

A major sea-level fall at the Upper Devonian Frasnian-Famennian boundary, Alberta Rocky Mountains.

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Near the end of the Frasnian, westward thinning of basin strata in the Rockies north of Jasper and southwest of Banff indicate that the westernmost Western Canada Sedimentary Basin was incompletely filled (Jasper sub-basin). This sub-basin was filled in the early Famennian by Sassenach siliciclastics and carbonates. Westward thickening, presence of feldspar and Nd isotopes support a western Antler orogenic source (Late Devonian).

In the Jasper area, subaerial exposure of the late Frasnian Simla platform carbonate margin and adjacent slope is indicated by a thin, downlapping, lowstand sequence and the absence of the upper part of the latest Frasnian *linguiformis* Zone. Following exposure and sea level fall, the entire 200m Sassenach Formation overlapped this slope and platform margin, (NE margin of Jasper Basin), but did not cover the top of the earlier Simla platforms. Similar stratigraphic relationships occur near Banff.

North of Jasper shallow, subtidal oncolite facies developed near the base of the Sassenach, and sporadically in higher strata adjacent to the unconformity. At Mount Haultain, oncoids overlie reworked carbonate conglomerates (lowstand/ transgressive sequences?) derived from the underlying Simla platform, and are overlain by columnar stromatolites. This oncolite facies represents a nearshore, agitated environment that shifted upwards stratigraphically as sea level rose along the northeast margin of the Jasper Basin (previous Frasnian slope and platform margin). This supports a sea-level fall of at least 100m at the Frasnian-Famennian boundary and a corresponding rapid(?) rise during the early Famennian Early/Middle *triangularis* Zone.