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No 28977

DEGLACIATION OF SOUTHERN CHITTENDEN COUNTY AND NORTHERN ADDISON COUNTY, VT.

BRYAN, Kristine, BIERMAN, Paul, Department of Geology, University of Vermont, Burlington, Vermont 05405.

Reconnaissance mapping conducted during the summer and fall of 1994 in Lincoln, Huntington, Bristol, Starksboro and Hinesburg, Vermont has led to a more detailed understanding of how glaciers receded from this mountainous area. Unsorted glacial sediment, glacial till, was found to occur along valley sides in the mountainous terrain. Sorted sediment was found in valley bottoms, in areas marginal to valley bottoms, and in deltaic features. Glacial sediment can also be characterized by its association with the glacier upon deposition: in contact with or distal to the ice-margin.

We interpreted the deglaciation sequence by mapping the location of glacial sediment and considering the elevation and location of spilways draining temporarily-impounded glacial lakes. Glacial till is associated with deposition upon glacial advance and sorted sediment is associated with meteoric delta deposition such as the Hollow Brook delta as well as outwash close to the ice margin. In this area, glacial retreat occurred from south to north as indicated by systematic fining of ice contact deposits to the south.

The Hollow Brook delta, with a volume of approximately 0.078 km³, indicates a massive discharge in the now grossly underfit Hollow Brook. Diversion of the Winooski River by ice to the north increased the discharge in the Hollow Brook Valley. Simultaneous with northward retreat, higher elevations became free of ice before lower elevations. Terraces and deltas throughout the study area suggest many different local and regional lake levels. Evidence in the southern part of the study area is consistent with the systematic ice retreat model of Koteff and Pessel (1981).

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