

The Paleoenvironment and Paleoclimatological Variations during Aptian in North Central Tunisia

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Abstract : This paper focuses on the sedimentological and mineralogical studies of Aptian series outcrops in the Serdj and Bellouta Mountain situated in north-central Tunisia. In the Serdj Mountain, the Aptian series is about 590 meters thick and it is defined by two formations corresponding respectively to the Sidi Hamada formation (Barremian-Gragasian) and the Serdj formation (Middle Gragasian-Late Clansaysian). This later is consisting of five limestones sequences separated by marly levels limestones associated to some siltstones bed. The Bellouta section is especially composed of carbonate rocks and it is attributed to the Middle Gragasian - Late Clansaysian. These sections are studied in detail regarding lithology, micropaleontology, microfacies, magnetic susceptibility and mineralogical composition in order to provide new insights into the paleoenvironmental evolution and paleoclimatological implications during Aptian. The following facies associations representing different ramp palaeoenvironments have been identified: mudstone-wackestone outer ramp facies; skeletal grainstone-packstone mid-ramp facies, packstone-grainstone inner-ramp facies which include a variety of organisms such as oolites, rudists ostracods associated to other bioclats. The coastal facies is especially defined by a mudstone -wackestone texture coastal rich with miliolidea and orbitolines. The magnetic susceptibility (Xin) of all samples was compared with the lithological and microfacies variation. The MS curves show that the high values are correlated with the distal facies and the low values are registered in the coastal environment. The X-ray diffractometer analysis show the presence of kaolinite and illite.

Keywords : Aptian, Serdj formation, mineralogy, petrography

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