

Late orogenic evolution of the Leo/Man shield : a reconstitution using fabrics of granitic plutons

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Granite is the best marker of crustal deformation (Lagarde, 1989; Gleizes, 1992; Bouchez, 1997). Nevertheless in many cases, it is difficult to access to internal fabrics of plutons directly on the field. In this study the technique of anisotropy of magnetic susceptibility (AMS) have been used to highlight fabrics of some plutons of Burkina Faso (Tenkodogo-Yamba, Wayen, Déou, Arbinda,...). The petrographic and geochemical characteristics of these plutons are different, ranging from calk-alkaline to alkaline compositions. Their ages range from 2128 ± 4 Ma (U/Pb on zircon) for Kouaré calk-alkaline granite to 1889 ± 27 Ma (K/Ar) for the Wayen syenite (Castaing et al., 2003). The internal structures of these plutons compared to those of their country rocks have allowed to propose different models of emplacement that include diapirism and emplacement along discontinuities created by regional transcurrent shearing.

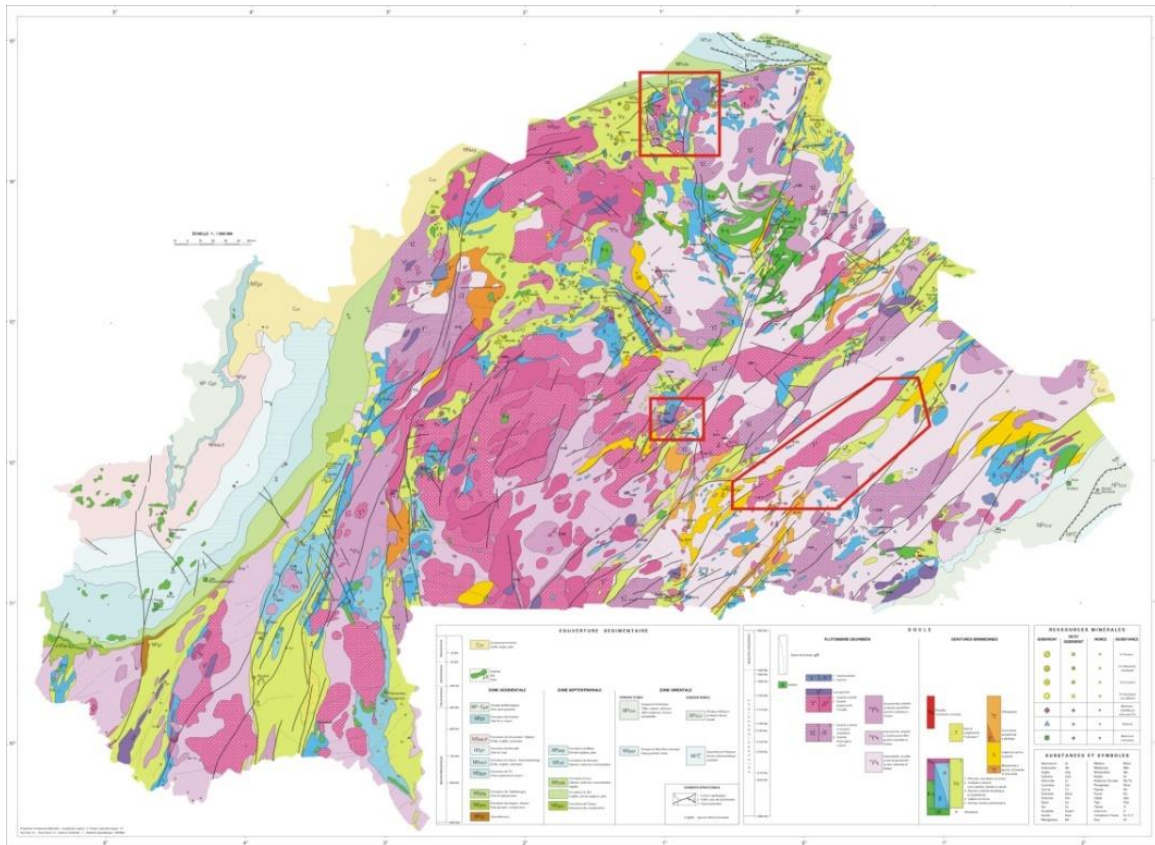
The main conclusion that can be drawn is that the Eburnean tectonics remained active until the emplacement of the later plutons like the Wayen syenite.

These results show that the best comprehension of the geodynamic of the West African Craton during the Paleoproterozoic needs a best investigation of the internal structures of different plutons of different ages.

Keywords: West African Craton, Paleoproterozoic, geodynamic, fabrics, AMS, granite plutons

References

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Positions of investigated areas (red framed) on the geological map of Burkina Faso (Castaing et al., 2003)