

Buchite from Iran: A first record

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Buchitic rocks appear as two small cross cutting dykes hosted by contact metamorphic skarns around Feshark granitic intrusion. Buchite dykes have columnar jointing and glassy appearance at immediate contact with skarn and semiglassy character and contorted foliation in the middle part. Buchite of Feshark are very rich in glass, in which minute very rare fine crystals of high disordered sanidine, high disordered oligoclase, mullite, Fe-Ti oxide, biotite and corundum have been recognized. This mineral assemblage strongly reflect condition of spurrite - merwinite facies. The host skarn lack the mineral assemblage of this facies. Field and laboratory evidences have shown that: (1) In the first step of intrusive activity a noritic gabbro intrudes in the crust which itself is highly transformed into rocks of intermediate composition by metasomatic exchange of solid gabbro and later granitic melt. (2) Remnant of biotite bearing quartzitic to gneissic rocks in buchite strongly reflect the formation of buchite by anatexis of lower crustal rock. (3) Noritic gabbro are strongly metasomatized by granitic melts. (4) Skarn which are the host rock of buchitic dyke are true pyroxene hornfels facies skarns.

It can be envisaged that: (1) Lack of spurrite-merwinite facies assemblage in host skarns is due to retrogressive metamorphic effect of granitic intrusion. (2) Or, buchitic granitic melt is originated in deeper part of continental crust during the first stage of gabbroic intrusion and is injected rapidly into skarns of higher crustal level via fractures.