

Metasomatic Kanonaite, occurrence and approach on its formation, at Serra das Bicas, Carrancas, Minas Gerais, Brazil

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Kanonaite (Mn^{3+} , Al)AlSiO₅, in vivid green, with good cleavage and xenoblastic crystals occurs in Mn-Fe oxide rich boudins in Proterozoic schists at Serra das Bicas, which underwent strong refolding to low-medium grade metamorphism near kyanite-sillimanite boundary. This mineral can be easily mistaken as aegerine for it has been described as viridine or manganadalusite. Weathering quickly promotes alteration covering it with a thin black film of Mn oxides. Kanonaite occurs in quartz muscovite schists interfingering with biotite-kyanite-chloritoid-almandine schists. It also appears at the external parts of the 10 cm-long boudins consisting of black Mn-Fe oxide rich cores, surrounded by kyanite and kanonaite, as isolated crystals enveloped by quartz and rose muscovite at the external part. The boudin zone with kanonaite is a conformable band, c.a. 4.5-m thick, within quartz muscovite schist. Quartz and kanonaite may coexist at the low-pressure zone between the boudins. We assume that kanonaite was formed during the waning stages of metamorphism, when aqueous fluids, which were actively pervading through the rocks formations, promoted the reaction between the muscovite from the neighbouring schists with the Mn-Fe oxides forming centimetric horizons within the schists, under relatively low confining pressure and oxidising conditions. An action of hidden granitic intrusive stock can be supposed as the source of heat and the convective system to promote the mineral reactions.