

The Palaeocene-Eocene boundary in turbiditic successions: an example from the Słopniczanka section of the Magura Nappe, Polish Outer Carpathians

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The Magura Nappe, the largest and innermost unit of the Polish Outer Carpathians, is mainly composed of the Upper Cretaceous to Eocene deep-sea turbiditic sediments. This nappe is subdivided into four facies zones (Krynica, Bystrica, Rača and Siary zones), which display strong facies changes, particularly in the Palaeogene. The Magura Basin was filled with sediment successions, representing three turbiditic stages of the Late Cretaceous-Palaeocene, Palaeocene-Middle Eocene and Late Eocene-Oligocene ages. Each one starts with hemipelagic variegated shales deposited below CCD, passing upwards into thin- and medium-bedded turbidites with intercalations of turbiditic limestones and marls, followed by thick-bedded, sandy turbidites capped by thin-bedded turbidites (Oszczypko, 2006).

The outcrops of the Senonian-Palaeocene Ropianka Fm, Eocene Łabowa Shale Fm and Beloveža Fm deposits of the Rača Zone, forming three thrust sheets and a syncline, can be traced along the Słopniczanka river on a distance of more than 1 km (Uchman, 2008), providing rare opportunity to study Palaeocene-Eocene boundary interval in the Magura Nappe. The Ropianka Fm represents the final stage of the first turbiditic succession, and the Łabowa Shale Fm forms the lower part of the second turbiditic succession. Biostratigraphy of these deposits is based mainly on deep-water agglutinated foraminiferal assemblages (DWAF) of the flysch biofacies (Malata, 2002). According to our preliminary results, the upper part of the Ropianka Fm consists of a relatively rich and diverse Palaeocene agglutinated assemblage with *Annectina grzybowskii* (Jurkiewicz) and *Rzehakina fissistomata* (Grzybowski), while the overlying variegated shales contain less diversified DWAF Early Eocene assemblages corresponding to the *Glomospira acme* zone (see: Bąk, 2001), and higher up an assemblage with *Karrerulina*, displaying slight increase in diversity and abundance. Also trace fossil assemblages display distinct decrease in diversity from the upper part of the Ropianka Fm to the variegated shales. These changes can be related to the rapid, worldwide increase of oligotrophy. A decrease in accumulation of organic matter corresponds to the facies change from the Palaeocene grey shales in the Ropianka Fm to the Eocene red shales.

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