Glaciomarine underflow fan sedimentation, Placentia Bay, Avalon Peninsula, Newfoundland

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Glaciomarine underflow fan deposits abut the eastern shore of Placentia Bay. The sequences were formed by several subaqueous fan systems discharging into the bay from lobes of a local ice cap. The largest (63 m high, 1,300 m long) and most sedimentologically complex of these sequences is located at Great Barasway. High density turbidity current flow, slurry flow, viscous grain flow, and debris flow events are represented by diamicton strata, with deposits formed by slurry flow and high density turbidity currents predominating. Dropstones are common throughout the sequence. The high density turbidity current diamictons are characterised by random clast macrofabrics, and by discontinuous pebble and granule monolayers, representing basal traction carpet sedimentation. The moderately sorted slurry flow deposits tend to have moderately oriented macrofabrics, frequently with girdle distributions. Viscous grain flow is responsible for the deposition of moderately sorted sand and sandy diamicton beds. Debris flow deposits, marked by random clast macrofabrics and no internal structures, are rare at the Great Barasway exposure, but dominate some of the smaller fan sequences. The fan sequences generally show transitions from coarser, high-density proximal subaqueous sedimentation at the bases, to more distal deposition from less viscous subaqueous flows in the upper parts of the successions. The overall pattern of sedimentation is indicative of successive retreat by glaciers terminating in Placentia Bay, with sea level a minimum of 70 m above its present elevation.

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