KOMATIITIC VOLCANISM FROM THE MORRO DO FERRO GREENSTONE BELT, SW MINAS GERAIS STATE, BRAZIL.

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Metaultramafic, mainly chlorite - Ca-amphibole rocks in Alpinópolis, Passos and Fortaleza de Minas townships, southwestern Minas Gerais State, exhibit pseudomorphic spinifex textures in lenticular nucleii preserved from heterogeneous shearing along the Campo do Meio Shear Zone, included as disrupted bodies of variable size in tonalitic / granodioritic gneiss terrains at the southern margin of the São Francisco Craton. The komatiitic suite has been strongly modified along the WNW/ESE trending shear zone, to the almost complete annihilation of its volcanic features, being now replaced by chlorite - Ca-amphibole schists at lower (high greenschist / amphibolite), and green spinel - olivine - orthopyroxene - Mg-hornblende rocks at higher (high amphibolite / granulite?) facies, with serpentinites, talc schists and metapyroxenites as minor types, and with amphibolites (former Mg-tholeiite basalts), BIF and metapelitic schists intimately associated. Volcanic stratigraphy is largely lost to the intense, although non-pervasive deformation, with remnants of the original volcanic pile, as well as some larger, differentiated bodies (flows or sills?) occasionally preserved, like at the O'Toole massive Ni-sulfide deposit (Fortaleza de Minas township), where the ore-body is hosted at the base of a differentiated, gabro - clinopyroxenite - serpentinized cumulatic peridotite body. Spinifex texture variations (random- and plate-spinifex types) also indicate the existance of former differentiated flows, although no serpentinites of undoubtedly cumulatic protholith have been found so far in clear spatial association with spinifex-textured rocks: most serpentinites are taken to be formed from chlorite-amphibole schists through metassomatic alteration.

Albeit recurrent deformation, and metamorphic / metassomatic processes have promoted the widespread chemical remobilization of the ultramafic suite as a whole, deeply modifying its geochemical signature, careful sampling for whole-rock chemical analyses (XRF, Neutron Activation) allowed the identification of a set of samples which preserves some clues to the geochemical behaviour of the former komatiites. Based on less mobile incompatible element (Al, Ti, Zr, Sc) ratios, the protholiths were undoubtfully identified as having an ADK- Aluminium Depleted Komatiite character ($Al_2O_3/TiO_2 \simeq 11$). Based on the incompatible-element-like behaviour of Cr and on Molecular Proportion Ratio diagrams, the suite was shown to have evolved, at least for the analyzed set of samples, from a Mg-rich komatiitic magma, with olivine with forsterite contents of 93 to 94 or higher as the main fractionating phase. Higher-than-normal Zr-contents in a group of samples might be attributed to some degree of crustal assimilation, which could also explain the presence of small ($\simeq$ 20 to 50 μm) zircon xenocrysts (?) included in amphibole pseudomorphs after plumose clinopyroxene in a spinifex-textured sample. Finally, the anomalous, yet systematic REE behaviour of some spinifex-textured samples, with strong light-REE enrichment and proportional negative Ce-anomalies, combined with the coupled behaviour of Y, might be interpreted as the result of immediately post-igneous, pre-metamorphic, "cold" submarine weathering of the volcanic pile.

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