

THE RIO DOCE GROUP REVISITED: AN EDIACARAN ARC-RELATED VOLCANO-SEDIMENTARY BASIN, ARAÇUAÍ OROGEN (SE BRAZIL)

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The Araçuaí orogen developed between the São Francisco and Congo cratons, during the Western Gondwana amalgamation in Late Neoproterozoic time. Located in the eastern Araçuaí orogen, the Ediacaran Rio Doce magmatic arc includes a large amount of plutonic rocks (the G1 supersuite, ca. 630-580 Ma) spatially associated with a supracrustal succession, the Rio Doce Group (RDG). This group, poorly studied until recently, encompasses four formations (from base to top): Palmital do Sul, Tumiritinga, São Tomé, and João Pinto. The Palmital do Sul and Tumiritinga formations mostly include pelitic schists to paragneisses, interbedded with metavolcanic and meta-volcaniclastic rocks, representing proximal deposits in relation to the volcanic arc front. Pyroclastic deposits represented by lapilli-rich meta-tuffs with scattered volcanic bombs denote explosive volcanism of dacitic to rhyolitic composition. Zircon U-Pb data provide a magmatic crystallization age from ca. 594 Ma to ca. 585 Ma for the volcanic protoliths. The São Tomé Formation mainly includes psammitic to pelitic meta-turbidites with lenses of calcsilicate rocks, indicating relatively distal marine deposits with a maximum depositional age of ca. 594 Ma and a striking arc-related lithochemical signature. The João Pinto Formation mostly includes quartz sandstones and micaceous to feldspathic sandstones, with a maximum sedimentation age of ca. 620 Ma, representing fluvial to shelf marine environments related to the late stages of the Rio Doce arc development. The RDG can be correlated with other orogenic supracrustal successions (i.e., parts of the Andrelândia Group) found in the region covered by the Rio Doce arc, connecting the Araçuaí and Ribeira orogens.

KEY WORDS: RIO DOCE GROUP; RIO DOCE MAGMATIC ARC; ARAÇUAÍ OROGEN