Peritectic metasomatism and agpaitic line of descent in the endocontact zone of the Măgureaua Vaței (MV) intrusives (Apuseni Mts.)

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Alkalifeldspathic rocks identified at the contact of the MV monzonitic Paleocene intrusion are referred to as "syenite" [1] (quotation marks preserved). Indeed meso- and microscopic relationships indicate the presence of a syenitic melt coexisting with the already consolidated monzonite. The monzonite is penetrated by syenite veinlets and also forms enclaves in the syenite otherwise discontinuously mantling the monzonite, towards well-developed high-temperature calcic skarns and the host Jurassic recrystallized limestone.

The syenite is composed of K-feldspar, zoned aegirine-augite (Ac = 21-54) and titanite. Accessory phases are represented by eudialyte and apatite with moderate chlorine and ellestaditic substitutions. Quartz appears accidentally. K-feldspar is homogeneous, displaying perthites only along deformation bands. Eudialyte is corroded or overgrown by dalyite, hyper-zirconian eudialyte and an undetermined K-Na zirconosilicate. At pyroxene resorption edges a sulphide association develops, partly preserved also in the skarnified portions of the syenite, where besides pyrite, pyrrhotite and chalcopyrite we identified millerite intergrown with vaesite-cattierite solid solutions, thalcusite and members of the djerfisherite-thalfenisite series, including a Fe-Cu-Tl term.

Close to the syenite, pyroxenes in the monzonite are mantled or replaced by green aegirine-augite, and the outer zone of the syenite is transformed in wollastonite-grossular skarn preserving the former magmatic structure. The border between skarnified and untransformed syenite is marked by an axiolitic fringe of fine-grained pectolite. The skarn formed on syenite is grading to a grossular-wollastonite spinifex aggregate, in turn bordered by wollastonite-grossular-pyroxene-monticellite skarn, passing into spurritic exoskarn.

The association of subalkaline intrusions with peralkaline (agpaitic) magmas developed at limestone contact implies extreme chemical shifts, unlikely to appear in residual contaminated melts. Yet, fluids evolution during skarn formation may lead to compositions with hyper-solidus behaviour with respect to peralkaline melts, which are actually generated by partial melting of the already consolidated intrusives percolated.

[1] Pascal *et al* (2001) *Canadian Mineralogist* **39**, 1405-1434