PŮVODNÍ PRÁCE/ORIGINAL PAPER

Minerály a geochémia granitového pegmatitu Bratislava - Jezuitské lesy (Slovensko)

Minerals and geochemistry of the Bratislava - Jezuitské Lesy granitic pegmatite (Slovakia)

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Abstract

The Bratislava - Jezuitské Lesy granitic pegmatite forms a relatively narrow dike (up to 1 - 2 m thick) in parental Hercynian (~350 Ma) S-type granodiorite to granite. The pegmatite internal zoning consists of a coarse-grained quartz-feldspar-muscovite zone, locally with transition into a graphic pegmatite, blocky K-feldspar and massive quartz. An aplitic saccharoidal albite (albite >> quartz + muscovite + garnet) and cleavelandite extensively replace the older pegmatite zones. Beryl, garnet (almandine > spessartine), zircon (≤12 wt.% HfO_2), monazite to cheralite, Nb-Ta-(Sn) oxide minerals (all columbite-tantalite members, ferrotapiolite, ferrowodginite), and gahnite occur in coarse-grained zone as well as saccharoidal albite. The pegmatite is enriched in Rb, Cs, Be, Nb, Ta, Sn and W and depleted in Li, Sr, Ba, Zr and REE`s. These geochemical features and mineral composition show a relatively highly fractionated pegmatite melt and beryl-columbite subtype of the rare-element class and LCT tendency of the pegmatite. Moreover, anomalously high Y/Ho value (60) and presence of the lanthanide tetrad effect ($T_{1,3}$ = 1.17), together with presence of fluorapatite (≤10 wt.% MnO) and fluorcalciomicrolite, indicate an influence of fluorine-rich fluids during late magmatic to early hydrothermal (high-temperature) evolution stage of the pegmatite. On the contrary, phenakite, bertrandite, quartz II, and muscovite II originated during late hydrothermal (low-temperature) overprint of the pegmatite as a result of post-magmatic Hercynian uplift or Alpine tectono-thermal overprint of the Bratislava granitic massif.

Key words: *granitic pegmatite, rock-forming minerals, accessory minerals, secondary minerals, Bratislava - Jezuitské Lesy, Slovakia*

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