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FOITITE AND SODIUM DEFICIENT SCHORL IN THE SPIŠ–GEMER AND KLENOVEC GRANITE, EASTERN SLOVAKIA

BROSKA, I. & UHER, P. (Geological Institute of the Slovak Academy of Sciences, Bratislava, Slovak Republic)
E-mail: geolbros@savba.savba.sk

Recently, it has become apparent that vacancy tourmalines are more common than was hitherto realised, and it now seems reasonable to subdivide the tourmaline group into three subgroups: (1) calcic, (2) alkali (Na and K), (3) vacancy tourmalines (HAWTHORNE & HENRY, 1999). Fe-bearing vacancy tourmaline or alkali deficient tourmaline is named foitite (MACDONALD *et al.*, 1993), Li rich rossmanit (SELWAY *et al.*, 1998) and the Mg-bearing variant is still only predicted as Mg-foitite. Foitite was found in the Zlata Idka granite body and especially in their magmatic derivatives (BROSKA *et al.*, 1999).

Tiny crystals (0.3–0.4 mm) of disseminated accessory foitite with zones of schorl were found in biotite-muscovite leucogranite of Permian age near Zlatá Idka village, Spiš–Gemer Ore Mts., Gemer superunit (eastern Slovakia). Blue foitite forms irregular patchy zones (<0.2 mm in size) which replaces the primary brown schorl. EPMA analyses of foitite reveal a high Fe/(Fe+Mg) ratio (0.85–0.95); the ratio is higher than that of schorl (0.69–0.91). Low Na (1.2–1.5 wt% Na_2O) and trace K and Ca resulted in an alkali deficient stoichiometry of foitite: $^{X}\square$ = 0.51–0.61, whereas schorl reveals $^{X}\square$ = 0.16–0.49. Replacement textures as well as gradual transitions of colour and composition from schorl to foitite indicate a secondary, probably hydrothermal origin of foitite by partial leaching of Na from primary magmatic schorl, along with the substitution: $^{X}\square + {}^{Y}Al = {}^{X}Na + {}^{Y}Mg$. The late aplitic dykes of the Zlata Idka granite body contain large aggregates (1 cm crystals) of the blue foitite with $^{X}\square$ up to 0.7.

Late magmatic and probably post-magmatic hydrothermal alkali deficient blue schorl forms overgrowths around primary brown schorl in the Hnilec granite, ca. 50 km to the west from Zlatá Idka (BROSKA *et al.*, 1998). Replacement textures as well as gradual transitions of colour and composition from schorl to foitite from the Zlatá Idka granite indicate their secondary, probably hydrothermal origin by partial leaching of Na from primary magmatic schorl, along with the substitution: $^{X}\square + {}^{Y}Al = {}^{X}Na + {}^{Y}Mg$. Ca, Ti and partly Mg could also be removed from primary schorl.

The foitite was discovered also in the Klenovec granites of the Vepor superunit which probably represent an analogue of the Spiš–Gemer granites.

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