

Mesozoic Evolution of the Continental Margin of Western Mexico

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Terranes of Mexico form two regional belts. The eastern belt is made up of Mesoproterozoic and Paleozoic metamorphic terranes, accreted to North America by Late Paleozoic. The western belt is made up of Paleozoic-Mesozoic juvenile terranes, accreted to the paleo-continental margin during the Mesozoic. The Parral terrane formed by Triassic deep-marine siliciclastics, thrust over the continent, and covered unconformably by Jurassic continental arc volcanics. West of the Parral terrane is the Cortes terrane, formed by metamorphosed Ordovician to Triassic marine volcanic-sedimentary rocks of unknown tectonic affinity, that are covered unconformably by Cretaceous limestone. The Cortes terrane is in tectonic contact with the Parral and Caborca terranes. The Guerrero composite terrane lies to the west of the terranes described before. It is made up of Tithonian to Albian volcanic rocks of island arc, OIB and MORB affinity. The basement of the western part of the terrane is formed by metamorphosed Triassic turbidites and MORB lavas. Cretaceous melange located in the present Pacific coast suggests that subduction was located outboard the terrane, dipping toward the east. The Vizcaino is the westernmost terrane, formed by Triassic volcanics and chert, Jurassic volcanoclastics, mid-Cretaceous volcanic arc, and 170-95 Ma melanges. Terrane configuration suggests that the continental margin during Early Mesozoic time was located along the actual southern Guerrero terrane limit, and along the contact between the Parral-Caborca and Cortes terranes. Two main deformation events have been recorded along the margin, they are mid-Jurassic and Late Cretaceous respectively.