

Staying Informed

Leo Pettipas

Manitoba Archaeological Society

For many of us, keeping up with the Joneses is a very worthwhile objective. But if you're an archaeologist, keeping up with the literature is an even better idea. Especially when the recent documentation, published or unpublished, has important new data to offer.

Dr John H. Steinbring, formerly of the Department of Anthropology at the University of Winnipeg, has very fortuitously provided us with some excellent examples of why this is so. Following in his professorial footsteps, I direct this paper in particular to university students with the hope that it may contribute a little something toward their archaeological education.

In 2014, Dr Steinbring published an intriguing paper on the earliest-known North American rock art and presumed members of the populations whom he has considered responsible for it (Steinbring 2014).¹ The paper was inspired by the recent discovery that the Winnemucca petroglyph site in Nevada may be as old as 14,800 BP. A focal theme of Dr Steinbring's presentation is the hypothesized co-existence of the Late Wisconsinan glaciation (22,000 – 12,500 BP) with people who created the artwork. Among his key literary sources were publications by A.E. Jenks (1936, 1937) and H. M. Wormington (1957), wherein are to be found information on two ancient burials – "Browns Valley Man," and "Minnesota Man."

Browns Valley Man was an Indigenous person whose skeletal remains were accidentally discovered in 1933 in "a newly formed gravel ridge associated with a lake formation provisionally dated to 18,000 B.P." (Steinbring 2014; see Fig. 1, this paper). The lake formation in question is Glacial Lake Agassiz during its Lockhart phase (~12,000 – 10,800 RCYBP [McMillan and Teller 2012:86]), and the gravel ridge was a fluvial deposit of the "River Warren" spillway through which the lake drained during that time.

In the 1930s, the lake's beginnings were indeed considered to date to 18,000 years ago (Jenks 1937:15; Wormington 1957:144); more recently, its genesis is considered to have been closer to 12,000 RCYBP (Lepper et al 2007:670; McMillan and Teller 2012:77).

Dr Steinbring reports that "the [Browns Valley] skeletal material has been recently re-dated and a date of over 10,000 years B.C.E. has been obtained." The date of >10,000 BCE translates into >12,000 radiocarbon years ago (>10,000 years before the Common Era + 2,000 years during the Common Era = >12,000 years BP), at which time the Browns Valley locus was either under ice or else in the bed of the active River Warren (Lepper et al 2007:670) and hence would have been unavailable to a funereal cortège.

¹ To see the article, Google "Exploring America's Earliest Rock Art."

I'm unaware of the source of Dr Steinbring's >10,000 BCE date, but the University of Minnesota Department of Anthropology (nd:3) reports AMS counts of $8,790 \pm 88$ and $9,049 \pm 110$ RCYBP on bone from the skeleton – some 3,000 years later than the date that seems to be accepted by Dr Steinbring. By the time the Browns Valley individual was laid to rest 9,000 radiocarbon years ago, the River Warren spillway was relict and its now-sub-aerial bed could be visited dry-shod by local people.

The remains of **Minnesota Man** (actually a woman) were discovered three miles north of Pelican Rapids, Minnesota (Fig. 1) in July of 1931. She is accepted by Dr Steinbring, following Wormington (citing Jenks 1936), as being very ancient in light of "certain primitive morphological characters" (Wormington 1957:234). Dr Steinbring reports that "her bones had become crystallized, and could not be used for radiocarbon dating [but] there is no question of her very substantial antiquity."

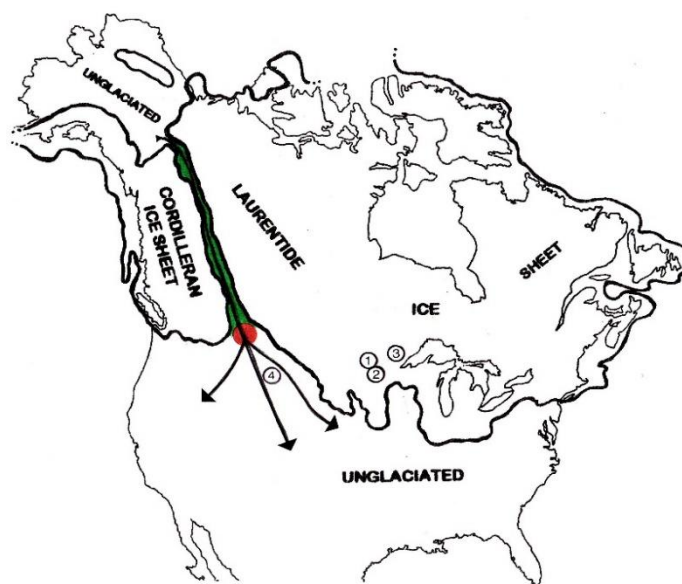


Fig. 1. Major elements of Dr Steinbring's presentation re. presumed Ice Age rock art: presumed 17,000 RCYBP ice-free corridor (green); hypothesized migration routes south of the ice sheets (arrows); ribstone loci (red dot); locations of burial sites discussed here – (1) Browns Valley, (2) Pelican Rapids, (3) Gold Island, (4) Anzick. Base map after Steinbring 2014.

Actually, the bone was indeed amenable to radiocarbon dating, and in fact yielded an AMS count of $7,890 \pm 70$ RCYBP (University of Minnesota Department of Anthropology nd:3).

In my worldview, 7,890 BP is pretty old; I wonder, however, if it equates with Dr Steinbring's "very substantial antiquity" which, judging from his 2014 Figure 8 map and accompanying caption (see also Fig. 1, this paper), would fall within the classic Late Wisconsinan time frame of

~22,000 – 12,500 RCYBP (Frye et al 1968:E18). Suffice it to say that the Pelican Rapids locality probably lay beneath the Laurentide ice sheet throughout most of that span of time, and so, all things considered -- including the above-cited radiocarbon date -- there's little chance that Minnesota Woman frequented the Pelican Rapids area during the Late Wisconsinan era.

Three skulls were found at a site -- **Gold Island** -- in the Boundary Waters Canoe Area that divides northwestern Ontario from northern Minnesota (Fig. 1). In light of certain osteological characteristics, these too were initially judged (by a physical anthropologist) to be of quite some antiquity, and so were included in Dr Steinbring's inventory of individuals who may have been related to Late Wisconsinan creators of rock art.

However, the Boundary Waters corridor was continuously under ice for thousands of years up until around ~10,500 RCYBP; it was then flooded by Lake Agassiz for another half-millennium after that (Dyke et al 2003). More to the point, I am informed that radiocarbon tests have been run on these same Gold Island materials, and the results were $1,750 \pm 70$ and $1,870 \pm 70$ RCYBP (Office of the Minnesota State Archaeologist, via W.I. Ross, 2015). These dates fall well within the Late Holocene era, rather than within the Late Wisconsinan period of the terminal Pleistocene.

In short, none of the human osteological materials of interest to Dr Steinbring seem be as old as he has thought them to be. Indeed, if the most recent reconstructions of the last glaciation and deglaciation are to be believed, all of the site loci in question were variously under ice, in the bed of an active meltwater spillway, or beneath ice and then the waters of early Lake Agassiz during the Late Wisconsinan timed period. Thus, all were uninhabitable at the times that Dr Steinbring seems to believe the individuals in question were alive. This conclusion is commensurate with the Early and Late Holocene AMS dates obtained from the skeletal materials themselves; and the entire foregoing review exercise helps to demonstrate how important it is to keep on top of scientific data arising from recent testing and research.

Cupules and Ribs

Dr Steinbring provides a most interesting discussion on the early peopling of the interior of North America during the Late Wisconsinan glaciation. The immigrants would have been the direct, and possibly recent, ancestors of the individuals whom he regards as members of the populations responsible for the early rock art. He notes that two particular petroglyph motifs – cupules and grooves – are found on “ribstones” on the Northwestern Plains in Alberta, Saskatchewan, and Montana. He points out that these occur in an area that would have been at the exit of a former inter-glacier corridor that would have allowed people from Beringia direct access to the continental interior. He dates the ice-free corridor at >15,000 BCE (Steinbring 2014: Fig. 8) and, by virtue of their geographic location, suggests that the petroglyphs were created by Ice-Age migrants from the north. For him, the considered existence of the corridor by 15,000 BCE, the location of its southern terminus, and the presence of the artwork within the former location of the said outlet, are no coincidence.



Fig. 2. Two ribstones near Viking in southern Alberta. Note the pockmarks (cupules) near the right end of the object in the foreground, and the grooves ("ribs") that are especially well defined on the example in the background. Credit: Alberta Register of Historic Places.

It is in connection with the ribstones that Dr Steinbring mentions in passing "a Clovis burial of a child dated to 12,600 B.C.E. near the Yellowstone River within access of the ribstones." I assume that this is the Anzick site in Montana (Fig. 1). If so, then again his age estimate seems to be a bit inflated; 12,600 BCE converts to ~14,600 RCYBP. According to the peer-reviewed literature, the radiometric date of the Anzick burial is $10,705 \pm 35$ RCYBP (Rasmussen et al 2014:225) – almost 4,000 years later than Dr Steinbring's 12,600 BCE/14,600 BP estimate. Dr Steinbring doesn't cite his references in support of the hypothesized Late Wisconsin ice-free corridor and his timing of it, but they would seem to have been somewhat dated by the time he wrote his paper in 2014. To be sure, arguments have been published for the existence of the corridor during the Late Wisconsinan (e.g., Reeves 1973: 13), but that hypothesis was in vogue decades ago and it has since been seriously challenged in the recent literature: to make a long story short, "there had been no ice-free passage south along the eastern margin of the Cordillera from about 21,000 YBP (perhaps earlier) to as late as 12,000 YBP" (Jackson and Wilson 2004:3; see also Wilson et al 2005; Wilson et al 2009; Wilson 2010; and Milideo 2014; see Figure 3 below).



Fig. 3. Extent of continental glaciation ~15,000 BCE (17,000 RCYBP). Note that no ice-free corridor is indicated. Credit: Dyke et al 2003.

An Alternate Route of Access

Dr Steinbring correctly acknowledges that two hypothetical routes have been envisaged for migration from Beringia to the land mass south of the ice sheets – (1) the inland route just presented, and (2) a coastal route along the British Columbia littoral made navigable with watercraft. He favours the inland route on palaeontological grounds – the human migrants would have been hunters of land-dwelling Pleistocene megafauna, and “a coastal route would not have been congenial for elephants and bison, grassland animals of the steppes and plains.”

However, I would call attention to the discovery of an 11,700-year-old partial skeleton of a *Bison antiquus* on Vancouver Island (Wilson et al 2009). This C-14-dated find nicely complements the 1941 report of Ian McTaggart Cowan, who lists imperial mammoth, Columbian mammoth, horse, and long-horned bison from stream-laid sediments near the city of Vancouver and on southern Vancouver Island (Harington 1971:78). None of these latter fossil remains has been radiometrically-dated and are simply described as of “Quaternary” age (ibid); nonetheless, to Dr Steinbring’s way of thinking they would seem to be out of place in coastal BC at any time during the Quaternary, and yet the relevance of these osteological data cannot be denied.

Conclusions

In sum, Dr Steinbring's focus of interest is on (1) the late Pleistocene environments of the North American mid-latitudes and (2) the megafauna, people, and rock art that he believes correlate time-wise with the Late Wisconsinan glaciation. The skeletal remains upon which he relies all post-date this glacial period in view of recent research, and hence are incompatible with his thesis (as I read it) that the subject human osteological materials are remnants of populations that were responsible for the perceived Late Wisconsinan-age rock art.

I hope the foregoing paragraphs will impress upon students the need to keep apprised of the most recent literature, and some of the older literature as well, on any given topic. It is also important to establish liaison with provincial and state heritage agencies wherein unpublished data are gathered and kept on file. For the student learners, it would be most instructive indeed if Dr Steinbring could prepare a response to this paper along the lines of the *Current Anthropology* discussion format; I would encourage him to do so if at all possible.

I would like to express my appreciation to Dr Steinbring whose writing has afforded me the opportunity to present something that I trust will prove instructive to student readers in particular, and will assist in encouraging them to produce well-researched treatises on topics in our fascinating discipline. My thanks as well to Dr Amelia Fay for providing a critical review of an earlier draft of this paper. For all shortcomings it may still contain (and, under the tyranny of Murphy's Law, there are probably several), the responsibility is entirely mine.

References

- Clayton, L. and S. Moran, 1982, "Chronology of Late Wisconsinan Glaciation in Middle North America." *Quaternary Science Reviews* 1:55-82.
- Cowan, I. McT., 1941, "Fossil and Subfossil Mammals from the Quaternary of British Columbia." *Royal Society of Canada Transactions* 35 (Sec. IV):39-50.
- Dyke, A., A. Moore, and L. Robertson, 2003, "Deglaciation of North America." *Geological Survey of Canada Open File* 1574. Ottawa.
- Frye, J., H. Willman, M. Rubin and R. Black, 1968, "Definition of Wisconsinan Stage." *U.S. Department of the Interior Geological Survey Bulletin* 1274-E. Washington.
- Harrington, C. R., 1971, "Ice Age Mammals in Canada." *The Arctic Circular* 22(2):66-89.
- Jackson, L. and M. Wilson, 2004, "The Ice-Free Corridor Revisited." *Geotimes*, February, pp. 1-6.
- Jenks, A., 1936, *Pleistocene Man in Minnesota*. University of Minnesota Press. Minneapolis.
----, 1937, Minnesota's Browns Valley Man and Associated Burial Artifacts. *American Anthropological Association Memoir* 49. Menasha, Wisconsin.
- Lepper, K., T. Fisher, I. Hajdas, and T. Lowell, 2007, "Ages for the Big Stone Moraine and the Oldest Beaches of Glacial Lake Agassiz: Implications for Deglaciation Chronology." *Geology* 35(7):667-670.
- McMillan, K. and J. Teller, 2012, "Origin of the Herman-Norcross-Tintah Sequence of Lake Agassiz Beaches in Manitoba, Canada." *Geomorphology* 151-152:77-88.
- Milideo, L., 2014, "Fieldwork Revises Ice-Free Corridor Hypothesis of Human Migration." *Earth Magazine*, April, pp. 1-3.
- Rasmussen, M. et al, 2014, "The Genome of a Late Pleistocene Human from a Clovis Burial Site in Western Montana." *Nature* 506:225-229.
- Reeves, B., 1973, "The Nature and Age of the Contact Between the Laurentide and Cordilleran Ice Sheets in the Western Interior of North America." *Arctic and Alpine Research* 5:1-16.
- Steinbring, J. H., 2014, "Exploring America's Earliest Rock Art." In *Ancient America: The Ongoing Exploration*. Ancientamerica.com. 15 June edition. University of Minnesota Department

of Anthropology, nd, "Academic Archaeology, 1932 to the 1970s."

<http://anthropology.umn.edu/labs/wlnaa/history/academic.html>.

Wilson, M., 2010, "Late Pleistocene Vertebrates in Western Canada: Northward Dispersal of Late-Glacial to Postglacial Faunas in Two Contrasting Environmental Settings." *Program and Abstracts, 21st Biennial Meeting, American Quaternary Association, University of Wyoming, Laramie, p. 147.*

Wilson, M., L.V. Hills, and B. Shapiro, 2005, "Bison 'Occidentalis' is Dead, and the Ice-Free Corridor Was Closed: Biogeography, mtDNA, and Implications for Paleoindian Migrations." *Abstracts, 63rd Plains Anthropological Conference, Edmonton, Alberta, p. 67.*

Wilson, M., S. M. Kenady, and R. F. Schalk, 2009, "Late Pleistocene *Bison antiquus* from Orcas Island, Washington, and the Biogeographic Importance of an Early Post Glacial Land Mammal Dispersal Corridor from the Mainland to Vancouver Island." *Quaternary Research* 71:49-61.

Wormington, H., 1957, *Ancient Man in North America*. Denver Museum of Natural History. Denver.