

Colquiriite, Carlhintzeite, Ralstonite and Pachnolite from a Serra Branca – Pegmatite/Pedra Lavrada – Paraiba/Brazil.

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The Serra Branca – pegmatite, about 10 km sw of Pedra Lavrada, Paraiba, Brazil is characterized by two different phosphate – parageneses. The main compositions of this granitic pegmatite consists of quartz, K – feldspar, muscovite and amblygonite. Minor minerals are uranium – columbite, apatite, black tourmaline, few blue tourmalines, beryl and uraninite/gummite. Besides this mineralogical bulk compositions two different phosphate mineralizations occur, one originating from triphylite, the other from triplite as primary phosphates forming pods up to several tons.

In phosphate mineralizations iron and manganese are separated. From this two phosphate mineralizations: triphylite and its secondary minerals like hureaulite, tavorite and barboselite – among others – are very rich in iron and poor in manganese, whereas triplite and its secondary minerals are very rich in manganese and poor in iron, thus representing almost in each case the pure end-members of iso-structural assemblages.

Secondary minerals of the two primary phosphates are situated in minute cracks within the almost fresh host phosphates. Major mobilizations of large amounts of the primary phosphates still hadn't taken place. Anyway, the development of secondary phosphates is extremely extensive and almost any crack – as minute as it might be – shows another assemblage of minerals : the occurrence of Colquiriite, Carlhintzeite, Ralstonite and Pachnolite within the same pegmatite, all of them originated from triplite. Idiomorph and perfect crystals of colquiriite up to 1 mm in size, are even different in shape.