

Paleogeographic controls and the opening of the Minas Basin, Quadrilátero Ferrífero, Minas Gerais, Brazil

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The postulated platform type of deposition of the Minas sediments must be reviewed, considering the variations in composition, grain size and colour of the sediments, which are diagnostic of opposing environmental conditions. The iron formation at the both extremities of the Curral structure is reddish and siliceous, with sparse lenses of the amphibolitic variety in the lower portions. Toward the central Curral and the presumed deeper parts, the itabirite becomes dolomitic with numerous lenses of reddish dolomite suggesting a significant lateral facies variation. At the junction Moeda-Curral there are several, thick horizons of cobble and pebble conglomerate (Moeda Formation) underneath the dolomitic iron formation. Such pattern indicate that a paleocoast running subparallelled to the Curral range reach to a deeper part surrounding a structural high represented by the conglomerate. Southward the Moeda structure the colour of the dolomite changes from red to salmon, light grey and dark grey, according to the oxidation index and mineralogical compositional variation, from hematite, magnetite, Cu sulphides and pyrite. Overlying quartzites (Cercadinho Formation) gradually decrease in thickness with the increase of carbonaceous phyllite in a clear facies variation occurs. The existence of basic sills and dikes between Moeda quartzites and Batatal phyllites, within the iron formation and the possible volcanic contributions to the amphibolitic itabirite may indicate igneous basic intrusions during the initial stages of basin opening.