

MINERALOGY AND GENESIS OF PEGMATITE-LIKE VEINS IN SERPENTINITE ELUVIUM AT NOVÁ VES NEAR OSLAVANY (CZECH REPUBLIC)

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The studied locality belongs to the Gföhl unit (Moldanubian zone) at the eastern margin of the Bohemian Massif. Remnants of veins with pegmatite character were found in eluvium of a small serpentinite body situated at Nová Ves near Oslavany. Three groups of vein material (NV1, NV2, NV3) differing in their internal structure, mineral assemblages and chemical composition of minerals were distinguished.

Mineral assemblage NV1 (Kfs + Qtz + Plg ± Tur ± Chl) consists of medium- and coarse-grained, brown-grey K-feldspar, grey albite (An₂₋₉), quartz and minor greenish-brown columnar tourmaline. Tourmaline is replaced by K-feldspar and smectite-like minerals. Accessory titanite is typically associated with altered tourmaline, xenotime and monazite are rare. About 70 vol. % of the bulk composition in the assemblage NV2 (Plg ± Amp ± Preh ± Chl) consists of coarse-grained pale-brown andesine (An₃₈₋₄₂). Subordinate green amphibole is developed at the rims of the vein samples and may represent the contact between the pegmatite and the host rock. Quartz and primary K-feldspar are absent but late secondary K-feldspar occurs in fissures within the andesine. Andesine is often pseudomorphosed by prehnite but its replacement by chlorite, clinozoisite, sericite and albite was also observed. Zircon and tourmaline are rare. The group of NV3 vein samples has rather similar mineral assemblage (Plg + Tur ± Preh ± Chl) as NV2 group. Blocky pale-brown labradorite-bytownite (An₆₉₋₈₅) and dark-green tourmaline are dominant. Tourmaline occurs in form of clusters and aggregates. Plagioclase is often pseudomorphosed by prehnite and also by chlorite and thompsonite. Tourmaline is partly replaced by pumpellyite-(Al) and/or chlorite. Apatite, celsian-hyalophane and zircon are accessory minerals. These three assemblages can be clearly distinguished by the basicity of plagioclase. The chemistry and compositional trends of tourmalines from 3 distinct parageneses described above are also different. Dravite-uvite from NV2 (NV3) samples exhibits rimward increase in Ca, Mg, Fe and decrease in Na, Al. Dravite of the NV1 assemblage, enriched in Al, exhibits predominance of Mg over Fe and increase of Na, Mg and Fe combined with decrease of Al and X-site vacancy.

The crystallization of tourmaline and plagioclases was probably controlled by the activities of mobile elements during the mixing of parent melt (rich in Na, Al, Si, B) with the elements derived from the host serpentinite (rich in Mg and Ca). The features of pegmatite-like vein fragments from Nová Ves are unique in several aspects: (a) extremely variable anorthite content in plagioclases (An₀₂₋₈₅); (b) abundance of younger Ca-rich minerals (prehnite, pumpellyite, clinozoisite, thompsonite); (c) activity of some volatiles in forming melt (particularly B); (d) only local presence of quartz and K-feldspar and finally; (e) predominant coarse-grained character of primary minerals. These features are similar to those observed at other contaminated pegmatites hosted by serpentinite such as Drahonín, Věžná, Smrček, Věchnov etc.

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