EVIDENCES OF POST-EOPALEOZOIC TRANSTENSIONAL DEFORMATION IN JAIBARAS RIFT, NE BRAZIL

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ABSTRACT: The Jaibaras Rift is an Eopaleozoic basin, characterized by a NE-SW trending axis, located between the Ceará Central (CCD) and Médio Coreaú (MCD) domains, in the northwest of Borborema Province (BP), NE Brazil, Ceará state. The development of the Jaibaras Rift is related to regional extensional brittle reactivations of the northern segment of the Transbrasiliano Lineament, locally known as Sobral-Pedro II Shear Zone, featuring a graben and horst system. This basin comprises two volcano-sedimentary successions: i) Alfa Inferior sequence, represented by the Massapê, Pacujá and Parapuí formations, which includes conglomerates, sandstones, shales and volcanoclastic rocks; and ii) Alfa Superior sequence, represented by the upper part of the Parapuí Formation and Aprazível Formation, comprising volcanosedimentary rocks. The volcano-sedimentary infill is mainly characterized by polymictic conglomerates, sandstones and volcanoclastic rocks (502±8 and 469±13 Ma). The tectonic deformation currently described for the rocks of Jaibaras Rift refers to a compressional tectonic inversion, which has generated a set of thrust-faults and folds deforming the beds. The data collected in this study was based on the concepts of continuum deformation and structural domains, by geometric and kinematics structural analysis, from detailed mapping, and cross sections. The fine-grained micaceous sandstones (Pacujá Formation), exposed near Jaibaras city, is cut by sets of oblique-normal faults, forcing drag folds. The main sets of normal faults observed are NE-SW and ENE-WSW trending, with steep to subvertical dips towards NW and SSE. These faults locally rotate the beds generating moderately reclined, open synclinal and anticlinal drag folds whose axis have shallow plunges towards WSW. Theses folds are slightly asymmetric, with dextral kinematics. Sets of later joints also affect the rocks and are NW-SE and WNW-ESE trending. A not pervasive cataclastic foliation is also observed following the same orientation of the oblique normal faults sets. It is suggested that the Eopaleozoic sandstones of Pacujá Formations were affected by later brittle to brittle-ductile deformation, characterized by oblique-normal faults generating forced drag folds, due a regional transtensional tectonic inversion. There is no evidences, at least on the investigated rocks, for any important event of compressional inversion. This event may be related to the extensional faults of the border of the graben.

Key words: BORBOREMA PROVINCE. JAIBARAS RIFT. TRANSTENSIONAL REACTIVATION.