DOC. 395

International Conference "Geochemical Evolution of the Continental Crust"

Poços de Caldas, Brazil
11-16 July, 1988

Abstracts

Silva Filho, A.F. & Guimarães, I.P. (1979) 9º Simp.Geol.Nordeste, Atas, p.364-368.

Thorpe, R.S. (1987) Trans. Roy. Soc. Edinburgh, Earth Sciences, 77:361-366.

THE SÃO JOSÉ DO RIO PARDO MANGERITIC SUITE, SOUTHEASTERN BRAZIL

M.C. Campos Neto [1], M.C.H. Figueiredo [1], V.A. Janasi [1], M.A.S. Basei [1], B.J. Fryer [2]

1. Instituto de Geociências, Universidade de São Paulo, C.P. 20899, 01498 São Paulo, Brasil
2. Department of Earth Sciences, Memorial University of Newfoundland, St. John's A1B 3X5, Canada

In the São José do Rio Pardo region, São Paulo and Minas Gerais States, occur intrusive, folded, tabular bodies of mangerites associated with hornblende granitoids. The country rocks correspond to a complex association of gneisses and migmatites, locally with granulite facies assemblages. Both the mangerites and hornblende granitoids present a tectonic foliation with mineral flattening and stretching.

Petrographically the mangeritic rocks are mainly dark green quartz mangerites with mesoperthite, plagioclase, quartz, hypersthene, clinopyroxene and variable amounts of hornblende, with conspicuous accessory zircon. The pink horblende granitoids are mainly granite s.s. having higher quartz and amphibolite contents and lacking pyroxenes. Hololeucocratic alkali feldspar granites are locally associated to the hornblende granites. The texture of the mangerites and granites almost always show an important metamorphic overprinting, with relictic mesoperthite and pyroxene crystals in a granoblastic matrix.

A single outcrop Rb/Sr isochron yielded for the mangerites an age of 921 Ma with an initial $^{87}Sr/^{86}Sr$ ratio of 0.70679 probably corresponding to a metamorphic isotopic rehomogenization.

Geochemically, the mangerites are characterized by intermediate SiO_2 contents (N61%), high Al_2O_3 (N17%), K_2O (N5%), Na_2O (N4.5%), $Fe_2O_3^t$ (N7%), Ba, Zr, Nb and Y and low CaO (N3%) and MgO (N1%). These characteristics are typical of anorogenic mangeritic suites, such as in Lofoten-Vesterolen in Norway and Adirondacks in eastern North America.

The horblende granitoids differ from the mangerites by having higher SiO_2 (N68%) and lower Al_2O_3 (N13.5%) and Na_2O (N3.5%). On the other hand, they share with the mangerites some important features such as high Fe/Fe+Mg, K_2O and HFS elements and low CaO. These characteristics compare well with those of typical anorogenic rapaviki granites, such as in the Adirondacks and Finland, although the wiborgitic texture has not been identified in the São José do Rio Pardo rocks.

RARE EARTH ELEMENT GEOCHEMISTRY OF PRECAMBRIAN AMPHIBOLITE FACIES AND GRANULITE FACIES GNEISSES, GUAXUPÉ MASSIF, SOUTH MINAS GERAIS, BRAZIL

S.S. Iyer[1], A. Choudhuri[2], M.B.A. Vasconcellos[1]

1. Instituto de Pesquisas Energéticas e Nucleares (CNEN-SP), Cidade Universitária, Caixa Postal 11049, São Paulo, Brazil
2. Instituto de Geociências, Universidade Estadual de Campinas, Caixa Postal 1170, 13100 Campinas, Brazil

Rare earth element data of the amphibolite and granulite facies gneisses from the Proterozoic gneiss-migmatite complex of the Guaxupé Massif, south Minas Gerais, Brazil, are presented. Tonalitic to granodioritic biotite and hornblende-bearing gneisses with amphibolite bodies in the form of layers or boudins from the main rock types of the amphibolite facies gneisses. A later group of gneisses, also forming part of the complex, are relatively leucocratic rocks ranging from tonalitic and granodioritic to granitic augen gneisses containing schlieren of mafic composition and at times fragments of digested amphibolite. The granulite facies rocks are mainly charnockitic gneisses, enderbitic gneisses and massif granulites.

The over all REE patterns are strongly inclined with lack of or negative Eu anomalies and the augen gneisses having a distinct negative anomaly. The patterns are similar to compositionally equivalent Archean gneisses showing light rare earth element enrichment, but to a lesser degree. Models based on melting of the Archean gneisses, eclogite and hornblende fractionation are considered for the origin of the gneisses and their generation appears to be closely, linked