



Late Oligocene -Early Miocene paleogeographic and paleotectonic evolution of the Northern Carpathians

N. Oszczytko and M. Oszczytko-Clowes

Institute of Geological Sciences, Jagiellonian University, Krakow, Poland
(nestor@geos.ing.uj.edu.pl, u3d09@geos.ing.uj.edu.pl)

The progressive closing of the Outer Carpathian branch of the Neotethys began during the Late Eocene. At that time the Outer Carpathians, were transformed from remnant oceanic basin into a foreland basin. This resulted in drastic changes in the deposition condition from deep-water turbidites to pelagic Globigerina Marls, and then to organic-rich Menilite (Fish) shales, deposited in the restricted basin. The next important tectonic event took place at the turn of Oligocene when the Magura Nappe was thrust northwards onto the terminal Krosno flysch basin, supplied mainly from the eroded front of the orogen. This resulted in the deepening of the residual flysch basin, the development of the Magura piggy-back basin as well as onlap of marine deposits onto the southern edge of the European Platform. At the turn of the Early Burdigalian, the Late Krosno basin shifted towards the NE and finally underwent desiccation to Vorotyshcha Salt Formation (Boryslav-Pokuttya Folds). This event was followed by the Late Ottnangian folding, the uplift and overthrust of the Outer Carpathians, onto the foreland platform. At that time the front of the Outer Carpathians was located about 50 km south of the present-day position. Simultaneously during the uplift of the Outer Carpathians the sea retreated from its foreland. The load of the growing Carpathian accretionary wedge caused a bending of the platform basement and the development of the moat-like flexural depression. This was accompanied by the development of large-scale slides along the frontal part of the Sub-Silesian Nappe. Finally, the present-day position of the Carpathian nappes reached at the post-Sarmatian time.

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