

New occurrence of Záskanie Breccia in Orava part of Pieniny Klippen Belt: Preliminary results

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The Záskanie Breccia represents synorogenic sediments of Campanian to Maastrichtian age in the Pieniny Klippen Belt (PKB). Their presence in the Orava part of PKB was until now restricted to only two outcrops (right cut bank of the Orava river near Záskanie; bank of the Orava river on the opposite side of the Kňažia village). New occurrences of the Záskanie Breccia can be added to the list of these localities in the number of two outcrops. They are situated in the northern part of the village of Beňová Lehota, on the banks of the Lehotský stream. First outcrop consists of monomict breccia with clasts of light grey marls and marlstones, which on the southern part shift to unbrecciated spotty grey limestones. Another outcrop represents approximately 100 metres long section with dip orientation 60° to the NWW. The section starts in the red marlstones, which later alternate with polymict conglomerates to breccias, followed by the grey marly limestones, monomict breccia and once again marly limestones. The succession then continues with red marlstones which later pass into the light grey fine-grained sandstones with bioglyphs. The last bed is represented by the light grey limestones characteristic with the light ochreous to white patina. The bioglyphs indicate that the section is in reverse position. In addition, 5 metres below the section, the outcrop in claystones to sandstones emerges. Coarsening of the clasts is towards the north (upwards to the marlstone beds). These flysch-like beds were also determined to be in reverse position, which indicates that they possibly represent a continuation of the profile. In previous studies, there were various opinions on the origin and stratigraphy of the Záskanie Breccia. Polymict conglomerates, present in the middle of the succession in Marschalko et al. (1979), led to suggestions about the genesis of the Záskanie Beds. They considered it either synsedimentary, or, more preferred, they considered the conglomerates as a huge olistolith generated tectonically

and later redeposited by gravitational sliding. As a lateral equivalent of the Záskanie Breccia in the eastern part of PKB, the Gregorianka Breccias were described by Nemčok et al. (1989). The microfacies analysis of clasts and matrix show that the Gregorianka Breccia is younger than Upper Cretaceous and the authors assume the beds as Paleogene in age. Findings of clasts (olistoliths) of larger size (3–5 meters), together with microclastic material, may signify deposition by gravitational transport. During field works in the Orava region, the olistoliths of such size were also found around mentioned sections of the Záskanie Breccia. This may indicate that the breccias are of tectonic origin, resulting from the shortening of the sedimentation space of the PKB during the Laramian phase, when PKB collided with the Central Western Carpathians and the sedimentary sequences were thrust. If such origin will be proved, it will be one of the rare sedimentary evidences of the Laramian composition in the PKB. Therefore further structural, lithological and biostratigraphical analysis of new outcrops and surrounding beds may bring data which will help to elucidate the genesis of Záskanie Breccia and provide a more accurate view on the evolution of the sedimentary area of the Pieniny Klippen Belt in the Upper Cretaceous.

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References

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