

Pre-Miocene tectonic events in the foreland of the Polish Carpathians

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(1) A zone displaying distinctively great crustal thicknesses, which comprises the Lublin Graben and the Radom-Kraśnik Uplift in south-eastern Poland, and extends into the western Ukraine, can be interpreted as a result of Late Variscan (late Westphalian-early Rotliegendes) transpressional tectonics.

(2) The multistage evolution of the Polish Permo-Mesozoic Rift Basin dates back to the Permian (late Rotliegendes) in northern and central Poland, and to the Middle Jurassic south of the Holy Cross Mts Lineament. This evolution was terminated by the Laramide inversion of the proximal zone of this basin. The inversion gave rise to the Mid-Polish Anticlinorium, which extends from the Baltic Sea south-east across cratonic areas of Poland and the western Ukraine, plunging beneath the nappes of the Outer Carpathians.

Available evidence permits to interpret a vast area of cratonic Poland as belonging to the Polish Permo-Mesozoic Rift Basin, assuming a concept of asymmetrical rifting, with simple shear involved. According to such an interpretation, the Mid-Polish Anticlinorium corresponds but to the proximal

zone of the Polish Rift, whereas regions situated further south-west (e.g., the Szczecin-Łódź-Miechów Depression, the Fore-Sudetic and Cracow-Silesian Monoclines, the Upper Silesian Coal Basin and the Opole Depression) represent more distal portions of the rift basin.

(3) The southernmost (peri-Carpathian) portion of the Polish Rift Basin roughly coincides with the Meta-Carpathian Arch, a zone of uplift or lesser subsidence that separated the Central European Basin from basins of the Carpathian Domains in Permian, Mesozoic and Cenozoic times. An exception to this rule is the strong subsidence that affected the arch in the Late Jurassic. Presumably, the development of the Meta-Carpathian Arch should be interpreted in terms of crustal or lithospheric folding.

(4) The formation of the Mid-Polish Anticlinorium, with some dextral strike-slip movements involved, was chiefly a Laramide event, culminating in the Paleocene. Still controversial is the evidence for an earlier commencement of the development of this anticlinorium in mid-Late Cretaceous time, but a discrete Subhercynian event (of extensional nature ?), centered over the Coniacian, can be recognized in the Cracow region, beyond the Mid-Polish Anticlinorium.