

The Mexican Sierra Madre Oriental Orogeny During Late Cretaceous to Paleogene Time

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During Pangea formation, the Appalachian-Oachita Orogeny took place at the North America southeastern margin, from Carboniferous to Permian, probably up to Early Triassic. The Appalachian-Oachita mountain belt was intruded by batholiths, younger from north to south. At the southern end of North America were placed the eastern Mexican batholiths.

After Late Triassic Atlantic Ocean origin, during Late Liassic a RRR triple junction system was at the origin of the Gulf of Mexico and its Middle Jurassic expansion formed several fractions of Late Paleozoic batholiths and distributed them around the Gulf. They became, in the Mexican rim, the most resistant lithospheric pieces that controlled the Jurassic oil basins origin and later the Sierra Madre Oriental initial deformation (from Late Albian, 100 M.y. to Late Eocene, 40 M.y.), erroneously considered as a part of the Laramide Orogeny. Nevertheless, this deformation became younger southeastward, suggesting, during Tertiary, an origin related to the Chortis Block displacement, before the collision of the East Pacific Rise and the Northamerican border, during Oligocene time, which is at the beginning of the Transmexican Volcanic Belt, the Sierra Madre Occidental and the Gulf of California evolution. One of the most important tectonic facts was the development of another triple junction which is bordering the Jalisco Block by its Tepic and Colima arms. The widening of the Tepic arm during Oligocene is considered the final factor of deformation and thrusting of the Sierra Madre Occidental at its Monterrey- Victoria portion.