

## **Was Clovis First in Manitoba?**

Leo Pettipas

### **Introduction**

Without a doubt, one of the most conspicuous issues in North American archaeology in recent decades has been the “Clovis-First” debate. Simply put, one contending school of thought maintains that “Clovis” culture (11,200-10,900 RCYBP [Holliday 2000:227]) is the earliest to make its appearance in North America. The alternate school holds that a “pre-Clovis” human presence existed several thousands of years before the advent of Clovis. In my view, the hypothesis that there were people living somewhere or other on the continent south of the Pleistocene ice sheets before the emergence of the so-called Clovis cultural horizon is stronger than its alternative.

In the minds of modern-day Indigenous people, this issue is more than academic. For them, “the older the evidence of human occupation, the stronger the claim to indigeneity” (Scarre *et al* 2006). It is therefore very much in the political interests of contemporaneous Aboriginals to demonstrate that their ancient ancestors were here far earlier than the people who crafted the 11,000-year-old Clovis points.

The key phrase in the foregoing paragraph is “south of the ice sheets.” Within the region now circumscribed by the boundaries of modern-day Manitoba, the Clovis-First question is, in a sense, very much alive. Simply put, Clovis points are the oldest recognisable artefacts thus far discovered in Manitoba. The available dating of Clovis from south of the 49<sup>th</sup> Parallel is coeval with the ongoing deglaciation of Manitoba’s Western Uplands and the ascendancy of Glacial Lake Agassiz in the adjoining Manitoba Lowlands. Hence, there was a very small window of opportunity for anybody to colonise the southern half of the province during Late Glacial/pre-Clovis (~14,000-11,200 RCYBP) times.

So Clovis culture **was** the first in Manitoba **if** we strictly confine our attention to

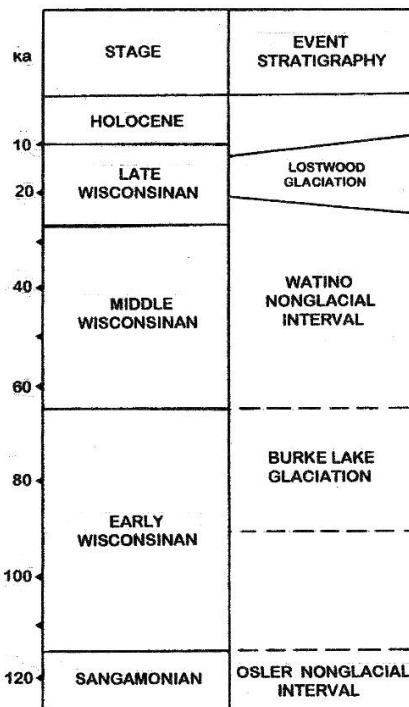
- A. the Late Wisconsinan/Late Glacial time period of 14,000 to 10,000 RCYBP, and
- B. the archaeological record as it is currently known.

But what of the centuries and millennia before 14,000 BP? As of 2016, we simply have no pre-Clovis archaeological evidence on record for human inhabitants of Manitoba. But does that necessarily mean that such evidence doesn’t actually exist in the ground?

### **Geological Thematics**

If we look at the Late Pleistocene geochronology of Western Canada (Fig. 1), we see that between roughly 23,000 and 11,000 years ago, i.e., during the Late Wisconsinan “Lostwood”

glaciation, southern Manitoba was beneath the active Laurentide ice sheet and/or Lake Agassiz, and hence was uninhabitable. But before that there was a ~ 52,000-year-long ice-free period, the "Watino Nonglacial Interval" (Fig. 1), when "an uninterrupted ice-free corridor extended south from the Yukon and Alaska during the Middle Wisconsinan" (Dredge and Thorleifson 1987:219). This means that the Canadian Prairie region, including southern Manitoba, would have been open to the sky ("sub-aerial"; Fig. 2) and available for human occupation.



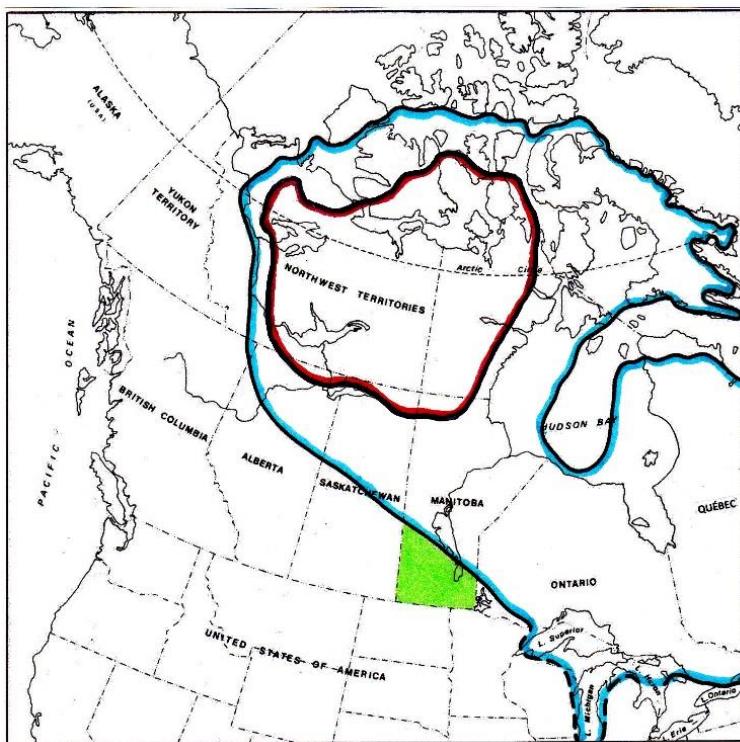
**Fig. 1. Geological time chart of the Canadian Prairie region. Note that the Mid-Wisconsinan stage was coeval with the Watino Nonglacial Interval "event." After Fulton 1984.**

Modern forms of humans (*Homo sapiens sapiens*) have been in existence for at least 50,000 years, according to the palaeontologists (Anonymous 2015). That's time enough for Asian people to expand their territories and colonise the Western Hemisphere including, I would submit, parts of Manitoba.

Under these circumstances, Clovis would have very much been a late-comer to the North American continent and hardly the first culture to arrive. *Thus far, we have no empirical evidence for any peopling of the Canadian Prairies region in general during the Watino Nonglacial Interval or any time before that.* Indeed, apart from the hypothesis that the land was sub-aerial, do we have any solid data, beyond those favouring a non-glacial, open-air land surface, of at least environmental potential for a hunter-gatherer adaptation before the last glacial maximum (LGM) of 18,000 radiocarbon years ago? As a matter of fact, we do.

## The Palaeontological Record

The Watino Nonglacial Interval falls within what is known as the "Rancholabrean North American Land Mammal Age" that was initiated with the first arrival of the genus *Bison* south of 55° latitude around 130,000 years ago (Burns 2010:38).



**Fig. 2. Two interpretations of Middle Wisconsinan ice limits, showing the extent of sub-aerial southern Manitoba (green) as referred to in this paper. Base map after Dredge and Thorleifson 1987.**

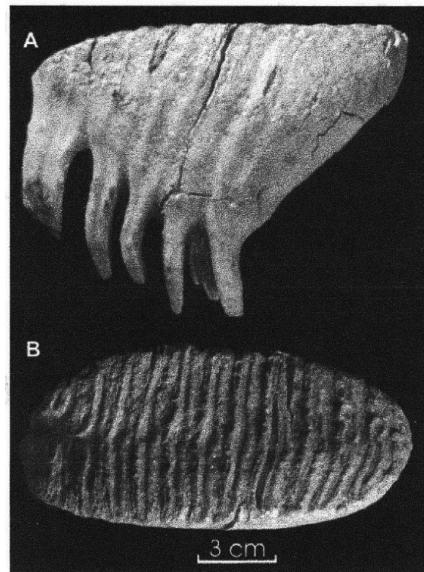
Other members of the Rancholabrean faunal suite included now-extinct Pleistocene large-mammal forms such as horse, camel, mammoth, mastodon, giant sloth, and sabre-toothed cat, as well as numerous smaller mammals, notably carnivores and rodents, that still exist today (Bell *et al* 2004:284). The Rancholabrean Age came to an end with the extinction of the megafauna ca. 11,000 years ago, near the close of the Late Wisconsinan stage. Our focus below will of necessity be on palaeontological, not archaeological, research in the Canadian Prairie region.

Fossil recoveries across the length and breadth of the Canadian Prairies has disclosed that the region at large was not only sub-aerial but also heavily invested with animal life during the Middle Wisconsinan stage. Moving from west to east, we learn that fossil-rich gravel pits in the Edmonton area have produced bones of ground sloth, wolf, short-faced bear, American lion, mammoth, mastodon, horse, camel, wapiti (elk), caribou, bison, and tundra muskox (Harington

2015), all dating to the Middle Wisconsinan. Further to the south near Medicine Hat, Mid-Wisconsinan deposits over 20,000 years old have yielded up the remains of hare, pocket gopher, coyote, sabre-toothed cat, large horse, Mexican ass, camel, llama, deer, and bison (Harington 1971:73). In Saskatchewan, graveling operations in the Saskatoon area have exposed skeletal fragments of mammoth, horse, camel, deer, bison, badger, and wapiti from Mid-Wisconsinan deposits.

Mammoth (Fig. 3), bison, and tundra muskox were identified in a gravel quarry near Grunthal in southeastern Manitoba (Nielsen and Matile 2002; Harington *et al* 2007). Harington (2015) points out that the Grunthal finds indicate that “the Rancholabrean fauna at Edmonton had spread at least as far east as Manitoba during the Middle Wisconsinan.”

It has long been recognized that elephants lived in southern Manitoba during the Quaternary Epoch (Manitoba Historic Resources Branch 1990). Their remains have been reported from over a dozen separate locations across the province. These comprised mainly isolated teeth and tusk fragments rather than entire or near-complete skeletons, and they were more often than not smoothed and abraded, which means that the animals didn’t die where their remains were recently found. Rather, they are much older than the Late Wisconsinan deposits from which they were recovered, having been eroded long ago from their original geologic matrices and redeposited by moving ice and water. A goodly number of these specimens no doubt belonged to animals that lived during the Middle Wisconsinan period. For example, one of them, a tooth from Turtle Mountain, has been radiocarbon-dated at  $33,860 \pm 330$  RCYBP (Morlan *et al* 2000:132-133), placing it squarely within the Watino Nonglacial Interval.



**Fig. 3. Mammoth molar from the Grunthal Quarry site. Credit: Institute on Lake Superior Geology, 2002.**

Our review of the Middle Wisconsinan biogeography of Manitoba and points west has focused on the co-existent megafauna. But there are other data that are of interest to us here. A fragment of wood from the Grunthal deposit, dated to  $44,020 \pm 1030$  BP, also belonged to the Watino Nonglacial. This mention of a wood sample brings to mind other fossils that reflect ecological conditions at that locale. For instance, a large sample of compacted organic-rich sediment from the Grunthal site contained evidence of a spruce-dominated forest. Plant fragments also suggest poorly-drained land dominated by sedges, buckbean, and mosses. In contrast, the large mammal fossils reflect grassy steppe to tundra surroundings – drier patches, perhaps, within a parkland setting or on the margin of a forested region (Harington *et al*/2007). A cooler-than-present climate, but not an excessively harsh one, is implied.

Sediments containing fossils and organic materials were found to occur in late Pleistocene deposits underlying glacial tills in the uplands of western Manitoba (Klassen *et al* 1967). Ground squirrel and vole bones were recovered from an inter-till silt on Riding Mountain, and grass associated with these bones was dated to  $>31,300$  years ago (*ibid*:433). Pollen, ostracodes, and molluscs within deposits on Duck Mountain indicate a cool-warm-cool climatic sequence that began  $>37,760$  years ago. More specifically, the earliest data from Duck Mountain yielded evidence of a boreal forest that gave way to a warm and dry climate supporting a healthy growth of grasses. This was in turn followed by a warm, moist phase, with the grasses supplemented by oak. This oak-grass interval corresponds with a period “at least as warm as the present” (Klassen *et al* 1967:446). Next came a cooler episode and a reversion to boreal forest. Finally, a cooler and moister interval, characterised by evidence of dwarf birch, typified the region (*ibid*:Table 6) until it was terminated by the arrival of the Lostwood glaciation that commenced on the uplands shortly after 22,200 BP (Dredge and Thorleifson 1987:220).

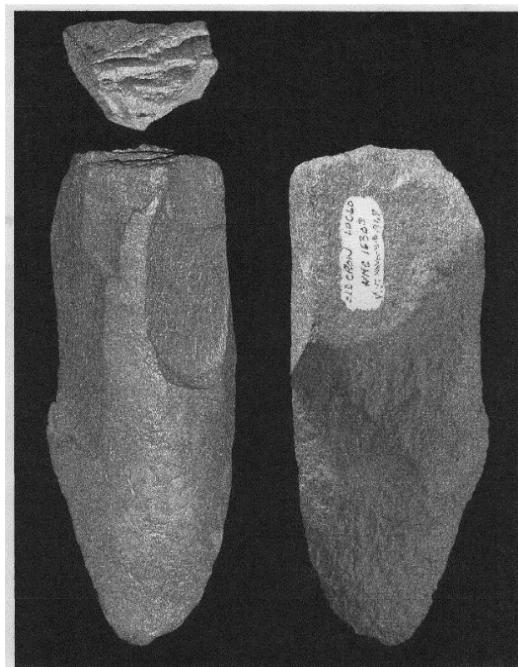
Parenthetically, it was originally believed that Manitoba is unlikely to produce archaeological sites pre-dating the last (Lostwood) glaciation, because the advancing ice sheet would have obliterated all such evidence. However, the Grunthal Quarry osteological finds contradict this suggestion, as do the discovery of the even-more-fragile and undisturbed palaeontological sites above the Manitoba Escarpment on the Duck and Riding mountains. All of this demonstrates that productive archaeological loci could, theoretically, come to light as well.

## The Cultural Record

We see, then, that the Middle Wisconsinan Interstadial/Watino Non-glacial Interval witnessed a rich large- and small-game animal population across the Canadian Prairies and fairly benign climatic conditions along with it. We can confidently conclude that the environment was well suited to support a hunting-gathering lifeway for the period in question. That said, do we in fact have good reason to believe that the region might have been peopled at the time. Indeed, was any part of North America inhabited during the Mid-Wisconsinan era?

There are encouraging signs of this very thing in the form of utilised and unifacially-worked flakes, cobbles or nodules, and edge-trimmed bipolar spalls, in Mid-Wisconsinan sites located well to the south and southeast of the Canadian Prairies in the continental United States, Mexico, and South America (Lorenzo and Mirambel 1999; Stanford *et al* 2005:324; Goebel *et al* 2008:1500). None of these places produced evidence of a refined-biface lithic industry that turned out projectile points analogous to those of the Clovis and post-Clovis complexes. But they do fit rather nicely into the much-disputed “Pre-Projectile Point” stage of cultural development championed decades ago by Alex Krieger (1964:23-81).

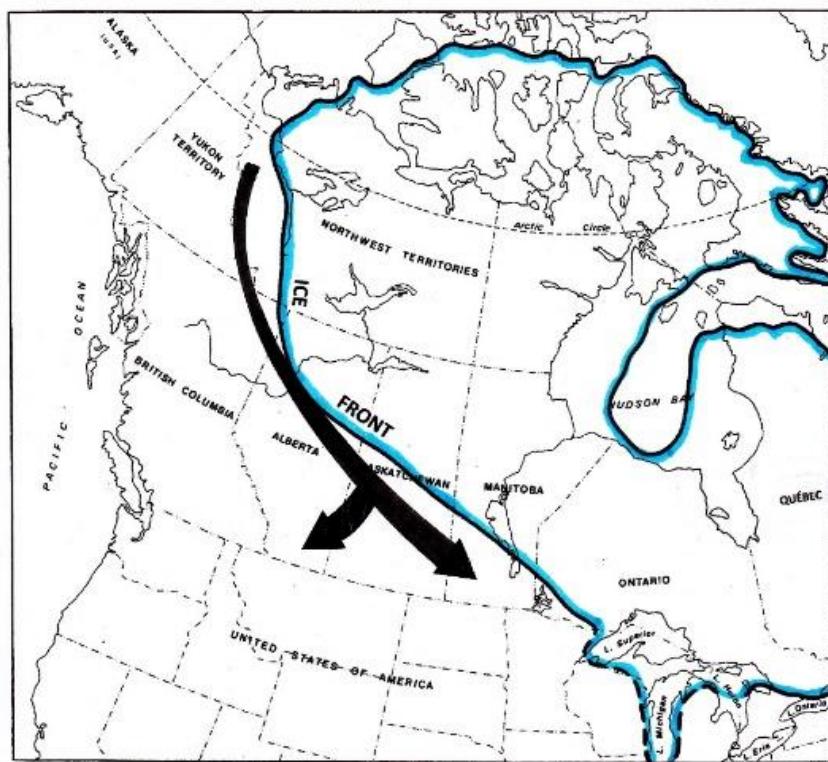
Closer to home, the far northwest of our country takes on special significance because it is there, in the Old Crow area of the northern Yukon, that possible artefacts have been found that date back to the Middle Wisconsinan period. The findings include presumed cores and flakes made from megafaunal bones (Fig. 4) and other osteological fragments showing butchering marks and cut lines believed to have been created by stone tools (Morlan 2003:125).



**Fig. 4. Three views of a proboscidean limb-bone fragment from the Old Crow locality, Yukon. The upper-left image depicts the striking platform by means of which the piece would have been detached from the parent bone "core." Credit: ©Canadian Museum of History, (formerly Canadian Museum of Civilization).**

The people (and/or their immediate descendants) who produced these bits of evidence lived at a time when access was available to the continental interior far to the south, including southern Manitoba (Fig. 5). Unfortunately, none of the Old Crow materials were found *in situ* as part of larger living-floor or activity-area assemblages, and there has been a good deal of scepticism expressed over whether or not they are true artefacts to begin with. For some archaeologists,

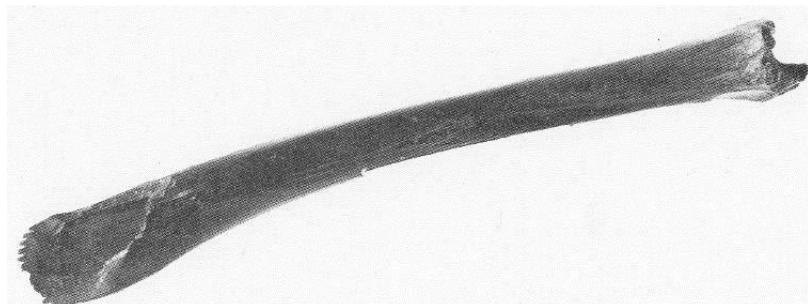
their authenticity is a given (e.g., Bonnichsen and Young 1978:124-125); for others, not so much -- "while it may be possible that some of the specimens may have been manufactured by humans, equally plausible noncultural processes may explain their appearance, including ... carnivore breakage, rodent gnawing, trampling by large mammals, fracture resulting from geologic overburden, and modifications resulting from the actions from rivers and river ice" (Dixon 1999:58).



**Fig. 5. Speculative routes of access (arrows) from Beringia and to the Canadian Prairie region during the Middle Wisconsinan stage/Watino Nonglacial Interval. Base map from Dredge and Thorleifson 1987.**

Items that are obviously artefacts and which were initially thought to be very ancient (e.g., Fig. 6) have since been found to be much more recent thanks to the application of more advanced and reliable dating techniques (Sorg 1985). Found human skeletal remains in Western Canada have also proven controversial; only one ( fleeting) instance has come to light anywhere on the Canadian Prairies thus far, that being a cluster of infant skull fragments retrieved from the banks of the Oldman River near Taber, Alberta. Their perceived geological context originally gave rise to the hypothesis that they were between 20,000 and 40,000 years old and hence of possible Mid-Wisconsinan age. However, advanced analytical techniques have recently affirmed that the antiquity of the bones was more in the order of a mere 4,000 years before present (Brink 2014).

Nonetheless, the last word goes to the advocates of the early occupation of eastern Beringia, thanks to *in situ* discoveries at the Bluefish Caves archaeological locality in the northern Yukon.



**Fig. 6. Caribou long-bone flesher from the Old Crow area of the Yukon. Note the toothed working edge at the left end of the piece. Originally radiocarbon-dated at 27,000+3,000 - 2,000 RCYBP, the more advanced AMS technique has placed it at 1,350±150 BP (Sorg 1985:1). Credit: ©Canadian Museum of History (formerly the Canadian Museum of Civilization).**

Here were recovered percussion-created core and flake mammoth-bone artefacts dating back to the end of the Middle Wisconsinan Interstadial, or between 25,000 and 23,000 BP. It was the Bluefish Caves recoveries that enhanced the credibility of the Old Crow findings: "many of the bone specimens collected in the fossiliferous sites of the Old Crow Basin bear attributes that are analogous in every respect to the essential elements of the 'chaine opératoire' [as manifested in the Bluefish Caves materials]. As the systematic repetition of such a series of actions cannot possibly be the result of environmental happenstance, we must consider their end-results as, if not tools themselves, then at the very least the products and by-products of cultural activities" (Cinq-Mars 2001).

### **Conclusions**

In sum, it is possible that humans colonized the Americas before the Last Glacial Maximum and well before the Clovis era. They occupied western Beringia by 32,000 years ago, and there were no glacial barriers to migration through Western Canada and into the continental interior during that fairly warm period (Goebel *et al* 2008:1501). The capacity for southern Manitoba to support human populations during the Middle Wisconsinan stage of geological history enjoys reasonable support, but tangible artefactual evidence is as yet entirely lacking in this province.

The same applies to the rest of Western Canada. Although *Homo sapiens sapiens* has been in existence for some 50 millennia or more, conventional scientific wisdom maintains that the Western Hemisphere was not the scene of pre-*sapiens* hominid evolution (*ibid.* 1497). I have arbitrarily chosen not to address in this brief article the prospect that humans were present during any of the earlier pre-Middle Wisconsinan inter- and non-glacial periods of the Pleistocene. Goebel *et al* (2008:1500) rightly caution us that "a maximum limiting age can be

placed on the entry of people of no earlier than 40 ka [years ago]. Any claims for an earlier migration should be viewed with skepticism."

In the interests of scientific rigour, archaeologists are typically insistent in their demands for solid, unambiguous data for any pre-LGM occupation of North America. And I would describe as equivocal most of the pre-Clovis "evidence" of, and as decidedly tenuous the favouring arguments for, a human presence of that antiquity from Manitoba and the rest of Prairie Canada.

Nonetheless, I would strongly recommend that we approach the question with an open mind. What we must NEVER do is dismiss out of hand the possibility of Mid-Wisconsinan human occupation of the region, or close our eyes to field data that do not support pre-conceived notions that, as of right now, are based on circumstantial, scarce, or currently-undocumented field evidence.

The Clovis-First hypothesis has had its day south of the Canadian border, having been overtaken by progressive fieldwork, better dating techniques, and open-minded scholarship.

As for southern Manitoba, Clovis is still first ... for now.

## References

- Anonymous, 2015, "When and Where Did Our Species Originate?" Australianmuseum.net.au. Sydney.
- Bell, C., E. Lundelius Jr, A. Barnosky, R. Graham, E. Lindsay, D. Ruez Jr, H. Semken Jr, S. Webb, and R. Zakrzewski, 2004, "The Blancan, Irvingtonian, and Rancholabrean Mammal Ages." In *Late Cretaceous and Cenozoic Mammals of North America: Biostratigraphy and Geochronology*, edited by M. Woodburne, pp. 232-314. Columbia University Press. New York.
- Bonnichsen, R. and D. Young, 1978, "Early Technological Repertoires: Bone to Stone." *Canadian Journal of Anthropology* 1(1):123-128.
- Brink, J., 2014, "Taber Child." *The Canadian Encyclopedia*. Ottawa.
- Burns, J., 2010, "Mammalian Faunal Dynamics in Late Pleistocene Alberta, Canada." *Quaternary International* 217(1-2):37-42.
- Cing-Mars, J., 2001, *Significance of the Bluefish Caves in Beringian Prehistory*. Canadian Museum of History. Gatineau.
- Dixon, E., 1999, *Bones, Boats, and Bison: Archeology and the First Colonization of Western North America*. University of New Mexico Press. Albuquerque.
- Dredge, L. and H. Thorleifson, 1987, "The Middle Wisconsinan History of the Laurentide Ice Sheet." *Géographie Physique et Quaternaire* 41(2):215-235.
- Fenton, M., 1984, "Quaternary Stratigraphy of the Canadian Prairies." *Geological Survey of Canada Paper* 84-10:57-68. Ottawa.
- Goebel, T., M. Waters, and D. O'Rourke, 2008, "The Late Pleistocene Dispersal of Modern Humans in the Americas." *Science* 319:1497-1502.
- Harington, C.R., 1971, "Ice Age Mammals in Canada." *The Arctic Circular* 22(2):66-89.  
----, 2015, "Quaternary Vertebrate Fossils." *The Canadian Encyclopedia*. Toronto.
- , G. Young, A. Telka, and G. Matile, 2007, "Pleistocene Mammals from Grunthal Quarry, Southeastern Manitoba." Abstracts, Canadian Quaternary Association Conference, June 4-8, Ottawa.
- Holliday, V., 2000, "The Evolution of Paleoindian Geochronology and Typology on the Great Plains." *Geoarchaeology* 15(3):227-290.
- Jacobs, J.Q., 2001, "The Paleoamericans: Issues and Evidence Relating to the Peopling of the New World. <http://www.jgjacobs.net/anthro/paleoamericans.html>.
- Klassen, R.W., L.D. Delorme and R.J. Mott, 1967, "Geology and Paleontology of Pleistocene Deposits in Southwestern Manitoba." *Canadian Journal of Earth Sciences* 4:433-447.

Krieger, A., 1964, "Early Man in the New World." In *Prehistoric Man in the New World*, edited by J. Jennings and E. Norbeck, pp. 23-81. University of Chicago Press. Toronto.

Lorenzo, J. and L. Mirambel, 1999, The Inhabitants of Mexico During the Upper Pleistocene." In *Ice Age People of North America*, edited by R. Bonnichsen and R. Turnmire, pp. 482-496. Oregon State University Press. Corvallis.

Manitoba Historic Resources Branch, 1990, *The Fossil Elephants of Manitoba*. Manitoba Culture, Heritage and Recreation. Winnipeg.

Morlan, R.E., 2003, "Current Perspectives on the Pleistocene Archaeology of Eastern Beringia." *Quaternary Research* 60:123-132.

-----, R. McNeely, and E. Nielsen, 2000, "Manitoba Radiocarbon Dates." *Open File Report OF2000-1*. Geological Survey, Manitoba Industry, Trade and Mines. Winnipeg.

Nielsen, E. and G. Matile, 2002, "Stop 6 – Interglacial Site at Grunthal." Institute on Lake Superior Geology Field Trip Guidebook, 48<sup>th</sup> Annual Meeting Proceedings 48(2):32-33.

Scarre, C., G. Scarre, J. Bendremer, and K. Richman, 2006, "Human Subject Review and Archaeology: A View from Indian Country." In *The Ethics of Archaeology*, pp. 97-114. Cambridge University Press. New York.

Sorg, M., 1985, "New Date for Old Crow Caribou Flesher." *Mammoth Trumpet* 2(2):1.

Stanford, D., R. Bonnichsen, B. Meggers, and D. Gentry Steele, 2005, "Paleoamerican Origins: Models, Evidence, and Future Directions." In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 313-353. Center for the Study of the First Americans. College Station, TX.