

Sedimentology of the Fluvial Deposits of the Nýřany Member, Kladno-Rakovník Basin, Central Bohemia

Zuzana TASÁRYOVÁ

Institute of Geology & Paleontology, Faculty of Sciences, Charles University, Albertov 6, 128 43, Prague, Czech Republic

The aim of my investigation is to define mechanisms of sedimentation, directions of the paleoflows, fluvial style and its changes, tectonic deformation and its causes in Nýřany Member (Westphalian D- Cantabrian) on the eastern margin of Kladno-Rakovník Basin (in the area between Kralupy nad Vltavou and Nelahozeves). Sedimentological results based on the study of Hostibejk Hill are presented here.

Four sedimentary facies were defined:

Facies A: laminated claystones to clayey-sandstones. This facies is interpreted as sedimentation from suspension.

Facies B: medium-grained sandstones to fine-grained conglomerates with coal interbeds in places, trough cross-bedded with pronounced erosional base. The erosional relief is 0.25–1.2 m. Cobbles at the base. Average size of clasts is 2.1 cm, maximal size is 10 cm. Rip-up sandstone clasts up to 35 cm are presented rarely. This facies is interpreted as sedimentation from traction current, migration of 3D-dunes.

Facies C: medium-grained sandstones to fine-grained conglomerates with planar cross-bedding and plain erosional base. The erosional relief is 0.1–0.25 m. Cobbles at the base in places. Some beds appear massive. Average size of clasts is 2.5 cm, maximal size is 8 cm. This facies is interpreted as sedimentation from traction current, migration of bedforms.

Facies D: medium-grained to cobbly conglomerates with coarse-grained sandy matrix, grain supported, cross-bedding. The erosional base has the relief ca. 1 m. Average size of clasts is 5.2 cm, maximal size is 15 cm. This facies is interpreted as sedimentation from traction current.

Photomosaics of Hostibejk Hill outcrops (height ~10 m, discontinuous length ~120 m – outcrops partly scrubby and covered) was made and three types of geometries (architectural elements) was defined:

- 1) Bodies (thickness ~3 m, length ~50 m) with pronounced erosional base, with the erosional relief up to 2.5 m, with multi-storey filling of facies B and D. Individual beds are separated by erosional surfaces. These bodies are interpreted as fluvial channels.
- 2) Bodies (thickness ~5 m, length ~30 m) with plain erosional base (erosional relief up to 1.4 m) composed of facies C. Individual sets of cross-bedding are separated by reactivation surfaces. These bodies are interpreted as bars.
- 3) Sheet bodies (thickness ~0.2 m, length ~3 m) composed of facies A often eroded by elements 1) and 2). Because of absence of bioturbation and roots, these bodies are interpreted as abandoned fluvial channels.

Predominantly NNE directions of paleoflows were found. The paleoflow vectors show low spread (ca. 20°).

Based on the multi-storey channel fills, large sizes of erosional reliefs, low spread of directions of the paleoflows, the absence of point bars, very rare preservation of ripples, the absence of lateral accretion and overall coarse grain size of the deposits we can interpret deposits of the Nýřany Member as a product of braided stream sedimentation. Further investigation will be focused on the Lobeč Hill outcrops (height ~50 m, length ~1000 m) and to analysis of AMS (anisotropy of magnetic susceptibility) which should either define directions of the paleoflows or deformation overprint.

Structural Development of the Outer Carpathians (Polish Segment): Progress Report

Antek K. TOKARSKI^{1,2}, Ania ŚWIERCZEWSKA^{1,2}, Leszek JANKOWSKI^{2,3}, Antek WÓJCIK³ and GALICIA T. GROUP²

¹ *Institute of Geological Sciences, Polish Academy of Sciences, Research Center in Kraków, Senacka 1, 31-002 Kraków, Poland*

² *Galicja T. Group, Mazowiecka 117/3, 30-023 Kraków, Poland*

³ *Polish Geological Survey, Kraków Branch, Skrzatów 1, 31-560 Kraków, Poland*

This paper presents the results of our structural and mapping research during the last 7 years.

Regional setting

The Polish segment of the Outer Carpathians is a north-verging thrust-and-fold belt composed of several nappes. The main structural features of the belt were formed during Tertiary times when the belt was an accretionary prism related to southward direct-

ed subduction of the European Platform below the ALCAPA unit.

Structural approach

Starting point

Seven years ago the structural development of the Outer Carpathians has been rather poorly understood. The basic questions “how? why? and when? the tectonic features were formed”