The Agoundis-Ounein Group, High-Atlas, Morocco: A Witness of the Cambrian Rift

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In the Agoundis-Ounein within the "Massif Ancien" of the High-Atlas, lower Palaeozoic rocks consist of basaltic lavas associated with a marine sedimentation. These lavas are lightly differentiated and show a tholeiitic continental signature that evolves to alkaline toward the summit of the Agoundis-Ounein succession. The sedimentary formations are composed of limestones and dolomies with silts. Both lavas and sedimentary formation overlay the rhyolite basement through a clear angular discordance.

The basement is affected by submeridian folds and a faults network.

The rhyolites are by here, calcalkaline Ediacarians terms related to the late Pan African orogeny while elsewhere they are andesitic and rhyolitic. The upper basaltic lavas belong to late Ediacarian-early Cambrian.

The sedimentary and volcanic units of the Agoundis- Ounein group testify of a rift extension and couldn't be explained only by a simple block tilting device.

During the late Ediacarian early Cambrian time, the tectonic context corresponds to a transtensional regime with a senestral dynamic. This transtension is bidirectional, and operates successively on an equatorial then a NE-SW direction. Syn- to post-rift sedimentary type, extensive tectonics elements and the magmatic event, are such powerful recorders of an extensional environment dynamic that prevailed during the early palaeozoic time. Similarly, this extension concerned Africa, Iberia, the south Europe and other continental palaeo-masses around the Yapetus and Rheic sea spaces opened at the beginning of the Palaeozoic.

By its geological features, the group of the Agoundis- Ounein illustrates the Cambrian rifting at the north-western edge of the Palaeo-Gondwana.

Key words: Early Cambrian, Paleo-Gondwana, continental tholeiite, Atlas