

sufficient supply of alkalis through dedolomitisation which is conditioned by presence of sulphates. Two possible sources are proposed: 1) brines derived from the Permian evaporites, 2) input of the sea water.

All the above described features and processes suggest the principal role of fluid flow in a course of the rauhacke formation, which confirms the fluid inclusion study. In euhedral quartz, primary CO₂ rich inclusions were found with salinities

over 40% and homogenisation temperatures in the range 380 - 420°C. Calculated pressures exceed 2 kbar which oversteps the proposed lithostatic pressure by 1 kbar. This excess is due to the extreme fluid pressure which, at these values, could have supported the weight of the nappe in the course of thrusting. This possibly indicates a way a displacement of many km without any strong deformation of the nappe body occurred.

Petrography of the Zábřeh Crystalline Unit: A Review

Monika NĚMEČKOVÁ¹, Pavel HANŽL² and Jiří BABŮREK³

¹ Czech Academy of Science, Rozvojová 135, 165 00 Praha, Czech Republic

² Czech Geological Survey, Leitnerova 22, 658 69 Brno, Czech Republic

³ Czech Geological Survey, Klárov 3, 118 21 Praha, Czech Republic

The Zábřeh crystalline unit (ZCU) is a metamorphosed volcano-sedimentary complex situated in the NE margin of the Bohemian Massif. A supposed gradual increase in metamorphic grade from the south to the north in the ZCU was not fully confirmed by recent data. It is possible to distinguish some relatively independent parts of the ZCU from the viewpoint of lithology and character of the metamorphism.

The southern part is formed by phyllites containing abundant intercalations of amphibolites in places with ultramafic rocks. Layers of acid metavolcanites and metadiorites are rare. The amphibolites metamorphosed under conditions of granulite facies (Babůrek and Hanžl 1997) are exposed together with garnet phyllonites in low-grade rocks (metapelites and meta-greywackes) in the southernmost part of the ZCU near Pěčínkov. Amphibolites are accompanied by thin layers of strongly mylonitised marbles.

The northern part is composed of quartzite gneisses containing layers of quartzite and metarhyolite, biotite gneisses with garnet and sillimanite, augen gneisses and migmatites with intercalations of amphibolites.

Concordant bodies of tonalites are common mostly in the north part of the ZCU.

Two main described parts are separated along the Moravská Sázava river valley by a narrow, relatively independent, belt of flysch like metasediments with porphyroblasts of biotite. The belt contains a horizon of schists with staurolite north of Hoštejn village which indicates metamorphic conditions of lower amphibolite facies.

New mineral assemblages in gneisses, tonalites (chlorite) and amphibolites (chlorite, epidote) accompanied by brittle-ductile deformation are products of destabilisation during the retrograde metamorphism in the greenschist facies conditions. Indicators of the retrograde metamorphism have not been observed in metasediments from the southern part of the ZCU.

References

BABŮREK J. and HANŽL P. 1997. Petrologie granátického amfibolitu z jižní části zábřežského krystalinika. *Geologické výzkumy na Moravě a ve Slezsku v roce 1996*, 98-100.

The Omphacite Exsolutions in Pigeonitic Pyroxene Coexisting with Na-amphibole in Meladiorite Body at Krásná Lípa (Northern Part of Bohemian Massif)

Jiří K. NOVÁK

Geologický ústav AV ČR, Rozvojová 135, 165 02 Praha 6, Czech Republic

A sample of pyroxene-amphibole meladiorite with unusual pyroxene exsolution textures and Na-amphibole was collected in a core of the drillhole situated 0.5 km to the north of Krásná Lípa (southern part of the Šluknov area). The recognisable omphacite lamellae in host pigeonite as well as small nyböite and cummingtonite crystals were used to constrain a history of cooling from igneous conditions as well as regional metamorphism ones. The jadeite-rich clinopyroxene and alkali amphibole are characteristic of high-grade metamorphic rocks (blueschists and eclogites) whereas they would be absent in

meladiorite. This finding suggests that elastic strain energy may have been affected by metamorphism during deep meladiorite emplacement. The list of Na-amphibole occurrences within basic dykes involves the bluish riebeckite overgrowths on brown amphibole in "lamprophyre" dyke from environs of Dresden by Tröger (1932) and numerous occurrences of the Na-Ca amphiboles (taramite, katoforite) in "lamprophyres" within the Lusatian granitoid pluton by Beger (1913). All places of occurrence correspond to a positive gravity anomaly beneath the Lusatian area (Lindner 1972).