

Editorial

Foreword to the special volume on “Geological development of the region at the NE periphery of the Moldanubian Zone, eastern part of the Bohemian Massif”

This special issue of *the Journal of Geosciences* presents contributions to the tectonometamorphic development of geological units along the northeastern periphery of the Moldanubian Zone in the high-grade metamorphic core of the Variscan Bohemian Massif. Specifically these are the Strážek Unit of the Moldanubian Zone, as well as the largely independent Svratka, Kutná Hora, Polička and Orlice–Sněžník units. The main focus of the research papers is on analysis of the metamorphic record, geochemical characteristics and structural position of felsic gneisses and granulites, skarns, eclogites, tourmalinites, and other lithologies. At a general level, the results of our research serve for interpretation of the nature and tectonometamorphic development of various crustal domains during the Variscan orogenic processes.

In the first paper by *Verner and co-authors*, the regional, structural and geochronological data from the main units at the NE periphery of the Moldanubian Zone are briefly reviewed. In addition, extensive new field structural data sets acquired from this area are presented. The results are incorporated in a synoptic interpretation of the tectonic setting and timing of the geodynamic processes involving the different segments of the Variscan orogenic crust situated at present between the Moldanubian Zone (the Strážek Unit) and the West Sudetes (the Orlice–Sněžník Unit).

The study by *Pertoldová and co-authors* contributes to the widely discussed aspects of the origin of skarns and their pre-metamorphic precursors (protoliths) in the Svratka Unit, the Moldanubian Zone and the Kutná Hora Complex, namely the dispute on the open- vs. closed-system conditions of formation. Skarns were studied with respect to their tectonometamorphic evolution, geochemistry, oxygen isotopic composition and zircon ages. All the data, including the large variability in detritic zircon ages (0.5–2.6 Ga), rule out a metasomatic origin of the skarns. The geochemical interpretations point to a protolith that was most probably a mixture of sedimentary detrital material with a component of exhalites deposited on the sea floor and partly mineralized by magnetite, giving rise to small deposits of iron ore at some localities.

Štědrá and Nahodilová present a study of eclogites and related metabasic rocks, including samples from new localities. These data complement information published recently by various authors on mantle-derived and other HP rocks in the Běstvína Unit. Eclogites from the central part of the Kutná Hora Complex provide evidence for a prograde part of the high-pressure metamorphic event predating the Late Variscan exhumation.

The paper by *Vrána et al.* presents geochemical and petrological data for several types of kyanite–garnet–albite–K–feldspar gneisses and granulites from the Kutná Hora Complex. Albite–K–feldspar felsic gneisses with mylonitic fabric were derived from geochemically highly evolved garnetiferous leucogranite under HP amphibolite-facies conditions. Kyanite-bearing migmatites equilibrated at $P \sim 15$ kbar. High-pressure kyanite–garnet granulites represented by the Běstvína Unit were equilibrated at $P = 18\text{--}20$ kbar and $T \sim 850\text{--}1000$ °C. The data provide evidence for two eclogite-facies events (recorded by granulites and HP migmatites) followed by a single superimposed MT/HP amphibolite-facies event. The metamorphic record for the Kutná Hora Complex is thus different from patterns of metamorphism known from the Moldanubian Zone.

The paper by *Buriánek and co-authors* attempts at correlation of metagranites and migmatites from the Svratka and Orlice–Sněžník units. It clearly shows similarities in their lithology, petrology and geochemical composition. The mineral and whole-rock chemistry of all the studied rocks correspond to crustal melts. The rocks were affected by deformation and metamorphic recrystallization under MP–MT conditions during the Variscan orogeny.

Buriánek et al. in their second contribution deal with the processes producing a specific lithological type termed “pearl gneiss” in the lower part of the Polička Unit (Bohemicum) and exceptionally present in the tectonic segments of the Moldanubicum. The complicated fluid-present melting related to the tonalite intrusions in the Polička Unit (Budislav and Miřetín plutons) produced porphyroblastic rocks with granitic composition. The characteristic augen textures are considered to be a result of high-temperature deformation under subsolidus conditions. The evolution of pearl gneisses has been terminated by a late deformation in the shear zone between the Polička and Svratka units.

Čopjaková and co-authors provide a detailed petrographic and geochemical study of “strata-bound” tourmalinites and hosting mica schists from the southern and central parts of the Svratka Unit. The presented data indicate a similar protolith for the two rock types. The whole-rock geochemistry and tourmaline composition suggest pre-Variscan, low-temperature tourmalinite formation by a selective replacement of primary B- and F-rich clastic sediments by hydrothermal fluids.

We would like to thank all the authors who have contributed such a variety of articles to this Special Volume. The referees are thanked for their volunteered time, energy and efforts to improve the quality of the manuscripts. This volume owes very much to the careful editorial work by Vojta Janoušek (editor-in-chef) and all the handling editors. M. Štulíková is thanked for revising the English. This research and the presented data were supported by the Czech Geological Survey and the Ministry of the Environment of the Czech Republic Project No. 6352 (J. Pertoldová). The geological maps on a scale of 1:25 000 enclosed in this volume are the result of mapping project No. 6328 “Žďárské vrchy Protected Landscape Area” (P. Hanžl). We are grateful to the Czech Geological Survey for financial support in printing these maps.

We hope that the data and approaches presented in the following papers will contribute to the current understanding of tectonometamorphic development of, and stimulate new studies concerned with, the area at the northeastern periphery of the Moldanubian Zone.

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