

**COMPARISON OF THE OUACHITA AND
CARPATHIAN THRUST-FOLD BELTS AND
THEIR BACK-ARC BASINS: GULF OF MEXICO
AND PANNONIAN BASIN**

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The Late Paleozoic Ouachita orogenic belt is a north-vergent thrust-fold belt, related to a A-type subduction of the passive margin of North America. The thin-skinned Ouachitas and their deep foredeep basins were formed during this southward directed subduction. Synchronously with compression in the thrust-fold belt, thick Pennsylvanian to Permian marine sediments were deposited to the south of the Ouachita belt, in the Paleozoic Gulf of Mexico. Although this sedimentary succession typically lacks apparent extensional features, its position on the concave side of an orogen associated with A-subduction points to its back-arc origin. The Pannonian basin of Hungary provides a well-documented analogy for this specific basin setting.

The Pannonian basin of Central Europe is one of the Mediterranean, extensional back-arc basins, characterized distinctly by attenuated continental crust. Very thick (locally >8 km) sedimentary successions formed during the syn-rift (middle Miocene) and post-rift (late Miocene to Recent) period. The style and magnitude of extension is well documented based on reflection seismic and well log data. The loop of the Carpathians surrounds the Pannonian basin and forms a continuous, thin-skinned thrust-fold belt which is coeval with the extension on its concave side. The Neogene evolution of the Carpathians is dominated by the formation of thick flysch nappes toward the foreland and a deep foredeep basin.

Beyond these broad similarities between these thrust-fold belt and back-arc basin couples (Ouachita-Gulf of Mexico and the Carpathians-Pannonian basin, respectively), other specific details, such as foreland basement promontories of comparable size and kinematic role, such as the Llano Uplift and the Bohemian Massif make this comparison even more viable.