

Neoproterozoic Tectonometamorphic Imprint in the Quadrilatero Ferrifero, São Francisco Craton (SE Brazil)

CABY, R. Lab. de Tectonophysique, UM2, 34095, Montpellier, France.

New petrostructural observations have been undertaken to characterize the P/T conditions of the main tectono-metamorphic event that affected the Quadrilatero Ferrifero. Mineral assemblages in metapelites from the Rio das Velhas Supergroup (Late Archaean), the Minas Group (2.4-2 Ga) and the younger Itacolomi group (1.8- 1 Ga?) are described in relation to structures. Staurolite, garnet, kyanite, white micas, phlogopite-biotite and rutile are the common synkinematic, unretrogressed minerals formed regionally in the recumbent foliation lying mostly at low angles to the sedimentary bedding planes from all units. Our conclusions are at variance with the traditional concept of Paleoproterozoic tectono-metamorphic events in this region. The widespread occurrence of kyanite (\pm pyrophyllite) and the large development of syn-metamorphic kyanite and gemstone veins in Fe-Al schists and quartzites of the higher unit point that these mineral assemblages formed during the Neoproterozoic (Brazilian) orogeny. The development of a single white-mica/green biotite extensional foliation superimposed at the margin of Archean granite-gneiss domes and on L-P thermal aureoles also suggest that dome and keel structures were not generated during the Paleoproterozoic but formed essentially during the Late Brazilian events. The high-pressure affinity of the metamorphism is consistent with a tectonic burial of the major part of the Quadrilatero Ferrifero below a ~ 15 km thick tectonic pile of W-verging crystalline nappes originated from the Aracua' belt.