New structural and stratigraphic data from the Súľov conglomerates (Middle Váh Valley, Slovakia)

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The Súľov conglomerates are situated in the Middle Váh Valley area in basal formation of the Súľov-Domaniža Basin. They represent poorly sorted coarse breccias and conglomerates accumulated along scarps of synorogenic basin (Marschalko & Samuel 1993). This wedge-top basin (Plašienka & Soták, 2015) overlain the frontal parts of the Centrocarpathian and Peri-Klippen Units. In Súľov area the conglomerates are lying discordantly (from 20° to 60°) on the Cretaceous sediments of the Manín Unit. Sedimentary sequence in the NW of the Súľov village (in course towards to „Lúka pod hradom“) gradually changed from basal coarse-grained conglomerates through fine-grained conglomerates to calcareous sandstones and siltstones with very steep dip (from 68° to 86°) striking in NNW-SSE to NNE–SSW direction. In this part the Súľov conglomerates are interbedded by layers of yellow-brown claystones with rich microfauna of planktonic foraminifers, which were discovered for the first time. Foraminifers from the Súľov formation consists of species Acarenina praetopilensis, A. pentacamerata, Acareninacollactea, Turborotalia frontosa, Morozovelloides bandyi, Morozowella subbotinae, Subottinalina perta, S. senni, S. yeguaensisand Catapsydrax unicavus), which provide an evidence for Late Ypresian to Early Lutetian age. Considering that, the described sequence of conglomerates with claystones could be correlated with organodetritic limestones and sandstones, which superposed the Súľov conglomerates and underlain below the Domaniža Formation (Lutetian; Mello et al., 2011).

Súľov conglomerates are strongly tectonically deformed, in Súľov area having steep dip between 50° to 68° in SE direction. The first tectonic phase belongs to the Upper Paleogene (Upper Eocene to Oligocene), is recorded by compressional axis in NW-SE direction and by compressional to transpressional tectonic regime. During this event the Paleogene sediments of Peri-Klippen zone and Rajec and Turiec Basins were deformed, too (Hók et al., 1998; Rakús & Hók, 2003; Šimonová, 2011; Bučová, 2013). Next deformational event was changed from transpressional to transtensional tectonic regime. That is the reason why sinistral strike slips related to transtensional regime can be observed in the studied area. This kinematic change of deformation started during the Middle Miocene. The youngest recorded tectonic phase led to extensional tectonic regime with gradual rotation of extensional axes from NW–SE to NE–SW direction. The change to extensional tectonic regime is dated to the Upper Miocene to Pliocene.

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