

Rifting Evolution of the Mesomediterranean Continent

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In the Mediterranean region, along the Alpine Orogenic Belt which stretches from the Calabrian Arc to the Gibraltar Arc, the Internal Zones are terranes derived from a former microcontinent, the Meso-mediterranean Microplate. In these terranes, the Alpine sedimentary cycle starts with Middle Triassic to Lower Jurassic redbeds. In this research, we analyse some outcrops of these early continental deposits associated with evaporitic rocks and evolving upwards to Jurassic carbonate successions.

In the southern Calabrian Arc (Peloritani Belt), redbeds belonging to the Ali-Montagnareale Unit (affected by anchimetamorphism) are presumably Middle Triassic in age. They consist of a detrital formation made up of a facies association ranging from dark red conglomerates to pelites. The Mesozoic succession continues with Carnian rhauwackes (Ali) or Middle-Upper Triassic stromatolitic limestones and dolostones with evaporitic moulders (Montagnareale). In the Ali area, Triassic deposits are followed by upper Pliensbachian cherty marly limestones (locally dolomitized) and Dogger to Cretaceous (?) variegated marls and radiolarites intercalated by cherty microbreccia.

In the Gibraltar Arc (Betic Cordillera), the Malaguide composite Mesozoic succession starts with Anisian-Ladinian redbeds (non metamorphic to anchimetamorphic) followed by Upper Triassic marls with gypsum. They evolve to Lower Jurassic dolostones and limestones. The Jurassic succession also includes Middle to Upper Jurassic platform limestones, overlain by Cretaceous to Neogene deposits. From a palaeogeographic standpoint, the Mesozoic successions under study developed along a continental margin which recorded the evolution from continental to marine environment.

At the geodynamic scale, the Triassic redbed sedimentation occurred during the continental pre-rifting stage of Pangea; the Lower-Middle Jurassic carbonate sedimentation took place during the successive syn-rifting stage, whilst the post-rift stage developed from the Upper Jurassic onward. Finally, this process originated in the western Tethys two oceanic branches delimitating the Mesomediterranean Microplate.