

## Tectonics and Pre-Alpine Metamorphic Features of Basement in Central Part of Kohút Zone – Veporicum, Western Carpathians

Martin KOVÁČIK

*Geological Survey of Slovak Republic, Mlynská dolina 1, 817 04 Bratislava, Slovak Republic*

The basement rocks situated in the area SE of the Muránska Planina plateau (polygon surrounded by the towns Tisovec – Muráň - Revúca) were subjected to geological mapping and petrological study. The following basic metamorphic rock types are distinguished as products of Hercynian evolution: “Muráň” orthogneiss (building the lowermost part of the studied basement rock pile), “hybrid” complex (biotite gneiss strongly absorbed by granitoids), biotite gneiss with coarse garnets and graphitic metaquartzite (products of periplutonic reworking), garnet-biotite gneiss (representing prevailing lithology in the variegated rock assemblage), (staurolite)-garnet mica schist (two horizons of mica schists of different lithological inventory), (garnetiferous) amphibolites (interbedded in certain metamorphics, but absent in some domains).

Three basic metamorphic-deformational episodes can be deciphered in the investigated metamorphic rocks: 1. Hercynian regional amphibolite facies metamorphism; 2. contact/periplutonic manifestation associated with granitic intrusions; 3. Alpine regional greenschist facies overprint. The prevailing Hercynian regional metamorphic conditions range between the

boundary of the greenschist/amphibolite – and the middle amphibolite facies. Generally, the intensity of the metamorphic reworking shows spatial relations to the granitoid bodies, as indicated by migmatitization zones or xenoliths of gneisses with as much as 2–3 cm large garnet porphyroblasts enclosed in porphyritic granite.

Field observations revealed preservation of some pre-metamorphic lithological features which is illustrated e.g. by the gradual transition between the “Muráň” orthogneiss body and the gneiss-mica schist material. This vertical transitional rock pile is enriched in amphibolite and leptynite intercalations throughout almost the whole contact zone. The main Hercynian deformation structures (predominantly foliation planes) are oriented approximately W-E thus showing a similar strike as the Alpine transpressional fabric. The Alpine deformation of the basement is largely accommodated along the pre-Alpine structural and lithological inhomogeneities. A potential nappe overthrust planes were not identified in the studied area, except the proposed Alpine thrust plane of the “upper” mica-schist horizon over the porphyritic granite.