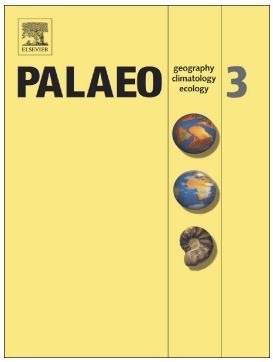

Heterogeneity of conodont faunas in the Cache Creek terrane, Canada; significance for tectonic reconstructions of the north American cordillera

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Heterogeneity of conodont faunas in the Cache Creek Terrane, Canada; significance for tectonic reconstructions of the North American Cordillera

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Abstract

The oceanic Cache Creek Terrane has long been interpreted to be exotic relative to the neighbouring Stikine and Quesnel terranes, on the basis of its unusual fossil faunas. Current tectonic models for the amalgamation of these three terranes have to account for the position of the exotic Cache Creek Terrane between two volcanic island arc terranes, and competing models invoke either terrane entrapment or strike-slip motion to explain this configuration. Although previous paleobiogeographic studies have attempted to assess the degree of faunal variability among terranes of the North American Cordillera, none have yet measured the amount of internal faunal heterogeneity and considered the effect that this may have on tectonic reconstructions. The use of multivariate statistics demonstrates that the Late Paleozoic to Triassic conodont faunas from the Cache Creek Terrane show distinct heterogeneity. The degree of heterogeneity among faunas from different regions of the terrane varies with time, and does not correlate with temporal changes in depositional environment, conodont ecology, or species endemism. Instead, it is proposed that the Cache Creek Terrane may consist of a number of sub-terranes which moved independently of each other prior to the final accretion of the