Early Prehistoric Sites in Alberta and How They Relate to Ahai Mneh (FiPp-33)

Jo-anne Schenk and Gabriel Yanicki

A number of projectile points found in the basal cultural deposits at Ahai Mneh are representative of the Early Prehistoric period. In addition to confirming a cultural presence previously only tentatively identified at this hilltop site near Wabamun Lake in central Alberta, these findings add to our understanding of the range of the Agate Basin/Hell Gap phase, a period that is very poorly represented in Alberta archaeology. Further, two fragmentary specimens that are basally concave and exhibit attempts at fluting or basal thinning appear to be Early Prehistoric in origin; these bear some resemblance to stubby points of the little-known Sibbald phase, although they could also be representative of the later Lusk complex. While only the most tentative of identifications can presently be made, they serve as an indicator of multiple Early Prehistoric occupations at Ahai Mneh and highlight a key area of interest for future research at the site.

Human occupation in what is now Alberta spans over 13,000 years (Ives 2006). During the 2010 field school at Ahai Mneh run by the Institute of Prairie Archaeology at the University of Alberta (see Rawluk *et al*., this volume), a number of projectile points were found showing evidence of occupation from the earliest stages of human colonization of the Northern Plains. Situated on a high hilltop, the site was identified as a likely area for Early Prehistoric activity based on research at similar settings in central Alberta (John W. Ives, pers. comm.). This was reinforced by the find of a fragmentary projectile point in previous work at the site in 2008, identified as Early Prehistoric in origin (Soucey, Ball, and Boscher 2009, 60).

The Early Prehistoric was a dynamic time period marked by drastic environmental and cultural change. Few traces of the cultural changes are preserved, with the most notable exceptions being diagnostic projectile points. Several points from the 2008 and 2010 excavations at Ahai Mneh compare favourably with points found at two other important sites in Alberta recognized for their Early Prehistoric occupations: Lake Minnewanka and Sibbald Creek. In particular, projectile points diagnostic of the Agate Basin/Hell Gap phase and possibly Sibbald phase or Lusk complex are present, indicating repeated Early Prehistoric occupation at Ahai Mneh.

The Early Prehistoric: A Review

Alberta's prehistoric past is generally divided into three different time periods based on changes in projectile point styles and assumed correlations with technology (Byrne 1973; Forbis 1982; Mulloy 1958; Peck 2011; Reeves 1969, 1983; Vickers 1986, 10). Although archaeological units include diverse toolkits with lithic materials being most commonly preserved, the difference between these cultural units is easiest understood through changes in projectile point morphology. The Early Prehistoric, ca. 11,050 to 8,600 BP (Peck 2011, 23), is characterized by large lanceolate points which are believed to have been hafted to large thrusting spears. The Middle Prehistoric, ca. 7,500 to 1,500 BP (Peck 2011, 119), featured medium-sized, notched points indicative of the adoption of atlatl technology. In the Late Prehistoric, ca. 1,350 to 250 BP (Peck 2011, 335), small side-notched points show a technological shift to the bow and arrow. These broad periods can be further subdivided: when an archaeological unit features traits that can be distinguished from other units it is classified as a *phase* (Peck 2011, 6; Reeves 1983, 39). If an assemblage's relationship to preceding and subsequent phases is unclear, it is classified as a *complex* (Peck 2011, 6; Reeves 1969, 13). Recognized phases and complexes of the Early Prehistoric period in Alberta include Clovis, Folsom, Sibbald, Agate Basin/Hell Gap, Alberta, and Scottsbluff-Eden (Peck 2011).

J. Schenk, undergraduate student; G. Yanicki, graduate student; Institute of Prairie Archaeology, Department of Anthropology, University of Alberta

Author contact: **schenk@ualberta.ca**

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Figure 1: Early Prehistoric projectile points from Ahai Mneh (FiPp-33); actual size

Early Prehistoric environment

After the Laurentide and Cordilleran ice masses retreated in the terminal Pleistocene, a rapid warming trend between 11,300-11,200 BP saw arboreal vegetation quickly become established over central Alberta. This pattern of warming continued into the early Holocene, and new vegetation regimes continued to develop (Schweger, Habgood, and Hickman 1981, 58). These rapidly changing environmental conditions saw the demise of Pleistocene megafauna such as mammoth (*Mammuthus* sp.), Yesterday's camel (*Camelops hesternus*), and North American horse (*Equus* sp.) by the end of Clovis times, ca. 10,800 BP (Guthrie 2006). More familiar species such as bison (*Bison* sp.), sheep (*Ovis* sp.), caribou (*Rangifer tarandus*), and elk (*Cervus elaphus*) persisted through the remainder of the Holocene (Wilson 1983, 204) with bison becoming the dominant species on the Plains. Although commonly associated with megafauna, Early Prehistoric peoples can better be understood as hunters and gatherers establishing familiar lifeways that would endure for the next 10,000 years.

EARLY PREHISTORIC POINTS AT AHAI MNEH

Based on their morphological attributes, six projectile points at FiPp-33 can tentatively be identified as Early Prehistoric in origin (Figure 1). The first such projectile point, FiPp-33:4114, was found during the 2008 excavation by Altamira Consulting Ltd. (Soucey, Ball, and Boscher 2009). Soucey and colleagues (2009, 60) reported it as a straight-stemmed lanceolate point with rounded corners. They interpreted it as the base of an Agate Basin/Hell Gap spear point[1]. This was the sole artifact representative of the Early Prehistoric in their excavations. Peck (2011, 55) dates the Agate Basin/Hell Gap complex from 10,200 to 9,600 BP.

This tantalizing find was corroborated by the discovery of several additional artifacts during the 2010 field school excavations. Five addi-

[1] Following Frison (1993, 243) and Peck (2011, 55), the long and narrow Agate Basin point and shouldered Hell Gap point show no difference in functional purpose. Given their strong temporal and spatial correlation, they are treated as a single cultural unit.

tional points appear to be from the Early Prehistoric, four of them fragmentary. These were found both on the top of the hill and in the swale where separate excavation areas were placed (see Rawluk *et al.*, this volume, fig. 1).

Artifact FiPp-33:7537 was found 22.5 cm below surface in Unit 51; it is a complete Agate Basin/Hell Gap projectile point made of grey quartzite. The tip is rounded; blade edges are excurvate. The shoulders are rounded and high on the blade margin. The left and right proximal margins are rounded; the basal margin is straight. The projectile point is biconvex in cross section. Flaking appears to be irregular, though this is difficult to determine given the coarse material. The base and proximal lateral margins show evidence of grinding. The shouldered appearance is likely due to resharpening of the tip, commonly executed with little regard for the point's original shape (Frison and Stanford 1982, 80).

FiPp-33:7538 is a projectile point base found in Unit 50, also at a depth of 21.5 cm below surface. It also appears to be Agate Basin/Hell Gap in origin, and is made of the same mottled brownish red and white porcellanite as the base found in the 2008 excavations (Soucey, Ball, and Boscher 2009, 60). Its lateral margins are slightly excurvate, terminating with a snap fracture midway down the blade. The margins contract towards the base. The basal margin is straight and does not show evidence of grinding. Flaking on the dorsal side is irregular, but the ventral side features more regular patterned retouch. Several similar basally contracting stems were found at the Agate Basin site (Frison and Stanford 1982, fig. 2.54).

FiPp-33:7539 is more enigmatic in style. Recovered from 18 cm below surface in Unit 53, it is a small grey quartzite fragment representing the base of a stemmed projectile point. The straight lateral margins contract towards the base, while the basal margin is concave. Although flaking is hard to distinguish given its size and coarseness, it features pronounced basal thinning scars on both its dorsal and ventral faces, which may be step-fractured flutes. Fluting is a very distinctive practice typical of the Clovis and Folsom phases, the earliest periods of human occupation in Alberta. Another fluted variant has been recognized in Alberta featuring stubby points with multiple flutes or basal thinning scars (Gryba 1983; Wormington and Forbis 1965, 86); these are associated with the Sibbald phase, ca. 10,500 BP (Peck 2011, 47), and are discussed in greater detail below. Identification as Sibbald is problematic given the piece's stratigraphic association with deposits slightly above the Agate Basin/Hell Gap materials, and it may be representative of a later occupation (see Rawluk at al, this volume). In this case, another candidate cultural affiliation is a "poorly understood set of material" featuring basally concave lanceolate points and dating from ca. 8,300 to 7,500 BP, identified as the Lusk complex (Peck 2011:108). As with Agate Basin/Hell Gap, basal thinning or fluting is not reported for Lusk specimens.

FiPp-33:7702 is the blade of a short lanceolate projectile point, possibly Agate Basin/Hell Gap, made of dark grey siltstone. The tip is sharply pointed; blade edges are slightly excurvate. The shoulders are rounded and high on the blade margin. The base is broken, with the proximal end being irregularly fractured. Contraction of the stem towards the base remains evident. Flaking on both faces is irregular. The piece's size, high shoulders and blade shape are markedly similar to FiPp-33:7537, again likely due to resharpening.

Finally, FiPp-33:10348 is the basal portion of a short lanceolate projectile point made of light grey quartzite; much of the blade appears to be intact, but the tip is absent. Provenience for this piece is uncertain; it was found in the screen material of Unit 54, Level 4, approximately 15-20 cm below surface. Blade margins are excurvate and very irregularly flaked; this may be due to the poor quality of the material – several step fractures are evident – or the piece may have broken during manufacture and was left unfinished. Proximal margins are obtusely angled; slight basal contraction is evident. The basal margin is concave, and step-fractured basal thinning flakes, possibly representing attempts at fluting, have been removed from both faces. Like FiPp-33:7539, the cultural affiliation of this

Figure 2: Basally concave, possibly fluted point from Lake Minnewanka site (artifact 349R22C8:2; Landals 2008, fig. 27); actual size

piece is enigmatic, but its stubby lanceolate form, basal concavity and possible attempts at fluting are characteristic of the Early Prehistoric. Candidate cultural affiliations include both Sibbald phase and Lusk complex. Although recovered as a screen find, the depth from which it was recovered, above the Agate Basin/Hell Gap materials, suggests that the latter, terminal Early Prehistoric assessment is more likely correct.

DISCUSSION

Very few excavated archaeological sites in Alberta have produced Early Prehistoric points from a reliable stratigraphic context (Benders 2010, 19-24; Peck 2011). Two key sites, the Lake Minnewanka site near Banff (Landals 2008) and the Sibbald Creek site southwest of Calgary (Gryba 1983), provide particularly valuable illustrative material with which to compare the Ahai Mneh assemblage.

Lake Minnewanka

At Lake Minnewanka, Landals's multi-year excavations revealed 26 distinct occupations, including eight well defined, well stratified occupation floors dating between 10,800 and 10,000 BP (Landals 2008, iii); each excavation area was identified as an *operation* (Landals 2008, 108). A basally concave and thinned projectile point base recovered from Operation 17, Occupation 8 at Lake Minnewanka was suggested by Landals (2008, 143) to be Clovis, Folsom or Goshen, a Clovis-contemporary point style; uncertainty of affiliation is due to the fragmentary state of the artifact. This fragment shares several affinities with FiPp-33:7539 and FiPp-33:10348, including basal concavity and multiple basal thinning scars that could be representative of flutes. However, the Lake Minnewanka specimen has a fish-tailed rather than basally constricted form. No radiocarbon dates were obtained for this occupation due to old carbon contamination (Landals 2008, 143).

Another projectile point found by Landals (2008, 163; Figure 3) was identified as Hell Gap, a conclusion based on comparison to similar findings from the nearby Eclipse Site (Fedje 1986, 1988). This point resembles the Agate Basin/ Hell Gap points from Ahai Mneh, FiPp-33:7537, 7538, and 7702. Landals (2008, 163) notes heavy grinding to the lateral edges of this point's stem and reworking of the blade to give it a shouldered appearance. The specimen was recovered from Operation 18, Occupation 2/3, from which a bison horn core yielded an AMS date of 9990 ± 50 BP (Beta 122723; Landals 2008, 160).

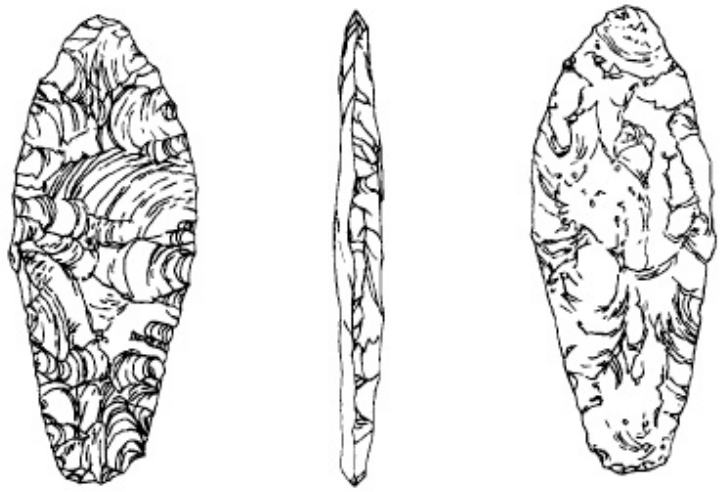

Figure 3: Hell Gap point from Lake Minnewanka site (artifact 349R18E2:1; Landals 2008, fig. 32); actual size

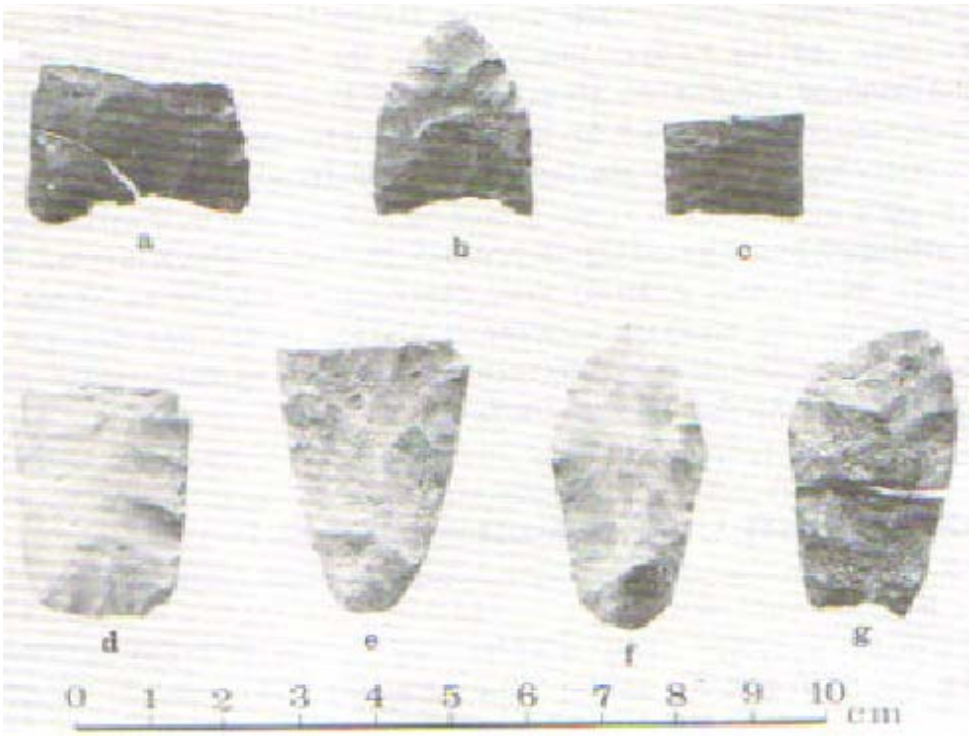

Figure 4: Early Prehistoric points found at Sibbald Creek (Gryba 1983, fig. 28)

Sibbald Creek

The Sibbald Creek site was excavated by Eugene Gryba in 1980 and consisted of between 10 and 12 different cultural components (Gryba 1983, 122). The site is located on a knoll in the Jumpingpound Creek drainage west of Calgary in the southern Alberta foothills. It was the first site in Alberta to yield in situ fluted points. Gryba noted that "this site contained the refuse of successive occupation events which commenced at the time of the Fluted Point Tradition [Early Prehistoric] and continued without any major interruptions for an estimated 11,000 years" (Gryba 1983, ii).

There were three radiocarbon dates obtained from the Sibbald Creek site. They were obtained from organic particles removed from arbitrary 5 cm layers in the lower half of the deposits, and were found to support the typology of the projectile points and stratigraphic evidence (Gryba 1983, 122). Gryba excavated to a depth of 60 cm, by which cultural materials were exhausted (Gryba 1983, 37). The dates that were collected were 5,850 ± 190 BP, 7,645 ± 260 BP, and 9,570 ± 320 BP (Gryba 1983, 122). There were some issues with the latter date—the lab reported that their counting device had to be replaced a couple days after the date was made—but since the sample was taken from the 35-40 cm layer, it did not seem unreasonable to him (Gryba 1983, 123).

There were many projectile points found at Sibbald Creek; among those relevant to our discussion are four Agate Basin points that were found in the 35-40 cm layer, all made of siltstone, with rounded bases and expanding blades, and of poor manufacture (Gryba 1983, 65). Cat. No. 5922, the base of a basally constricted Agate Basin point, is of particular interest for its resemblance to FiPp-33:7538 (Figure 4, *e*). Like the point bases found at the Agate Basin site (Frison and Stanford 1982), these points have constricted bases with narrow, rounded basal margins. As can be seen in Figure 4, several other Agate Basin points from the Sibbald Creek site show a strong similarity to the Agate Basin/Hell Gap points from Ahai Mneh.

There were also two fluted points found

in situ at the Sibbald Creek site in the deeper, undated 40-45cm layer (Gryba 1983, 64). Two specimens were stubby and basally thinned, with multiple flutes on both faces (Gryba 1983, 67; Figure 4, a and b). In addition to their basal concavity and multiple basal thinning or fluting scars, they show no evidence of grinding (Gryba 1983, 67), and are roughly similar to the basally concave, possibly fluted points at Ahai Mneh, FiPp-33:7539 and FiPp-33:10348.

Gryba (1983, 67) felt that the broad, V-shaped bases of these points are very similar to Clovis points. Peck (2011, 47) has called these short, stubby points that are often fluted or have basal grinding Sibbald phase points; he dates them to ca. 10,500 BP based on their similarity to previously dated finds from Charlie Lake Cave in British Columbia (Fladmark, Driver, and Alexander 1988, 375) and the Twin Pines (Ronaghan 1993, 89) and Vermillion Lakes (Fedje 1986, 36) sites in the Alberta Rockies.

It must be recognized, however, that these Sibbald phase points do not feature the same contraction towards the base as the Ahai Mneh pieces. Figure 4, *g*, from the Sibbald Creek site also bears some similarity, with an expanding stem and basally concave shape. In an unpublished consultants' report on excavations at site EgPn-428, Vivian and Reeves (1999, quoted in Peck 2011:109) pointed to Sibbald Creek as evidencing Lusk complex occupation.

Conclusion

The discovery of multiple Agate Basin/Hell Gap points reinforces Soucey and colleagues' (2009) tentative identification of an Early Prehistoric component at Ahai Mneh. Analysis of the 2010 materials has shown that there may in fact have been multiple occupations during this early period. When compared to points found at several other sites in Alberta, direct morphological similarities can be observed, particularly for the Agate Basin/Hell Gap points. Unfortunately, the basally concave, possibly fluted specimens from Ahai Mneh are fragmentary and of poor quality material, making reliable identification difficult. However, the Lake Minnewanka and Sibbald Creek sites produced specimens that are comparable. Whether representative of the Sibbald phase or Lusk complex, further excavation at Ahai Mneh may yield more insight into the presence of a cultural occupation about which very little is presently known.

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References Cited

Benders, Quinn. 2010. "Agate Basin Archaeology in Alberta and Saskatchewan, Canada." MA thesis, University of Alberta.

Byrne, William J. 1973. "The Archaeology and Prehistory of Southern Alberta as Reflected by Ceramics." National Museum of Man Mercury Series Paper 14. Ottawa: Archaeological Survey of Canada.

Fedje, Daryl W. 1986. "Banff Archaeology, 1983-1985." In *Eastern Slopes Prehistory: Selected Papers*, edited by Brian Ronaghan, pp. 25-62. Occasional Paper No. 30. Edmonton: Archaeological Survey of Alberta.

———. 1988. "The Norquay and Eclipse Sites: Trans-Canada Highway Twinning Mitigation in Banff National Park." Microfiche Report Series 395. Ottawa: Environment Canada, Parks Service.

Fladmark, Knut R., Jonathan C. Driver, and Diana Alexander. 1988. "The Paleoindian

Component at Charlie Lake Cave (HbRf 39), British Columbia." *American Antiquity* 53 (2): 371-384.

Forbis, Richard G. 1982. "One View of Plains Archaeology in Canada." *Canadian Journal of Archaeology* 6: 157-166.

Frison, George C., and Dennis J. Stanford. 1982. *The Agate Basin Site: A Record of the Paleoindian Occupation of the Northwestern High Plains*. London: Academic Press Inc.

Gryba, Eugene M. 1983. *Sibbald Creek: A Record of 11,000 Years of Human Utilization of the Southern Alberta Foothills*. Edmonton: Alberta Culture Historical Resources Division.

Guthrie, R. Dale. 2006. "New Carbon Dates Link Climatic Change with Human Colonization and Pleistocene Extinctions." *Nature* 441 (11): 207-209.

Ives, John W. 2006. "13,001 Years Ago—Human Beginnings in Alberta." In *Alberta Formed—Alberta Transformed*, volume 1, edited by Michael Payne, Donald Wetherill and Catherine Cavanaugh, pp. 1-34. Edmonton: University of Alberta Press.

Landals, Alison J. 2008. "The Lake Minnewanka Site: Patterns in Late Pleistocene Use of the Alberta Rocky Mountains." PhD dissertation, University of Calgary.

Mulloy, William. 1958. *A Preliminary Historic Outline for the Northwestern Plains*. Laramie: University of Wyoming Publications.

Peck, Trevor R. 2011. *Light From Ancient Campfires: Archaeological Evidence for Native Lifeways on the Northern Plains*. Edmonton: AU Press.

Reeves, Brian O.K. 1969. "The Southern Alberta Paleo-Cultural – Paleo-Environmental Sequence." In *Post-Pleistocene Man and His Environment on the Northern Plains*, edited by Richard G. Forbis, Leslie B. Davis, Oscar A. Christensen, and Gloria Fedirchuck, pp. 6-46. Calgary: The University of Calgary Archaeological Association.

———. 1983. *Culture Change in the Northern Plains: 1000 B.C. – A.D. 1000*. Archaeological Survey of Alberta Occasional Paper 20. Edmonton: Archaeological Survey of Alberta.

Ronaghan, Brian M. 1993. "The James Pass Project: Early Holocene Occupation in the Front Ranges of the Rocky Mountains." C*anadian Journal of Archaeology* 17: 85-91.

Ronaghan, Brian M., Don Hanna, and Sharon Thorpe. 1983. "Final Report Genesee Power Project Historical Resources Impact Assessment and Conservation Studies." ASA permits 82-10, 82-22, and 82-62. Report on file, Archaeological Survey of Alberta, Edmonton.

Schweger, Charles, Thelma Habgood, and Michael Hickman. 1981. "Late Glacial - Holocene Climatic Changes of Alberta: The Record from Lake Sediment Studies." In T*he Impacts of Climatic Fluctuations on Alberta's Resources and Environment: Proceedings of the Workshop and Annual Meeting of the Alberta Climatological Association*, edited by K.R. Leggat and J.T. Kolylak, pp. 47-60. Report WAES-1-81. Edmonton: Atmospheric Environment Service, Western Region, Environment Canada.

Soucey, Kristin, Bruce F. Ball, and Loïc Boscher. 2009. "Historical Resource Impact Mitigation: FiPp-33, FjPp-50, FjPq-36 and FjPq-37 Trans-Alta Generation Partnership Highvale Mine Pits 3, 4, and 5 Expansion." 2 volumes. ASA Permit 2008-320. Report on file, Archaeological Survey of Alberta, Edmonton.

Vickers, J. Roderick. 1983. *Alberta Plains Prehistory: A Review*. Occasional Paper 27. Edmonton: Archaeological Survey of Alberta.

Vivian, Brian C., and Brian O.K. Reeves. 1999. *Historical Resource Conservation Excavations, EgPn-428, Crestmont Estates: Final Report*. ASA permits 97-30, 98-131. Unpublished consultants' report on file, Archaeological Survey of Alberta.

Wilson, Michael C. 1983. *Once Upon a River: Archaeology and Geology of the Bow River Valley of Calgary, Alberta, Canada*. National Museum of Man Mercury Series Paper 114. Ottawa: Archaeological Survey of Canada.

Wormington, H. Marie. 1957. *Ancient Man in North America*. Proceedings No. 4. Denver: Denver Museum of Natural History.

Wormington, H. Marie, and Richard G. Forbis. 1965. *An Introduction to the Archaeology of Alberta, Canada*. Proceedings No. 11. Denver: Denver Museum of Natural History.