

Alpine-type deformations with isoclinal and nappe structures (e.g. thrust of the presumed Ordovician complex over the Devonian-Early Carboniferous one in the central part of the Ještěd Mts., as interpreted already by Gallwitz, 1930) seems to be most probable.

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Different Geodynamic Setting of Subunits in the HP/LT Metamorphosed Bôrka Nappe (Inner Western Carpathians): Evidence from Basic Rocks Geochemistry and Petrology

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The newly defined Bôrka Nappe (Mello et al. 1990) is located in the northern part of Slovenský kras Mts. and in the western part of the Spišsko-gemerské rudohorie Mts. It represents a HP/LT metamorphosed part of an ancient accretionary prism formed by closing the Meliata-Hallstatt ocean during the Jurassic time. The Bôrka Nappe is recently stratigraphically divided into three formations: (1) Jasov and (2) Bučina Formations, probably Permian in age, composed of metamorphosed clastic sediments and acid volcanoclastics, and (3) Dúbrava Formation, supposedly Mesozoic in age, containing metamorphosed sedimentary and basic magmatic rocks. Relic primary textures and geochemical and petrological characteristics of these basic magmatic rocks have been studied. Obtained data indicate that following five group of HP/LT metamorphosed basic rocks, which differ in protolith, geochemical signature and metamorphic evolution, can be recognised in the Dúbrava Formation:

- (1) Basalts, dolerites and gabbros with BABB (back-arc basin basalt) to N-MORB (normal oceanic-ridge basalt) affinity transformed into epidote-glaucophane rocks with variable amounts of Na-pyroxene (acmite), clinozoisite, albite, white mica and garnet. Basalts, originally forming lava flows with glassy or lava breccia rinds, experienced a progressive metamorphic evolution from prehnite-pumpellyite through greenschist to epidote blueschist facies conditions. Vestiges of latter ocean-ridge type metamorphism have been found in the dolerites and gabbros.
- (2) Dolerites and less amount of basalts still preserved doleritic or ophitic texture geochemically close to BABB, formerly metamorphosed in epidote blueschist metamorphic conditions and later retrogressed to greenschist conditions. Actinolite, chlorite, albite and octaeder-forming magnetite is a typical mineral assemblage.
- (3) Basalts, rarely dolerites with CAB (calc-alkaline basalt) affinity. Relic porphyritic or ophitic texture is rarely preserved. The oldest metamorphic phase, probably in HP/MT conditions (high-Al amphibole relics) was overprinted by HP/LT metamorphic stage producing blueschist with vari-

able amounts of glaucophane, garnet, omphacite, clinozoisite/epidote, white mica, chlorite and rutile. These blueschists were largely retrogressed to greenschists composed of actinolite, epidote, chlorite and albite.

- (4) Banded basaltic pyroclastics with a calc-alkaline signature retrogressed from blueschist metamorphic conditions to greenschist of actinolite-chlorite-epidote-albite composition with magnetite octaeders.
- (5) Phyllonitised (under greenschist facies conditions) amphibolites geochemically close to N-MORB with a HP/LT metamorphic overprint and mostly retrogressed again under greenschist facies conditions.

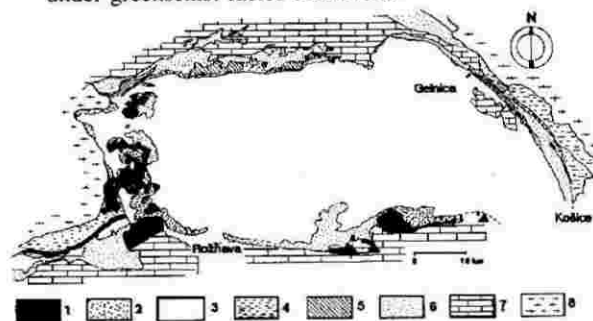


Fig. 1. 1-2 Bôrka Nappe: 1-Dúbrava Fm. 2-Jasov and Bučina Fm. 3-6: Palaeozoic of Gemeric Unit: 3-Early Paleozoic formations 4-clastic Carboniferous formations 5-Zlatník Fm. 6-Generic Permian formations 7-Mesozoic formations of Silica and Stratená Nappe and Meliata Unit; black triangle - Rudník (Dúbrava Fm.)

The basic magmatic rocks of all the above-mentioned groups occur in the Bôrka Nappe separately in the association with specific types of metamorphosed sedimentary rocks. This implies that the Dúbrava Formation is, in fact, composed of several individual lithostratigraphic formations in a form of slices with mutual tectonic contacts. The supposed formations,

