## The Iron Ores from the Quadrilátero Ferrífero

Carlos A. Rosière, CPMTC/IGC/UFMG, 31270-901 Belo Horizonte, MG, Brazil, e-mail: crosiere@dedalus.lcc.ufmg.br

The Quadrilátero Ferrífero (QF) district in Minas Gerais, Brazil, contains Archean to Paleoproterozoic metamorphic sequences and owes its name also to the presence of extensive layers of itabirite from the Cauê Formation, a metamorphic variety of jaspilitic iron formation, that includes several hematite-rich ore bodies(>64% iron). The QF displays a quadrangular shape due to development of two main orogenic events. In the definition of iron ores in this region it is necessary to take in consideration not only sedimentary and mineralogical characteristics but also tectono-metamorphic features. Lithostratigraphic, textural and structural studies in the Quadrilátero Ferrífero indicate Low Strain (LSZ) and High Strain Zones (HSZ).

In LSZ primary features are present and iron ore bodies occur:

a) as hard massive lenses concordant to bedding

b) as friable irregular bodies clearly controlled by the geomorphology.

They are constituted mainly by pre-metamorphic/pre-tectonic martitized kenomagnetite partially inverted to hematite.

In HSZ iron ore bodies are partially controlled by shear zones and are constituted by syntectonic formed platy hematite crystals denominated specularite.

Massive iron ore bodies display usually primary banding defined by difference in the relative proportion of iron oxides. They are clearly pre-metamorphic and seem to be the product of secondary enrichment or anomalous primary deposition of iron oxides.

Friable ore bodies result from both Cenozoic supergene and residual enrichment specially in dolomitic iron formations.

Several schistose bodies are discordant and represent the product of synmetamorphic leaching of quartz and carbonates.

All three processes have contributed up to a certain amount to the development of ore bodies of different sizes in the Q. F.