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**Title: THE GAP IN THE CORDILLERAN THRUST BELT: A  
CONSEQUENCE OF LARAMIDE INVERSION OF LATE  
JURASSIC TRANSTENSIONAL BASINS IN SOUTHWESTERN  
NORTH AMERICA**

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**Abstract:** Along most of its length the inner part of the North American Cordillera is marked by a belt of folds and thrusts. In the United States north of Arizona and in central Mexico, shortening in sedimentary cover strata has been accommodated by movements along gently dipping thrust faults. In the north, these movements probably take place above deep detachments; in the south, movement above shallow décollements in evaporites is commonly thought to be gravity-driven. Mountain ranges in the intervening region (including the northern tier of Mexican states, New Mexico, and Arizona) show a different style of Phanerozoic orogenesis. The deformational history of this region comprises diverse events that began in Jurassic time when the Proterozoic cratonic basement and overlying Paleozoic and Early Mesozoic strata were systematically fractured during Late Jurassic transtension associated with the Mojave-Sonora megashear. This deformation generated numerous pull-apart basins, which initially received conglomerates and gravity-slide masses, and continued to fill with clastic deposits as plate convergence resumed along the western margin of North America in the Early Cretaceous. Eastward migration of Late Cretaceous magmatic activity in Sonora between approximately 95 and 65 Ma correlates with displacement of large masses of Early Cretaceous carbonate - commonly reefs - from the rims and flanks of the Late Jurassic basins toward their depositional centers. Near Cananea, Sonora, debris flows containing carbonate olistoliths are buried under slightly younger Late Cretaceous flows from nearby volcanoes. Subsequent northeast-directed contraction during latest Cretaceous time inverted the basins. Basin closure involved left-lateral movement along reactivated east-striking normal faults and formation of northwest-trending folds within the basin fill. Shortening also involved uplift along steep thrust faults formed from reactivation of Late Jurassic left-lateral faults coincident with northwest-trending basin flanks. Later, some ranges were tilted above listric normal faults during Tertiary extensional events. The gap in the frontal Cordilleran thrust belt in northern Mexico, southwest New Mexico, and southern Arizona reflects the Jurassic structural framework. Late Jurassic steep faults cutting into crystalline basement interfered with or prevented the development of gently dipping faults required to form a thrust-and-fold belt.