

Structural study of Kourki Copper-Molybdenum indices of the Birimian belt of Gorouol (Liptako, North-west Niger)

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The green Gorouol rock belt is located in the Nigerian Liptako which corresponds to the Northeastern edge of the Man Ridge. The West African Birimian outcrops in alternating granitoid and metamorphosed and structured greenstone belts in the Eburnian orogeny (~2.1 Ga) (Milési, et al., 1992). The green rock belt of Gorouol (object of this study) is one of the three greenstone belts (Gorouol, Diagorou-Darbani and Sirba) of Liptako-Niger.

Kourki molybdenite (Mo) and copper (Cu) mineralizations are disseminated in a gneiss, embedded in porphyry granodiorites intruding the Gorouol green belt.

The methodological approach adopted consisted in a field study followed by a polarographic metallographic microscope analysis.

The geological environment of the Kourki index consists of lavas of varied nature (mafic and intermediate acid) sometimes in the form of massive flow and sediments (chemical, clastic or pelitic). These volcano-sedimentary formations are intersected by gabbroic, dioritic and granitic intrusions in the form of isolated massifs or dykes. At the metamorphism of localized amphibolite facies, a metamorphism of the generalized greenschist facies appears superimposed by chlorite-carbonate-epidote-quartz hydrothermal alteration in the mafic facies, and quartz-white-calcite mica in the felsic facies.

At the observation stage, four phases of deformation have been evidenced: D₁ defined by early syn-schistous ductile deformation underlined by a flow schistosity (S₁); D₂ which is expressed through syn-schistous folding with schistosity (S₂) of axial plane; D₃ marked by NE-SW oriented ductile faults; and finally D₄ characterized by late NW-SE oriented fractures that sometimes coincide with the direction of the locally mapped doleritic dykes.

The mineral paragenesis of the Kourki deposit is of the molybdenite-chalcopyrite-chalcocite-malachite-pyrite-sphalerite type. Pyrite occurs mostly in the contact gneiss-granitoid.

Keywords: Paleoproterozoic, lithology, deformation, alteration, paragenesis

Reference

Milési, J.P., Ledru, P., Feybesse, J.L., Dommange, A., Marcoux, E., 1992. Early Proterozoic ore deposits and tectonics of the Birimian orogenic belt, West Africa. *Precamb. Res.*, 58, 305-344.