

Best, J. A., Barazangi, M., Al-Saad, D., Sawaf, T. and Gebran, A., *Continental margin evolution of the northern Arabian platform in Syria*. Am. Assoc. Petr. Geol. Bull., 77, 173-193, 1993.

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Abstract:

Synthesis of available geological and geophysical data in the Syrian Arab Republic permits a descriptive account of the pre-Cenozoic geologic history of the northern Arabian platform. The northern Arabian platform appears to be a composite plate similar to that interpreted in the rocks of the Arabian shield. The structural and stratigraphic relationships of the Paleozoic and Mesozoic sedimentary sections in Syria record the transformation of an east-facing Gondwanaland passive-margin in the early Paleozoic into a west-facing Levantine margin in the Mesozoic, at which time the northern platform was intimately associated with the creation of the eastern Mediterranean basin. Timing of the margin transformation is inferred from the orientation and thickness variations of Lower Triassic rocks, but the transformation may have initiated as early as the Permian. The diversity and timing of geologic features in Syria suggest that the northern Arabian platform did not behave as a rigid plate throughout its geologic history. The present-day Palmyride mountain belt located within the northern Arabian platform in Syria, initiated in early Mesozoic time as a northeast trending rift nearly perpendicular to the Levantine margin, was subsequently inverted in the Cenozoic by transpression. The location of the rift may be associated with the reactivation of a zone of crustal weakness, i.e., a Proterozoic suture zone previously proposed from modeling of Bouguer gravity data. Thus, the northern and southern portions of the Arabian platform have similarities in their geologic history during the Proterozoic and Paleozoic; however, the northern Arabian platform was intimately affected by Mesozoic rifting and the creation of the eastern Mediterranean basin during the Mesozoic.

Figure 13. Diagrammatic tectonic evolution of the northern Arabian platform in Syria. a) Proposed suturing of at least three distinct crustal blocks in the Proterozoic, followed by minor Early Cambrian extension; b) Early Paleozoic epicontinental region of the east-facing Gondwanaland margin; c) development of Late Paleozoic depocenter in central Syria, as possible precursor to later Mesozoic rifting; d) Early Mesozoic development of the Levantine margin and the Palmyride rift; e) second phase of extension in the Late Mesozoic marked by the development of the Euphrates depression; f) Cenozoic transpressive uplift of the Palmyride intracontinental mountain belt in central Syria and regional subsidence in northeast Syria.

