

**Palaeotectonic setting and petrogenesis of the Takla Group
volcano-sedimentary assemblage, north-central British Columbia**

Vanessa Gale

Department of Earth Sciences, Dalhousie University, Halifax, Nova Scotia B3H 3J5, Canada

The Upper Triassic Takla Group volcano-sedimentary assemblage is located within the Stikinia Terrane of the Intermontane Belt in the Canadian portion of the Cordillera. The assemblage consists of basalts and pyroclastic rocks of equivalent composition, that are interlayered with sandstones, siltstones, argillites and conglomerates. Deposition of the assemblage occurred primarily under marine conditions that became subaerial as the volcanic pile built above sea level. Major and trace element analysis indicates that the Takla Group basalts are arc-related tholeiites. They are characterized by a slight large ion lithophile element (including Th and light REE) enrichment relative to high field strength elements. Trace element plots show that the tholeiites are depleted in Nb, which supports an arc-related origin. Low Zr:Y ratios indicate that the tholeiites are primitive and were probably extruded through a thin crust.

A contemporaneous volcano-sedimentary assemblage occurs in fault contact with the Takla Group of the Stikinia Terrane. This group, also named Takla, occurs in the neighbouring Quesnellia composite terrane to the east and contains basalts also of arc-related genesis. In the past, interpretations of the origin and relationship between the two groups have differed. They have been interpreted as a single cogenetic unit as well as two separate, non-related units. Similarity in petrography, mineral chemistry and incompatible trace element distribution indicate that the eastern and western Takla groups are broadly equivalent. A cogenetic origin of the two groups limits the offset of a major fault system in the study area and constrains the timing of the Stikinia and Quesnellia terrane amalgamation.