

EVOLUTION OF THE PANAFRICAN BELT IN MOROCCO NEAR OUARZAZATE

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The concept of lithostratigraphic mapping was introduced to the Moroccan Geological Survey to replace the pure chronostratigraphic approach. The pre-Hercynian stratigraphy and basin evolution south of Ouarzazate starts with the 2037Ma Zenaga granite-gneiss basement upon which the Panafrican Supergroup was deposited. The succession commenced with the Bleïda Group, comprising the Agouniy basalts, Tirsal dolomite/shale, and Mimount quartzite representing terrestrial, fluvial, shallow marine and beach deposits during a period of divergence. Pelagic sediments and slivers of ocean crust, termed the Khzama and Nqob mafics, the Tachoukacht schists and the Irii ortho-gneisses were formed 743Ma ago. During convergence (± 663 Ma ago) the ophiolitic slivers were obducted while the Sarhro Group, consisting of Imghi diamictite, graywacke and shale, Azarwas deltaic conglomeratic grits and arkose, deepwater turbidites as well as fluvial conglomerates and arkose, was deposited. This was followed by the Bou Salda andesite (614Ma), basalts, volcanoclastic sediments and massive conglomerates (molasse facies), the Tamriwine rhyolite (605Ma) and the Tafiat shale and quartzite (flysch facies). Subduction-related magmatism (Arg gabbro, Tamtattarn and Askaoun diorites, 625-546Ma) intruded during this stage while differentiation of the I-type magmas produced leuco-granites (Mzil, Oufalla). Continental collapse produced extensive andesite (571-562Ma) to rhyolite volcanism and associated sub-volcanic granophyre (562-559Ma). The volcanoclastic units of the Ouarzazate Group extruded at several centres. Drowning of the continental margin allowed the deposition of the Tata Group (Tamallakout conglomerate, Adoudou, Lie-de-Vin, Igoudin and Amoulssek shallow marine and platform units) to continue beyond 516Ma as a foreland basin succession.