

GRANITES AND THE EVOLUTION OF THE BRASÍLIA BELT, CENTRAL BRAZIL

PIMENTEL, M.M., BOTELHO, N.F. AND FUCK, R.A.

Recent field and geochronological studies have recognized a number of granitoid suites associated with the different stages of evolution of the Brasília Belt in central Brazil. This is a Neoproterozoic orogen developed on the western margin of the São Francisco/Congo continent. In this review the field, isotopic and geochemical characteristics of these granite suites are used to reconstruct the geodynamic history of this belt. Four granitic suites are reviewed: (i) 1.77-1.58 Ga old rift-related A-type granite intrusions, (ii) ca. 0.8 - 0.7 Ga peraluminous, syn-collisional granites, (iii) arc metatonalites and metagranodiorites associated with calc-alkaline volcanic sequences (ca. 0.9 to 0.63 Ga), and (iv) bimodal post-orogenic suite ranging in age between 0.59 and 0.48 Ga. These rocks suggest that during most of the Neoproterozoic the western margin of the São Francisco/Congo continent faced a large oceanic basin, where subduction and oceanic lithosphere consumption started at ca. 0.9, roughly coeval with the initial stages of break up of Rodinia. An early collisional event (arc-continent?) is recorded at ca. 780 Ma and final ocean closure happened at ca. 0.6 Ga., followed by crustal thickening, uplift and erosion. Post-orogenic magmatism was partially contemporaneous with the deposition of the Paraguay and Tucavaca sedimentary successions, related to the break up of Laurentia from southwestern Gondwana.