

3rd International Conference on Geology & Earth Science

April 10-11, 2019 Valencia, Spain

The Devonian Successions of Oued Ferkla-Tinejdad (Tisdafine Basin, Eastern Anti-Atlas, Morocco). Sedimentary Petrography, Facies and Environments, Sequential Approach

Amine Talih*, Mohamed Saadi and Ahmed El Hassani
University Mohammed V, Morocco

A section made in the Tisdafine basin at the height of the Wadi Ferkla (Tinejdad, Anti Atlas Oriental) led us to a series of observations at the level of the outcrop as at the microscopic scale on the basis of nature lithofacies and palaeontological content. The sedimentological analysis revealed an organization in middle sequences, which reflects an evolution of the environments with changes in the deposition conditions. Dated Devonian and stalled from the Emsien to Givetian (Ward et al., 2013), this small basin has delivered an interesting Hercynian material with cyclo-sequences related to small variations of eustasy. The sequences show a repetitive bathy-increasing evolution with low amplitude withdrawal levels from Emsien to Givetian. It is a gulf environment first, containing diverse fossils of a shallow mid-ground, favorable for life with a precursor dwarf fauna, mostly crinoid limestone, ostracodes, test debris and corals. The basin deepens further, turbiditic figures announce slope conditions and organisms of varying sizes, adapt to increasingly deep environments, the benthic forms such as trilobites, crinoids, dactyloconarids, molluscs and the conodonts then goniatites and orthoceres frankly pelagic of a distal platform medium. This sedimentary activity suggests a filling phase ranging from the mobile platform to an open environment due to the eustatic dynamics that define the nature of the carbonates, their organization and the associated fauna.

The extension of the platform to the Devonian SE of Morocco allows to see through this series, a stratigraphic architecture with a tectono-eustatic control associated with subsidence, expressed according to the nature of the deposit of calcareous banks and marl-limestone alternations with a low detrital intake.

Keywords: Eastern Anti Atlas, Devonian, Emsian, Ferkla, Givetian, Cyclosequence, Tectono-eustatic, Dwarf Fauna.