

LETTER TO THE EDITOR

Comment on “Late Wisconsinan Glaciation Models of Northern Maine and Adjacent Canada”

Genes *et al.* (1981) presented late-Wisconsin glaciation models and their interpretation of the Pleistocene stratigraphy of northern Maine and adjacent Canada. Our purpose here is to call attention to controversies concerning these matters which have arisen from our mapping since 1977. Virtually all surficial mapping conducted in northern Maine thus far, including our own, is of reconnaissance nature; hence all conclusions should be considered preliminary, a point not made evident by Genes *et al.* (1981). Nevertheless, our work has uncovered data that are not discussed in Genes *et al.* In particular, we feel it worth mentioning two points because they require reevaluation of the ideas presented by Genes *et al.* (1981).

Our first major disagreement concerns the description and interpretation of the lithostratigraphic unit that Genes *et al.* (1981) have referred to as the St. Francis till. We see no basis for their assigning this unit a pre-late-Wisconsin age. The Golden Rapids exposure (Genes *et al.*, Fig. 3A) is critical to the stratigraphic placement of this unit because, as Genes *et al.* (1981, p. 55) state, “only at Golden Rapids are the St. Francis and Van Buren tills superposed revealing each of the tills and its associated outwash.” Unfortunately, our studies of the exposure, which include detailed measured sections, data from 4-m-deep test pits, and the log of a drill hole to bedrock, lead to a different description of the stratigraphy exposed at that locality. We have had

numerous discussions in the field with Genes *et al.* and as yet have been unable to agree with them about which units are present in the Golden Rapids exposure, much less about the interpretation of those units.

A second point of conflict between Genes *et al.* (1981) and ourselves regards ice-flow direction. Genes *et al.* (1981, Fig. 5) report exclusively southward and southeastward ice-flow indicators throughout their study area. This pattern of ice flow is incompatible with the northward- and northwestward-flow indicators reported from surrounding areas studied by Lowell (1980), Martineau (1979), and Gauthier (1980). Moreover, our mapping and field discussions with Genes *et al.*, since the preparation of their manuscript, have extended the area of northward- and northwestward-flow indicators to include nearly one quarter of their study area. Our ongoing field investigations have shown that these features, resulting from ice-flow reversal, cover at least 7000 km² of northernmost Maine. Any glaciation models proposed for northern Maine and adjacent Canada must be consistent with this and all other available field data.

REFERENCES

- Gauthier, C. (1980). Existence of a central New Brunswick ice cap based on evidence of northwestward-moving ice in the Edmandston area, New Brunswick. In “Current Research,” Part A, “Geological Survey of Canada,” Paper 80-1A, pp. 377–378.

Genes, A. N., Newman, W. A., and Brewer, T. B. (1981). Late Wisconsinan glaciation models of northern Maine and adjacent Canada. *Quaternary Research* **16**, 48–65.

Lowell, T. V. (1980). "Late Wisconsin Ice Extent in Maine: Evidence from Mount Desert Island and the Saint John River Area." Unpublished M.S. thesis, University of Maine, Orono.

Martineau, D. (1979). "Géologie des dépôts meubles de la région du Lac Temiscouata." Ministère des Richesses Naturelles Québec, DPV-618.

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