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MESOZOIC TECTONIC EVOLUTION OF THE SE COAST BELT, BRITISH COLUMBIA

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The SE Coast Belt of British Columbia and contiguous North Cascades of WA comprise an intensely deformed orogen between the Intermontane superterrane to the east and the Insular superterrane to the west. The orogen had mid-Cretaceous through early Tertiary arc magmatism and coincident deformation that evolved from predominantly contraction in the mid Cretaceous to dextral strike-slip in the latest Cretaceous and early Tertiary. Non- to weakly metamorphosed rocks to the north and east have been assigned to Bridge River, Cadwallader and Methow terranes and most of the metamorphic rocks in the orogen's core are correlative. We suggest that Methow and Cadwallader terranes are part of one arc-basin system in which a Middle to Upper Triassic arc formed on Permian oceanic crust. Arc magmatism was followed by latest Triassic and Lower Jurassic arc-related sedimentation and then renewed arc volcanism in the lower Middle Jurassic. The Bridge River terrane includes parts of a Mississippian to Middle Jurassic ocean that, in the northern part of the orogen, accumulated in a Middle Triassic to Middle Jurassic accretion-subduction complex. Based on the restoration of Cretaceous thrust faults, the Bridge River ocean was part of northern Panthalassa and lay west, or outboard, of the Cadwallader-Methow arc system, which is similar to the younger part of the Stikine and Wallowa terranes. The upper Middle Jurassic to Lower Cretaceous Relay Mountain Group records arc-derived sedimentation that overlaps the Cadwallader-Methow arc system and the adjacent Bridge River accretion-subduction complex. Sediment was in part derived from the older, underlying Cadwallader-Methow arc, but may also include a component derived from an uppermost Jurassic arc that today underlies the western Intermontane superterrane immediately to the east, although the basin contains no primary volcanic material of that age. A Valanginian to Hauterivian unconformity, increase in sedimentation rate, and change in basin paleogeography all point to accretion of the southwest Coast Belt and Insular superterrane to the west side of the Bridge River - Cadwallader - Methow collage by Hauterivian time. Based on regional relations, this accretion was a sinistral - transpressional event. Subsequent Hauterivian and Barremian sedimentation was in a backarc setting west of the Lower Cretaceous Coast Belt arc. This arc migrated eastward to the SE Coast Belt in the early Late Cretaceous, following a major episode of contractional deformation and related sedimentation in Albian-Cenomanian time.

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