

# Lower Jurassic sediments from the Rhar Roubane Mountains (Western Algeria): Stratigraphic precisions and syndimentary block-faulting

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**Abstract/Résumé :** During the Lower Jurassic, the stratigraphic and palaeogeographic fluctuations of facies and thickness as well as the existence of stratigraphic gaps in the central and eastern parts of the Rhar Roubane Horst are controlled by the pre-Lower Jurassic palaeotopography as well as the evolution of the subsidence in the different blocks and probably tilting of blocks. This geodynamic context is placed in a general framework of evolution of carbonate rocks of the Tlemcen Domain, characterised by an episode of filling during the Early Pliensbachian followed by a deepening episode from the Late Pliensbachian onward. Four facies associations were recognised through macroscopic and microscopic analyses. Facies association-A corresponds to tidal platform environments, represented by the Zailou Limestones Fm. Facies association-B entails biomicrite and biosparite from the shoreface environment represented by the Tisseddoura Limestones Fm in the Central Rhar Roubane Horst and the Pseudonodular Limestones Fm at Eastern Rhar Roubane Horst. Facies association-C comprises a condensed succession rich in ammonoids represented by the Beni Bandel Ferruginous Limestones Fm, indicating an upper offshore environment. Finally, facies association-D is a marl-limestone rhythmite with abundant cephalopods, corresponding to the Bayada Beds Fm and representing a lower offshore environment. The maximum depth is that of the Toarcian deposits of the Bayada Beds Fm (Area of Tleta). The central part of the Rhar Roubane Horst constituted a topographic barrier that controlled geometry, thickness variation and facies development during the Early Jurassic, evidenced by characteristic deposits with varying thickness and stratigraphic gaps. The Eastern Rhar Roubane Horst reveals such changes in facies, thickness and stratigraphic gaps to be a sedimentary response to the extensional tectonics of tilted blocks. Subsidence in the different areas of the Eastern Rhar Roubane changed during the Pliensbachian to Middle Toarcian, and persistent sectors became subsiding zones or vice versa. A comparison of Rhar Roubane successions with neighbouring domains in the Northern Gondwana Palaeomargin, from Morocco to Tunisia, evidences great similarities in the deepening evolution of sedimentation, yet with diachronic platform submergence. (C) 2012 Elsevier Ltd. All rights reserved.

**Keywords/Mots clés :**

**Journal title / Revue :** JOURNAL OF AFRICAN EARTH SCIENCES

DOI: 10.1016/j.jafrearsci.2012.09.005

"issue" 24

"volume" 76

"Bp" 50"Ep"65"

PD : NOV 7 2012

SN :1464-343X

WOS:000311526900005