

Witnesses to the Ice Age

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In his "The Mishomis Book: The Voice of the Ojibway," Edward Benton-Banai (1981) introduces the topic of the "Ice People." He is presumably referring to the last ("Wisconsinan") ice age, when people "lived on the vast expanses of ice and snow" (p. 26).

If you Google "images of the Greenland ice sheet," you will readily appreciate that the continental glaciers were barren of life and would have been incapable of supporting human life for all or part of the year. I feel safe in saying that no group ever developed a culture that adapted them to living on top of an ice sheet. I therefore think that calling a community "Ice People" overstates the case and is really not compliant with historical reality.

That said, I have no problem believing that people could have and did routinely live in periglacial environments and were first-hand witnesses to the glaciers. It comes as no surprise to me that demographic maps of Greenland show human habitation in dry-land areas lying *between* the glacier's edges and the seashore (Driver 1961: Maps 39, 40). Studies of modern-day mountain glaciers in Western Canada demonstrate that periglacial environments can be exceedingly productive of plants and wildlife (Geist 1975), and hence can be well suited to the needs of hunter-gatherers.

The same can be said of the periglacial areas bordering the Wisconsinan ice margins where flooding by glacial meltwater didn't delay the incursions of plant and animal (including human) life. And this is where things really get interesting; archaeologists are finding evidence of people living south of the North American ice sheets as far back as 14,000 years ago, if not earlier.

Now, the glacier's southern margin at that time didn't follow a straight or gently curving line. Rather, it was characterized by huge lobes or peninsulas of ice that were separated by open spaces ("re-entrants" [Fig. 1]). These open, ice-free re-entrant areas between the lobes would have contained tundra-type plants that were unavailable further to the south away from the periglacial environment.

The Mishomis Book leads me to believe that people living in the various re-entrants would have travelled across the intervening lobes of ice and snow to communicate with their neighbours in adjacent re-entrants, and to gather herbs, medicines, and plant foods. This became all the more necessary at times when the ice re-advanced or "surged" locally and reburied tracts of land that had earlier been exposed due to melting. Under these circumstances, people would

have had to visit areas that weren't re-glaciated/overridden to obtain resources that they needed.

We have recently-discovered evidence in the Canadian northwest for persons (one, at least) venturing onto glacier surfaces. In 1999, the frozen, mummified remains of a young man were found on a melting ice field in the northwestern corner of BC (Beattie et al 2000) where he had died sometime between 300 and 550 years ago. Just what he was doing on the glacier in the first place isn't entirely clear – what's important is, he was there for whatever reason, and his presence is reminiscent of some of what Benton-Banai said about the Ice People in the Mishomis book.

Fourteen thousand years ago, the conditions described above didn't involve Manitoba because our region was still slumbering beneath the continuous, active ice sheet (Fig. 1). There were no re-entrants open to the sky ("sub-aerial") in Manitoba 14,000 years ago. Blanketed by ice several kilometres thick, the countryside would have been totally uninhabitable and uninhabited.

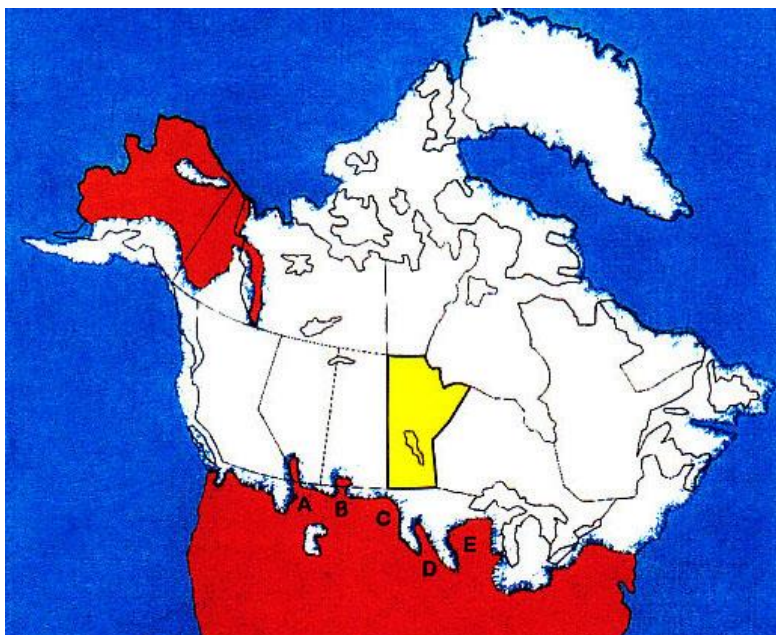


Fig. 1. Glacial re-entrants (A-E) in the southern margins of the ice sheet 18,000 years ago. Base map from Lahn-Jensen 1994.

Three millennia later, however, we have a much different picture: between 11,500 and 11,000 years ago, the ice front was in overall retreat in the higher country west of the Manitoba Escarpment. As time went on, more and more of the uplands from south to north became sub-aerial. Punctuating this era of gradual, long-term recession were episodes of re-

advance/surging that refilled the Escarpment valleys with ice. One of these resurgences in particular is of special interest to us here.

Around 11,000 years ago, the massive “Red River lobe” surged southward, refilling with ice (sub-lobes) the valleys that breach the Escarpment north of the Assiniboine (Klassen 1983:Fig. 7; Lowell et al 2013:Fig. 3; Fig. 2, this paper). There were people living in the Duck and Riding Mountain uplands between the resurgent tongues of ice at the time, and here too task groups may have been crossing the ice latitudinally or longitudinally from one upland to another (Fig. 3, 4) just as their ancestors may have been doing far to the south in Minnesota, Iowa and South Dakota thousands of years earlier. Or perhaps venturing up onto the ice sheet and staying there for several days was a rite of passage for young men who had come of age, or was a test of their endurance in harsh conditions.

Of course, I have no evidence for such customs in long-ago Manitoba – all I can do is point to the above-mentioned discovery of Kwayday Dan Ts’inchi, to Benton Banai’s brief story of the “Ice People,” and to the custom of traditional peoples around the world to require their young men to undergo endurance tests.

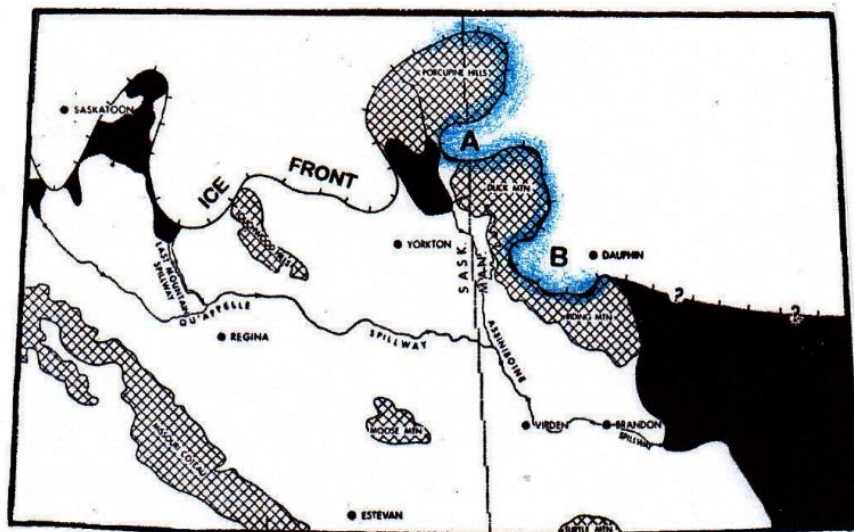


Fig. 2. Swan River (A) and Valley River (B) ice sub-lobes in western Manitoba ca. 11,000 years ago. The Red River lobe covers the upper right-hand quarter. Base map from Klassen 1972.

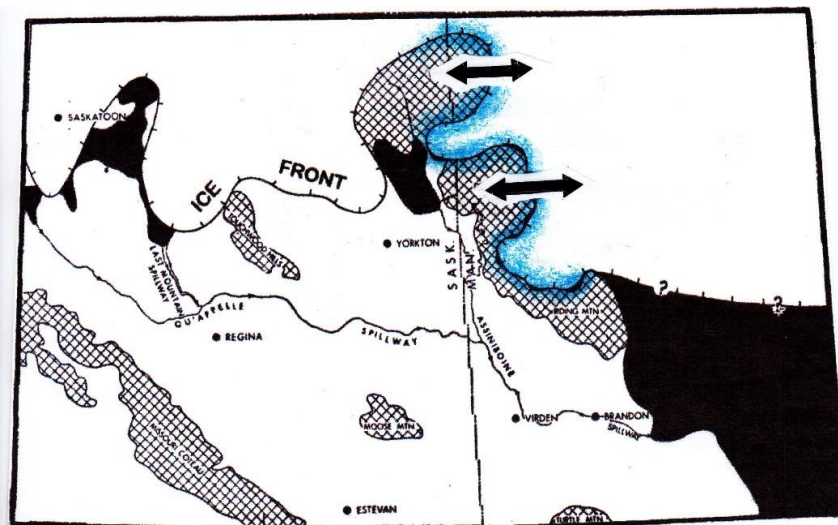


Fig. 3. Hypothesized latitudinal movements (double-headed arrows) back and forth between the deglaciated uplands (cross-hatched areas) and the main ice sheet, 11,000 years ago. Base map from Klassen 1972.

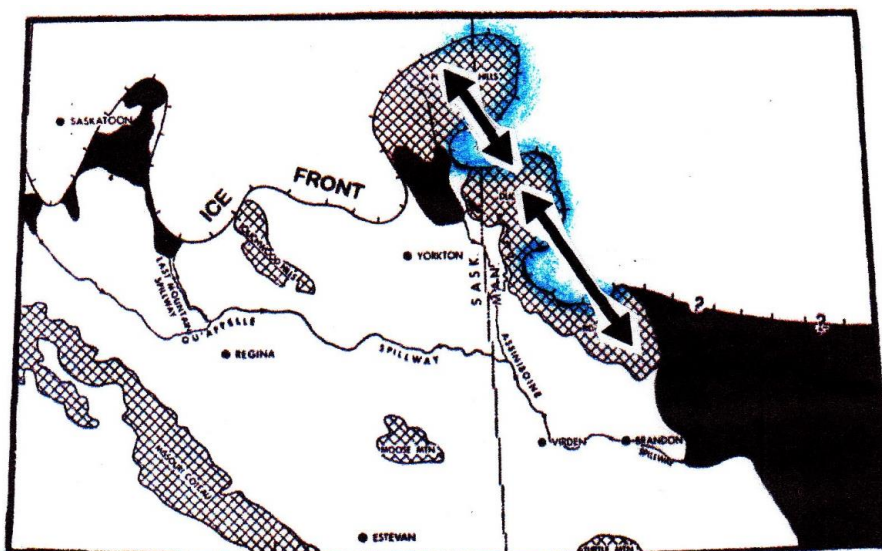


Fig. 4. Hypothesized longitudinal movements (double-headed arrows) back and forth across the re-entrant ice sub-lobes, 11,000 years ago. Base map from Klassen 1972.

Admittedly, these are weak arguments for inferring that people actually frequented the ice surface in Late Glacial Manitoba in the ways that I have suggested. No archaeological data are on hand to support this scenario. Cultural material dropped or discarded in transit or during brief forays onto the glacier would conceivably have ended up in end-moraine or lake-bottom deposits following disappearance of the ice and Lake Agassiz, and theoretically it could eventually be discovered by archaeologists. But thus far, no 11,000-year-old artifacts have been found anywhere within the Agassiz basin or in adjoining morainic deposits (Fig. 5).

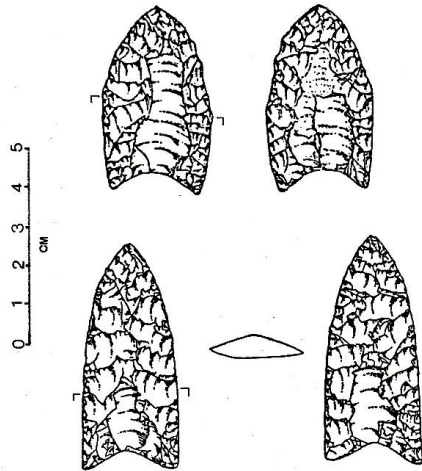


Fig. 5. The individuals who possessed these artefacts ("Clovis" projectile points) would have been witnesses to the surges that brought ice up against the Escarpment and into the Swan River and Valley River re-entrants 11,000 years ago. Drawings by the writer.

There's another encumbrance to this hypothesis – there is no consensus as to whether or not ice sub-lobes advanced up the Swan River and Valley River troughs 11,000 radiocarbon years ago. Dyke and Prest (1987) envisage a re-advance around that time, but it took the shape of a tongue that didn't abut up against the edge of the Escarpment or project fingers of ice into the Swan or Valley River depressions. Teller (1985:Fig. 4) has the ice margin well to the south in the Manitoba Lowland, but it doesn't involve the edge of the Escarpment or its intersecting trenches. Thorleifson (1996:73) agrees that a major Late Glacial surge of the Red River lobe took place and furthermore that it filled the Escarpment hollows, but it didn't happen until ~10,000 BP.

My recourse here is to accept the all-encompassing re-advance of 11,000 by the Red River lobe and its sub-lobes (Fig. 2, 3, 4), but only because it is the most recent scenario (Lowell et al 2013) that seems to be currently accepted and is published in the peer-reviewed literature. In my view, this whole question of if, when, and how far-reaching this proposed 11,000-years-ago re-advance took place is still somewhat up in the air given the possible existence of undisturbed pre-11,000-old Agassiz beach formations in the Swan River valley.

So the idea of people venturing out onto the margins of the ice sheet 11,000 years ago is conjectural at this point. At best, it is one that might be usefully kept in mind by archaeologists if, say, a "Clovis" point should ever be found where one would least expect it to be – in a section of the Manitoba Lowland that in "Clovis times" lay beneath glacial ice or meltwater.

References

Beattie, O., B. Apland, E. Blake, J. Cosgrove, S. Gaunt, et al, 2000, "The Kwäday Dän Ts'ínchi Discovery from a Glacier in British Columbia." *Canadian Journal of Archaeology* 24:129-147.

Benton-Banai, E., 1981, *The Mishomis Book: The Voice of the Ojibway*. Indian Country Press. St Paul, Minnesota.

Driver, H., 1961, *Indians of North America*. University of Chicago Press. Chicago.

Dyke, A. and V. Prest, 1987, "Paleogeography of Northern North America, 18 000 – 5 000 Years Ago." *Map 1703A, Scale 1:12 500 000*. Geological Survey of Canada. Ottawa.

Geist, V., 1975, "On Life in the Sight of Glaciers." *Nature Canada* 4(3):10-16.

Klassen, R., 1972, "Wisconsin Events and the Assiniboine and Qu'Appelle Valleys of Manitoba and Saskatchewan." *Canadian Journal of Earth Sciences* 9:544-560.

-----, 1983, "Assiniboine Delta and the Assiniboine-Qu'Appelle System – Implications Concerning the History of Lake Agassiz in Southwestern Manitoba." *Geological Association of Canada Special Paper* 26:211-229. St John's.

Lahn-Jensen, D., 1994, *Geological Highway Map of Manitoba*. Geological Survey of Canada, Manitoba Energy and Mines. Winnipeg.

Lowell, T., P. Applegate, T. Fisher, and K. Lepper, 2013, "What Caused the Low-Water Phase of Glacial Lake Agassiz?" *Quaternary Research* 80:370-382.

Thorleifson, H., 1996, "Review of Lake Agassiz History." In Sedimentology, Geomorphology and History of the Central Lake Agassiz Basin, edited by J.T. Teller, H. Thorleifson, G. Matile and W. Brisbin, pp. 55-84. Geological Association of Canada/Mineralogical Association of Canada. Winnipeg.