

THE NEOPROTEROZOIC UMARIZAL IGNEOUS ASSOCIATION AND THE GENESIS OF CHARNOCKITIC A-TYPE GRANITOIDS.

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The association comprises undeformed plutons with A-type chemistry in the mainly orogenic Umarizal-Caraúbas igneous complex. The main zoned laccolith occupies a cavity between basement and supracrustal gneisses and contains fayalite-bearing and fayalite-absent facies. Zoned stocks of mangerite/charnockite intruded a neighbouring granite then in a visco-plastic state, while rapakivi-like granite with distinct mineral chemistry and enclave suite was intruded into the same granite, then fragile. ISr ratios at 593 Ma -the U-Pb zircon age - are heterogeneous and have a strong crustal influence. The four main facies evolved separately. Crystallization started at ~7-9kb and 900oC, amphiboles appeared at ~5-6kb and ~800oC, and final consolidation was achieved at 3.5+/-1.5kb. Shear zones acted as conduits for magma ascent and dilatation zones provided the space necessary to accommodate the magmas.