., Surenian R. (1997): Mudturbidites, Black Shales and Bentonites from the Paleocene/Eocene Boundary: The Anthering Formation of the Rhenodanubian Flysch (Austria). *Jb.Geol.B.-A.*, 140, 29-45.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Geologischen Bundesanstalt](#)

Jahr/Year: 2011

Band/Volume: [85](#)

Autor(en)/Author(s): Bubik Miroslav, Svábenická Lilian

Artikel/Article: [Bioevents at the Paleocene-Eocene boundary in Flysch sediments of the Outer Western Carpathians, Czech Republic 47](#)