

ROLLING, FOLDING, DROPSTONES OF PRO-GLACIAL LAKE SEDIMENTS NEAR LYTTON, BRITISH COLUMBIA, CANADA

BAXTER, SONNY, Ohio University at Lancaster, Lancaster, Ohio, U.S.A.

A rolled structure, 2 by 1.5 m wide, is preserved along Highway 1, south of Lytton, B.C., about 200 m above the river. Well-sorted lacustrine sediments, (sand and silt) were rolled about 720°. Adjacent sediments include pebbles and boulders. Till overlies everything. Axis of structure points downstream, about 45° to eastern wall of Fraser Canyon. Small splay faults occur where rolling is tightest. Near vertical normal faults, pass through everything. A low-level thrust fault has pushed the roll on, and to the side of the slightly older lake sediments.

In Iceland, termini of stagnant glaciers are wedge-shaped, with tip buried in moraines or lake sediments. Termini of advancing glaciers are nearly vertical, pieces break off to form icebergs. Glacial advances during cooling or excessive melting during warm spells may raise lake levels, breach barriers, and produce a sudden drainage. Freezing of wet sediments may produce a near solid layer that could be rolled by advancing glaciers.

Clastics accumulated in a pro-glacial lake of a glacier in the Upper Frazer Canyon. Icebergs deposited dropstones. Cooling and advance of glacier drained the lake and rolled the frozen sediments at the glacier's toe into a cylinder. The glacier first pushed, then overrode and preserved this sequence. Later de-watering led to faulting and to collapse of the structure to give its present form.