

Uranium in the north of Côte d'Ivoire: case of Odienné

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This work is a contribution to a better knowledge of Precambrian formations of Odienné region (Côte d'Ivoire), through their petrography and geochemistry.

Those formations may be divided into two main groups:

- first the metamorphic rocks constituted of Liberian rock relics, volcanic and volcano-sedimentary complex of birimian age, ortho-gneiss and amphibolites considered either as Ante-Eburnean or early from the Eburnean cycle;
- second, the plutonic rocks which are mainly made of granitoids.

The discovery of aluminous gneiss of granulite facies within the Liberian formations, petrographically and chemically similar to those described in the Man region, and the presence of magnetite containing quartzites, are evidences of the existence of liberian basement in the Odienné region.

All the features of the Odienné Eburnean volcanism, as shown by the study made on the volcanic and volcano-sedimentary complex, allow us to connect it to the calco-alkaline series. In the present case, a formation model related to the big cutting accidents seems to fit best.

As for the granitoids, they show:

- a cataclais characterized by mineral torsions or breakages, a frequent mineral lineation, and an undulating extinction ; these are evidences of a syncinemantic set-up ;
- a high content of Na₂O that seems to be expressed by a very important plagioclastic charge ;
- an evolution wholly silico-potassic ; all the samples studied vary from a quartzic-diorite pole to a granitic pole, with the majority of the compositions found in the granodiorite and adamellite domains ; the magma which generated those granitoids is of the calco-alkaline type ;
- relatively low average uranium and thorium contents ; most of the radioactivity of those rocks is concentrated in the biotite or in the accessory minerals (generally in the form of inclusions in the biotite).

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