DRAVITE-SCHORL EVOLUTION IN TOURMALINITE FROM OPARNO CRYSTALLINE COMPLEX, SAXOTHURINGICUM

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Different types of tourmalinites are minor but characteristic rocks in the easternmost part of the Saxothuringicum (Oparno Crystalline complex). They consist of tourmaline (dravite>schorl) and quartz, other minerals (< 1 vol. %) include Fe-rich clinochlore, fluorapatite, K-feldspar, calcite, zircon, monazite-(Ce) and goyazite. Tourmalinites from ***Chotiměř*** (RADOŇ et al., 2011) and ***Oparno*** form metamorphic segregations (including vein-like type) hosted in two-mica gneisses. They contain low-vacant dravite (1.53-2.24 apfu Mg), locally Fe-rich (0.57-1.13 apfu Fe in the centre of grains), F-poor (0.04-0.61 apfu) and slightly zoned with higher content of Ca (≤0.29 apfu) and Al (≤6.35 apfu) in grain rims. Locality ***Velké Žernoseky*** represents a rare type of tourmalinites (>90 vol. % Tur, Qtz>>Alm) with dravite-schorl concordantly hosted in garnet mica-schists (Fig. 1a). Tourmaline occurs in three types: (a) the oldest dravite with inclusions of disc-shape calcite and K-feldspar (Fig. 1b), (b) oscillatory and patchy zoned tourmaline on grain rims + quartz and garnet, and (c) zoned tourmaline grains and needle-like aggregates in quarts veinlets. All 3 types of tourmaline have very high contents of Na (>0.80-0.92 apfu Na) and low F (≤0.40 apfu) compared to the most common compositions from alkali tourmaline group (HENRY & DUTROW, 2011). Contents of Al are relatively low (≤ 6.09 apfu). Ca varies from centre to rim (≤0.20 apfu) and is not dependent on the calcite inclusions. Younger zones in tourmaline type (a) and the youngest of type (c) correspond to Mg-schorl (1.54-1.85 apfu Fe).

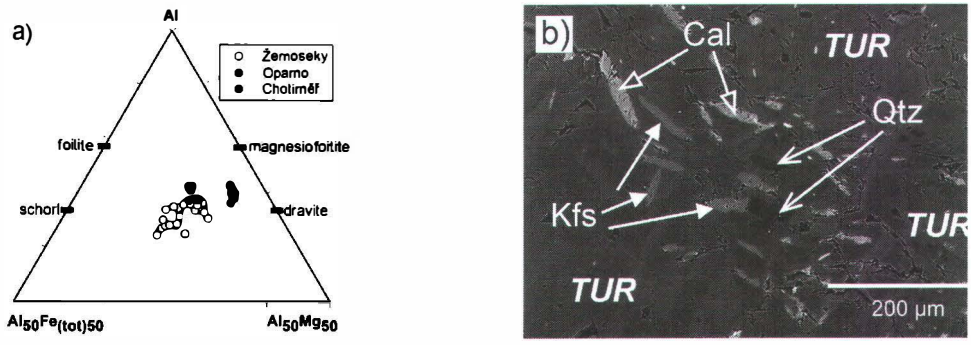

Figure 1. a) Fe-Al-Mg compositional diagram of tourmaline from Oparno Crystalline complex; b) Inclusions of calcite and K-feldspars in zoned dravite (BSE image)

HENRY, F., DUTROW, B. (2011): Canad. Mineralogist, 49, 41-56.
RADOŇ, M., ŽÁČEK, V., RAPPRICH, V., KYCL, P. (2011): Zpr. geol. Výzk. za rok 2010, D-Mineralogie, Petrologie a Geochemie, 177-183.