

PALAEOGEOGRAPHIC STUDIES ON THE DIAMOND-BEARING SOPA CONGLOMERATE IN THE DIAMANTINA REGION (MINAS GERAIS), BRAZIL.

Chaves, M.L.S.C.

Instituto de Geociências, Univ. Fed. Minas Gerais, C.P. 2608, Belo Horizonte-MG, Brazil.

Since 1985 the author realizes studies on the diamondiferous conglomerate and breccia of the Sopa Formation (Espinhaço Supergroup) in the Diamantina District, State of Minas Gerais, Brazil. These deposits are exploited since the last century by "garimpos" and small washing plants.

The Espinhaço belt is a long chain of mountains with about one thousand kilometers crossing the States of Minas Gerais and Bahia. The Mid-Proterozoic Espinhaço Supergroup is a 5000 meters thick metasedimentary section, predominantly composed by quartzites and phyllites. The regional trend of the Espinhaço Supergroup is N-S.

The Sopa Formation consists of quartzites, phyllites, conglomerates and breccias. The polymictic conglomerates occur as lenses and channels deposits up to 150 meters thick. Regional studies allow five main diamondiferous fields to be recognized in the Diamantina District: Campo Sampaio-São João da Chapada, Sopa-Guinda, Extração, Datas and Presidente Kubitschek (Chaves, 1988). The present contribution describes the palaeogeographic arrangements of Sopa-Guinda, Extração and Datas fields.

In the studied fields detailed geological mapping, sedimentary environments and facies analysis, with data on the attitude of the cross-bedding in the sequences enable us to draw the following conclusions:

(1) In the Diamantina District general transport of sediments was to the east and south into a coastal region,

(2) The diamond-bearing sediments were deposited mainly on alluvial fans and fan deltas, but diamond-rich sandstone deposits of braided river type also occur,

(3) In the Sopa-Guinda and Datas fields the deposition occurred in alluvial fans, but only at Datas the sediments reached the ocean where they were reworked by strong waves developed during stormy weather,

(4) In the Extração field the fan delta sedimentation resulted from vertical movements with uplift of continental areas (the Volcanic-Sedimentary Complexes) and of blocks with small sedimentation load (the basal portion of the Espinhaço Supergroup), forming large islands parallel to the coast (Abreu, 1984),

(5) In the Extração field the proximal fan facies crop out, while in the Datas and Sopa-Guinda fields mainly the meddium to distal deposits are exposed,

(6) As a result, the diamond concentration in the three studied fields was controled by the distance to the source area.

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