Camaquã Basin: Allostratigraphy and Volcanic Activity of a Vendian-Ordovician Succession in Southernmost Brazil

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The end of the Brasiliano/Pan-African orogeny is represented in Southern Brazil by volcanic sedimentary sequences in the Camaquã Basin, that correspond to one of the best preserved volcanic sedimentary stratigraphy of this age in the world. The basin infilling was studied based on allogroup and alloformation identification. The complete volcanic sedimentary succession was named as Camaquã Allosupergroup and subdivided, from bottom to top, in the five allogroups, delimited by angular unconformities: (i) Maricá; (ii) Bom Jardim; (iii) Cerro do Bugio; (iv) Santa Bárbara; and (v) Guaritas. Volcanism occurs in three units: (i) *Bom Jardim allogroup (Hilário alloformation)* – formed deltaic system and alluvial sediments, interfingered with traquibasalts that evolve to acid flows, related to flow and fall processes. A few small genetically related intrusions occur, like a dome of spessartitic lamprofire and monzonitic necks. Geocronological data (Rb/Sr, U/Pb) point to an age of 645±19Ma. Mantellic contribution to the shonshonitic magmatism is suggested by the presence of olivine traquibasalts and Sr^{87}/Sr^{86} isotopic ratio of 0.704; (ii) *Cerro do Bugio allogroup (Acampamento Velho alloformation)* - represented by volcanic events ranging from mugearitic to comendiitic composition, beginning with basic flows followed by piroclastic sequence of ignimbrites and falls, acid flows and brecciated horizons. Isotopic data (Rb/Sr, U/Pb) yield an age of 572±2Ma, for this bimodal association; and (iii) *Guaritas Allogroup (Rodeio Velho alloformation)* - the youngest volcanosedimentation interfingered with basic volcanic flows. These display lavas of the aa type and blocky structures, genetically related to inflated flows.