ORIGIN OF THE RAPAKIVI TEXTURE AND OTHER FEATURES RELATED TO FELSIC-BASIC MAGMA INTERACTION IN THE SALTO PLUTON, ITU GRANITIC PROVINCE, SE BRAZIL: PETROGRAPHIC AND GEOLOGIC EVIDENCES

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The origin of the rapakivi texture is still a matter of considerable debate, and it was shown that it might result from a variety of processes. Interaction between basic and felsic magmas is one such a process, and field evidence show that it may be the cause of the widespread occurrence of the rapakivi texture in the subalkaline A-type syenogranites of the ~580 Ma Salto Pluton (Itu batholith, post-orogenic Itu Granitic Province, SE Brazil).

The Salto Pluton is a small subcircular occurrence (~ 9 km diameter; 40 km^2 minimum area), intruding orthogneisses and high-grade migmatites and partly covered by Permo-Carboniferous sediments. It is composed of inequigranular coarse-grained pink hornblende-biotite syenogranites with low (4-8) color index, locally varying to a "porphyry granite" facies with fine-grained matrix and high proportion of quartz, feldspar and hornblende phenocrysts (T.M. Galembeck; Doctoral Thesis, 1997). Besides the rapakivi mantling, other disequilibrium textures are common in the syenogranites, such as rounded quartz mantled by mafic minerals (biotite and/or hornblende), small fine-grained diorite clots mantled by plagioclase, and antirapakivi mantling. Interaction with coeveal basic magma is evidenced by scarce, small (<5 cm) mafic microgranular enclaves showing igneous textures and inferred to be at varied stages of hybridization. Much more common and larger (up to one meter) are subrounded *felsic* microgranular enclaves often bearing quartz and K-feldspar xenocrysts from the host granite, which are thought to derive from upwells of hot (re-heated?) granite magma that intruded and chilled within the crystallizing coarse-grained granite.

In a similar manner to what is shown in studies of mafic microgranular enclaves elsewhere, mantling textures such as rapakivi and mafic mineral mantling of partly resorbed quartz are features commonly originated when crystals from the crystallizing granite are incorporated into a coexisting basic magma. Field observations in the Salto Pluton show that these mafic enclaves were fragmented into very small pieces, liberating the mantled xenocrysts that were then re-incorporated into the granitic magma. Among them, some key field features are the presence in the coarse-grained granite of round rapakivi feldspar with a thick mantle of green plagioclase in turn surrounded by a thin preserved rim of microgranular diorite and mafic mineral-mantled quartz caught in the proccess of being liberated from a mafic enclave.

Larger mafic microgranular enclaves are typical of the neighbor Itupeva Pluton, which has a different chemistry, transitional between A-type subalkaline and I-type calc-alkaline (T.M. Galembeck, *op. cit.)*. The rapakivi texture and mantled quartz are practically absent from the granite and restricted to xenocrysts within the mafic enclaves. This can be related to lesser fragmentation of the enclaves, reflecting different magma chamber dynamics, and perhaps also responding for some distinct physico-chemical properties of the magma.