

Cambrian of the Moroccan Atlas regions: the icon of the shallow marine western Gondwana successions

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The Atlas regions of Morocco have the most complete and best studied Cambrian successions in Africa. These relatively fossiliferous rocks compose the most important reference area for the Lower and lower Middle Cambrian in western Gondwana. The uppermost Proterozoic(?)–Cambrian in this region illustrates a long-term transition in lithofacies associations and is dominated by restricted marine platform carbonates overlain by a shale-carbonate "Grand cycle" in the upper Lower Cambrian. Uppermost Lower Cambrian units include fine-grained siliciclastics with minor nodular and bedded limestones overlain by higher energy, shallow marine, sandstone-dominated facies. Limited carbonates also characterize the lowest Middle Cambrian. Suggestions that Morocco came under progressively higher latitudes during the Cambrian seem to be appropriate in explaining the decrease in limestones from the latest Precambrian(?)–Lower Cambrian, in the loss of archaeocyathan buildups higher in the Lower Cambrian, and in development of paleoenvironments that permitted trilobite immigration in the Lower-Middle Cambrian boundary interval between the separate continents of Gondwana and Avalon.

The lower part of the sequence has been divided into groups that reflect asymmetrical transgressive-regressive cycles. Depositional environments changed through time with shoreline offlap and the increasing influx of detrital material. Biostratigraphic evidence for diachroneity in formation contacts also suggests that onlap-offlap cycles are recognizable. The presence of volcanic rocks indicates that deposition of the shallow water cover sequence did not take place on a completely "passive margin".