Paper Number: 25

Tectonothermal evolution of Southeastern Nigerian basement complex

Ekwueme, B.N. [1]

[1] Department of Geology, University of Calabar, P.O. BOX 3651 UNICAL P.O CALABAR, NIGERIA. bachudo@yahoo.com

---

Precambrian basement rocks are exposed in the Oban Massif and Obudu Plateau of Southeastern Nigeria. These rocks include phyllites, schists, gneisses, migmatites, amphibolites, charnockites, granulites and meta-ultramafites. They are intruded by rocks of basic, intermediate and acidic composition. Geochronological studies confirm that the region belongs to the Pan-African mobile belt and that the peak of this event was ca. 617 Ma, which marked the intrusion of the Uwet Granodiorite. This event is coeval to the peak of the Pan-African event in the northern and southwestern Nigerian Basement complex.

There are remnants of pre-Pan-African tectonothermal events in the region. These include relicts of Archaean and Eburnean events. The metamorphism progressed from south to north attaining the granulite facies grade in the Obudu Plateau. Relicts of Archaean (2505 ± 0.5 Ma) have been recognized in the Obudu Plateau. These Archaean rocks were deformed and subjected to granulite facies metamorphism 2062 Ma. Retrogression to amphibolite facies possibly occurred at 1680-1803 Ma, whilst the latest phase of the Pan-African event occurred at 574 Ma, during which charnockitic rocks were emplaced. The zircon U/Pb and evaporation ages obtained from the basement rocks of southeastern Nigeria are comparable to those of granulite facies terrains in Cameroon, Togo, Ghana, Brazil and Madagascar and suggest that this event was of regional significance and marked the collision and assembly of the Gondwana during the Eburnean and Pan-African Orogenies.