

Integrated stratigraphy of the Jurassic-Cretaceous sequences of the Kurovice Quarry, Outer Western Carpathians: correlations and tectonic implications

Pruner, P.^{1,*}, Schnabl, P.¹, Cížková, K.¹, Elbra, T.¹, Kdýr, Š.¹, Svobodová, A.¹, Reháková, D.²

1) Institute of Geology of the CAS, v.v.i., Praha, Czech Republic, *E-mail: pruner@gli.cas.cz

2) Comenius University in Bratislava, Bratislava, Slovakia

Sedimentary rocks of Jurassic-Cretaceous age from Kurovice quarry are one of the key study materials for the research project “Integrated multi-proxy study of the Jurassic-Cretaceous boundary in marine sequences: contribution to global boundary definition”. The Kurovice section belongs to the Magura Group of Nappes within Carpathian Flysch Belt. Rocks of the interest comprise of Kurovice limestones and overlying Tlumačov marlstones in medium to thick beds. Fossil record consists of radiolarians, sponge spicules, nannofossils, calpionellids, calcareous dinoflagellate cysts, ostracods, foraminifera, aptychi, rhyncholites of nautiloids and rare belemnites. The biostratigraphy of the sequences studied was supported by calpionellid and nannofossils distribution. Zonations of REHÁKOVÁ & MICHALÍK (1997) and CASSELLATO (2010) were used. The result of studied samples revealed very low remanent magnetization and susceptibility. Acquisition of remanent magnetization suggests presence of weak (magnetite) and strong (goethite or hematite) coercivity fractions. The section shows for normal and five reverse polarity zones. The span of the studied sections is M20r to M17r. Increased abundance of spherical species of *Calpionella alpina* Lorenz was observed along the J/K boundary interval, which help to interpret the magnetostratigraphic column and can be correlated with the magnetozone M19n.2n. Slightly below this bioevent, the first occurrence of calcareous nannofossil species *Nannoconus wintereri* was recorded. The preliminary Tithonian/Berriasian mean paleomagnetic direction from the Kurovice section is counter-clockwise rotated if compared with the expected European reference directions by about 150° and is in agreement with that obtained from the Brodno section (HOUŠA et al., 1999). Conversely, clockwise rotation was recorded from the Tatra Mountains in Poland (GRABOWSKI et al., 2010). Inclination of paleomagnetic directions around the J/K boundary from Western Carpathians are in good agreement (44–49°) which indicates a 26–30°N paleolatitude. The rotations were interpreted as the result of tectonic escape of the Western Carpathians from the domain of the Alpine collision. A specific distribution of paleomagnetic pole positions for rocks of the same age motivated a formulation of a theoretical model simulating paleotectonic rotation of rocks assemblages about vertical axis.

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