

Current Archaeology in Kansas

Thematic Issue: Kansa Archaeology



Professional Archaeologists of Kansas

Officers and Board

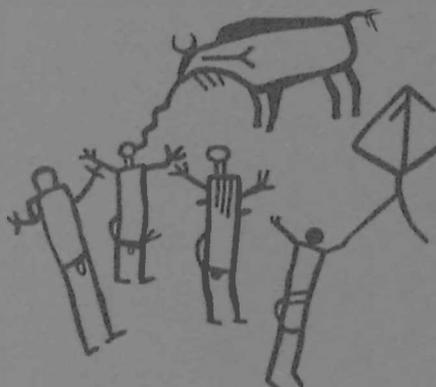
President — Robert Blasing (2012)

Secretary and Editor — Donna C. Roper (2013)

Treasurer — Tricia Waggoner (2014)

Board Members — Christine Garst (2013), David Hughes (2014)

(dates denote year term of office expires)



Professional Archaeologists of Kansas (PAK) has three membership classes: *Regular membership* is open to any individual with an interest in the archaeology of Kansas and who has an advanced degree in archaeology or related fields or who has equivalent experience. *Student membership* is open to undergraduate or graduate students pursuing a degree in archaeology or a related field. *Subscribing membership* is open to any individual who is ineligible for regular or student membership but who wishes to receive the organization's *Newsletter*.

Annual dues, which run from January 1 to December 31 each year, are \$15 for regular members, \$10 for student members, and \$7.50 for subscribing members. Dues may be submitted to the Treasurer, Tricia Waggoner, Kansas Historical Society, 6425 SW 6th Avenue, Topeka, Kansas 66615-1099.

The PAK *Newsletter* is published twice a year, around April and October. The research volume, *Current Archaeology in Kansas*, is published once a year. To submit items for the *Newsletter* or *Current Archaeology in Kansas*, contact the Secretary/Newsletter Editor, Dr. Donna C. Roper, 1924 Bluehills Road, Manhattan, Kansas 66502-4503, droper@ksu.edu.

Current Archaeology in Kansas

Number 9

2012

Contents

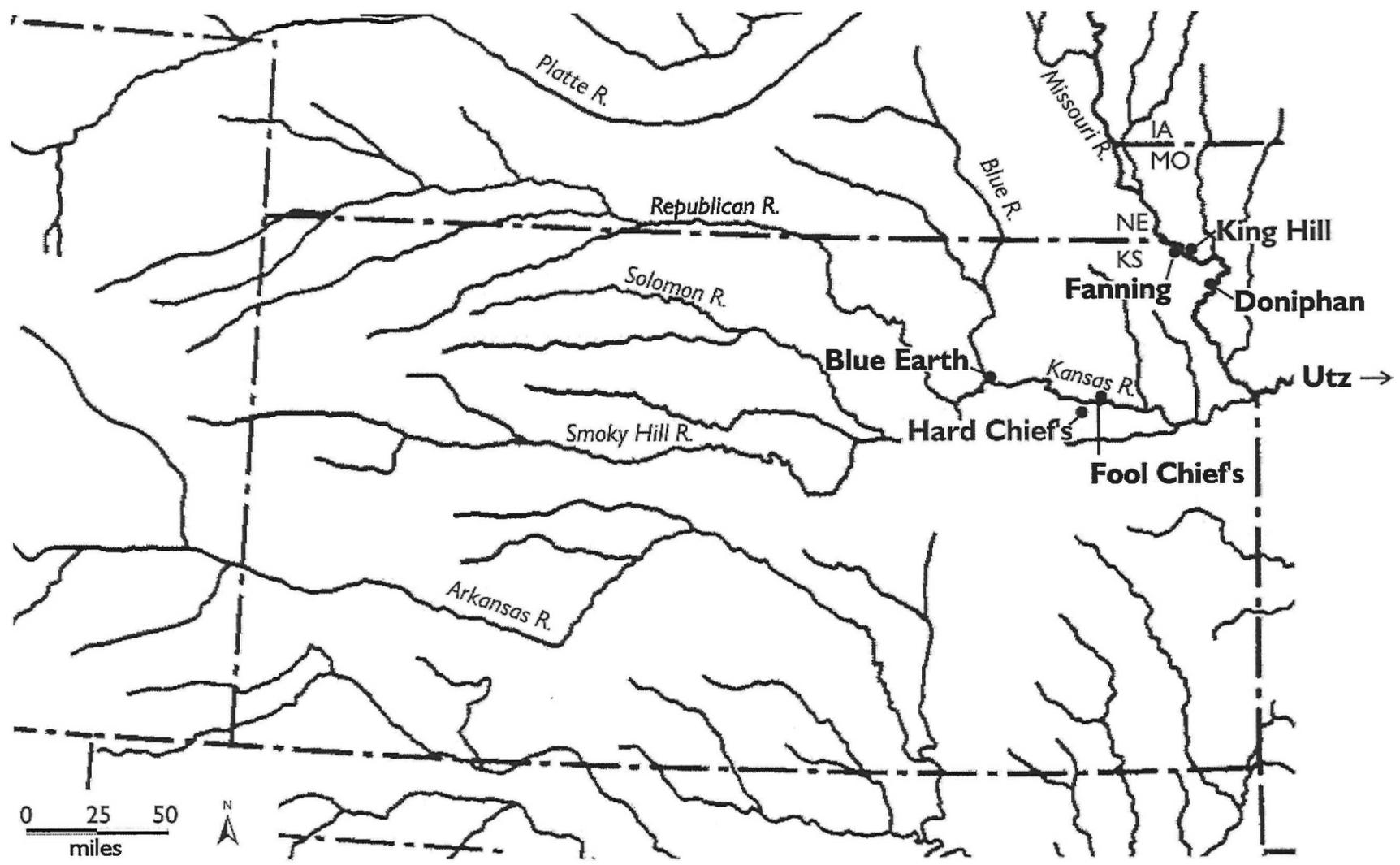
<u><i>Title and Author(s)</i></u>	<u><i>Page</i></u>
Editor's Note	1
Tracking the Kansa - Lauren W. Ritterbush	3
A Brief Reconnaissance on the Fanning Site, 14DP1 - Donna C. Roper	13
The Rediscovery of the Blue Earth Site Maps: Reassessing the Status of 14PO24 - John J. Tomasic	20
Metal Detector Survey and Test Excavations at the Blue Earth Village Site (14PO24) - John J. Tomasic, Donna C. Roper, and Lauren W. Ritterbush	26
The Faint Footprint of Fool Chief's Village - Margaret C. Wood	35
Fool Chief's Village (14SH305): Artifact Analysis and Descriptive Report - Brendon P. Asher and Mark Volmut	48
Partnership to Help in Kansa Village Mitigation - Tricia Waggoner and Virginia A. Wulfkuhle	69
Archaeological Maize in the Central Plains - Mary J. Adair	75
A Report of Possible Ridged Field Agriculture at the Kansas Monument Site, 14RP1 - Donna C. Roper	90
A Comment on the Trinomial Site Numbering System - Chris Garst	96

Editor's Note

As recently as two years ago, a thematic issue devoted to Kansa archaeology would have been inconceivable—there simply was not enough recent or ongoing work to enable such a volume to come together. Things had certainly changed by early 2012. Somehow, Kansa archaeology became a hot topic and, we are finding, one of interest to a general audience in Kansas. Much, but not all, of this work is related to or stimulated by recent or upcoming construction projects that will or could have an adverse effect on one or another of the known or presumed Kansa sites in northeast Kansas and the archaeological work done to assess those real or potential impacts. Thinking over this one day, and simultaneously frustrated by the lack of contributions coming in for a regular volume of *Current Archaeology in Kansas*, I decided to try to solve the submissions problem by capitalizing on the recent and upcoming work with Kansa sites and encouraging, or downright soliciting, contributions that pertained to this work. As the reader can see, this worked out nicely and the result is a set of papers that are quite representative of the state-of-the-art in the first half of 2012. The papers, however, reflect not so much end products, but rather the first steps of the re-entry by Kansas archaeologists into the field of Kansa archaeology. I am hoping that the next issue of *Current Archaeology in Kansas* will have more contributions, even as I also recognize that work on other aspects of Kansas archaeology is on-going and hopefully will be reported as well.

I had another motive for seeking to assemble a thematic volume on this topic. It has not been difficult to determine that the interest in this topic reaches well beyond the archaeological community. Twice in February 2012 I gave talks about Kansa archaeology to broader audiences that, granted, were self-selected for an interest in the topic and were in venues with strong Kansa association (Council Grove and Manhattan), but that were composed of neither archaeologists, nor anthropologists, nor historians, although, in one instance, did include several members of the Kaw Nation. The questions and discussion—as well as comments I received in public settings as much as three months later—reflect considerable interest in this topic among the general public. This issue has, therefore, been assembled with this audience, as well as the journal's regular audience, in mind. In fact, one paper was solicited as a response to a comment common to each talk.

My thanks to all those who responded to my call for papers on Kansa archaeology or from whom I solicited a contribution on a particular aspect of Kansa archaeology. This volume does contain a couple contributions on other topics, one of them already on hand when the idea of a thematic issue came up, the other on a topic in Pawnee archaeology that came to my attention fortuitiously and just begged to be considered at this time.



The general locations in northeast Kansas of known or presumed Kansa sites mentioned in articles in this volume

Tracking the Kansa

Lauren W. Ritterbush
Kansas State University

Two hundred years ago, the Kansa Indians were living in a single major settlement near present-day Manhattan, Kansas. Blue Earth Village was established by 1794 and abandoned by 1831 as the Kansa moved downstream. This move followed the establishment in 1825 of a 30 mile wide reservation along much of the Kansas River westward into the High Plains. After leaving Blue Earth, the Kansa split into several communities. Fool Chief, Hard Chief, and American Chief established villages near Mission Creek outside present-day Topeka, while White Plume and his followers settled farther east near the government agency. These were the last Kansa settlements along the river bearing their name. In 1848, the Kansa moved to a new reservation in the Upper Neosho Valley near present-day Council Grove (Unrau 1971). Intermittent archaeological and historical research has been conducted at several of the Kansas River sites some of which are discussed in this volume (e.g., Asher and Vollmut; Tomasic; Tomasic, Roper and Ritterbush; Wood). The combination of historical and archaeological study of these sites expands our knowledge of the Kansa. The earlier history of this group is partially understood through more limited historical and archaeological studies. Even less is known of the prehistoric ancestry of the Kansa. Here I briefly review the archaeology of the early historic Kansa from the Blue Earth Village back to their occupation of the Lower Missouri River valley. Preliminary comparison of settlement and ceramic data from Fanning, a protohistoric Kansa site in northeastern Kansas, with similar data from the Utz site in central Missouri suggests a relationship between the two and possible ancestral Kansa settlement along the route of their migration westward.

Blue Earth Village (14PO24)

In 1804, as the Lewis and Clark expedition ascended the Missouri River on their journey to the Pacific Ocean, its leaders collected data about the region's native peoples. While at the mouth of the Kansas River (June 26-29, 1804), Clark reported that the Kansa lived in two villages 20 and 40 leagues up that river (Moulton 1986:327). The presence of two Kansa villages at this time has not been confirmed. It is possible that Clark misunderstood or received incorrect information. Over the winter of 1804-1805, Clark compiled the data obtained on their journey about the native peoples east of the Rocky Mountains in his "Estimate of Eastern Indians." In this listing, he noted that the "Kanzas" or "Kah" were living in one village with an estimated 300 warriors or 2000 people. This village was described as "80 Leagues up the Kanzas River" and just below the mouth of the "Bluewater" or Big Blue River (Moulton 1987:344, 392-393).

This settlement was visited in 1811 by George Sibley (1927) and in early August 1819 by Thomas Say of the Long expedition (James 1823; Marshall 2006:222-224). As Stephen Long traveled up the Lower Missouri River via steamboat, he dispatched a party of 12 men under the command of Say up the Kansas River as far as Blue Earth Village. They traveled with difficulty overland in the August heat to the Kansa settlement where they were cordially received. Say described the village as consisting of about 120 semi-subterranean circular earth-covered lodges (James 1823:107-121). During their stay of less than five days, Say recorded much ethnographic information about the Kansa. This was supplemented by Samuel Seymour's sketch of a dance performed by a group of Kansa men inside one of the lodges during the

last evening of their visit (Seymour 1822).

Although few other contemporaneous records document this village, its archaeological remains have been known since at least the late nineteenth century. As documented by Henry Stackpole, remnants of earthlodges were evident in 1880 when he drafted a map of the site for the Kansas State Historical Society (Stackpole 1880). At that time, 50 years after the Kansa had abandoned the settlement various features were visible including more than 150 relatively large circular depressions indicating the remains of collapsed lodges, a number of smaller features likely marking the location of cache or storage pits and possible grave sites (Tomasic 2011). Georeferencing this map with modern imagery is discussed by Tomasic in this volume.

By the early twentieth century, the Blue Earth site had been cultivated, making it more difficult to discern the earthlodge depressions and other features (Griffing 1929). The site was known to Euroamericans who settled the city of Manhattan and surrounding communities after 1850. Visitors and artifact collectors have collected objects from its surface for more than a century.

In 1937, Smithsonian archaeologist Waldo R. Wedel conducted the first professional excavations here. Unfortunately, by that time much of the site had been destroyed or damaged through erosion by the Kansas River, construction of the Union Pacific Railroad, a nursery, cultivation, and other modern activities. Despite no clear surface indications, Wedel found the remains of one lodge floor, several cache pits, and a burial ground (Wedel 1959:187-197). The artifacts recovered consisted largely of Euroamerican trade goods (e.g., metal tools, gunflints). These reflect the Kansa's intimate involvement with Euroamerican trade and the earlier abandonment of certain crafts. Although valuable information was recovered, Wedel was disappointed by the lack of native pottery and other material remains that might be useful in tracing the Kansa back to earlier settlements.

One of Wedel's primary research interests was to identify the tribal affiliation of archaeological sites in the Central Plains, tracking

groups from the historic, to earlier protohistoric and, potentially, prehistoric periods. He is well known for his use of the 'direct historical approach'. For Wedel, this involved three primary steps:

- a) Find historic sites of known tribal identity
- b) Analyze their archaeological remains in order to identify the complex of traits that are diagnostic of that particular group.
- c) Then, follow this group back in time by finding earlier sites that include very similar diagnostic cultural remains.

Upon close analysis there are problems with the assumptions underlying this approach; however, it provided a start to understanding complex ancestral relationships. Unfortunately for Wedel, the historically known Blue Earth Village did not provide diagnostic archaeological remains reflective of earlier Kansa technologies. Thus, he sought historic information to identify earlier Kansa sites.

Early Historic Kansa Villages along the Missouri River

Written documents regarding early travel on the Lower Missouri River serve as an important source of data regarding historic Kansa settlements. Oral traditions also provide related information about Kansa migrations. The Kansa speak a Dhegihan dialect of the Siouan language family. Linguistically related groups include the Quapaw, Osage, Omaha, and Ponca. Oral traditions of these groups relate that they once lived east of the Mississippi River. Together these groups migrated westward, fissioning into separate social units along the route. The Quapaw were the first to split and moved south along the Mississippi River. The others traveled north to the Missouri and divided into various groups while living along that river. Eventually the Osage traveled up the river bearing their name, while the Omaha and Ponca continued up the Missouri. The Kansa stayed on the lower Missouri, migrating upstream, but staying below the Omaha and Ponca (Dorsey 1886; Unrau 1971).

Although the information contained in the oral traditions remains fairly general, it reveals an eastern origin for the Kansa (and related groups) and close association with the lower Missouri River, along which various European traders and Euroamerican travelers passed in the eighteenth and early nineteenth centuries.

Historic documents from this period provide clues to where the Kansa lived during the early Historic and portion of the Protohistoric periods. For example, while ascending the Missouri River above the mouth of the Kansas in 1819, Stephen Long referred to an abandoned Kansa village near present-day Fort Leavenworth (James 1823:102). This site is believed to be the village that was occupied around 1744 while the French were trading at nearby Fort Cavagnial (Hoffhaus 1984). An earlier village was located farther upstream. French trader Etienne de Veniard Bourgmont visited this "village of Twenty-four" in 1724 as part of a mission to establish peace among native tribes. Although Bourgmont did not provide sufficient information to relocate this site accurately, later references to this village by Lewis and Clark, as well as Stephen Long place it below the mouth of Independence Creek in modern-day Doniphan County, Kansas, as indicated by the by Clark's journal entry of July 4, 1804 (James 1823:105; Moulton 1986:350-351; Norall 1988).

We came to and camped in the lower edge of a Plain where 2d old Kansas village formerly Stood, above the mouth of a Creek 20 yds wide this Creek we call *Creek Independence* ... at this place the Kansas Indians formerley lived. this Town appears to have covd. a large Space, the nation must have been noumerous at the time they lived here ... (Moulton 1986:348)

This historical information led Waldo Wedel in 1937 to the Doniphan archaeological site (14DP2). Unfortunately, this site had been impacted by modern developments to the extent that Wedel was unable to find the heart of the Kansa village. He did, however, uncover archaeological

remains representing two different periods of occupation. The earliest and best represented is assigned to the Central Plains tradition. This predates the arrival of the Kansa. The second component is represented by Oneota archaeological remains. Given historic data pertaining to this location, this latter component is attributed to the Kansa (Wedel 1946:10-11, 1959:28-29, 98-130). Among the few Kansa features and artifacts discovered intact were cache pits, burials, shell-tempered pottery, stone tools (e.g., arrow points, scrapers, shaft abraders), catlinite pipes and plaques, metal objects and glass beads (Wedel 1959:98-130). The presence of traditional stone and ceramic artifacts alongside Euroamerican goods indicates that this site was occupied during the Protohistoric or Early Historic periods, concordant with the historic record of the Kansa in 1724.

While working in Doniphan County, Wedel investigated another site known to contain Oneota remains. Fanning (14DP1), unlike Doniphan, is located on a high ridge overlooking Wolf Creek near its confluence with the Missouri River. Excavations uncovered numerous cache pits and midden areas rich with archaeological remains consistent with a Protohistoric or early Historic Oneota occupation (Wedel 1959:131-172). Among the artifacts were potsherds from shell-tempered vessels, both plain (Fanning Plain) and decorated (Fanning Trailed). The latter bear parallel trailed lines on the upper-portion of the body. Areas within chevrons are sometimes filled with sets of punctates. On others, a line of punctates fills the space between parallel lines (Figures 1 & 2) (Wedel 1959:143-150). These suggest a Kansa presence given that Oneota materials were also uncovered at Doniphan. However, Oneota styles of artifacts can be attributed to various Siouan groups, including Dhegihan speakers, as well as those who spoke Chiwere languages. Despite this fact, archaeologists familiar with this site since the early twentieth century, including Waldo Wedel, believe Fanning was occupied by the Kansa. The combination of native-made and Euroamerican goods, as well as the lack of any reference to this site by Bourgmont leads to the interpretation that

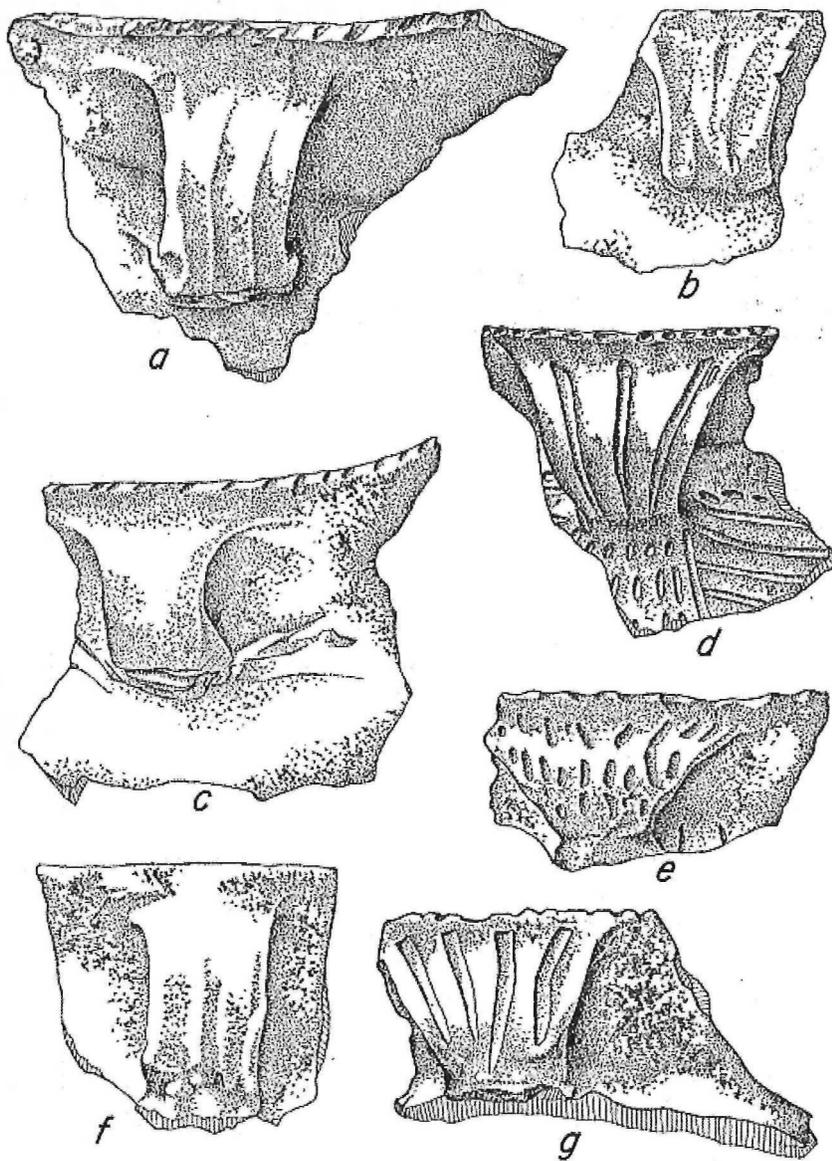


Figure 1. Fanning Plain and Trailed rim-handle sherds from the Fanning site (Wedel 1959:147, Figure 18)

the Kansa lived here during the early contact era but prior to 1724, likely during the late 1600s (Marshall 2006; Wedel 1946, 1959).

Yet another site (originally unmentioned by Wedel) is believed to have been occupied by the Kansa at or about the same time. This is King Hill (23BN1) in present-day St. Joseph, Missouri. Like Fanning, this site is located on an upland ridge overlooking the Missouri River valley. Excavations in 1966 and 1972 by the University of Missouri,

St. Joseph Archaeological Society, St. Joseph Museum, and University of Nebraska uncovered materials very similar to those from Fanning, including some Euroamerican trade goods and Oneota artifacts. The latter include ceramic styles nearly identical to those from Fanning. These are both plain with a smooth surface, straight and tapered handles, high rims and sloping shoulders (Fanning Plain), and decorated with sets of parallel lines occasionally with punctates between lines or filling areas within chevrons (Fanning Trailed) (Raish 1979). The comparable ceramic styles, a couple Lower Loup ceramics likely obtained through native exchange with protohistoric Pawnee, the presence of some Euroamerican trade goods, and no mention of this site by de Bourgmont suggest King Hill was occupied by the Kansa in the seventeenth century (Henning 1998:392).

Precontact Kansa along the Lower Missouri River

On the basis of these data, regional archaeologists are confident in tracing the Kansa from Blue Earth Village in the late eighteenth and early nineteenth centuries back to the Missouri Valley at and below present-day St. Joseph, Missouri, in the seventeenth and early eighteenth centuries. The archaeological signature of the Kansa along the Missouri River appears as distinctive Oneota remains associated with Euroamerican trade goods. Given the oral traditions of the Kansa and their Dhegihan relatives, earlier evidence of the Kansa should be found downstream along the Missouri River. To

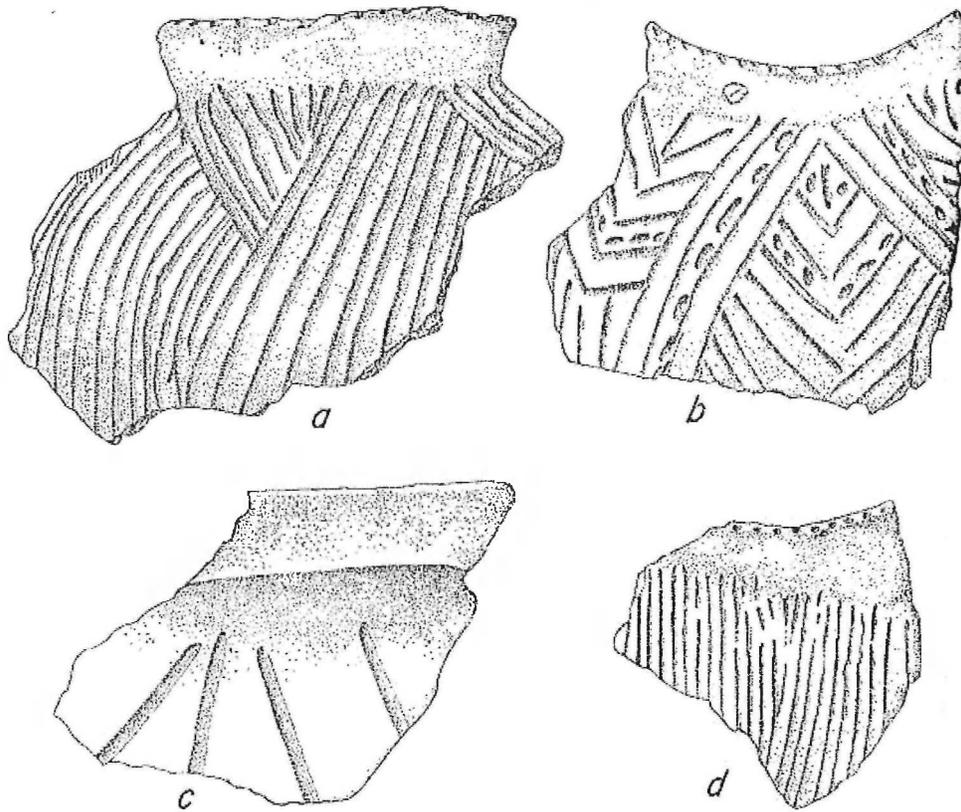


Figure 2. Fanning Trailed rim sherds from the Fanning site (Wedel 1959:148 Figure 19)

date, no concerted effort has been directed towards identifying ancestral Kansa settlements in this region. I suggest that evidence for precontact or very early contact Kansa exist in central Missouri in the Grand-Chariton region of the Missouri River (also known as the Big Bend of Missouri) (cf. Yelton 1998). This area is rich in Oneota sites. As noted earlier, other Oneota also migrated along the lower Missouri River. Because other Dhegihan, as well as certain Chiwere groups (e.g., the Missouri [Dorsey 1886]), established homes along this route, it can be difficult to identify the cultural affiliation of Oneota sites in this region. As noted by Yelton (1998:281) “the question of ethnic identity of the people who occupied the Chariton region sites is complicated.” Nonetheless, this does not mean that it is impossible to address the issue of possible ancestral ties between the Kansa and occupants of the Big Bend Oneota sites.

Previous historical and archaeological studies have suggested affiliations for Oneota sites

in this region with various Siouan groups, both Chiwere and Dhegihan. For example, the Gumbo Point village (23SA4) and Utlaut cemetery (23SA162W) located in the valley have been attributed to the early historic Missouri Indians, a Chiwere-speaking group (Chapman 1959; O’Brien and Hart 1972). The eighteenth century Plattner site, located on a high terrace in the Missouri River valley, is affiliated with the Little Osage,

Dhegihan relatives of the Kansa (Berry and Chapman 1942; Berry et. al 1944; Chapman 1959; Wiegers 1982). A number of other Oneota sites have earlier components that have not been confidently assigned to historically identified groups. Among these is the Utz site (23SA2). Numerous excavations have been conducted at Utz, although only a small portion of this extensive site has been sampled. Utz has long been interpreted as a protohistoric village of the Missouri Indians based on historical evidence of the Missouri in this area during the early contact period, along with the presence of Euroamerican trade goods there (O’Brien and Wood 1998:352 and others). Yelton (1998) has suggested that other groups, especially Dhegihan speakers such as ancestral Osage, also may have once occupied this very large and complex site. Similarly, I suggest the possibility of ancestral Kansa affiliation with one of the multiple components of Utz.

More detailed analyses are needed, yet preliminary review of published data reveals possible clues suggesting Kansa presence. First, like the Fanning and King Hill sites, Utz is in an

upland setting, on a prominent bluff referred to as the Pinnacles. Such situations may have been preferred by the protohistoric or late prehistoric Kansa because of the views afforded over the Missouri valley and possibly for defensive reasons.

Certain ceramics from Utz may also be indicative of the Kansa. Although there is variability among the Oneota remains recovered from different portions of this extensive site, those from at least one section, Area C, are similar to those at Fanning and King Hill. Noteworthy here are vessels with relatively high rims, straight and tapered handles attached at or below the lip, often gently curved necks, and limited decoration. Archaeologists analyzing ceramics from the Utz site have referred to this type as Van Meter or Utz Plain (Bray 1991:48-55; Chapman 1980:298). At Fanning they are called Fanning Plain (Wedel 1959:145-148). Both types are shell-tempered with smooth surfaces that are minimally decorated. Vessels are relatively tall globular jars with rounded bottoms, gently constricted necks, and slightly to more pronounced flaring rims that range from high to medium height. Decoration, if present, is commonly associated with lips or handles (Figure 3). When decorated, the lip is commonly marked with shallow finger or closely spaced tool impressions (Wedel 1959:148, Bray 1991:52). Handles on larger vessels are often flattened, elongate and tapering from their attachment below

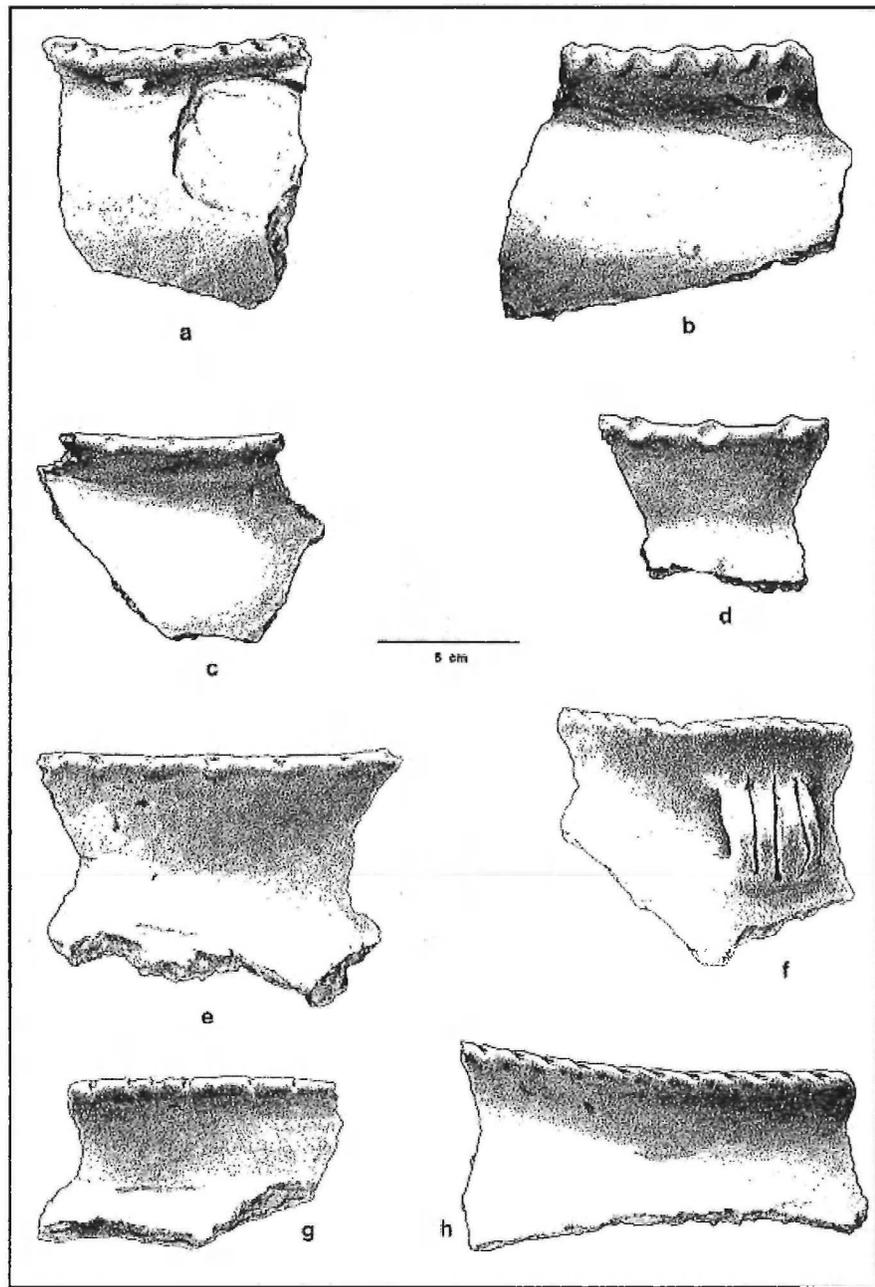


Figure 3. Van Meter Plain (modified lip) rim sherds from the Utz site (Section C) (Bray 1991:53 Figure 11). (Permission courtesy of the Missouri Archaeological Society.)

or at the lip to the upper portion of the shoulder. Even-width (straight-sided strap) handles also occur, but most commonly on what appear to be smaller vessels. Decoration of handles consists of broad, shallow vertical finger trails, narrower trailed lines, or slashes. Variations of Van Meter

Plain include rims decorated by pinching the outer edge of a flattened lip and several examples where shoulders are marked with two rows of shallow tool impressions (Bray 1991:52-54; Chapman 1980:298 Figure A-36).

Plain ceramics from Fanning and Utz are paralleled by similarities between the more extensively decorated types, Fanning Trailed (Wedel 1959:148-150) or Van Meter Trailed (Bray 1991:54-57; Chapman 1980:299). These resemble the plain variety but with decoration on the shoulder, extending onto the body. This consists largely of parallel trailed lines often forming sets of opposed diagonals and chevrons (Figure 4). Punctates are also present on certain vessels. In some cases, these fill open spaces between sets of lines. On others, a single row of punctates was formed between parallel trailed lines. Wedel (1959:150) noted this treatment on 26 sherds recovered from the Fanning site, while Bray (1991:55) observed it on 15% of his Van

Meter Trailed, wide trailed type. This motif is also present on ceramics from the King Hill site (Fuller 2010; Raish 1979:91). This decoration is noteworthy, because it is not described for other Oneota assemblages. Vessels with trailed line motifs generally appear smaller than many of the plain jars with relatively high rims. Strap handles are commonly of even width, rather than elongate and tapering, but are decorated in similar fashion.

In addition to the broad types of Van Meter (Utz) or Fanning ceramics described above, Bray

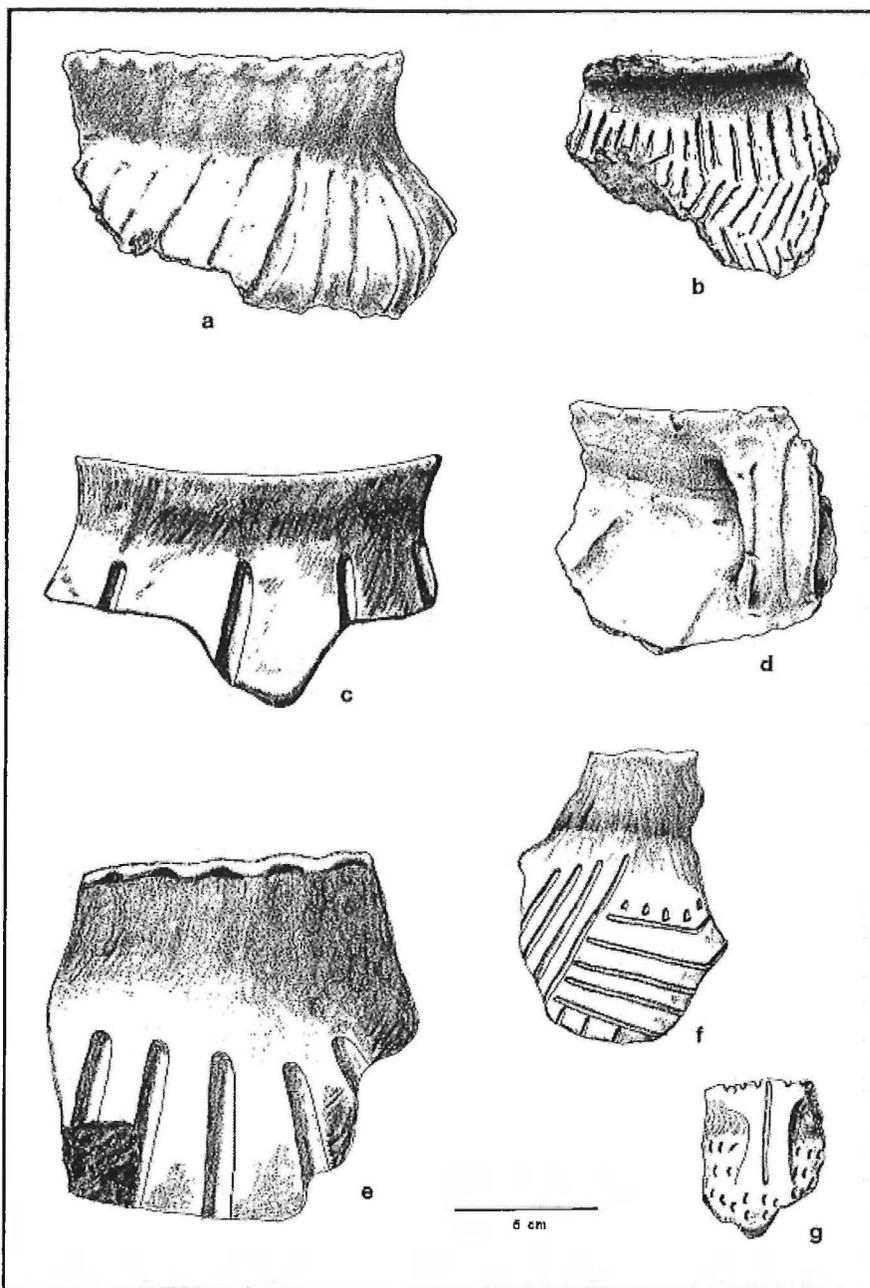


Figure 4. Van Meter Trailed rim sherds from the Utz site (Section C) (Bray 1991:56 Figure 13). b, slash/punctate variety. e, finger-trailed variety.

(Permission courtesy of the Missouri Archaeological Society.)

(1991) defined several more specific variants of the Van Meter ware including a finger-trailed type (Figure 4e) (Bray 1991:55-57). Decoration on these vessels consists of shallow, widely spaced lines

formed by dragging a finger vertically from the neck across the shoulder and onto the body. Vessel lips are regularly decorated with impressions. This form of decoration may also occur at Fanning, although it was not specifically described by Wedel. Another less common type defined by Bray (1991:57-58) is Van Meter Incised, which has lines that appear to be cut into the clay when soft with a sharp implement such as a knife. Wedel (1959:149-150) noted similar sherds at Fanning.

The preliminary comparison of the Fanning and Utz sites presented here provides one avenue of research in the study of Kansa migration and cultural change. Although few radiocarbon dates are available for Utz, like Fanning and King Hill, some European trade goods are present and associated with the above-described ceramic types. This suggests that these sites were at least generally contemporaneous and occupied either concurrently or closely sequential. If an ancestral Kansa affiliation is confirmed for Utz, new information about their settlement history would be revealed. This, in turn, provides new perspectives on issues of the cultural dynamics of the fascinating and significant Protohistoric period, a time of significant change in Kansa culture. Support of this hypothesis also would raise new questions and understanding about broader relations between Dhegihan-speakers such as the Kansa and Osage and between Dhegihan and Chiwere groups, especially the Missouri Indians who are presently believed to have developed from the Oneota base in central Missouri. Much has yet to be learned about pre-contact Oneota development in the Lower Missouri River Valley.

Summary

The Kansa Indians of the Historic period can be tracked back in time and across space through a combination of historical and archaeological studies. Historic records, supported by archaeological studies, place the Kansa not only along the Kansas River in the very late eighteenth and first half of the nineteenth centuries, but earlier along the Missouri River in present-day northeastern Kansas. This is best document for the heavily impacted, multicomponent Doniphan

site, where the Kansa were recorded by de Bourgmont in 1724. A somewhat earlier Kansa presence is interpreted at the nearby Fanning and King Hill sites, likely occupied during the seventeenth and possibly very early eighteenth centuries. Prior occupations of the Kansa have not been formally identified. Because Dhegihan oral traditions suggest the Kansa migrated along the lower Missouri River it is possible they established settlements along this route in former times. Based on preliminary comparison of archaeological remains from Fanning and the Utz site in central Missouri, I propose that ancestral Kansa also lived at the latter during the Protohistoric period. This hypothesis requires verification through further analyses, yet has the potential to provide new details not only about early Kansa settlement, migration, and culture change, but also the relationship with and development of other Siouan groups, especially the Osage and Missouri.

NOTE: An earlier version of this article was presented as "Archaeology of the Early Kansa Indians" at the Lower Missouri River Archaeology and History Conference, Fort Osage, Missouri, September 6, 2008.

References Cited

- Berry, Brewton, and Carl Chapman
1942 Oneota Site in Missouri. *American Antiquity* 7(3):290-305.
- Berry, Brewton, Carl Chapman, and John Mack
1944 Archaeological Remains of the Osage. *American Antiquity* 10(1):1-11.
- Bray, Robert T.
1991 The Utz Site: An Oneota Village in Central Missouri. *The Missouri Archaeologist* 52:1-146.
- Chapman, Carl H.
1959 The Little Osage and Missouri Indian Village Sites ca. 1727-1777 AD. *The Missouri Archaeologist* 21(1).

- 1980 *The Archaeology of Missouri, II*. University of Missouri Press, Columbia.
- Dorsey, J. Owen
1886 Migrations of Siouan Tribes. *The American Naturalist* 20(3):211-222.
- Fuller, Michael
2010 Pottery from the King Hill Site (23BN1). <http://users.stlcc.edu/mfuller/KingHillPottery.html>, Accessed May 23, 2012.
- Griffing, W. J.
1929 The Home of the Kaws. In *Log Cabin Days*, compiled by the Riley County Historical Society. Artcraft Printers, unknown.
- Henning, Dale R.
1998 The Oneota Tradition. In *Archaeology on the Great Plains*, edited by W. Raymond Wood, pp. 345-414. University Press of Kansas, Lawrence.
- Hoffhaus, Charles E.
1984 *Chez Les Canses: Three Centuries at Kawsmouth: The French Foundations of Metropolitan Kansas City*. Lowell Press, Kansas City.
- James, Edwin (compiler)
1823 Account of an Expedition from Pittsburgh to the Rocky Mountains Performed in the Years 1819, 1820. Volume I. London: Longman, Hurst, Rees, Orme, and Brown. Available through *American Journeys* Document AJ-144a, <http://content.wisconsinhistory.org/cdm4/document.php?CISOROOT=/aj&CISOPTR=15507>
- Marshall, James O.
2006 The Kansa. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 219-232. University Press of Kansas, Lawrence.
- Moulton, Gary E. (editor)
1986 *The Journals of the Lewis & Clark Expedition*. Volume 2. University of Nebraska Press, Lincoln.
- 1987 *The Journals of the Lewis & Clark Expedition*. Volume 3. University of Nebraska Press, Lincoln.
- Norall, Frank
1988 *Bourgmont: Explorer of the Missouri, 1698-1725*. University of Nebraska Press, Lincoln.
- O'Brien, Michael J., and W. Raymond Wood
1998 *The Prehistory of Missouri*. Columbia: University of Missouri Press.
- O'Brien, Patricia J., and Kevin Hart
1972 Utlaut Site (23Sa162W): An Oneota-Historic Missouri Burial Site. *The Missouri Archaeologist* 34(1-2):48-66.
- Raish, Carol B.
1979 King Hill (23BN1), Fanning (14DP1) and Leary (25RH1): A Study of Oneota Ceramic Variability. Unpublished Master's Thesis, Department of Anthropology, University of Nebraska, Lincoln.
- Seymour, Samuel
1822 Dog Dance Performed by the Kansa Indians. *Kansas Memory*, Kansas Historical Society. <http://www.kansasmemory.org/item/208338>, Accessed May 22, 2012.
- Sibley, George C.
1927 Extracts from the Diary of Major Sibley. *Chronicles of Oklahoma* 5(2):196-218. <http://digital.library.okstate.edu/Chronicles/v005/v005p196.html>, Accessed May 22, 2012.
- Stackpole, Henry W.
1880 Kansas Indian Village. *Kansas Memory*, Kansas Historical Society. <http://www.kansasmemory.org/item/224981>, Accessed May 17, 2012.

Current Archaeology in Kansas

- Tomasic, John
2011 The Rediscovery of Lost Maps on Manhattan's Blue Earth Kansa Indian Village. *Kansas Preservation* 33(3):19-21.
- Unrau, William E.
1971 *The Kansa Indians: A History of the Wind People, 1673-1873*. University of Oklahoma Press, Norman.
- Wedel, Waldo R.
1946 The Kansa Indians. *Transactions of the Kansas Academy of Science* 49(1):1-35.
- 1959 *An Introduction to Kansas Archeology*. Bulletin 174. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.
- Wiegers, Robert Paul
1982 The Little Osage Village. *The Missouri Archaeologist* 43:111-140.
- Yelton, Jeffrey K.
1998 A Different View of Oneota Taxonomy and Origins in the Lower Missouri Valley. *The Wisconsin Archeologist* 79(2):268-283.

A Brief Reconnaissance on the Fanning Site, 14DP1

Donna C. Roper
Kansas State University

A recently-created rural water district is proposing to construct a water distribution system in a portion of Doniphan County, Kansas. In mid-June 2010, and with the assistance of Brendon Asher, I conducted an archaeological survey on the portions of the proposed waterline network the Kansas SHPO had requested be surveyed. In the overall project design, one of the waterlines is routed across the Fanning site, 14DP1. Fanning, of course, has been known to collectors and avocational archaeologists for at least a century. It received some professional attention in roughly the middle third of the twentieth century, and is listed on the National Register of Historic Places (NRHP). But professional attention to, and systematic work on, this site has been limited and in any event was conducted long enough ago that the current status of the site is not documented. It was clear from the maps provided by the water district that the one waterline absolutely would cross the middle of the site and it was quite obvious that we would be inspecting at least the portion of the site to be affected by waterline construction. The question we had to address, therefore, was whether that specific portion of the site exhibits those qualities that make the site as a whole significant, eligible for, and listed on, the NRHP. It was quickly found that the portion of the site within the route as planned does contain significant archaeological resources. Avoidance or testing on this part of the site was recommended (Roper 2010). Since it was so immediately clear that this would be the recommendation, we used the occasion of having access to the site to inspect it more broadly, in part to make specific recommendations for alternative waterline routings, and in part to make an informal

assessment of its status at this point in the early twenty-first century.

The Site: Brief Description and Past Investigations

The Fanning site occupies a position about one mile north of the town of Fanning, in northeast Doniphan County. Topographically, it lies on a long and fairly gentle slope on the east bluff of the Wolf River. The river currently is about 0.8 mile to the southwest and west; however, its present channel is in the western part of the valley and it is possible that the river was much closer to the base of the bluffs in the past. In fact, the GLO plat map, drawn in 1855, shows it flowing in a course that lay farther east in the valley than at present, although still well west of the base of the east bluff. The drainage divide between the Wolf River and the Missouri River is about 0.8 mile to the northeast and the Missouri River is about 2.3 miles northeast of the site. The terrain surrounding the site area is heavily dissected, and drained by unnamed short first- and second-order streams that flow to the Wolf River. The state site form filed in 1967, the only version of the site form that is on-line, suggests the site covers about 10 acres. As plotted on the on-line quadrangle map, it is elongated in a north-south direction across about 40 to 50 feet of relief. It stands about 100 or so feet above the river and has an excellent view of the valley. A steep draw adjacent to the southeast part of the site flows to the river, but otherwise the site area, as mapped, is undissected. A dirt road crosses it in an east-west direction approximately in the middle of the site. At present, the land south of the road is cultivated, while that north of the road is in pasture.

The early twentieth century was a time of much interest in the region's archaeological resources and extensive activity on sites in Doniphan County and the Nebraska counties bordering the Missouri River from the state line north to about Omaha. An interesting little note in the pages of *The Archaeological Bulletin* in 1916 said that few counties has produced a larger quota of members of the journal's publisher, the International Society of Archaeologists, than had Doniphan County (Remsburg 1916:104). It is not surprising, therefore, that the Fanning site was first noticed early in the century. A curious note here is that in the copy of the 1904 Doniphan County plat book (North West Publishing Company 1904) that was scanned and is available on-line (www.kansasmemory.org/item/209409/page7), the location of the Fanning site has been plotted by hand, and an arrow leads to a marginal notation that reads "Wolf Creek site." This annotation obviously could have been made at any time during the period from 1904 until when this particular page was scanned, presumably within the last decade or so, but the old handwriting style and the fact that the site has been known as the Fanning site, not the Wolf Creek site, for many decades, suggesting that this book was defaced many years ago (not to mention that plat books go out-of-date after a relatively short amount of time and new editions are published).

The earliest dated reference that might be to the Fanning site is a short note published in 1910 by Pryor Plank. The reference is vague, but Plank describes excavating on a site east of the lower Wolf River that he implied to be extensive, and where he found "nice flint arrowheads" as well as pottery, "stone axes," and debitage ("spawls") (Plank 1910:97-98). More certain is a brief 1912 account by R.S. Dinsmore where he also described finding arrowpoints, chipped and ground stone tools, and pottery in some quantity. Dinsmore also reported seeing "no evidence of any mounds, but there are at least 20 teepee sites on less than 10 acres of ground" (Dinsmore 1912:54). Fowke (1922:153) put that differently, though, saying that Dinsmore had counted 125 "tipi sites" on this village "[N]ear the mouth of Wolf River." He also

said chert scrapers were very common here. Either way, it suggests that evidence of dwelling locations was still readily visible at that time. It also is possible that cache pits, which, when unplowed, have a tendency to have a sunken appearance to the surface, were highly visible at that time. A final early reference to this site is by Frederick Sterns. Wedel (1959:132) suggests that Sterns collected material here for the Peabody Museum at Harvard, but Sterns (1915:176) himself says he did not visit this site, that he called the Wolf Creek Site, but studied it by working with Dinsmore's collection. His dissertation was largely concerned with what we now would call Nebraska phase sites, so his account of this site is limited to a page in a section of the dissertation reviewing some other sites in the general southeast Nebraska/northeast Kansas area. After briefly reviewing the evidence concerning this site, he concluded that it was "not very old" and that it (and the Leary site, 25RH1, to which he compared it) were attributable to the Kansa. Plank and Dinsmore had obliquely alluded to this, but not really posited it as a possible cultural affiliation. It was, therefore, Sterns who first specifically suggested it.

The only major excavation ever conducted at Fanning, of course, was that completed in 1937 under Waldo Wedel's direction. Wedel's investigation included testing three middens and excavating a single lodge (House 1) and 46 cache pits, four of which were inside, although not necessarily associated with, the lodge. In his site report, Wedel (1959:131-171), using his usual reporting format, published maps of the site showing where his excavations were, showed a floor plan of the lodge, summarized data regarding the pits, and gave a systematic accounting of the material remains recovered during the excavation. Along the way, he defined two pottery types, Fanning plain and Fanning trailed, to accommodate the remains from this site (Wedel 1959:145-150), and, as had Dinsmore, he commented on the ubiquity of scrapers and how they were the most numerous material objects in his collection (Wedel 1959:155). His assessment of the date of occupation was that it was post-contact, abandoned by the time de Bourgmont was in the area in 1724,

and probably abandoned prior to 1700 (Wedel 1959:171-172). He initially said that could not offer anything conclusive, and found Sterns's attribution of the site to Kansa occupation to be not without some difficulties, but after stating his reservations, ended up concurring with Sterns' conclusion.

Work since 1937 has been limited. In 1963, Jack Schock and William Bass, along with students from the University of Kansas, salvaged the contents of eleven cache pits on the south side of the road. The easternmost of these pits was more or less directly across the road from (i.e., south of) the main concentration of pits Wedel excavated. The other pits were in a line extending to the west. Schock and Bass (1966) subsequently described the materials recovered during that excavation. These materials included pottery; chipped stone artifacts, the single most numerous formal tool class being endscrapers; a few groundstone objects; both shell beads and glass beads; metal objects; worked and unworked bone, including a few pieces of human bone; and limited floral remains. A single gunflint was identified as a type of French gunflint introduced around 1675. The glass beads also are French, and are identifiable to a type that appeared around 1650. Schock and Bass (1966:211) correctly note that the gunflints and beads could be later additions at this site; to which might be added that, conversely, they also could have been introduced to a site that had already been in existence for an undetermined amount of time. Still, a late 1600s date and not necessarily a later date is indicated and would be consistent with Wedel's chronological estimate.

Wedel later obtained one radiocarbon age determination on charred corn from the bottom of one of the cache pits Schock and Bass excavated. The assayed age of the sample, laboratory number SI-75, was reported as <100 years (Long 1965:248). While this appears to be a modern sample, having been run in the mid-1960s it probably is a measured age not corrected for isotopic fractionation. It also may have used an older half-life estimate for ^{14}C . Correction for those two effects, if possible, and calibration of the corrected age estimate, potentially could yield a calibrated that would be consistent with the

late seventeenth century date estimate (this is not just a supposition—I ran some numbers).

In 1966, Les Hixon and several other individuals excavated a pit said to lie 225 feet south of the road. This would probably put it towards the south end of the site as Wedel (1959:133) portrayed it, and certainly would place it well south of the southernmost features Wedel (1959:134) excavated. The Hixon excavation is briefly described in a typescript report sent to then-state archaeologist Tom Witty and now held in the 14DP1 site file. Descriptions of the material are so limited that they do not allow any comparison with materials from farther north on the site.

Other information in the state site files includes a sketch map drawn by A.T. Hill. While undated, it would seem plausible that it dates to the late 1930s, at which time Hill was leading field parties in southeast Nebraska. In some way, this may be one of the more useful maps of the site, for it provides something of a datum by showing the road west of the site, the road that runs through the site, and the draw on the east side of the site. It also maps information about the site relative to those modern features, and even gives some distances, although it also is noted that they are approximations. Site boundaries are indicated. Middens are said to be "plentiful" in the northern part of the site and in the vicinity of the road, but a notation for the south end of the site reads "indications scarce."

In addition, the site is well-known to collectors. Two collections have received notice in this journal in recent years (Feagins 2006, 2007) and at least one of them is more fully documented in manuscript form in the state site files. Other collections are known. The state site file for the site also contain a few other records of small investigations, including a brief inspection and some road profiling by Tom Witty in February 1961.

The 2010 Reconnaissance

The primary objective of the survey conducted in June 2010 was, of course, to evaluate that portion of the Fanning site to be affected by waterline construction. This amounted to a corridor

about 25-30 feet wide that crosses the middle of the site in an east-west direction south of the road. This put it in a cultivated field that was planted in soybeans for the 2010 crop season. The crop had been planted using no-till. It was ankle to calf-high at the time of survey and was not yet excessively bushy. This meant that visibility and surface conditions were excellent for a survey. It took little more than stepping onto the survey area and looking down to begin finding cultural debris in some quantity and diversity. Ultimately, we covered the entire waterline corridor with close interval transects and collected cultural debris as we went. We also used an Oakfield soil sampler to assess the possible context of the debris observed on the surface. The results were provocative.

Cultural debris observed on the surface was concentrated in an area measuring perhaps 10-15 meters in diameter, and was sparse to absent beyond this area. Wedel's excavation map has no datum point, but it is superimposed on a contour map of the site, so the location of those excavations can be approximated from topography. Schock and Bass's map did not show topography and we can fix their excavation only by their verbal estimate of where it was relative to Wedel's excavation. Working from this, and assessing the topography in the field, I would judge that the debris concentration we recorded was east of the easternmost pit Schock and Bass excavated and south or perhaps more nearly south-southeast of the lodge Wedel excavated. The upper part of the profiles observed in probe holes in this concentration reflected, as expected, a plowzone. Below this, an intact sediment horizon clearly contained organic matter. Indications were that it also contained cultural debris. This horizon ended abruptly and give way to a lighter subsoil. Both Brendon and I had worked on the excavation of an historic earthlodge at the Kansas Monument site (14RP1) two years earlier and are well aware of what an historic earthlodge profile looks like. I am not fully willing on the basis of this limited evidence to commit to the interpretation of this Fanning site location as a

lodge, potentially with a floor remaining intact below the plowzone, because the possibility of a double plowzone cannot be ruled out. However, and particularly in light of the concentrated debris on the surface and the fact that the profiles from probe holes beyond the concentration did not replicate what was observed in the concentration, I am equally as unwilling at this time to rule out the lodge possibility. Formal testing is required to resolve this.

The collection from the June 2010 reconnaissance is small, but it is diverse and characteristic of what is expected for the Fanning site. A total of 44 shell-tempered pottery sherds were collected. Of these, 43 are body sherds and one is a rim sherd (Figure 1). Only one body sherd is Fanning trailed. Decoration comprises straight lines that converge some, but the piece is too small to determine the entire motif. All other body sherds and the rim sherd are smooth-surface Fanning plain sherds.



*Figure 1. Body and Rim Sherds
(scale is in cm)*

Chipped stone objects are a prominent part of the collection. As had Dinsmore, Wedel, and Schock and Bass, we found endscrapers to be the most common chipped stone tool class here—indeed, in our case, they were the only formal tools observed and collected. The collection from the concentration in the field south of the road contains two complete endscrapers and the proximal end

of a third specimen (Figure 2). They are small, falling within the size ranges of the scrapers Wedel (1959:156-157) described, but toward the lower end of those ranges. Other chipped stone objects include 54 pieces of debitage. Some of these are shatter; some are reduction flakes. Most chert represented by both the endscrapers and the debitage is grey in color. Some definitely is Permian chert from the Flint Hills; the banded variety called Florence D, from the northern Flint Hills, is particularly notable. Wedel (1959:154) also noted the predominance of Flint Hills cherts in his Fanning site assemblage. Some of the grey chert in this collection, though, may be from chert-bearing Pennsylvanian formations. Several pieces of debitage show evidence of having been burned. Deliberate heat treatment does not seem to be indicated, but the significance of the burning really cannot be assessed without both more material and material in context. Finally, one complete scraper, the proximal end of another scraper, and small proportion of the debitage appears to have come from sources in the western Ozarks.

Six pieces of bone are too small to be reliably identified. They include unburnt, burnt, and calcined bone.

One of two other items recovered during the reconnaissance is a small portion of the bowl of a pipe made from red pipestone (Figure 3). The fragment is small, but the diameter indicated by the curvature of the fragment suggests the pipe

actually was small. It is similar to a pipe Schock and Bass (1966:Figure 5f) recovered in 1966 and to pipestone pipes from the Eagle Ridge site (25SY116) in eastern Nebraska (Bleed 2010:115). The other object is a perforated metal disc (Figure 4). It is slightly convex and the interior shows an adhering substance that I cannot identify. When we found it, Brendon commented that some of the metal objects from the Kansas Monument site had a similar-appearing adhering substance. This particular object is represented at that site as well and probably represents an ornament worn in the hair or on clothing.

Since it was obvious that avoidance or testing would be recommended for this part of the site, we turned some attention to evaluating possible alternative routes, particularly on the north side of the road. We also took the opportunity to evaluate the appearance of this part of the site. Most of Wedel's excavations were on this side of the road. Using Wedel's (1959:134) map, reading the topography, and pacing some distances took us to what we think is the area of Wedel's House 1 excavation (it did seem a little closer to the road than it should have been, according to measurements Wedel reported, but it also is the only place that fits the topography). This was recognized in the usual way as a slightly sunken area with straight edges, right angle turns along the edges, and vegetation that differs slightly from that in the surrounding area. This area of the site is

in pasture with minimal ground surface visibility so, not surprisingly, we saw no additional debris nor indication of features. Nor did probing in the typical location for a waterline corridor a short distance back from the north side of the road indicate the presence of any middens, lodges, or pits. Maps from Wedel's and Schock and Bass's excavations suggest that many



Figure 2. Scrapers

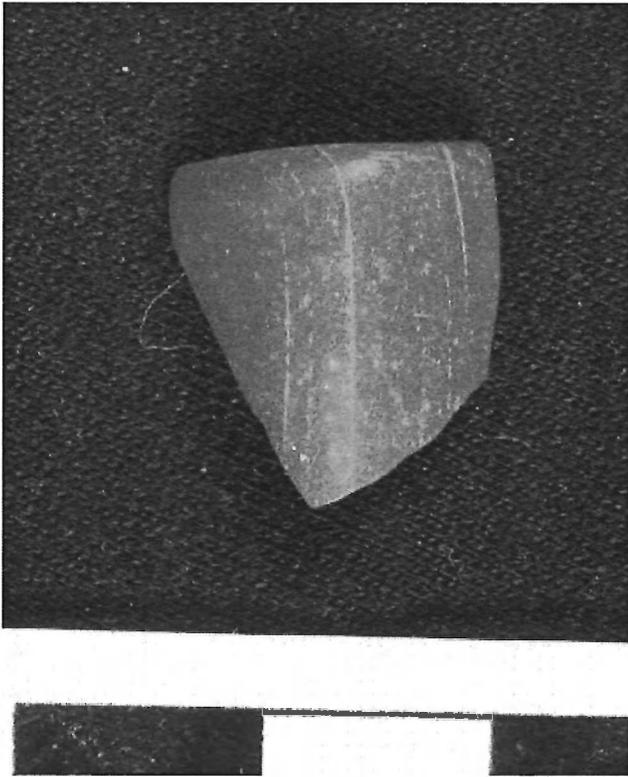


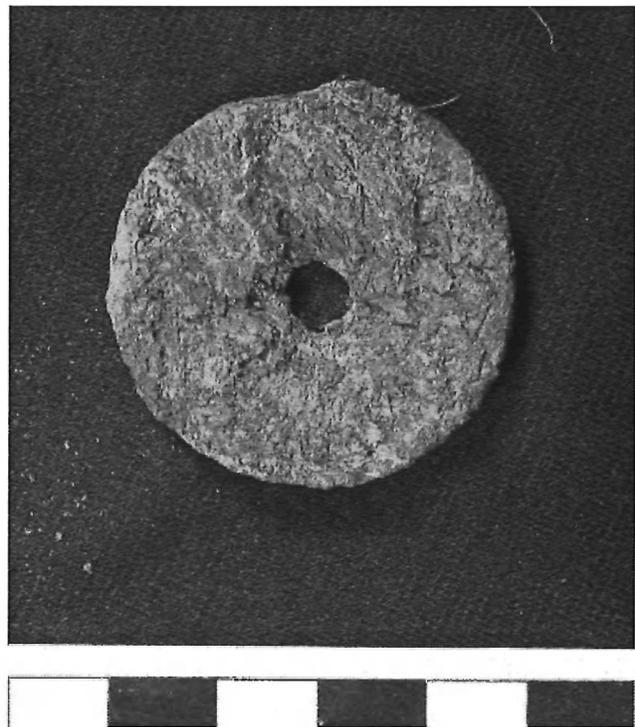
Figure 3. Pipe Bowl Fragment

pits in a corridor paralleling each side of the road have already been excavated. We saw no indications of any features remaining here, but our negative evidence is way too limited to be definitive. Collections from this part of the site amounted to one more endscraper from a cattle trail, and a small scrap of sheet brass picked up in the road.

Discussion

The previous work at Fanning has not resulted in the emergence of a particularly systematic portrait of the site and its place in eastern Central Plains prehistory, nor does this reconnaissance rectify that, nor could it possibly do so, given its scope and circumstances, and therefore it was not intended to do so. The early twentieth century accounts, particularly that by Dinsmore, would suggest the presence of lodge remains. It is apparent that Wedel interpreted them this way (cf. Wedel 1959:132, where he mentions Dinsmore's report of "20 or more lodge sites"), and, indeed, he did locate and excavate the remains

of one lodge. Presumably the site holds other such remains, and the results of this reconnaissance may suggest the location of one of them. The only indication we have of the number that once were observable is Dinsmore's account. Otherwise, the quantity and distribution of lodge remains will remain unknown unless remote sensing is applied to identify them. Our June 2010 observations are optimistic, however, in that they suggest that the part of the site north of the road may not be subject to much erosion and sheet wash, and that the integrity of features and deposits in this part of the site may be similar to what it was when Wedel was there. Of course, at least 58 pits and a lodge have been excavated at this site, but the question of whether any features remain (and our guess is that some likely do) is a separate issue from that of the integrity of the site.



*Figure 4. Metal Disk
(scale in cm)*

Epilogue

With my input and input from the SHPO, the water district has chosen an alternative routing of the waterline that should have no adverse effect

on significant resources. It does not appear, therefore, that this particular undertaking will afford further opportunity to investigate any portion of the Fanning site. It does appear, however, that in spite of plowing and undoubtedly some erosion, significant archaeological resources may be present in at least a portion of the site. An effort to investigate this part of the site under other auspices likely would be repaid with information that could add to our understanding of this site and its place in protohistoric Missouri River valley archaeology.

References Cited

Bleed, Peter

2010 Catlinite-Processing at Eagle Ridge. In *The Eagle Ridge Site and Early Eighteenth Century Indian-European Relations in Eastern Nebraska*, edited by Gayle F. Carlson and John R. Bozell, pp. 103-124. *Central Plains Archeology* 12(1).

Dinsmore, R.S.

1912 A Visit to an Old Indian Village Site near Sparks, Kansas. *The Archaeological Bulletin* 3(2):53-54.

Feagins, Jim D.

2006 Dyche Collection from the Fanning Site. *Current Archaeology in Kansas* 6:30.

2007 The Michael Fisher Collection from the Fanning Site: A Preliminary View. *Current Archaeology in Kansas* 7:34-37.

Fowke, Gerard

1922 *Archeological Investigations*. Bulletin 76. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Long, Austin

1965 Smithsonian Institution Radiocarbon Measurements II. *Radiocarbon* 7:245-256.

North West Publishing Company

1904 *Plat Book of Doniphan County, Kansas*.

North West Publishing Company, Minneapolis, Minnesota. www.kansasmemory.org/item/209409/
Plank, Pryor

1910 Old Village Sites in Doniphan County, Kansas. *The Archaeological Bulletin* 1(4):96-98.

Remsburg, George J.

1916 Miscellaneous Notes. *The Archaeological Bulletin* 7(4):104-106.

Roper, Donna C.

2010 Phase II Archaeological Survey for the Water Development Project, Rural Water District #6, Doniphan County, Kansas. Report to Doniphan County Rural Water District #6, Highland, Kansas.

Schock, Jack M., and William M. Bass, III

1966 Some Additional Artifacts from the Fanning Site (14DP1). *Plains Anthropologist* 11(33): 208-219.

Sterns, Frederick H.

1915 The Archeology of Eastern Nebraska with Special Reference to the Culture of the Rectangular Earth Lodges. Unpublished Ph.D. dissertation. Department of Anthropology, Harvard University, Cambridge, Massachusetts.

Wedel, Waldo R.

1959 *Introduction to Kansas Archeology*. Bulletin 174. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

The Rediscovery of the Blue Earth Site Maps: Reassessing the Status of 14PO24

John Tomasic
Kansas Historical Society

Recently, I completed a Phase II survey of a KDOT project near 14PO24, the Blue Earth Kansa village site. During the writing of the survey report (Tomasic 2011), I conducted an exhaustive review of KSHS records pertaining to the site, which resulted in the rediscovery of two unpublished 1880 maps of the Blue Earth village site. Although previous research suggested the vast majority of the site was destroyed by the lateral migration of the Kansas River (Esry 1985; Wedel 1959), Roper (2009a:30, 2009b:13-14) and Ritterbush (2009) recently suggested that perhaps one third of the site's land surface remains. Based on the information obtained from these rediscovered maps, it now appears that as much as three quarters of the site's land surface escaped destruction.

Historical records suggest the Kansa established Blue Earth village as early as 1790 (Roper 2009b:9), and that the site was more-or-less continuously occupied for more than 30 years (Bailey and Young 2001:471). In 1819, Thomas Say visited Blue Earth Village in association with the Stephen Long expedition (James 1823). According to Say's published description, the village contained approximately one hundred twenty circular, semi-subterranean earthlodges (James 1823:112).

In 1880, Franklin Adams of the Kansas State Historical Society commissioned Henry Stackpole to create a detailed map of the Blue Earth Village site (Anonymous 1881:287). According to the 1881 report:

The site of the village is on the present farm of the Hon. Welcome

Wells, and is crossed by the Kansas Branch of the Union Pacific Railroad. The situations of the lodges are yet plainly marked by circular ridges and depressions, ranging in diameter from less than ten feet to more than fifty feet. These, numbering about one hundred and sixty, exclusive of those which are quite small, were accurately measured and located by H.W. Stackpole, Esq., of Manhattan, and thus data obtained for a correct map of the village site, which has been made for preservation in our collections (Anonymous 1881:287).

The 1881 report includes a general map of the Blue Earth Village site (Anonymous 1881:288) (Figure 1). Prior to the current project, the published 1881 map was used as if it was Stackpole's site map (Roper 2009b:13; Ritterbush 2009:36-37). However, discrepancies in the description of Stackpole's map (Anonymous 1881:287) and the published map (Anonymous 1881:288) had led to the inference that an unpublished, more detailed map of the site might exist (Roper 2009b:13).

During the writing of this report, I conducted an extensive search of the KSHS map collection with the assistance of KSHS archivist Bob Knecht in order to determine whether an unpublished map of the Blue Earth Village site might exist. Eventually, this search paid off in the

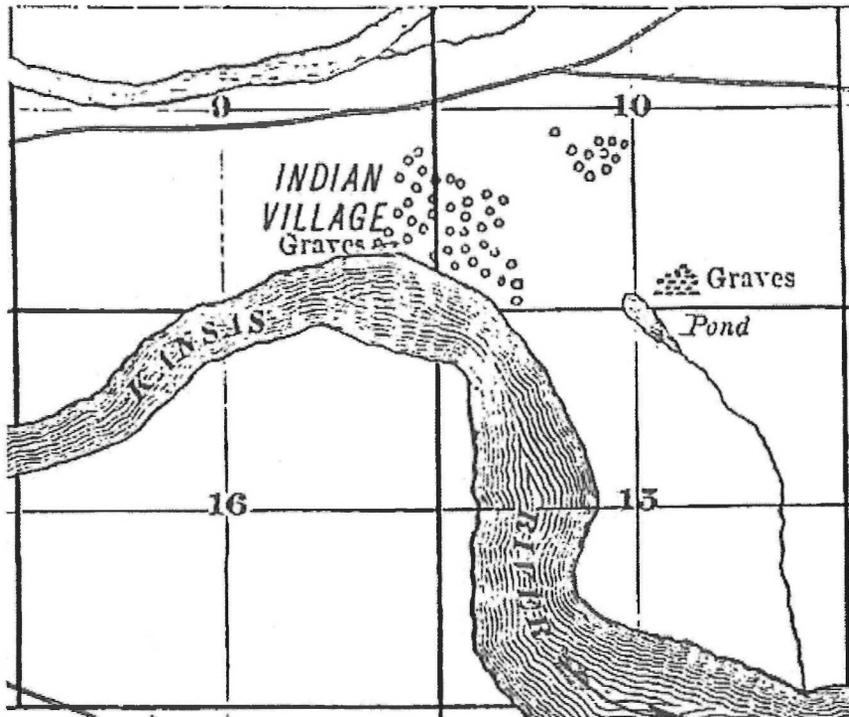


Figure 1. 1881 Regional Map of the Blue Earth Village site (Anonymous 1881:288)

Kansas Memory website (<http://www.kansasmemory.org/item/224981>).

Until recently, it was generally believed that the vast majority of the Blue Earth village site was destroyed by the lateral migration of the Kansas River (Esry 1985; Wedel 1959). Contrary to previous studies, Roper's (2009a:30, 2009b:13-14) recent research demonstrated that perhaps

rediscovery of two unpublished maps of the site (Figure 2, Figure 3).

The first of these maps (Figure 2) appears to be the Stackpole's original 1880 field map of Blue Earth Village. This map depicts approximately 160 earthlodges of varying size on the north bank of the Kansas River. The map caption reads "Map of a part of Tp. 10S., R. 8E., Kansas; showing the site of the Kansas Indian village as described by Prof. Thomas Say, of Maj. Long's exploring expedition in 1819. Surveyed, and sites of lodges mapped by the Kansas Historical Society, May 1880. The second of these maps (Figure 3) appears to be the revised version of Stackpole's 1880 field map. Perhaps the most significant modification to this revised map is the addition of an inset map within the southwest corner of the map. This map inset is a general map of the region showing the general location of Blue Earth Village relative to the Kansas River and Big Blue River. This map inset appears to be the basis of the published 1881 general map of the Blue Earth Village site (Anonymous 1881:288). Both of these unpublished maps are now available for download from the Kansas Historical Society's

one third of the site's land surface remains unaffected by the movement of the Kansas River, and these areas might still contain intact cultural materials associated with Blue Earth Village.

Following the discovery of Stackpole's unpublished 1880 maps, I used the GIS based technique known as georeferencing in order to reassess the degree to which the Blue Earth Village site had been destroyed by lateral migration of the Kansas River. Despite the lack of an appropriate scale or landmarks in the 1880 Stackpole maps, a close reading of the 1881 description of the site (Anonymous 1881:287) revealed key pieces of information that could be used to provide both an appropriate scale and appropriate landmarks with which to georeference both of the 1880 Stackpole maps. As a result, the approximate locations of the earthlodges mapped by Stackpole could then be visualized relative to modern features on 2010 aerial images of the site, as well as to Dort's (2009) historical channel changes of the Kansas River (Figure 4).

The georeferencing of Stackpole's 1880 maps of the Blue Earth village site confirms Roper's (2009a, 2009b) assertion that many of the earthlodges on the south side of the railroad tracks

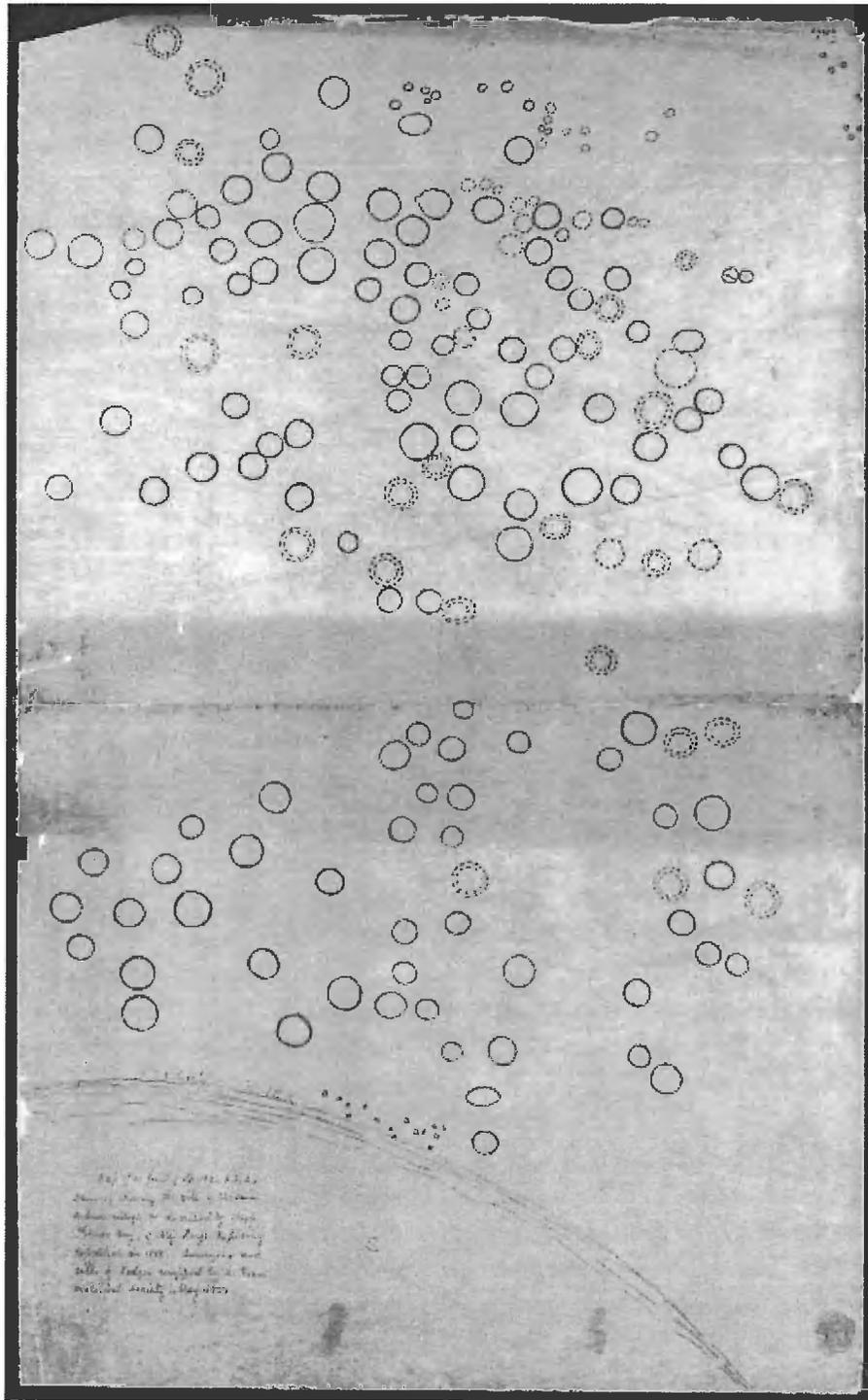


Figure 2. Henry Stackpole's unpublished 1880 field map of the Blue Earth Village site (Courtesy of the Kansas Historical Society <http://www.kansasmemory.org/item/224981>)

have been destroyed by the Kansas River. However, Stackpole's georeferenced maps indicate that more than 100 of the approximately 160 mapped earthlodges are located on the north side

of the railroad tracks, well to the north of the historical river channel locations. As a result, it appears that roughly two thirds of the earthlodges within the site's main group were not destroyed

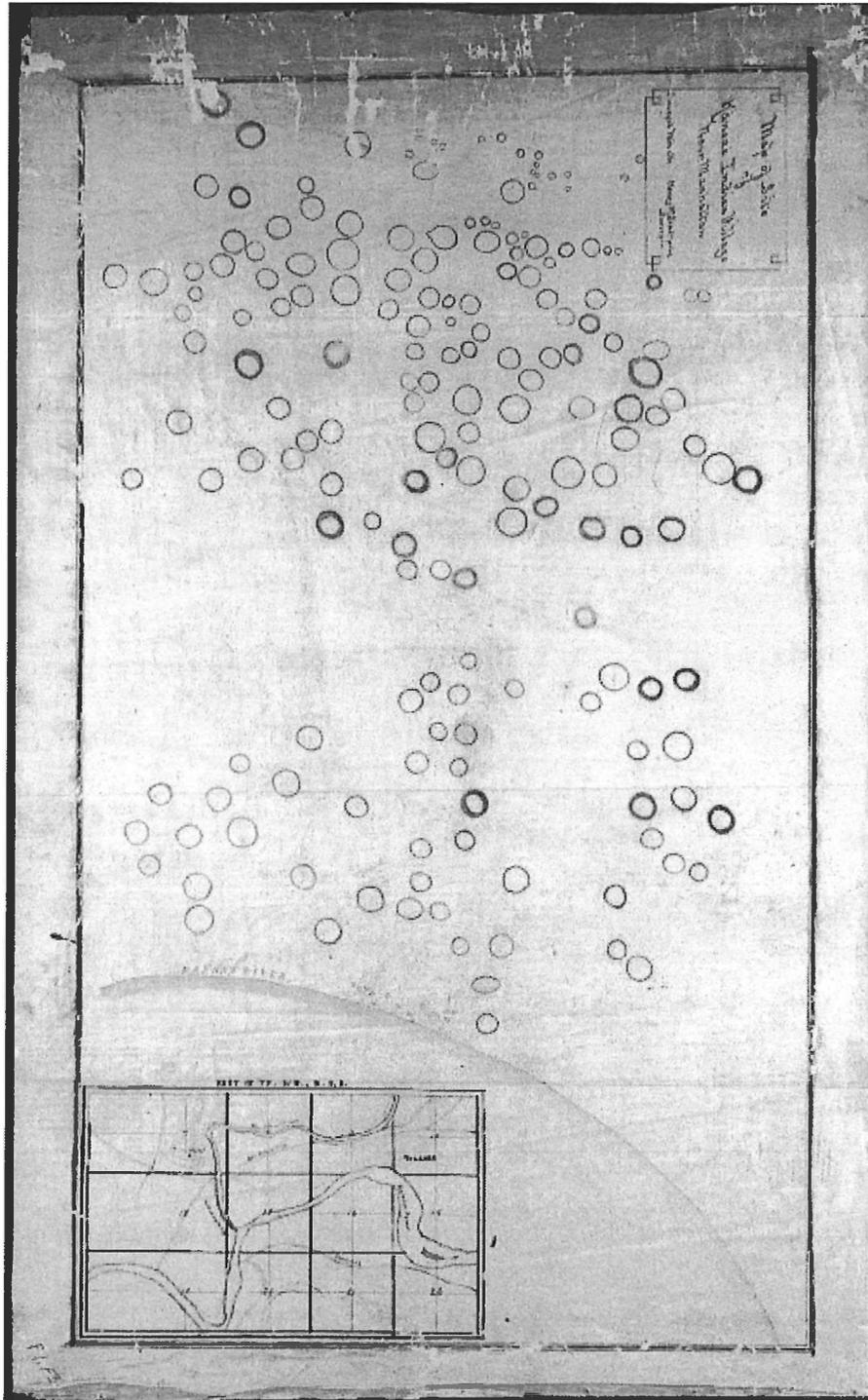


Figure 3. Henry Stackpole's unpublished 1880 final map of the Blue Earth Village site (Courtesy of the Kansas Historical Society <http://www.kansasmemory.org/item/224981>)

by the Kansas River. Based on the additional area of earthlodges to the northeast and graves to the east on the published 1881 map (Figure 1), perhaps

three quarters of the site has escaped destruction by the movement of the Kansas River.

The rediscovery of the two versions of Stackpole's 1880 map, combined with the

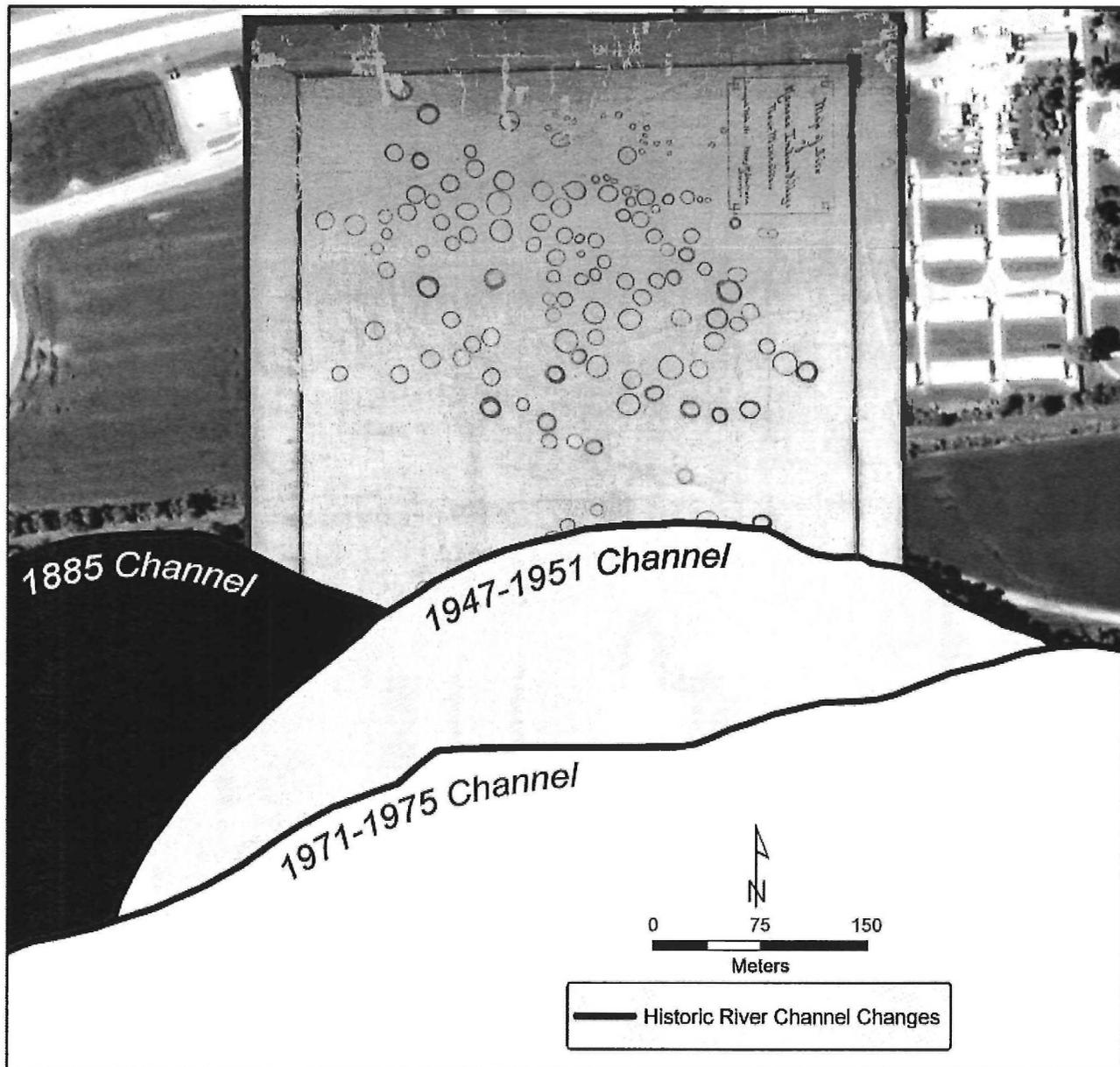


Figure 4. Georeferenced image showing the historical river channels that have impacted Blue Earth Village site (Dort 2009:Sheet 9) atop Stackpole's unpublished 1880 map of the Blue Earth Village site and a 2010 aerial image of the same area

georeferencing of the 1880 maps, has resulted in a revised estimate of the portion of the site that has been destroyed by river erosion. Previously, Roper (2009b) suggested perhaps two thirds of the site had been destroyed by river erosion; Wedel (1959:188) and Esry (1985:49) considered the proportion of destruction to be even higher. Since the abandonment of Blue Earth Village, a

significant portion of the site has clearly been eroded by the Kansas River, but apparently a much smaller portion than previously considered.

References Cited

Anonymous

1881 The Kansas Indians. *Transactions of the Kansas State Historical Society* I & II:280-301.

Bailey, Garrick A. and Gloria A. Young

2001 Kansa. In *Plains*, edited by Raymond J. DeMallie, pp.462-475. *Handbook of North American Indians, Volume 13, Plains*. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Dort, Wakefield

2009 *Historical Channel Changes of the Kansas River and its Tributaries*. Special Publication No. 42. American Geographical Society, New York.

Esry, Les

1985 The Blue Earth Kansa Village East of Manhattan. *Journal of the Kansas Anthropological Association* 6(3):46-53

James, Edwin

1823 *Account of an Expedition from Pittsburgh to the Rocky Mountains, Performed in the Years 1819, 1820. By Order of the Hon. J.C. Calhoun, Secretary of War, under the Command of Maj. S.H. Long, of the U.S. Top. Engineers. Compiled from the Notes of Major Long, Mr. T. Say, and Other Gentlemen of the Party, by Edwin James, Botanist and Geologist to the Expedition*. Longman, Hurst, Rees, Orme, and Brown, London.

Ritterbush, Lauren

2009 *Manhattan Archaeological Survey Phases I and II*. Report prepared for the City of Manhattan, Kansas. Copies available from the Kansas SHPO, Topeka.

Roper, Donna C.

2009a *Phase II Archaeological Survey for the Sewer Improvements Project Blue Township, Pottawatomie County, Kansas*. Report submitted to the Pottawatomie County Department of Public Works, Westmoreland, Kansas. Copies available from the Kansas SHPO, Topeka.

2009b The Status of the Blue Earth Kansa Site (14PO24). *Current Archaeology in Kansas* 8:8-17.

Tomasic, John

2011 *Phase II Archeological Survey of KDOT Project 75-KA-1256-01, Pottawatomie County, Kansas*. Submitted to the Kansas Department of Transportation. Copies Available from the Kansas SHPO, Topeka.

Wedel, Waldo R.

1959 *An Introduction to Kansas Archeology*. Bulletin 174. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Metal Detector Survey and Test Excavations at the Blue Earth Village Site (14PO24)

John J. Tomasic, Donna C. Roper, and Lauren W. Ritterbush

As discussed elsewhere (Tomasic 2012a, b), the rediscovery of Henry Stackpole's 1880 maps of the Blue Earth Village site (14PO24) and their accurate georeferencing has resulted in a reduced estimate of the site's destruction through lateral migration of the Kansas River. In January and March 2012, we conducted metal detector survey and test excavations at the Blue Earth Village site with hopes of identifying intact cultural materials unaffected by the lateral migration of the Kansas River or commercial and other developments in the area. Here, we present preliminary results of the survey and test excavations and provide an assessment of the degree to which intact cultural deposits remain at the Blue Earth Village site.

Prior to our metal detector survey, we examined aerial imagery of the site to identify areas potentially undisturbed by modern development. Although lateral migration of the river has removed parts of the village and significant portions of what remained appear to be impacted by modern construction, we identified two relatively undeveloped areas that might still contain intact cultural deposits. One of these areas, now designated Area 121 (Figure 1), lies north of the existing railroad and is currently used to control runoff from livestock pens. The other area, now designated Area 122, lies south of the railroad and consists of a cultivated field and adjacent woodland (Figure 1).

Preliminary survey of Area 121 was conducted in January. Several metal artifacts associated with the Kansa occupation were recovered at that time. Encouraged by these results, we returned for a week in March to conduct test excavations in Area 121 and more intensive

metal detector survey in both Area 121 and Area 122.

Metal Detector Survey

The survey proceeded by having metal detector operators walk fairly closely-spaced interval transects within roughly defined grid blocks. A second person usually accompanied each operator to assist with recovering metal objects located by the detector. Obviously modern (post-Kansa) artifacts were not mapped and were discarded. Artifacts certainly associated with the Kansa occupation were retained, and the rule for



Figure 1. Aerial image showing the locations of Area 121 and 122 at the Blue Earth Village site

pieces about which we could not be certain was to record and collect them for later identification in the laboratory. UTM coordinates were recorded using a GPS mapper with approximately one meter accuracy (Figure 2).

Overall, about 260 metal artifacts were collected. Identified pieces include axes (Figure 3A), hoes (Figure 3B), tinklers (Figure 3C), buttons (Figure 3D), arrow points, flintlock gun parts (Figure 3E), musket balls, files (Figure 3F),

knife sections, kettle parts, pieces of scrap copper or brass, and two Jew's harps (Figure 3G). Three horseshoes (Figure 3H) may or may not be associated with the Kansa occupation. They are quite similar to one another, however, and were found in different portions of the surveyed area, so their association with the Kansa occupation is plausible. Most recovered artifacts came from the southern portion of Area 121 or the central portion of Area 122 (Figure 2). Preliminary assessments

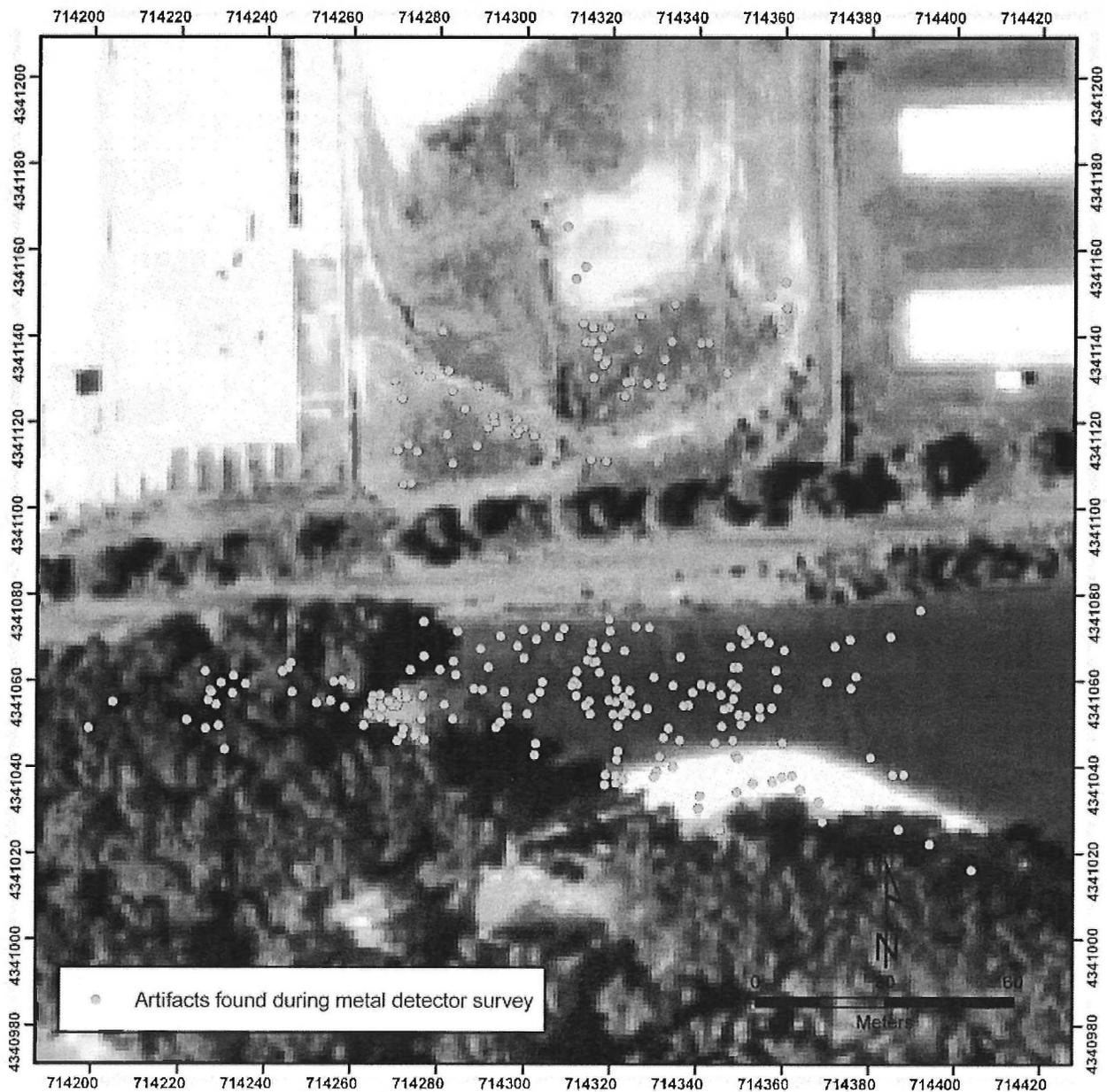


Figure 2. Aerial image showing the GPS locations of artifacts encountered during the metal detector survey of the Blue Earth Village site

Current Archaeology in Kansas

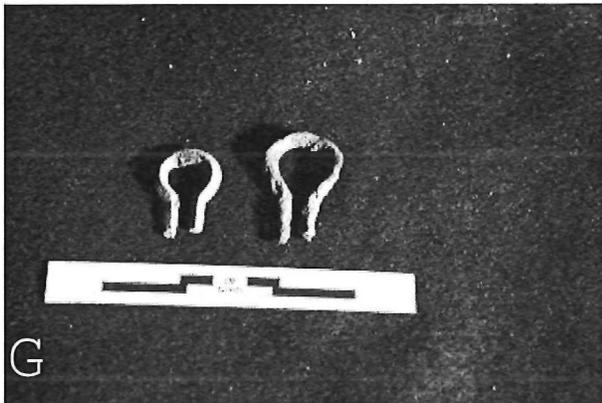
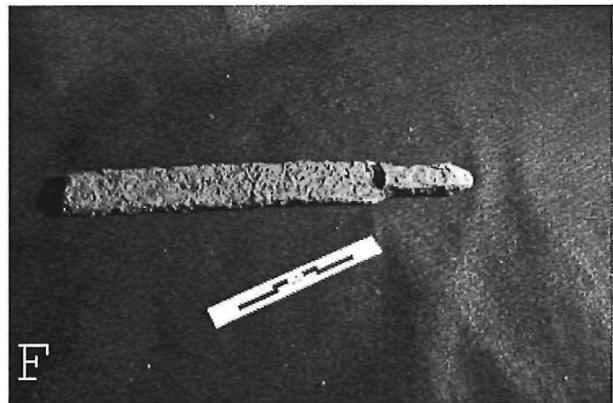


Figure 3 (opposite page). Selected objects recovered during metal detector survey: A) ax, B) hoe, C) tinklers, D) buttons, E) gun parts, F) file, G) Jew's harps, H) horseshoes

of the artifact distribution suggest that densities were up to three times higher in Area 122 than they were in Area 121. We have not yet evaluated the distributions of individual classes of artifacts. We predict that different classes will be fairly evenly distributed. This is based on the assumption that lodges would hold generally similar object inventories. Since georeferencing suggests that Areas 121 and 122 are within the Kansa village, we expect remains from multiple lodges. Post-abandonment maps and primary written documents pertaining to Kansa occupation of the village do not suggest clearly discernible activity areas (e.g., plazas, corrals) within the village.

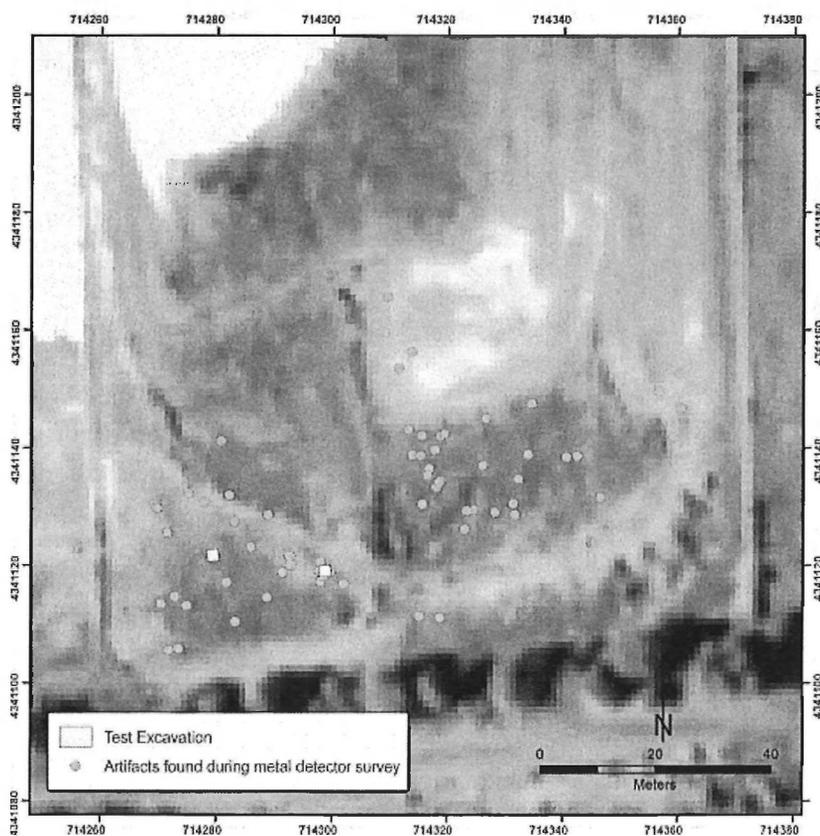
Test Excavations

To assess whether any intact features might be present in areas with dense concentrations of metal artifacts, two 2x2 meter test units were placed within one of the densest artifact concentrations identified during the initial metal detector survey in Area 121 (Figure 4). Approximately ten percent of excavated matrix from each level was collected for flotation and/or waterscreening, while the remaining ninety percent was screened through ¼-inch-mesh hardware cloth. All excavated feature fill was collected for flotation.

N580 E520. Square *N580 E520* was placed near the southwest corner of Area 121 where metal artifacts and charcoal had been encountered during the initial metal detector survey in January. It was excavated to a depth of 20 centimeters below the datum (ground level at the southwest corner of the square). Three distinct features were encountered. Feature 2050 was a circular concentration of charcoal approximately 15 cm in diameter. It appeared at 12 cm below datum and terminated at 16 cm below datum. Feature 2050 is interpreted as the base of a posthole.

Feature 2052 was first observed as a pair of vertically oriented rib bones within a column of soil slightly darker than the surrounding matrix. It appeared at 18 cm below datum and terminated at 32 cm below datum. Once excavated, the rib bones were found to be from the same rib that had broken *in situ* resulting in slight displacement of the two parts from one another. This feature is interpreted

Figure 4. Aerial Image of Area 121 showing the locations of artifacts and the locations of test excavations. The westernmost unit is *N580 E520* and the easternmost unit is *N575 E540*



as a probable posthole, with the rib bones as possible shims associated with a now disintegrated post.

Feature 2051 is a large pit feature containing a variety of metal, stone, bone, and shell artifacts. Our excavations uncovered only the northern and eastern portions of this feature. The area uncovered measured 40 cm by 160 cm (Figure 5). It appeared at a depth of 16 cm below datum. Its base was encountered about 41 cm below datum. It is not yet fully outlined and appears to extend to the south and west of this test unit. Preliminary indications are that this feature may be similar to the shallow, straight-sided, elongated pit excavated by Wedel (1959:190) in 1937. It is too early to tell if Feature 2051 and the post features lay within a lodge. We did not encounter evidence of a lodge floor.

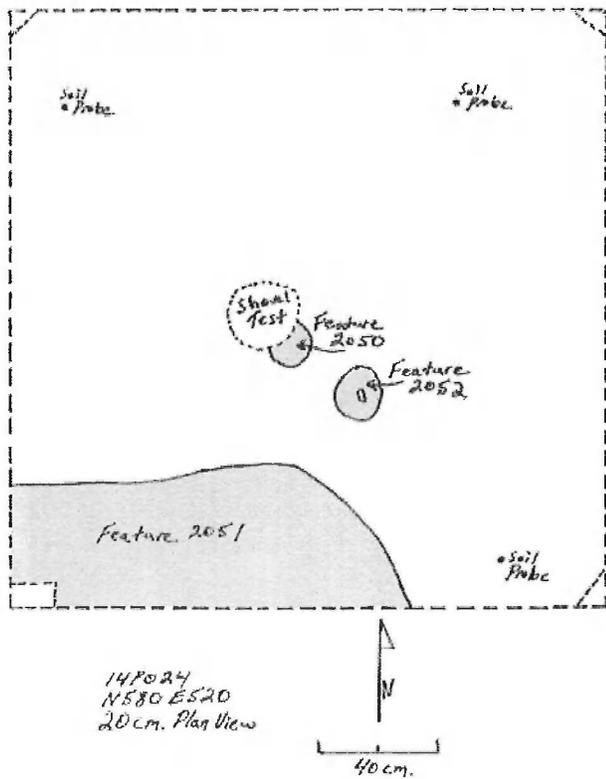


Figure 5. Plan drawing of N580 E520

N575 E540. Square N575 E540 was placed approximately 20 meters east of N580 E520. It too was placed at a location where metal artifacts were found somewhat concentrated during the intensive

metal detector survey. This unit, which was excavated to a depth of 10 cm contained no features. The southern three-quarters of the unit consist of heavily mottled clay and appears to have been heavily disturbed. The northern one-quarter of the unit contained a few metal artifacts within a homogenous silty loam matrix. One-inch soil probes within this portion of the unit suggest that the deposits also are disturbed (Figure 6).

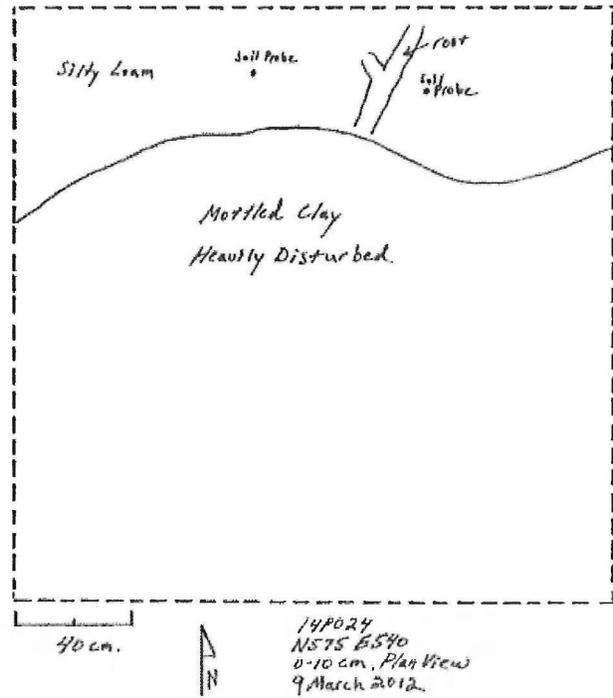


Figure 6. Plan drawing of N575 E540

Site Formation Processes within Area 121

Understanding the degree to which Area 121 has been affected by modern construction activities has been critical in assessing the condition of this part of the site. Since the 1950s, this area has been used to control runoff from livestock holding pens. Prior to the 1950s, it was used as a tree nursery (Wedel 1959:191) and likely was plowed. At the time of our survey of Area 121, a series of low terraces were visible, as were areas that appeared to have been recently trenched (Figure 4). According to the property owner, these terraces were created and pipelines installed in 2005 to comply with EPA regulations regarding livestock runoff.

The property owner provided us with copies of the project plans showing the specific areas impacted by the recent EPA project. Figure 7 shows these project plans georeferenced on a 2010 aerial image of the site along with our 2012 survey and excavation data for Area 121. Comparison of the locations of terraces and pipelines relative to artifact locations and test excavation locations provides valuable information that can be used to determine where additional intact deposits might be located within Area 121 and where intact deposits are unlikely to be found.

National Anthropological Archives). This map, recently redrawn by Steven Keehner (Figure 8), indicates the locations of the lodge floor, pit feature, and tests excavations described by Wedel (1959:188-191). Based on the presence of several suitable landmarks on Wedel's excavation map, we were able to georeference Wedel's map with modern aerial images and our 2012 survey and excavation data (Figure 9). It appears that the pit feature excavated by Wedel is within an area presently covered by cattle pens. The house excavated by Wedel appears to have been south of

the railroad, but the north of the current Kansas River bank, and within a portion of Area 122 with one of the densest concentration of artifacts revealed during our metal detector survey.

The georeferencing of Wedel's 1937 map, combined with the GPS mapping of artifacts recovered during the metal detector survey, has also allowed us to better understand their locations relative to the houses mapped in 1880 by Stackpole. Based on the georeferenced Stackpole map, it appears that Wedel's 1937 excavations and our 2012 survey and excavations were located in the east-central portion of the site (Figure 10). Given the potential for error in Stackpole's map as well as in the georeferencing, there is

likely some error in the precise relationships between the individual house features mapped by Stackpole, the house and pit features excavated by Wedel in 1937, and our recent discoveries. Nevertheless, the number of house features mapped by Stackpole in the general vicinity of the artifacts recovered in 2012 strongly suggests that multiple house and pit features occurred within these portions of the site.

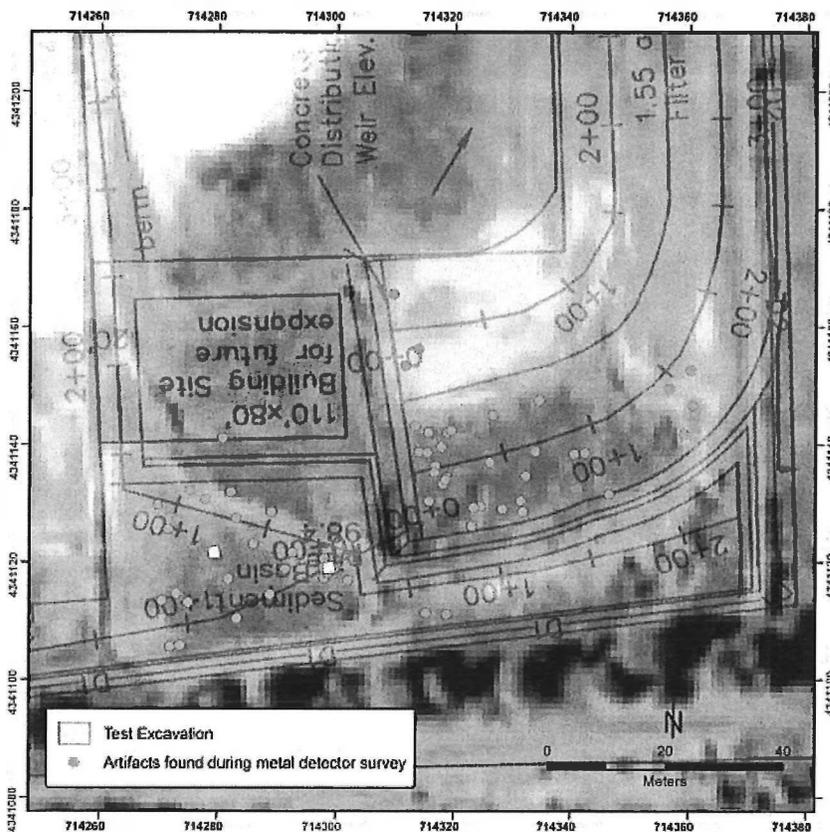


Figure 7. 2005 EPA livestock runoff project plans atop an aerial image of Area 121

Georeferencing Wedel's 1937 Field Map

Another useful resource for relocating features within the Blue Earth Village is Wedel's unpublished field map of 1937 (copy of the copy on file with the Kansas State University Archaeology Lab; the KSU copy is a copy of an original on file with the Wedel papers in the

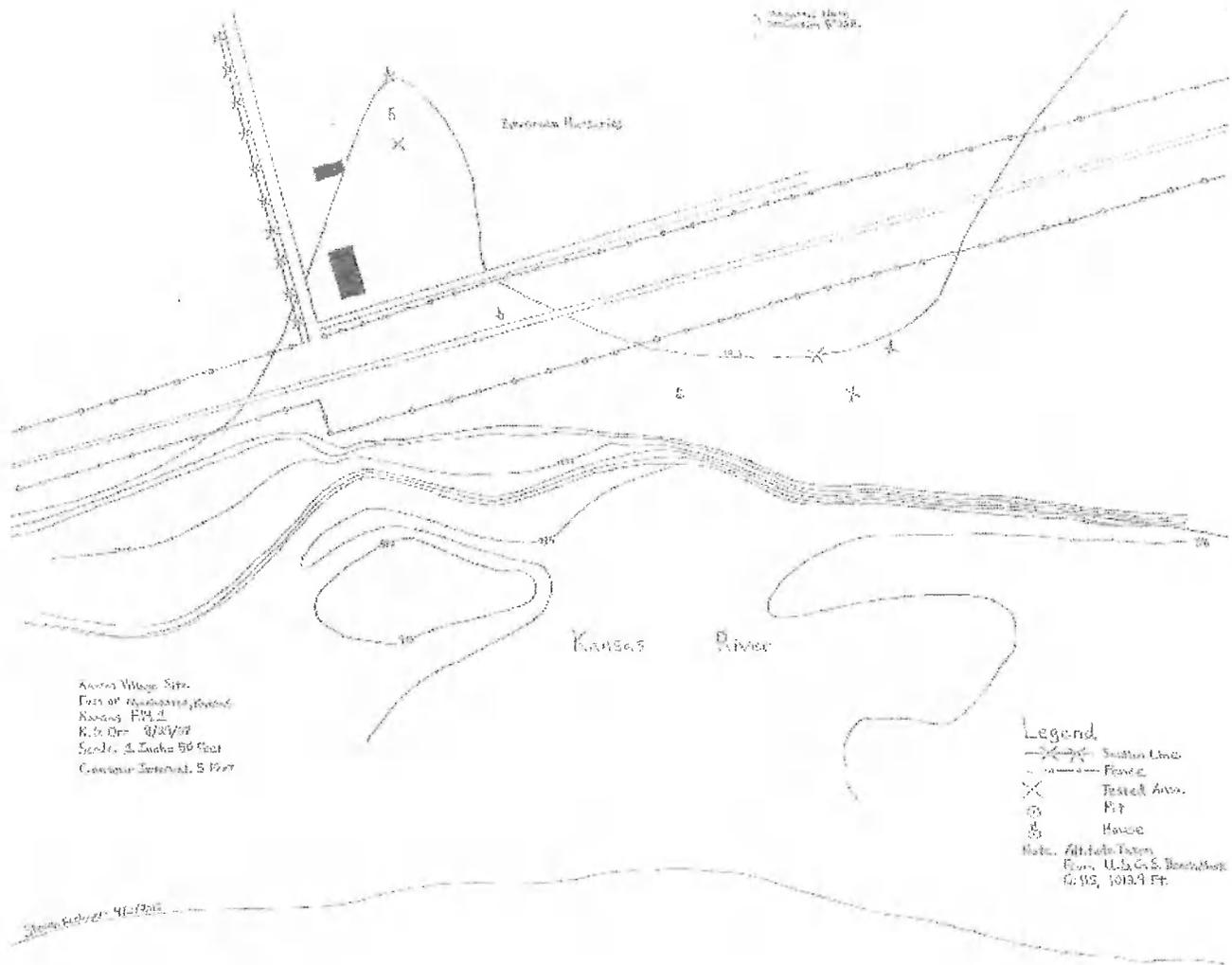


Figure 8. Waldo Wedel's 1937 field map of excavations at the Blue Earth Village site

Conclusions

Recent metal detector survey and test excavations at the Blue Earth Village site have made a major contribution toward assessing what remains of this significant early historic site. Prior to these investigations it was unclear whether modern agricultural and commercial activities had obliterated what remained of the site. The discovery of hundreds of metal artifacts dating to the Kansa occupation of the site, combined with the excavation of several at least partially intact features clearly demonstrates that cultural deposits from the Kansa occupation remain at the site. However, the integrity of these deposits has yet to be determined. In that regard, it is somewhat

worrisome that the features we observed appeared at depths of 12 to 18 cm below the present ground surface, while the features Wedel (1959:190) reported were encountered at two to three times that depth. Additional studies, including examination of site stratigraphy and remote sensing would assist in better understanding the preservation of this important village site. Knowing more about the post-Kansa land use history of this area also will be valuable.

Acknowledgements: We would like to thank Kent Burch, Bob Blasing, Joshua Chumbley, Bob Hoard, Steven Keehner, Marsha King, Doug Shaver, Katy

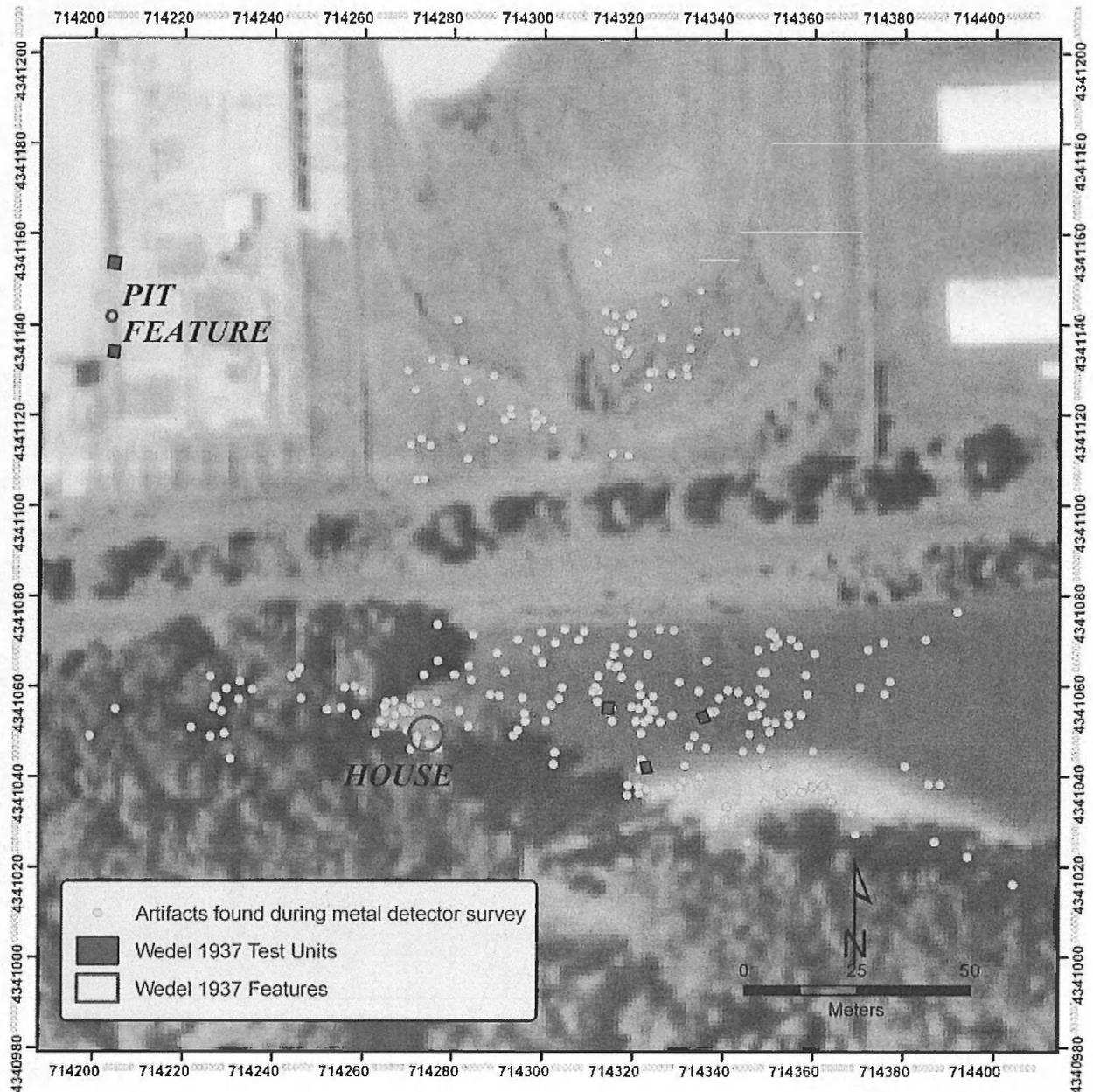


Figure 9 Aerial image showing the locations of Wedel's 1937 excavations and the GPS locations of artifacts encountered during the 2012 survey

Schultz, Bob Thompson, Tricia Waggoner, Margaret Wood, and Virginia Wulfkuhle (never all of these people at once!) for assisting with the recent fieldwork at the Blue Earth Village site. We greatly appreciate the assistance of Russ Broxterman, Wayne Donohoo, Gary Enneking, and

Dave Kregut with the metal detector survey. Thanks to Pat O'Brien for directing us to the copy of Wedel's 1937 excavation map at KSU and to Steven Keehner for redrawing it. We are especially grateful to Merv Sexton and to Kevin Newkirk for granting access to the portions of the site on their land.

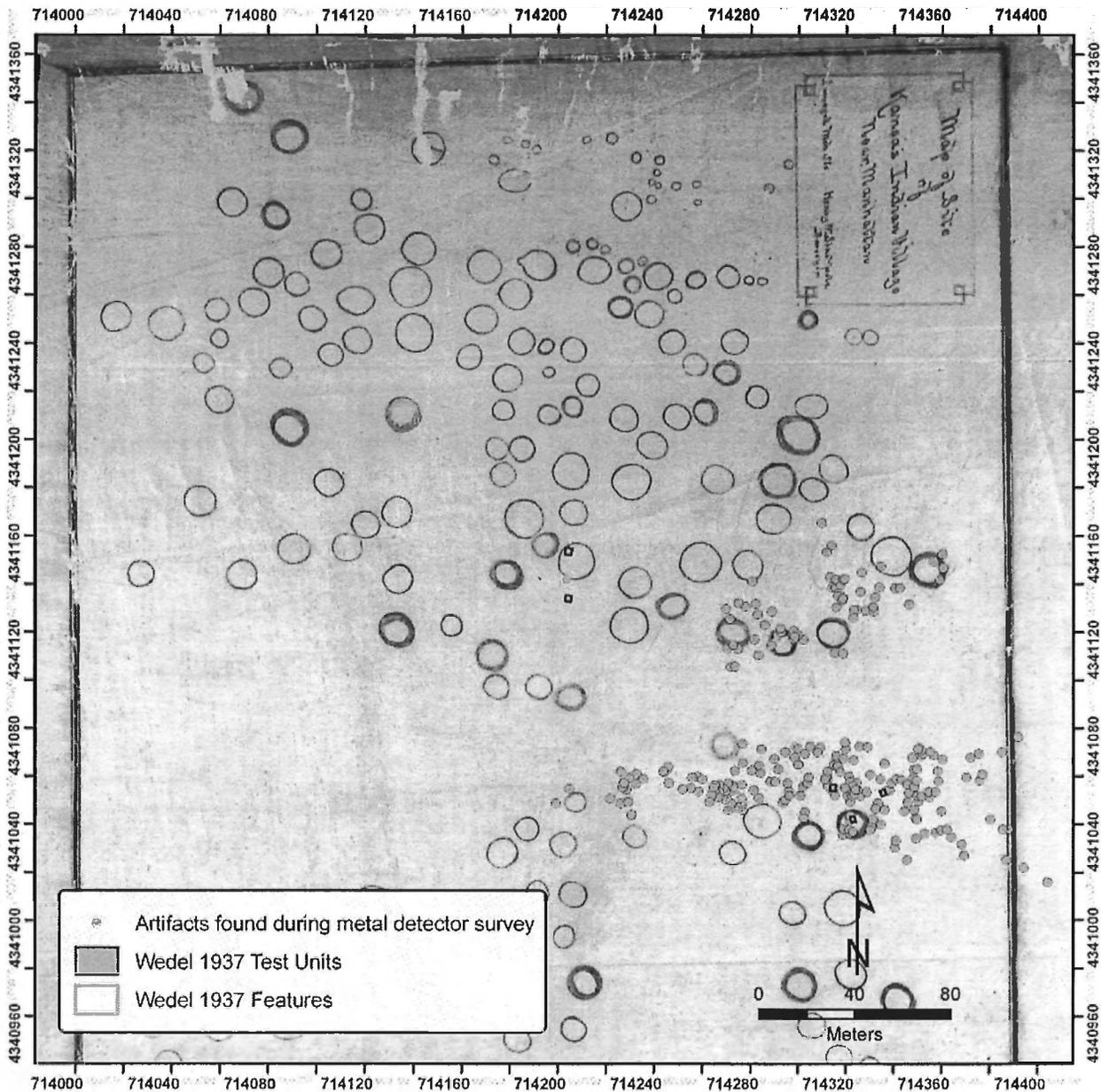


Figure 10. Georeferenced 1880 Stackpole map of the Blue Earth Village Site showing the locations of Wedel's 1937 excavations and the GPS locations of artifacts encountered during the 2012 survey

References Cited

Tomasic, John
 2012a The Rediscovery of Lost Maps of Manhattan's Blue Earth Kansa Indian Village. *Kansas Preservation* 33(3):19-21.

2012b The Rediscovery of the Blue Earth Site Maps: Reassessing the Status of 14PO24. *Current Archaeology in Kansas* 8:20-25.

Wedel, Waldo R.
 1959 *An Introduction to Kansas Archeology*. Bulletin 174, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

The Faint Footprint of Fool Chief's Village

Margaret C. Wood
Washburn University

Introduction

In 1894, ethnographer, James O. Dorsey noted that the Kansa Indians (Kanza, Kaw) believed that when a person died their ghost would return to a spirit village located at the last village the band had occupied before establishing their current village (Dorsey 1894, cited in Wedel 1946:27). Over the course of the 19th century the Kansa were compelled to abandon all of the villages in their ancestral territory in northeast Kansas to live on ever smaller reservations; first in the Neosho River Valley (1846) and finally in Oklahoma (1876). As each village was vacated it was transformed from a place of the living to a place of the dead; a place where the shades of those who had gone before were only vaguely discernible. Today, the presence of the Kansa continues to linger in these places and still they remain only faintly perceptible to those who seek their presence.

Fool Chief's Village was one of three primary villages occupied by the Kansa between 1830 and 1844. These villages, located near present day Topeka, were among the last that the Kansa would occupy in their ancestral homeland before they were relocated by the U.S. Government to a reservation near Council Grove, Kansas. While the general location of Fool Chief's Village has long been known (between the Kansas River and Soldier Creek), archaeologists have had difficulty in precisely pinpointing the location of the site. In 2007, archaeologists working for the Kansas State Historical Society (KSHS) uncovered large, dark stains under the plowzone of a field that has long been suspected to be the site of Fool Chief's Village (14SH305). Artifacts collected from the surface of the features and the shape and dimensions of these

stains suggested that these features were the footprints of Kansa lodges and the remains of Fool Chief's Village. In June and July, 2011, students from Washburn University carried out test excavations into a portion of one of these features in order to determine: (1) if the stains marked the location of domestic structures that dated to the known occupation period of the village, (2) if the material culture could be associated with the Kansa, and (3) the integrity of the feature.

Background

In historic times, the main villages of the Kansa were located in northeastern Kansas – first on the Missouri River, then on the Kansas River, and finally on the Neosho River. In comparison with the neighboring Osage and Pawnee, the Kansa were not a particularly large or powerful tribe. Their story however, is representative of the unequal struggle being waged by many of their contemporaries. The Kansa were one of the first Plains tribes to experience serious reduction of their land and resources and eventual displacement. They were among the tribes that were slightly too large to be ignored, yet too small to maintain themselves against the tide of encroachment on their lands and resources. The demise of the Kansa in the 1830s and 1840s was a dress rehearsal for broader trends of cultural genocide which larger tribes on the Plains would experience only a few decades later.

The years between 1800 and 1848 were a critical time for the Kansa. Land-hungry Anglo-American settlers pushing west encroached on their lands. Native American competitors like the Pawnee challenged the Kansa for control of hunting territories and access to trade networks.

By 1825, the U.S. Government pressured the Kansa to sign the Kansa-Osage Treaty relinquishing their claim to most of their territory. This treaty reduced Kansa territory from 20 million acres to 2 million acres beginning near present day Topeka and extending to the west (Wedel 1946: 13). The Kansa-Osage Treaty dramatically reduced the Kansa land and resources and exacerbated already existing tensions between the Kansa, Pawnee, and other tribes.

When the Kansa signed the Kansa-Osage Treaty in 1825 they were living at Blue Earth Village (14PO24) near present day Manhattan. Here they had settled into a way of life that focused on hunting/trapping in the western portions of their territory and growing crops in the rich river valleys to the east. They lived a semi-sedentary lifestyle, returning to their eastern villages twice a year to plant and harvest crops as well as trade hides they had acquired in the west. The Kansa were deeply involved in the fur trade, trading extensively with French, Spanish, British, and American interests (Marshall 2000).

As early as 1820, the Kansa living in Blue Earth village were organized into three bands which were led by three hereditary principal chiefs: Fool Chief, Hard Chief, and American Chief (Marshall 2000:66). Soon after the Kansa-Osage treaty was signed, around 1830, the village of Blue Earth was abandoned and the community split into three separate settlements. Each principal chief established a village near the confluence of the Kansas River and Mission Creek near present day Topeka in the eastern portion of the new reservation. This move put them within close proximity of a trading post established by Frederick Chouteau at the mouth of Mission Creek. In addition, the Kansa-Osage treaty assured that the Kansa would receive an annual annuity, provisions, and access to blacksmiths and interpreters (Unrau 1971: 107-108). Treaty obligations were managed by government agents located near the new villages in the vicinity of present day Williamstown (Wedel 1946:15).

Fool Chief's Village (1829-1844) was considered to be the most important of the three Kansa villages. According to travelers, traders, and

missionaries, Fool Chief's village was the largest in the area (population 700-800) and was located in an optimal position along one of the main branches of the Oregon Trail (Adams 1904: 425-426; Thies 2007:6). Fool Chief was probably considered the paramount chief of the Kansa and was referred to as the "great chief" (DeSmet 1966). The title of "Fool Chief" means to be brave and bold, almost beyond reason.

A Catholic priest, Father P.J. DeSmet, visited Fool Chief's village in 1841 and recorded his experiences in a narrative published in 1843. According to DeSmet, the village was a large and flourishing community and he described it as follows

At the first sight of their wigwams, we were struck at the resemblance they bore to the large stacks of wheat which cover our fields in harvest-time. There were of these I all no more than about twenty, grouped together without order, but each covering a space of about one hundred and twenty feet in circumference, and sufficient to shelter from thirty to forty persons. The entire village appeared to us to consist of from seven to eight hundred souls...These cabins, however humble they may appear, are solidly built and convenient. From the top of the wall, which is about six feet in height, rise inclined poles, which terminate round a opening above, serving at once for chimney and window. The door of the edifice consists of an undressed hide on the most sheltered side, the hearth occupies the center and is in the midst of four upright posts destined to support the rotunda; the beds are ranged around the wall and the space between the beds and the hearth is occupied by members of the family, some standing, others sitting or

lying on skins, or yellow colored mats (DeSmet 1966: 198).

Fool Chief's village was also described by John Kirk Townsend, an ornithologist, who traveled through Kansas on his way to an expedition on the Columbia River in 1834. Townsend (1978:36) noted that the houses at Fool Chief's village were "made of saplings driven into the ground, bent over and tied at top, and covered with bark and buffalo skins." Based on these accounts it is likely that the domestic structures at Fool Chief's village were circular bark-covered lodges. Kansa tribal members in the late 1800s told ethnographer James Dorsey that the Kansa name for Fool Chief's village was *Ja-i-tci*, which meant "wooden house village" (Dorsey 1882; Marshall 2000: 226-227).

The Kansa found it increasingly difficult to maintain economic and social stability. Repeated encroachments on their land by whites and other indigenous peoples reduced the Kansa resources. Inadequate annuities and provisions provided from the federal government led to wide spread privation and suffering. In 1835 Agent Richard W. Cummins reported starvation conditions among the Kansa. As chronic malnutrition and starvation became a normal part of their day-to-day existence, the Kansa grew more susceptible to the ravages of cholera and smallpox. In 1827 and 1828 smallpox swept through the tribe with brutal force. Both smallpox and cholera spread in 1831 and continued to be a problem until 1833 (Unrau 1971: 42).

Already compromised by reduced resources, disease, warfare, and the incursion of white settlers on their lands, the Kansa were further challenged by a major flood of the Kansas River in 1844 that destroyed crops and villages. Unable to recover from this crippling blow, Fool Chief's village was abandoned. The tribe gathered at Fort Leavenworth Agency in February of 1846. Here the Kansa Chiefs signed a treaty ceding their homelands and accepting a small land allotment near present day Council Grove, Kansas. They remained in the Neosho River valley near Council Grove for about 30 years until the government again moved them to an even smaller reservation

in Oklahoma.

Kansa Culture and Material Culture

A thorough discussion of historic Kansa culture is outlined in William Unrau's *The Kansa Indians: History of the Wind People* (1971:25-51) and will not be repeated here. What follows is a brief discussion of specific aspects of Kansa culture that may have an impact on the material remains encountered by archaeologists and may help to explain some of the material culture encountered during the summer 2011 excavations.

Kansa villages varied in size but the largest had between 150 and 200 lodges. The Kansa used several different kinds of architecture including earthlodges, bark-covered houses, and tepees. The earthlodges were circular and measured around 30 ft (9.1 m) in diameter. The roof of the lodge was supported by four central posts which flanked a central hearth. Bark-covered houses were usually larger measuring around 25 ft x 60 ft (7.6 m x 18.2 m). These larger houses often had multiple hearths, one for each family that lived in the dwelling. Inside and outside these homes, storage pits were used to store corn, beans, squash and other goods.

Houses in a Kansa village ideally were situated in two clusters which were material manifestations of the basic social organization of the tribe. Each group of houses belonged to members of one of the two moieties that made up the tribe. The Kansa envisioned the houses of the village encircling a central village hearth with each moiety extending halfway around this central feature. The Kansa moieties included the Keepers of the Pipe and the Wind People (O'Brien 1984:69). Each moiety was composed of seven or eight clans (gens) and each clan was made up of several related families.

The Kansa belonged to patrilineal families and practiced clan and moiety exogamy. Each clan held special ceremonial rites and sacred privileges and taboos. The fifteen or sixteen Kansa clans were identified by names like the Earth People, Thunder People, and Buffalo People (Unrau 1971:31). The clans were the focus of ceremonial and ritual life of the Kansa and the members of each clan claimed

descent from a common ancestor. Each clan was responsible for some aspect of Kansa religious life and for ceremonies specific to it. Each clan had its own sacred bundle.

Economic life focused on gardening and hunting. Women raised corn, beans, and squash while men led the semi-annual bison and small game hunts. The men also were deeply involved in trapping furs for trade, waging war, and gambling. Resources for farming were located in the eastern portion of the Kansa territories and resources related to hunting were concentrated in the West. Agricultural villages in the east were regularly abandoned (or left with very minimal populations) during the seasonal hunting periods. Eastern villages appear to have been primarily occupied between March and May, and again from August to October.

Agricultural villages like Fool Chief's village were locations of intense female activity. House construction and tending fields were both defined as women's work. The principal agricultural tool was the hoe, made by lashing the shoulder blade of a bison onto a stick. Iron hoes were used when they became available. The staple crops including corn, beans, pumpkins, prairie potatoes, and melon were prepared by women in a variety of ways. Corn and beans were made into soups and seasoned with slices of bison meat. Corn could also be roasted directly on the cob. Corn and beans were dried, packed in skins or mats and stored in underground caches. Undoubtedly the Kansa also utilized wild fruits, berries, nuts, roots, and seeds available in their environments.

Fish, fowl, venison, and dog meat were important elements in the Kansa diet, but buffalo meat obtained in the western part of their territory easily rated as the most valued protein source (Unrau 1971:31). It was customary for nearly the entire tribe to make two trips to buffalo country each year. While the men killed the animals, the women dressed the carcasses and preserved the meat for transport back to the main villages. The hunts yielded valuable robes used for clothing, shelter, and a lucrative trade item as well as an important staple in the Kansa diet (Unrau 1971:39).

While hunting, the Kansa lived in light

portable hide covered tipis. In their eastern villages they lived in earthlodges and bark-covered lodges. Earthlodges were more substantial and were constructed from large posts around their exterior and surrounding the central hearth. These substantial posts were necessary to support the weight of the outer covering of mud. Earthlodges were also semi-subterranean with their floors excavated one to three feet (1 m) below the ground surface (Wedel 1946:21). Bark-covered lodges, on the other hand appear to have been constructed on the surface of the ground with stout poles and saplings arranged in an arbor (Wedel 1946:21).

Kansa houses were often occupied by several related families. Household furniture and utensils were simple and utilitarian. Brass kettles, iron pots, wood bowls, and spoons are all mentioned in the historic literature (Wedel 1946:24). Both men and women carried a knife with them as an essential work tool, eating implement, and weapon. Other weapons included guns, bows and arrows, and war clubs. Pipes fashioned from catlinite, purchased from northern tribes, were also highly prized possessions (Wedel 1946: 25). Rituals that utilized pipes like the Hako ceremony among the Pawnee were essential to promoting social unity within tribes and facilitating contact and trade outside them (Fletcher and Murie 1904). Personal adornment included beads, tin trinkets, porcelain, animal claws, bones, and metal buttons that were worn as earrings, hair adornment, or attached to clothing.

Traditionally, the political arrangement of Kansa society centered on a number of separate villages held together only by the loosest form of political confederation. The population of each village usually recognized a leader or chief. Occasionally a particularly brave or capable leader might enjoy a temporary position of principal chief over all the villages; however this was the exception rather than the rule (Unrau 1971: 49). By the early historic period chieftainship had become heredity, but real prestige came to leaders primarily from acts of bravery and generosity (Wedel 1949:27). Hereditary chiefs thus possessed prestige, but little authority except that which came to them through their own achievements and

behavior. Chiefs appear to have been primarily characters of dignity to whom respect was paid. In terms of real political power, however the chief seems to have been largely a figurehead. In addition to the principal chief, there also were 10-12 lesser chiefs who wielded less prestige and authority.

Previous Archaeological Research

Systematic archaeological field work relating directly to the Kansa was inaugurated in 1937 by Waldo R. Wedel. He investigated three major sites related to prehistoric and historic Kansa populations. These included the Doniphan site (14DP2), the Fanning site (14DP1) and Blue Earth Village site (14PO24). These excavations were carried out to establish a solid chronology of Kansa occupation and to build a direct historic link between sites known to have been occupied by the Kansa (Doniphan and Blue Earth) and those that extended further back in time (Fanning) (Wedel 1948). In doing so, Wedel hoped to use the direct historical approach to link historic and late prehistoric sites and material culture, much as he had done for the Pawnee (Wedel 1938).

Based on his excavations, Wedel concluded that most of Blue Earth Village, the village occupied immediately before Fool Chief's Village, had been destroyed by the lateral movement of the Kansas River. The recent rediscovery and reexamination of a late 19th century map of the village however demonstrates that major portions of Blue Earth village lie beyond the areas destroyed by the lateral movement of the Kansas River. It is likely that as much as three quarters of Blue Earth Village may remain (Tomasic 2011: 20). Archaeologists at KSHS are in the process of planning a closer investigation of Blue Earth Village in the near future (Hoard and Tomasic, personal communication 2012; see the paper by Tomasic, Roper, and Ritterbush in this volume for more on that work). In 1987 volunteers working for the Kansas Archaeological Training Program (KATP) excavated portions of Hard Chief's Village including one earthlodge structure and two storage pits. Fifteen other possible structures were identified at that time (Kansas State Historical Society, National Register Nomination Form

2007).

By the late 1800s all of the Mission Creek villages had collapsed into ruin, and had been lost or destroyed. After Fool Chief's Village was abandoned in 1847, memory of its location faded. A teacher who worked in the Menoken School (on Menoken Road) in the 1890s recalled that when the fields near the school were plowed, dark circles became visible, marking the location of the old Kansa lodges (Thies 2007:11). After 160 years of plowing, no trace of these circles is evident on the ground surface today. Archaeologists, however, have long been interested in pinpointing the location of this important village. Surface inspections of the fields near the intersection of Menoken Road and Highway 24 in Shawnee County were conducted by KSHS in 1957, 1969, 1974 and 2006 (Thies 2007: 12). While historic period artifacts were noted (and sometimes collected), no researcher followed up with more intensive investigations. The site was recorded as 14SH305 and has long been considered to be the possible location of Fool Chief's village.

In 2006 the Kansas Department of Transportation (KDOT) announced plans to make changes to a bridge on Highway 24 near Menoken Road. The project has the potential to impact portions of 14SH305, so survey and testing were carried out at the site (Bauer 2006; Thies 2007). Preliminary work included pedestrian survey, limited subsurface testing, a metal detector survey, and a ground penetrating radar survey (Bauer 2006). The findings of these efforts suggested only limited evidence (very light artifact scatter) for the presence of a nineteenth century site in this location. Nonetheless, researchers decided to excavate two trenches in the project right-of-way in an effort to expose buried features. Using a road grader to strip away the plowzone in the field, archaeologists uncovered two intact subsurface features. These features included a large charcoal concentration measuring approximately 9 m x 9 m and a post mold (with rocks and metal fragments surrounding it) (Thies 2006, 2007). Further investigation of these features showed that they were indeed cultural. A trench excavated into the charcoal concentration did not reveal evidence of

post holes around the circumference of the charcoal concentration. A scorched area located approximately in the center of the stain (sealed under charcoal layer) probably marks the location of a central hearth.

The discovery of these features encouraged Kansas State Historical Society archaeologists to conduct a more intensive geophysical survey of the area and strip the plowzone off a much larger area of the field. A total of 11,700 square meters of the site were covered with a magnetic field gradient survey and a smaller high-resolution electrical resistance survey covered 7,200 m² (Maki 2007). While several anomalies were noted, test excavations in these areas were inconclusive.

By stripping the plowzone off a large section of the agricultural field, KSHS archaeologists exposed five large (approx. 10m x 10m), somewhat indistinct dark charcoal stains that they felt may be the remains of Kansa lodges or bark houses and approximately 37 unidentified smaller features, possibly post molds. Artifacts collected from the surface of the features included a metal projectile point and a piece of ceramic that has been modified into a pierced disc. These types of items have been recovered from other historic Native American sites and are consistent with the occupation period of Fool Chief's village (Thies 2007:13-24). Further testing of the features was beyond the scope of work for the KDOT project so the site was mapped, photographed, and reburied.

Stripping the plowzone from this field had a negative effect on the fertility of soil. The farmer experienced a dramatic reduction in his crop yields and decided to not allow further archaeological work in the field.

In February 2011, I met with the landowner and farmer who agreed to allow Washburn University to conduct an archaeological field school on the property in June-July 2011 on condition that we would disturb only a small area of the field during excavations. I agreed to use a GPS unit to pinpoint the location of a feature and expose only a small area surrounding the feature. This strategy was designed to minimize damage to the field and the farmer's livelihood while

allowing archaeological research to take place.

2011 Washburn University Field School

The objective of the 2011 Washburn University Field School was to relocate and test a feature identified during the 2007 KSHS project. In 2007, Feature 132 was recorded as a 10 m x 10 m soil stain with heavy to moderate charcoal flecking. Our goals were to: (1) determine if the stains recorded in 2007 were actually the remains of domestic structures, (2) evaluate the occupation period of the site, (3) determine if the material remains were consistent with other known Kansa sites from this period, and (4) evaluate the integrity of the feature.

With the generous assistance of KSHS archaeologists John Tomasic and Robert Hoard, we were able to identify the precise UTM coordinates of the center of Feature 132 (262272E 4330566N). We used a hand held GPS unit (Garmin GPSMAP 62s) to locate these coordinates on the ground. Because the entire area had been stripped and backfilled in 2007 we decided to carefully shovel scrape the plowzone overlying the feature. Removing only 10-12 cm of soil, we scraped a total area of 93 square meters, leveling off on what appeared to be an indistinct concentration of charcoal flecking.

Once the area was cleaned we established test units over the location of darker coloration and charcoal flecking although the edges of this soil type were very unclear. Units were placed in order to bisect the center of the feature in hopes of clearly defining an edge, locating structural elements, and identifying a central hearth. A total of six test units were excavated into the feature using both shovels and trowels. Unit size varied. Four test units measured 2 m x 2 m and two test units measured 2 m x 1 m. Units were excavated in arbitrary 10 cm levels until the feature was encountered (Levels 1 & 2). Once we encountered the feature we shifted to excavation by natural soil layers (132A, 132B, 132C). None of the soil layers inside the feature were more than 10 cm in depth so it was not necessary to subdivide these natural strata. Soils underlying the feature we given level designations (Levels 3, 4, & 5) and excavated in 20 cm

increments. Post holes and molds were identified by their feature number. Post molds were assigned the feature number and suffix "A" (e.g. 156A) and post holes were assigned the feature number and suffix "B" (e.g. 156B).

In all test units the first 10 cm of soil (Level 1) (Z=99.74-99.64) appeared to be a continuation of the plowzone. Generally, the soil was a dark brown (7.5YR3/2) fine silty loam with lighter brown/tan mottles and light/moderate charcoal flecking.

Excavation of Level 2 (Z=99.64-99.54) slowly revealed the shadow of features that undoubtedly were once more prominent in this area. Larger pieces of charcoal including chunks and sections of wood became apparent as we completed this level and vague areas of dark soil (which failed to hold their shape very well) suggested the edges of features. In test unit N1011 E991 charred wood chunks ran in a diagonal across the unit. Soils on either side of this charred beam were different. Soils in the NW quadrant of the unit were dark grayish brown and exhibited heavy charcoal flecking. Soils in the SE quadrant were more yellowish, softer and sandier with no charcoal content.

Soil in the feature (132A) consisted of dark greyish brown fine sandy loam (10YR3/2) with heavy charcoal chunks and dense charcoal concentrations. It was present in all the units except the SE corner of N1011 E991. In the SE corner of N1011 E991, pieces of corn cob and bark were noted, however it was not clear if these were historic remains or refuse that had been left here after stripping in 2007. We discovered catlinite red pipestone fragments, bone, and metal fragments in 132A. This layer was very thin (5 cm deep) (Z=99.58-99.53) and came down uniformly on what we called 132B, a dark gray sheet-like and alluvial feeling clay (10YR3/2).

As we excavated into 132B the edge of the feature which ran diagonally across unit N1011 E991 continued but became more obscure. Layer 132B was approximately 10 cm deep and extended across all of the other units which had been placed inside the feature (Z-99.53-99.43). This layer may be associated with the flooding episode which led

to the abandonment of the village in 1844. Some bone was excavated from this layer.

Layer 132C was uniform across all units. The soil was softer and sandier than the layer above it (132B). It consisted of 10YR 3/2 very dark greyish brown sandy fine loam mottled with 10 YR 4/3 dark brown loam and 7.5 YR 3/2 dark brown loam. It was relatively shallow extending to a depth of only 10 cm. No artifacts were excavated from this level. Layer 132C came down on Level 4.

Level 4 was a heavily disturbed (rodent) brown sandy loam (7.5YR5/2) mottled with darker brown (10YR3/2) splotches. It was a natural stratum and occurred at a consistent elevation across all of the units (99.35). Many of the disturbed areas in Level 4 appeared to be possible post molds. Each was assigned a feature number and explored individually. Level 4 was excavated only in the trench which was established by subdividing several units that had been excavated. The trench was established due to time constraints and allowed us to document a deeper profile of the site than we could have if we continued excavating all units. The SW corner of the trench was located at N1014 E988 and included a 1 m x 7 m area that roughly extended across the center of the feature. Several bone fragments (including one medium mammal foot bone that was modified by chopping a wedge out of it) were discovered in Level 4. Level 4 soils were approximately 26 cm thick and transitioned into softer yellow sand (Level 5).

Level 5 consisted of soft yellow sand that was easily removed with shovels. Level 5 was also disturbed by rodent disturbance. A single scraper was recovered from this soil, although it appeared to have originated in a dark splotch of disturbed soil. We excavated approximately 25 cm of this soil type in the trench. Excavations were terminated at a depth of 98.98 (1 meter) because of time constraints, although this soil type appears to continue to greater depths.

Features

Feature 132 (number assigned KSHS)

Current Archaeology in Kansas

2007): *Structure* (Figure 1) - This feature is an amorphous roughly circular soil stain characterized by 10YR 3/2 dark grayish brown sandy loam with moderate to heavy charcoal content. The feature measures approximately 10 m x 10 m. Excavations reveal that the feature consists of two basic soil types. On the surface the soil is dark grayish brown and is mixed with moderate to heavy charcoal (excavated as Level 2 and 132A). Some larger chunks of burnt beam are present. Undoubtedly this level represents the destruction of the structure by fire. A second level is greyer, more alluvial looking sandy clay (excavated as 132B and 132C). This clay seems to follow the edge of the feature but is relatively thin and seems to bowl in slightly toward the center of the structure. It is possible that this layer may represent the flooding that occurred in 1844. If the floor levels of the structures were slightly lower than the ground surface due to

traffic and habitation, alluvial deposits may have settled in these lower areas. Exactly how layer 132C fits into the depositional history of this structure is unclear, but most of the postholes/molds are sealed by this layer. The total thickness of feature fill does not exceed 30 cm.

Feature 170: Posthole/mold (Figure 2) - This circular posthole and mold located along the probable east side of structure (FE132). This feature became apparent on the surface of Level 4 (Z=99.30). The posthole (10YR5/3 brown sandy loam) is circular and measures approximately 22 cm in diameter. The post mold 10YR3/3 dark brown sandy loam) is also circular, measuring approximately 15 cm in diameter. The feature was bisected and appeared to maintain its shape. The feature extended to a depth of 30 cm (z=98.96).



Figure 1. Feature 132



Figure 2. Feature 170

Feature 200: Postmold - This feature is a circular postmold filled with charcoal. The feature measures approximately 9 cm in diameter. This feature became apparent in Layer 132A and extended to a depth of 15 cm.

Feature 203: Scorch - This area of scorched soil is located on the interior of Feature 132. It is adjacent to several large chunks of charred wood (beams) (Feature 212) that run along the east side of the structure (Feature 132). This feature became visible as we excavated into Level 2 and was absolutely clear by the time we had reached 132A. This area is reddened and hardened by burning clearly caused by the collapse of the large burning beams in this area. There is no evidence to suggest that this was a hearth area. The scorched soil is shallow and essentially pops off of soils assigned as Layer 132B (flooding episode?). The scorch area is relatively amorphous. It measures approximately 70 cm x 50 cm and was approximately 3 cm thick (z=99.58).

Feature 212: Burnt Beam - This feature is a large chunk of burnt wooden beam. It appears to mirror and mark the edge of the structure. Soil on

either side of the beam is distinct with charcoal flecked, more organic looking soil occurring NW of the beam and cleaner looking subsoil occurring SE of the beam. The beam first appeared in Level 2 but became more defined and pronounced in Layer 132A (z=99.57). The beam runs on an angle across unit N1011 E991. The burnt beam extends slightly into Layer 132B, but not substantially. Samples of this beam were retained for analysis.

Feature 214: Circular posthole and mold located near the center line of the structure - This feature became apparent on the surface of Level 4 (z=99.30). The posthole (10YR5/3 brown sandy loam) is circular, measuring approximately 25 cm in diameter. The post mold (10YR3/3 dark brown sandy loam) is also circular, measuring approximately 15 cm in diameter. The feature was bisected and maintained its shape. The feature extended to a depth of 32 cm (bottom of feature z=98.98).

Other feature numbers were assigned to possible features encountered during our excavations. Each of these was mapped and bisected. Most of these possible features turned out to be either root or rodent disturbance.

Artifacts

Our analysis of the artifacts excavated from Fool Chief's Village in 2011 is ongoing. I will attempt, however to make some general observations about the material we excavated and also reflect on material collected from the site during earlier phases of work at Fool Chief's Village.

Current Archaeology in Kansas

A total of 336 artifacts were collected from the site during this phase of excavation and could be organized into seven material categories.

from the site. One is dark grey/black English flint and the other is honey brown French flint. Both flints were recovered from plowzone.

Material	Count	Percent	Weight (g)	Percent
Stone	20	6%	134.4	19%
Glass	5	1.5%	14.9	2%
Metal	93	28%	114.4	16%
Ceramic	2	0.5%	4.3	0.5%
Plant Material (corn cob frags.)	47	13%	61.2	9%
Charcoal	46	14%	238.8	33%
Bone	123	37%	151.3	21%
Total	336	100%	719.3	100%

Metal artifacts included 3 staples, 1 decorative tack, 1 button, 4 nails, and 84 iron fragments. Glass artifacts included 4 green bottle glass fragments and 1 clear bottle glass fragment. Stone artifacts included 7 pieces of catlinite pipe stone, 1 piece of English grey gun flint, 1 piece of French brown gun flint, 2 pieces of local flint, 8 pieces of limestone, and one unidentified reddish rock. Ceramics included 2 pieces of pearlware. Plant material included 40 corn cob fragments and 7 bark fragments. Forty-six charcoal chunks were collected from the burnt post molds and the fill of Feature 132. Bone includes mostly small and medium mammal fragments.

Notable Artifacts

Ceramics. Two pieces of pearlware were recovered from the site. One piece is a small fragment of blue transfer print pearlware (1784-1840) from an unknown vessel type that was found in Level 1 plowzone. The other piece is a fragment of a blue hand painted botanical design pearlware (1784-1840) probably from a saucer. This fragment was excavated from unit N1013 E993 and was discovered near the remains of a post hole/mold (Feature 170) and in association with a green bottle glass fragment.

Gun Flints - Two gun flints were recovered

Scraper - A beautiful local flint scraper was recovered from Level 4 in the trench in the area of a deep rodent disturbance. This piece thus was probably carried down by rodent activity. This scraper retains cortex material on one edge of the implement. It measures approximately 6 cm x 3 cm.

Catlinite - Seven small fragments of red pipestone were recovered from the site. This material was traded into Kansas as an exotic good from tribes to the north. Several of the pieces appear to have scratches on them and one of these fragments may be the edge of a pipe bowl. Except for the small pipe fragment the other pieces are debitage. These objects indicate the interconnections between indigenous groups in the region and also speak to the continued importance of traditional pipe ceremonialism in these historic communities which could mediated social relationship within the community as well as with other tribes.

Oval Limestone Fragment - One large oval piece of limestone was excavated from the area that may be the floor area of Feature 132. The stone measures 12 cm by 12 cm and the function is unknown.

Brass Decorative Tack and Brass Button -

One brass furniture or decorative tack was recovered from the plowzone. A flat brass button with a decorative boarder measuring 3 cm around was also recovered from a surface context.

Modified Bone - Many pieces of bone found in Feature 132 show evidence of cut marks. Two pieces of bone stand out in this assemblage. Both were foot bones of medium sized mammals and were modified by chopping an opening in the top side of the bone. Possible functions of these modified bones include gaming pieces or ornaments.

Corn Cob Fragments and Bark Bits - Dried corn cob fragments were collected from Level 3 in Test Unit N1013 E993 in an area that we initially suspected to be the surface of a storage pit. The soil distinction however did not continue for any depth. Cobs as well as bark pieces were also collected from the southeast corner of test unit N1011 E991 along the exterior of Feature 132. It is not clear if these cobs and pieces of what appears to be bark are historic or were field refuse that was mixed with fill dirt that was deposited on this surface in 2007.

Artifacts Recovered in 2007

In early 2011, Brendon Asher filed a report describing the artifacts recovered in 2007 when the site was stripped (Asher 2011; see also the next paper in this volume). The artifact assemblage included notable items such as: an iron projectile point, 2 iron axes, a copper bell, 3 beads, a belt plate, 6 buckles, 5 buttons, 8 pieces of pearlware, copper and brass strips, a Jews harp, 3 tinkler cones, almost 900 pieces of bone, and many other miscellaneous objects. These objects, in addition to the ones we excavated in 2011 are consistent with assemblage from other contemporary Kansa assemblages (Hard Chief's Village) and earlier Kansa Villages (Blue Earth Village). While some later intrusive material was collected in 2007, artifacts from controlled excavation in 2011 were consistent with the Kansa occupation date of 1830-1847.

Conclusions

Our excavations revealed that shallow charcoal filled depressions mark the location of Kansa homes, probably bark/mat-covered structures. Post mold/holes, some with burnt posts still intact, were identified as well. The limited size of our excavation area however precluded our ability to discern a pattern connecting the post molds. The presence of charcoal in the features indicates that this home, and probably others, was destroyed by an intense fire.

The structure was, most likely, a bark covered lodge. Bark lodges were lightly built with only shallowly depressed floors and lighter support posts. Earthlodges, on the other hand usually had clearly defined semi-subterranean floor areas and substantial posts to support the heavy wall and roof covering. The size of the post molds identified during this phase of excavation, as well as the presence of barky material near the feature suggest that these features were bark covered lodges. In addition, no large structural posts, like the kind necessary to support the heavy roofs of earth lodges were noted when the site was stripped in 2007. Future research on the site may substantiate this claim. The heavy concentration of charcoal, burnt beams and burnt posts indicates that these structures were burned after they were abandoned.

Artifacts collected indicate an occupation date in the second quarter of the nineteenth century. Material culture included indigenously produced objects using imported materials as well as trade goods. It may seem surprising that no indigenous ceramics were recovered and only a handful of stone tools were present. Earlier research has suggested that the Kansa were deeply involved in trade and by the early nineteenth century they were consuming and using mostly imported materials that they obtained from trade (Wedel 1959:193). By the early nineteenth century the Kansa had been, for well over half a century, in direct contact with white traders and had resided on or near a major trade artery through the region. The unique attributes of the assemblage including the presence of catlinite, an iron projectile point, copper bell, and tinklers, strongly suggests a Kansa connection.

Artifacts were recovered from sealed

contexts as well as plowzone. This suggests that even after the 2007 stripping and backfilling, these features continued to be negatively impacted by plowing. Shallow tips of plow scars were visible on the surface of the feature in Level 2 and 132A. This explains the amorphous and ephemeral nature of the feature itself. With every plowing episode a tiny bit more of the already thin remains were churned up into plowzone.

Identifying the features at Fool Chief's Village was extremely difficult. While a charcoal concentration signaled the presence of a shallow house depression, the edges of the feature were rarely clear or easy to follow. Plowing in this area appears to have disturbed all but the most deeply buried portions of these structures. Post molds became apparent in a natural stratum that has been intensely disturbed by rodent activity, making it extremely difficult to discern between post-molds, rodent burrows, and root holes. Looking at these features in the field was (I imagine) a little like looking at a spirit; a vague and indistinct trace of something that went before. While I feel confident in defining these features, it is clear that the remains of Fool Chief's Village are only a faint footprint, a ghostly shade, of one of the last Kansa villages in their homeland.

References Cited

Adams, Franklin G.

1904 Reminiscences of Frederick Chouteau. *Kansas Historical Collections, 1903-1904*. 8:424-434.

Asher, Brendon

2011 Artifact Analysis and Descriptive Report of the Kansa Village of Fool Chief (14SH305), Shawnee County, Kansas. On file at the Kansas State Historical Society, Office of Historic Preservation (also printed in this volume).

Bauer, Anne

2006 Archaeological Survey of KDOT Bridge Project Number K-7431-01 Topeka, Kansas. Archaeology Office, KSHS, Topeka, Submitted to

Kansas Department of Transportation. Copies available from the Kansas SHPO.

DeSmet, P.J.

1966[1843] Letters and Sketches: With a Narrative of a Year's Residence Among the Indian Tribes of the Rocky Mountains. In *Early Western Travels, 1748-1846, Volume 27*, edited by. Reuben Gold Thwaites, pp. 129-411. AMS Press, New York.

Dorsey, James Owen

1882 Kansas Ethnographic and Linguistic Notes. Manuscript No. 4800 (Kansa). James Owen Dorsey Papers. National Anthropological Archives, Smithsonian Institution, Washington, D.C. (copy on file at KSHS, Topeka, KS).

Fletcher, Alice C. and James Murie

1904 *The Hako: Song, Pipe, and Unity in a Pawnee Calumet Ceremony*. University of Nebraska Press, Lincoln.

Kansas State Historical Society

2007 Hard Chief's Village. National Register of Historic Places Registration Form. U.S. Department of the Interior, National Park Service.

Maki, David

2007 A Geophysical Investigation at Fool Chief Village (14SH305): Electrical Resistance and Magnetic Field Gradient Surveys at a 19th Century Kansa Village Site, Shawnee County, Kansas. Report of Investigation Number 126. Archaeo-Physics, LLC.

Marshall, James O.

2000 Archaeology at Hard Chief Village: An Introduction to the Study of the Kansa Indian Experience in the American West. *The Kansas Anthropologist* 21:57-89.

O'Brien, Patricia J.

1984 *Archeology in Kansas*. Public Education Series No. 9. Museum of Natural History, University of Kansas, Lawrence.

Roper, Donna

2009 The Status of Blue Earth Kansa Site.
Current Archaeology in Kansas 8:8-18.

Thies, Randall

2007 Phase II Subsurface Archeological Survey at 14SH305, KDOT Project K-7431-01 Shawnee County, Kansas. Archeology Office, KSHS, Topeka. Submitted to KDOT. Copies available from the Kansas SHPO.

Townsend, John Kirk

1978[1839] *Narrative of a Journey Across the Rocky Mountains to the Columbia River*. University of Nebraska Press, Lincoln.

Unrau, William E.

1971 *The Kansa Indians: A History of the Wind People, 1673-1873*. University of Oklahoma Press, Norman.

Wedel, Waldo

1938 *The Direct-Historical Approach in Pawnee Archaeology*. Miscellaneous Collections 97(7). Smithsonian Institution, Washington, D.C.

1946 The Kansa Indians. *Transactions of the Kansas Academy of Science* 49(1):1-35.

1959 *An Introduction to Kansas Archeology*. Bulletin 174. Bureau of American Ethnology. Smithsonian Institution, Washington, D.C.

Fool Chief's Village (14SH305): Artifact Analysis and Descriptive Report

**Brendon P. Asher and Mark Volmut
University of Kansas**

Introduction

The following report is a product of a contract agreement with the Kansas State Historical Society to analyze, record, and report historic artifacts from the archaeological collections of the Kansa Village of Fool Chief (14SH305). More specifically, the artifacts described herein were collected as part of an ongoing investigation by the Kansas State Historical Society (KSHS) initiated by a proposed Kansas Department of Transportation (KDOT) road project that will impact the site. A brief description of these recent field investigations is included, and previous explorations of the site are outlined. Ethnographic and historic background information is provided to frame the site in a regional and temporal context.

The majority of the report focuses on detailed descriptions of artifacts and faunal remains. When possible, chronological information, technique of manufacture, and origins of production are provided for these artifacts. Comparisons to similar artifacts from other sites are drawn when applicable. Metric data for each artifact is included. Ultimately, these artifact observations and descriptions will help to frame the material culture of the Kansa Indians in a localized, chronologically specific framework, serving as a foundation for inter-site comparisons of other Kansa assemblages and beyond.

The Kansa Indians and Fool Chief's Village

Three Kansa villages are well documented in the Kansas River valley for the time period under consideration. These villages, American Chief, Fool Chief, and Hard Chief, named after the tribal

leaders of each, came to predominance around 1829 after the abandonment of the Blue Earth Village near Manhattan, Kansas (U.S. Senate 1830:10). However, as early as 1820, these three separate bands were recognized, and a flood in that year at Blue Earth Village may have encouraged the Kansa to consider moving on (Barry 1972:94; Marshall 2000:66). The Treaty of 1825, created to allow unrestricted travel and free commerce in lands anticipated to be affected by the Santa Fe Trail, established a Kansa reservation along the north side of the Kansas River (Marshall 2000:66). This reservation had an agency near the present town of Williamstown. The three Kansa villages emerged in part as a response to pressures sustained by the Pawnee to the west, as well as the need to be closer to the government agency to receive annuity distributions, and the anticipation of hosting trade rather than traveling for it (Marshall 2000:67; Unrau 1971:113).

Of the three villages, Fool Chief's village (called Prairie Village by Barry 1972:166), situated between the Kansas River and Soldier Creek near Topeka, was the largest with between 700 and 800 residents (Dixon 2007:482). The village of Hard Chief, previously reported by Marshall (2000), was located near the confluence of Mission Creek and the Kansas River and contained around 500-600 inhabitants. American Chief's village, located on the west side of Mission Creek about two miles south of the Kansas River, was the smallest of the three, consisting of around 100 people (Adams 1904:425; Marshall 2000:68). The remains of this village have not been located.

The Kansa would experience years of hardship in these villages. Bison herds were

dramatically thinned and moved further west, epidemics were a regular threat, government annuity payments were lacking, and the Kansa were engaged in a constant state of warfare with the Pawnee (Marshall 2000:69). A particularly devastating epidemic struck the villages in 1840, killing as many as five individuals per family (Marshall 2000:69). Only four years later, the three villages experienced a dramatic flood event they would never fully recover from. In addition, Fool Chief was killed by a fellow tribesman in an alcohol-related scuffle in January of 1845 (Barry 1972:534).

In this decrepit state, the Kansa signed a treaty in 1846 that stipulated they were to leave the Kansas River valley by May of 1847 (Unrau 1971:166). However, the new reservation lands set aside in the Neosho River valley had not yet been officially surveyed (Unrau 1971:66). In addition, promised government provisions were lacking, leading to begging and stealing for survival during the winter of 1847-48 (Unrau 1971:66). The Kansa would leave the village of Fool Chief under the leadership of Speckled Eye, a brother of Hard Chief, in the late spring of 1848 and travel to the Upper Neosho valley, establishing a new village about seven miles southeast of Council Grove on the Neosho River (Unrau 1971:166).

History of Investigations

The Village of Fool Chief is located on a high alluvial terrace in a cultivated field on the north bank of the Kansas River south of Soldier Creek near the present town of Menoken (Thies 2007:4). Local collectors and metal detector enthusiasts have procured artifacts from the site of Fool Chief's Village for years. The first documented archaeological observation of the site is a description by Miss Fannie E. Cole from the late 1800's (Thies 2007:11). In this report, Cole, a local Menoken school teacher, indicated that large circular features were still visible on the surface of agricultural fields, especially after fresh plowing in the springtime (Cole 1904:483). Her accounts likely come only half a century after the village had been abandoned (Thies 2007:11), at which time the site had already been affected by extensive

agricultural activities.

Subsequent archaeological documentation of the village of Fool Chief is limited to three accounts. The first professional investigation of the site would not come until 1957, resulting in the submission of a formal site survey report form by KSHS archaeologist Roscoe Wilmeth (Thies 2007:12). However, the extent and intensity of this investigation is uncertain. In 1967 State Archaeologist Tom Witty and KSHS staff archaeologist Jim Marshall conducted a field inspection of the site, resulting in the recovery of a few artifacts, but no progress report was submitted (Marshall 2000:60; Thies 2007:12). The extensiveness of this investigation is unknown. In 1974, KSHS researcher Herbert Pankratz visited the site and submitted a progress report, but unfortunately his visit did not include investigation of the highest-potential portion of the site (Thies 2007:12).

More recently, the site was investigated by KSHS staff archaeologists Randall Thies and Anne Bauer, in response to a KDOT proposed road project to replace the US-24 highway bridge over the Union Pacific railroad tracks near Menoken Road in Shawnee County (Thies 2007:1). Initial investigations included Phase I archival research to explore the historical significance of the site, followed by recommendations for a Phase II field survey investigation. The initial Phase II field survey was conducted in the spring of 2006, and included pedestrian survey with limited subsurface testing accompanied by metal detecting and a ground penetrating radar survey, described in Bauer 2006 (Thies 2007:2). An extensive subsurface survey utilizing heavy machinery was requested to remove portions of the plow zone, and was carried out in the fall of 2006. Removal of the plow zone resulted in the discovery of two significant features with recommendation for a Phase III investigation to proceed to determine the nature and extent of these features (Thies 2007:2). Preliminary field interpretations suggests that one feature, designated Feature 5, may be representative of a Kansa habitation structure, whereas the second feature, Feature 6, appeared to be a burned post with associated artifacts.

Detailed descriptions of the Phase III excavations of these features, as well as the previous pedestrian survey results and initial associated artifact descriptions are provided in Thies 2007. Due to changes in the KDOT proposed project plan, it was recommended that an additional Phase III investigation combining archaeological monitoring with the use of heavy machinery to strip the plow zone be carried out in areas expressing the greatest archaeological potential for intact subsurface deposits (Thies 2007:25).

In addition to Phase III excavation, a geophysical survey was undertaken in the fall of 2007 by Archaeo-Physics, LLC for KSHS and KDOT in an effort to locate other buried archaeological features and to map the distribution of metal artifacts at the site (Maki 2007:1). A total of 11,700 square meters of the site were covered with a magnetic field gradient survey, and a smaller high-resolution electrical resistance survey covered 7,200 square meters (Maki 2007:1). The geophysical survey resulted in the discovery of three anomalies that were interpreted as possible buried features and field-tested through excavation (Maki 2007:10). Burned earth, charcoal, and bone were found throughout these tests, but no discernible features were encountered (Maki 2007:10-11). Two of the anomalies may have been created by deeply buried metal objects recovered during test excavations (Maki 2007:20).

Additional mechanical scraping was completed in November of 2007, revealing five supplementary features, all described as ephemeral and difficult to define (Maki 2007:11). Three of these features fell within the bounds of the geophysical survey and the associated geophysical responses are described by Maki (2007:11-14). Maki (2007) also describes several anomalies that may be representative of fire-altered features, such as hearths, as well as possible house structures, with recommended future field-testing.

Methodology

Artifacts are herein classified by form and presumed function. In some cases, function could not be determined so physical attributes of the object rather than presumed use are the criteria

utilized for description. Artifacts are grouped into categories based on these criteria, with detailed description of each artifact following. Technique of manufacture, origins of production, and chronological assessments of artifacts are provided when allowable. Comparisons to similar artifacts from other sites are occasionally made. For each artifact, maximum length, width, and thickness measurements were recorded to .01 mm. In particular circumstances, additional measurements were required to accurately account for artifact shape and variability. In these cases, supplementary measurement information is provided. Weight measurements were recorded to .01 g. In certain situations, corrosion, bending of the artifact, or adhering material inhibits accurate measurements. Occasional iron objects, such as highly corroded and friable bucket pieces were too fragmentary to quantify accurately. In these cases, those items are recorded as single objects with only weight measurements obtained. Differentiating between brass and copper is challenging. In most circumstances, objects produced of copper or brass are listed as copper/brass in production unless otherwise noted. Mark Volmut, graduate student at the University of Kansas, analyzed and provided descriptions of the faunal materials included herein.

Artifact Descriptions

A total of 418 artifacts and 885 faunal remains have been analyzed during this project. The most common artifact category, with the exception of bone materials, is objects produced of a ferrous material, likely iron (Table 1). The large quantity of this artifact class is a reflection of recovery techniques employed, particularly the use of metal detectors during field reconnaissance. Each artifact is described below in alphabetical order, followed by the faunal analysis summary and concluding remarks.

Arrow Point (n=4)

All four arrow points from Fool Chief's Village are triangular, stemmed, and produced of iron. They likely were Native-manufactured, possibly from flattened sections of barrel hoops or

Table 1. Frequency and Weight of Artifacts by Material Type

Material	Number	Weight (g)
Aluminum	4	1.91
Bone	885	2056.10
Brass	6	125.11
Ceramic	9	4.63
Copper/Brass	80	457.13
Glass	13	6.43
Iron/Ferrous	258	8629.81
Lead	32	228.59
Stone	12	4234.92
Tombac	1	2.98
Unidentified	3	13.65
Total	1303	15761.28

buckets, and then file-sharpened (Harris and Harris 1967b:160). Two exhibit downward-angled shoulders, a third has slightly downward-angled shoulders, and the fourth has straight, parallel shoulders. The stem remains on only one specimen and is a slightly convergent straight-sided stem. The tip is missing from three of the items, but all presumably terminated in sharp points.

Axe (n=2)

Two axe fragments of similar manufacture are in the collection. One fragment is a partial eye only, oval in outline. The second axe retains a straight dorsal spine, but the bit insert is missing. It has an angled return on the bottom surface near the collar, similar to belt-style axes. Both examples would have been produced of a single piece of metal and hammer-welded with an iron bit insert near the blade edge. The more complete specimen shows evidence of battering on the dorsal spine, perhaps indicating use as an anvil. Both are morphologically similar to English and French trade axes of the period and likely date to the Kansa occupation of the site.

Bail Ear (n=5)

All kettle bail ears from Fool Chief's Village are produced of iron. Two bail ears would have been secured around the rim of each kettle, providing a bracket for the bail handle to attach

to. Of the five bail ears in the Fool Chief collection, three have octagonal bodies with rounded tops. The other two are of the "inverted T" style and resemble an upside-down letter "T". This style of bail ear was common from 1843-1850 (Hothem 2003:221). All examples discussed here were secured to the kettle by two iron rivets. The bails are different in style from the square bails with clipped corners produced of sheets of copper/brass at the Pawnee Kansas Monument site, 14RP1, indicating a change in style through time.

Barrel Band (n=4)

Four small strips of iron of consistent width and containing large iron rivets have been interpreted as barrel band fragments. These iron strips would presumably wrap around the circumference of barrels and be secured by rivets. The age of these specimens is unknown, and similar treatment has been observed on modern wooden barrels with iron bands. It is possible these fragments date to the Kansa occupation, or could have been introduced by later activities at the site.

Bead (n=3)

Only three beads have been recovered from Fool Chief's village. This low number is reflective of artifact visibility and excavation technique; no fine screen recovery methods were employed extensively in the recovery of these artifacts. Utilization of 1/16th inch water screen will greatly improve recovery of these small-scale items if future investigations proceed. One bead is a small turquoise seed bead commonly traded during the period under consideration. The second is tubular in shape and best described as a bugle bead. It is an opaque satin in color. It appears to be machine-cut. The final bead is not symmetrical and best described as an oblong oval. It retains a flaky red patination, perhaps paint, on the outer surface.

Bells (n=1)

A single brass bell, occasionally referred to as a hawk bell, is in the Fool Chief collection. This bell is highly distorted and the iron pellet which functioned as the clapper is missing. A prominent central seam is observable on this item.

This seam is reflective of manufacturing technique; the bell was produced of two hemispheres of stamped brass fused at a central seam that forms a circumferential flange (O'Shea and Ludwickson 1992:193). A single hole is visible in the top through which a brass hanger would have protruded to allow for suspension. Bells were likely attached to clothing or worn around the ankles and were a widely circulated trade item (Brown 1979:201). Similar bells have been recovered from Omaha sites dated to the early nineteenth century in Nebraska (see O'Shea and Ludwickson 1992).

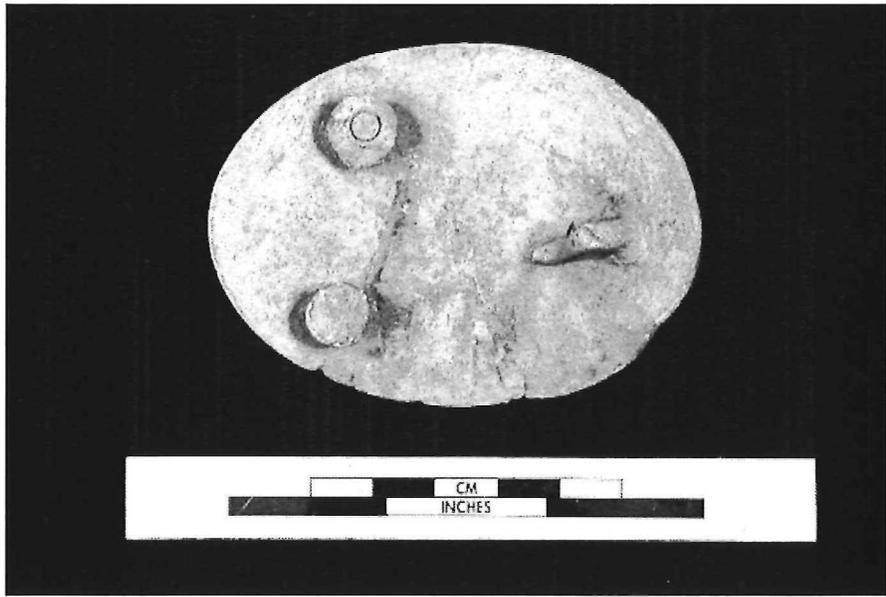


Figure 1. Reverse of plain brass belt plate showing hook and "puppy paw" configuration (image labeled waist belt plate)

Belt Plate (*n=1*; Figure 1)

A plain oval brass cross-belt plate was recovered from Fool Chief's village. This artifact was issued to enlisted militia and worn on the uppermost portion of the soldier's cross-belt (Calver and Bolton 1950:161). On the back are two studs with brass washers peened to them (variously called "burrs", "plugs", or "puppy paws"), and a single hook. The design allows for easy removal of the plate from the leather belt for cleaning (Calver and Bolton 1950:161). This style is reflective of the regulation enlisted militia 1808 pattern cross-belt plate, which typically dates ca. 1810-1833, and was a common pattern during the War of 1812 (O'Donnell and Campbell 2000:58; Kerksis 1982:167). It fits nicely with the chronology of Fool Chief's village.

Bolt (*n=2*)

Two bolts are identified in the collection and likely intrusive from modern farming implements. Both bolts are threaded, and one retains a hexagonal nut. The bolt with the nut in place is incomplete, missing the head portion. The other bolt has a square head.

Bottle Cap (*n=1*)

A single, threaded aluminum bottle cap, likely from an aluminum or plastic beverage bottle is in the 14SH305 collection. This object is considerably younger than the Kansa occupation at Fool Chief's Village, and is intrusive in the collection.

Bracelet (*n=1*)

A single plain iron wire, bent in a C shape with cut ends is interpreted to be a bracelet. Bracelets produced of iron as well as copper/brass were a common trade item as well as Native produced from existing trade goods during the period. The small size of the bracelet from 14SH305 suggests use as possible children's ornamentation.

Breech Plug (*n=1*)

Breech plugs were threaded into the proximal end of the breech portion of musket barrels to seal them and project the shot forward when the charge was ignited. They typically have a tang with a screw hole where a screw would pass downward to attach the breech plug to the trigger plate (Blaine and Harris 1966:60; Smith 1950:4).

The single breech plug from Fool Chief's Village retains the tang. It likely dates to the Kansa occupation of the site.

Bucket/Pail (n=13)

Twelve ferrous items have been interpreted as wall fragments from light iron buckets or pails. These fragments all exhibit a consistent thickness, and some display rim or solder seams indicative of bucket manufacture. Buckets were manufactured in a variety of sizes and often traded nested together to conserve space (Hothem 2003). One other specimen is a nearly complete convex lid of a bucket with a central bail ear that would have facilitated attachment of a D-shaped wire ring handle. A similar example has been found at 25DK2, an historic Oneota site (O'Shea and Ludwickson 1992:183). The bail ear is attached by two iron rivets. It is possible these items could date to the Kansa occupation of the village, but an accurate assessment of this is not possible from fragmentary wall remains alone. The style of lid and associated bail ear could date to the time of occupation, but this style had a relatively long lifespan and could date to considerably after the Kansa occupation as well.

Buckles (n=6; Figure 2)

Five buckles and one buckle tongue have been recovered from Fool Chief's Village. Four of the buckles are produced of iron. Of these, two are similar in size and rectangular in shape. The tongue is missing from both examples. They stylistically are similar to an utilitarian harness buckle, as well as plain buckles for belts, packs, and other sacks (Gilman 1982:49). The third iron buckle is rectangular as well, but slightly smaller with the base of the tongue still attached. The tongue is not centered. This specimen may also be a utilitarian buckle. A fourth iron buckle is small and square in shape, with a complete tongue remaining. The tongue placement on this item is off-center. Plain iron buckles of the above styles were common from the late 1700's on and served a range of purposes (Gilman 1982:49). The final iron buckle fragment is represented by a tongue only. The base of this tongue is similar in size to the tongue fragment

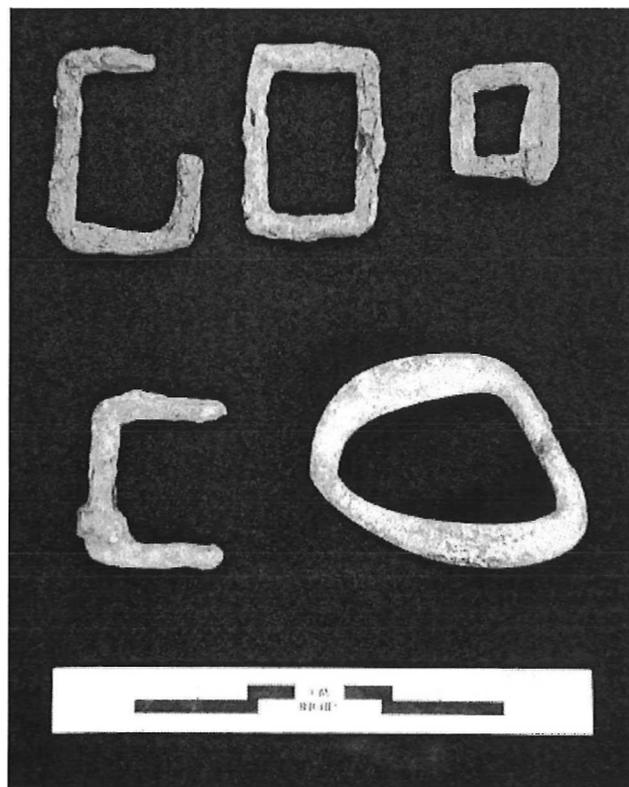


Figure 2. Iron and brass buckle fragments

observed on the complete rectangular buckle. The remaining buckle is produced of copper/brass and is D-shaped in outline. No tongue is present. This shape of buckle is similar to buckles observed on saddles, particularly the girth ring which attached to the cinch strap that secured the saddle to the Horse (Cruse 2008:184). All buckles described above stylistically fall within the range of expected buckle shapes associated with horse equipment and harness gear.

Bullets/Ammunition (n=29)

Twenty-nine lead fragments have been identified as musket shot or rifle bullets. Five rifle bullets range from 8 mm in diameter to 10.7 mm. Three of these bullets are around 9 mm in diameter. Each contains concentric rings around the base, and one displays an "H" headstamp on the back side, signifying Winchester production (Cruse 2008:190). This particular bullet has been fired and the head is mushroomed. These styles of bullets likely post-date the Kansa occupation of the site. The remaining ammunition is lead balls, likely

designed for smooth-bore muskets and pistols. These balls range in completeness and distortion, with many being heavily altered from their original shape. Only two are in pristine condition and still retain the casting spurs from the bullet mold. These balls range in weight from 3.61 g to 13.98 g, diameters were not calculated in most circumstances due to the distorted nature of most balls. They could date to the Kansa occupation of the site.

Buttons (n=5; Figure 3)

Five buttons reflective of military as well as civilian clothing are in the Fool Chief collection. Of these, one is a flat brass coat button of the Light Artillery First Regiment. This button exhibits an "L. A." with a "1" below, surrounded by a circle of stars on its face. The back is plain with a solid brass shank. This style of button superseded the foliated script monogram "L.A." button in 1816, and became cupped, rather than flat in form in 1820 (Calver and Bolton 1950:152). A similar button has been recovered from Fort Atkinson in Nebraska, dated 1819-1827.

A second button is produced of tombac, a brass alloy with a high percentage of zinc and that occasionally contains arsenic. This is a flat disk button, cast in a mold, with a spun back cast style (Blouke and Steele 1993:28). After casting, the button was placed on a chuck and spun on a lathe, resulting in the concentric circles visible on the back surface of the button (Blouke and Steele 1993:28; Olsen 1963:552). The eye of this style of button is often a wire cast in place with a blob of metal that occasionally displays burr edges at the base of the eye (Blouke and Steele 1993:28). The eye of this button is fashioned from a copper wire. This style of button was worn on trousers by both the military and civilians from about 1760 to 1785, perhaps as late as 1800, and was typically covered with the same material as the trousers (Hughes and Lester 1981; Hume 1969:90; Olsen 1963:552; Tice 1998:2). The manufacture of this style of button predates the occupation of the Kansa Village of Fool Chief.

A third brass button displays a flat face with a solid brass wire shank. A back-stamp is visible, but not decipherable. It lies within two concentric circles surrounding the solid shank. A fourth button is plain and flat as well, and relatively nondescript. It is produced of an unidentified nonmagnetic material, possibly lead, and has a partial solid shank still attached. It is heavily deteriorated. These two buttons potentially date to the Kansa occupation of the site. The final button is a brass snap-style button with rivets protruding from the center of an otherwise flat disk

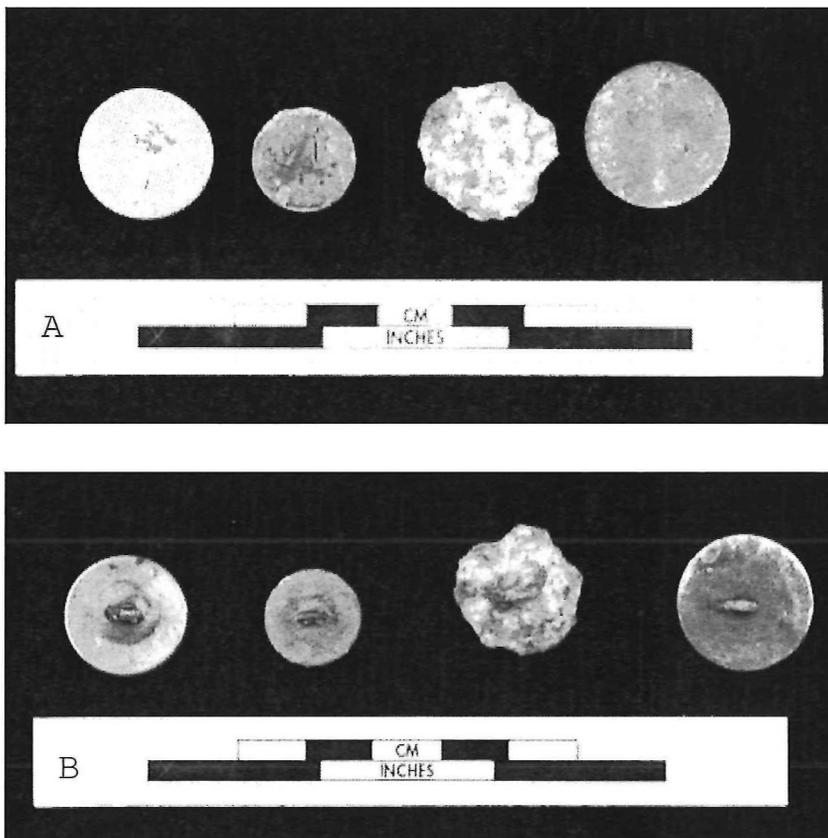


Figure 3. A) Obverse and B) Reverse of buttons from Fool Chief's Village. From left to right: Plain Tombac button; Light Artillery First Regiment button; Lead button; Plain brass button

on both surfaces. This style likely post-dates the Kansa occupation of the village.

Butt Plate (n=1)

Butt plates were attached to the end of the stock of firearms where it would rest against the shoulder (Good et al. 2002:286). These were typically fastened with either screws or tacks. Many English flintlocks had butt plates produced of brass, whereas French-manufactured guns were more likely to have furniture produced of iron. The butt plate from 14SH305 is produced of brass and missing the tang and bottom portion. It is morphologically reflective of an early style Northwest trade gun, and would have been secured to the stock with seven square nails (Hamilton 1982:92). The pattern for the Northwest, or “Common” trade gun, arguably the most famous of the Indian trade guns, was established from English and Dutch smoothbore flintlocks (Eddins 2003). Most of these guns were produced in either Birmingham or London, England, with the “Hudson Bay Fuke”, “London fusil”, and “Mackinaw Gun” all referring to the same gun as the “Northwest Gun” (Russell 1967:65; Hamilton 1982:117). Later models were also manufactured in America and Belgium.

Can (n=2)

Two fragments of what appear to be degraded aluminum likely came from modern litter at the site. These items appear to be a wrapper for a bottle and a fragment of an aluminum beverage can. They were likely incorporated as litter from the nearby road or modern farming activities.

Cast Iron (n=6)

Six fragments of heavy cast iron likely represent the remains of cooking pots or Dutch ovens. They are circular in outline, and one fragment retains a flat rim. Due to the fragmentary nature of these items, it is impossible to accurately validate this claim. The age of these fragments is unknown, but it is possible they could date to the Kansa occupation of the site, as Dutch ovens were common trade items.

Ceramics (n=8)

All ceramics referred to herein are European or American produced and may be porcelain, whiteware, pearlware, etc. Distinctions were not made between these different types of ceramics. No Native-manufactured ceramics were collected from Fool Chief’s village. Ceramics are described based on color and texture in this analysis. Further analysis and explanation is encouraged by a researcher familiar with historic ceramic technologies. Of the eight ceramics collected, one fragment has been tentatively identified by historical archaeologist Marsha King as blue-edge decorated pearlware, dated ca. 1780-1830. Three additional pieces are glossy with white interiors and blue and white exteriors. One is a rim fragment. Another is similar, but the blue and white exterior design is in banded horizontal stripes, and the interior surface contains a light blue slip. One fragment is pale white, with only a light gloss. Another is bright white and glossy. The final fragment has only the interior surface remaining, which is white and glossy.

Chain Link (n=1)

A thick long bent cylindrical fragment of iron likely represents a portion of a large chain link. This fragment is broken, but the portion that remains is in the shape of an incomplete link. Due to the fragmentary nature of this item, identification is speculative. It is possible this fragment was incorporated through modern agricultural activities at the site.

Copper/Brass Rod (n=2)

One copper/brass rod from the Fool Chief Village is likely a round soldering rod fragment introduced from modern agricultural activities. The second copper/brass rod is thicker, is square in cross-section, and has been hand-carved. The carvings are in a series of incised lines and ovals running the length of the rod. Its original purpose is unknown, and it possibly dates to the Kansa occupation of the site.

Copper/Brass Scrap (n=61)

Sixty-one items have been classified as

copper or brass scrap fragments. These items are primarily a by-product of manufacture of new objects from existing trade materials, specifically kettles and pails. It is common for no complete kettles or pails to be recovered from archaeological sites and for only “wastage” pieces, sometimes heavily manipulated but rejected, to be present (Erhardt 2005:104). Items classified as such herein both show evidence of manipulation through recycling as well as non-manipulated fragments reflective of decay and degradation of larger objects. Due to the fragmentary nature of these pieces, it is not possible to definitively classify the scrap fragments as kettle remains, however, thickness measurements are consistent with those observed on known kettle specimens.

Copper/Brass Strip (n=1)

A single small strip of machine-cut copper/brass with a series of incised lines on one surface served an unknown function. It stands out from the other fragments of copper/brass scrap because of the machine cutting on all edges. It is also thinner and more pliable than the majority of other copper/brass fragments. It is likely this is a fragment from a multi-component artifact, and may have once been wrapped around something. Without any comparative examples, this item’s age and purpose remain elusive.

Fencing Staple (n=11)

Fencing staples in three different sizes have been recovered. When broken, fencing staples can be mistaken for nail fragments. It is likely more fencing staple fragments are in the collection misidentified as nail fragments. Eleven staples retain sufficient form to be classified as such. These represent post-Kansa artifacts.

File (n=2)

Two file fragments have been identified. One is a round slender file fragment that tapers to a point. The other is a half-round metal file; rounded on one surface and flat on the other. It also tapers to a rounded point. Files were a prized trade item and facilitated manufacture and maintenance of many Native-produced metal items

recycled from EuroAmerican trade goods. However, files of these styles were common throughout the Kansa occupation of the site, and are still prevalent today. With the fragments present, it is not possible to definitively designate these file fragments to the Kansa occupation of Fool Chief’s Village.

Flake (n=3)

Three flakes, two from chipped stone reduction and a third from possible ground stone breakage are produced of a blue/gray material with fossil inclusions, either Permian or Pennsylvanian chert, and a fine-grained quartzite. Both chert flakes are late stage tertiary thinning flakes. One shows evidence of burning. The quartzite flake displays a platform and dorsal flake scars. Cortex remains on the surface. It is possible this artifact is detached from a larger ground stone tool.

Frizzen (n=1)

Frizzen refers to the L-shaped object positioned over the flashpan on a musket that provides the sparks that ignite the powder when the flint in the jaws of the hammer strikes it (Good 1972:141; Good et al. 2002:286). The frizzen also encloses and protects the priming charge in the flashpan. When struck by the hammer, the frizzen springs forward and exposes the primer charge. A single complete frizzen has been recovered from Fool Chief’s village. It is morphologically similar to frizzens from trade guns of the period, as well as frizzens from earlier sites, such as the Kansas Monument site.

Glass (n=10)

Ten fragments of glass represent a mixture of bottle fragments, flat window glass, and possible mirror fragments. Two fragments are flat but have a frosty adhering patination, possibly indicating use as mirror backing. Two fragments are rounded, perhaps portions of beverage bottles. One is frosted, the other is clear. Two fragments are thick and aqua green in color. Their use is uncertain. One fragment is clear but displays a decorative raised lattice work design, common on flower vases or decorative china. The final three fragments

are clear flat glass, probably from windows. It is possible all of these examples post-date the Kansa occupation of the site.

Gunflint (n=1)

Initial reports on Fool Chief's Village identified two gunflints in the collection. However, after analyzing these artifacts, it was determined that one was a natural occurrence, not a culturally modified artifact. The gunflint that remains is Native manufactured of a white flint, probably from eastern Kansas or the Ozarks region. The relatively small size of this gunflint compared to gunflints observed at other sites may indicate utilization with a pistol.

Hammer Top Jaw (n=1)

The hammer, or cock on a musket flintlock mechanism, holds the gunflint in its vice jaws and springs forward striking the frizzen when the trigger is pulled. The top jaw of the hammer, or cap, is the removable portion of the vice that is held to the hammer by the vice screw. The vice top jaw is adjustable along the comb of the hammer, and also removable which aids in the changing of, and facilitation of, different size gunflints (Good et al. 2002:287). A single removable heavily corroded top jaw has been recovered from Fool Chief's Village.

Harness Chain (n=1; Figure 4)

A single complete chain, likely associated with horse or oxen gear, has been recovered. This chain exhibits a toggle on each end, similar to the "chain and bar" style from Civil War era cavalry watering bits, but longer. It is possible this artifact served as a trammel chain for suspending a kettle or pail from a yoke or wagon. The toggle designs are similar to those found on sponge buckets for Civil War era light artillery, or grease buckets for a wagon (Davis 1989:107). The most probable use

is as a harness breast chain for a mule harness, or a trace chain to maintain clearance between the wagon tongue and the horse (Thies 2007:21). This style likely post-dates the Kansa occupation of the Village of Fool Chief, with a similar specimen found from the Red River Wars of 1874-75 of Texas (Cruse 2008:199). The chain is around 60 cm long, and is composed of thirteen links with an average length of around 60 mm. A toggle is inset into the final two links. However, one toggle is inset backwards and would not have been functional. This toggle is also inset into a larger chain link, measuring over 74 mm.

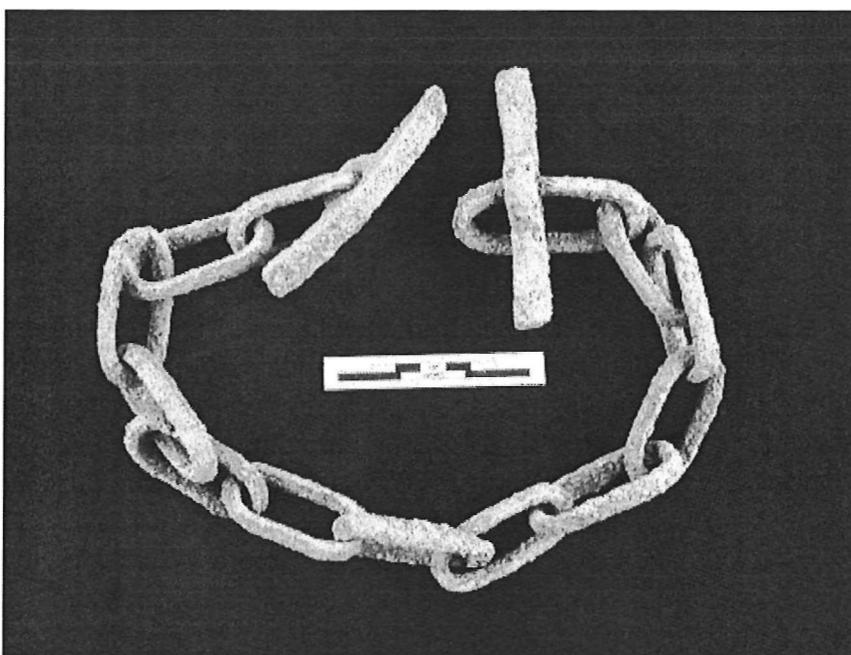


Figure 4. Complete harness chain with 13 chain links and two toggles

Iron Ring (n=1)

A single plain iron ring possibly comes from a horse saddle or wagon equipment. Saddle furniture is often outfitted with similar-size iron rings. It is similar to saddle dee rigging rings. However, without additional associated saddle artifacts, this classification is speculative. It may have been introduced through modern agricultural activities on farm machinery.

Iron Scrap (n=17)

Similar to copper/brass scrap, iron scrap

refers to wastage pieces, sometimes heavily manipulated, likely from recycling as well as non-manipulated fragments reflective of decay and degradation of larger objects. These seventeen iron scrap fragments presumably come from iron buckets and pails, but may come from other thin iron objects as well.



Iron Strap (n=1)

One heavily corroded and badly decayed fragment has been identified as a metal strap. The function of this item is unknown. Two iron rivets are still in place connecting two sections of thin metal strap. It is possible this item was introduced from modern farm machinery.

Jew's Harp (n=2: Figure 5)

Two bow-shaped iron Jew's harp frames are in the Fool Chief collection. Jew's harps, occasionally called German harps, were produced in different sizes in brass or iron and were a heavily traded item from the early 1700's on throughout much of North America (Hothem 2003:313). They were originally introduced by the Dutch and English, but manufacture began as early as 1650 in Massachusetts (Fox 1988:29). They are found at virtually every point and every period of westward expansion (Fox 1988:29). Both Jew's harps from Fool Chief's village are missing the iron tongue or vibrating "reed", a common occurrence on archaeological specimens (Hothem 2003:313).

Kettles/Pail Fragments (n=5)

Characteristics of five copper/brass scrap fragments indicate kettles or pails, differentiating them from scrap fragments. Two fragments come from the rounded rim of a kettle. Two other fragments contain perforations. One exhibits evidence of cutting from recycling and reuse, and a kettle patch is still in place on the other. The final fragment contains portions of the wall and rim with two perforations for the bail ear rivets.

Figure 5. Bow-shaped iron Jew's Harps frames. Tongues are missing.

Kettle Patch (n=1)

A single bent scrap copper/brass fragment is interpreted to be a kettle repair patch. This fragment is fashioned into a diamond-shape outline, with proximal and distal points crimped back upon the face of the diamond. Similar bend patterns have been observed on kettle patches at the Kansas Monument site.

Knife (n=20)

Trade knives are common in the Fool Chief collection, with twenty specimens represented. These knives range in style from straight backed, parallel blades with bolsters and wide returns, to curved blades and spines with no bolsters and short, sharp returns. All are reflective of kitchen or file-style knives with the exception of one that displays a rounded tip indicative of a skinning knife. The most complete knife retains an incised bone handle, and is nearly 270 mm long. Two other fragments are interpreted to be decorative copper/brass utensil handles, which likely were attached to the tang portion of a knife by pins. Each is incomplete.

Limestone (n=2)

Two fragments of limestone represent possible manuports. One appears to be an unmodified cobble, but coming from an alluvial terrace makes that tentative. The other shows evidence of possible light grinding and may have been utilized as a small grinding slab.



Figure 6. Complete knife with incised bone handle

Nail (n=73)

The fragmentary nature of many nails precluded accurate size measurements. For this reason, most nails were only quantified and weighed. Broken fencing staples as well as sections of thick wire may occasionally be misidentified as nail fragments. Seventy-three nail fragments are identified. The majority of these appear to be machine-cut square nails, with a shank that tapers on two sides only. This shape is produced by cutting nails from rectangular strips of iron plate with a tapered point using a single cut (Fontana and Greenleaf 1962). Two sides will retain a constant thickness the entire length of the nail since this measurement is determined by the width of the iron plate (Fontana and Greenleaf 1962). Nails of this style can date to the Kansa occupation of the site, since they were widely in use by 1830. Machine-cut wire nails, of which only a few are in the 14SH305 collection, do not become common until much later, and were likely introduced through modern farming practices. One final unique nail has an exaggerated head similar to a large tack or modern roofing nail. Its age and function is unknown.

Nuts (n=5)

Five nuts of probable recent introduction have been incorporated into the Fool Chief assemblage. Three of the nuts are square, one is rectangular with two parallel tapered sides, and the fifth is hexagonal. Corrosion skews observation of the interior threading on these items. It is likely

they have been introduced through modern agricultural activities on farm machinery.

Pipe (n=2)

A section of threaded iron pipe is likely a post-Kansa introduction to the site. Threading occurs on only one end of the pipe fragment. An additional section of iron pipe is not threaded and could possibly be a round gun barrel section, but the lack of noticeable alteration to the object lends support to classification as a pipe fragment. Typically, gun barrel sections will show evidence of battering or cutting on at least one end. It is possible this artifact dates to after the Kansa occupation of the site as well.

Pipestone (n=1)

One fragment of pipestone has been identified. Pipestone occurs locally in the area in the form of glacial cobbles. This particular fragment shows evidence of grinding and displays light cut marks on one surface.

Pull Tab (n=1)

An aluminum pull tab, likely from an aluminum beverage can is in the 14SH305 collection. This object was introduced to the site considerably after the village occupation.

Ramrod Tip (n=1)

On muskets and early style rifles, ramrods were used to tamp the projectile down the barrel to rest on the charge that was poured down the

bore. Ramrods were typically produced of wood or iron, with a separate tip attached. The tip from 14SH305 is a tapered hollow cone produced of brass, similar to the tulip or trumpet shape design of ramrod tip. These two styles of ramrod tip were common from 1844 to 1861 and slightly earlier, with a similar style of tip observed on a US model 1841 rifle (Davis 1989:62). It could date to the Kansa occupation of the site.

Scraper Blade (n=1)

Scraper blades were likely lashed to elk antler handles. The scraper blade from Fool Chief's Village is stylistically similar to elk antler-hafted specimens observed from other sites. A great antiquity for hafting scraper blades to elk antler handles is inferred (Gilmore 2005:21). Originally, stone scraper blades were hafted in this manner prior to the introduction of iron artifacts. However, elk antler hafting becomes more prevalent later in time with the incorporation of metal trade goods. The specimen from Fool Chief's Village is rectangular in outline with one edge file-sharpened. It is likely Native produced on scrap iron.

Screw (n=1)

One screw has been identified as part of a musket or rifle furniture. Firearm screws were typically threaded only on the distal portion of the screw, and have a distinctive round head. This particular screw likely attached the mainspring or sear spring to the rest of the flintlock mechanism.

Serrated Copper/Brass (n=1)

A single fragment of serrated sheet copper/brass is in the 14SH305 collection. This fragment is Native produced on a kettle fragment that exhibits three rivet holes and one remaining rivet in place. This item likely served as a cutting or sawing implement (Bray 1978:33), and similar examples are relatively common at the Kansas Monument site. A series of serrated teeth, formed by a sequence of small, wedge-shaped notches, are evident on one surface of this tool. Consistency in shape of serrated notches was likely achieved using a triangular, three-edged metal file. The absence of hanging shads on these notches supports the

notion that the notches were filed rather than cut. These notches are placed close together, although not consistently spaced or equivalent in depth, to form a series of teeth on the edge of the object. Consistency in thickness with other observed serrated objects from the Kansas Monument site suggests that certain objects, namely kettles and barrel bands, were selectively targeted for recycling and manufacture into new tools.

Sandstone (n=2)

Two fragments of fine-grained sandstone represent possible ground stone fragments. One is ground on two surfaces and exhibits wear patterns similar to whetstones observed at Kansas Monument. Whetstones, although poorly represented in the Fool Chief collection, were likely common to maintain edges on metal artifacts. The other sandstone fragment shows only light modification near the center of the object on opposing surfaces, an unusual wear pattern for a whetstone. Wear and polish in this fashion is better explained by use as a grinding surface, such as a metate, rather than a surface utilized for sharpening.

Side Plate (n=1)

A brass sideplate fragment may be a portion of a serpent sideplate from a Northwest trade gun. Sideplates, located on the side of the stock opposite the lock on muskets and rifles, were used to secure the lock to the gun with either two or three screws that passed through the stock, lock, and side plate (Hamilton 1982:89). This design allowed the lock to be easily removed for cleaning. The purpose of the sideplate is to prevent the heads of the screws from sinking into the wood of the stock (Hamilton 1982:89). Sporting and trade guns typically had more elaborate sideplates than military-issue weapons. The serpent sideplate is strongly associated with English manufacture. Cast brass serpent sideplates first appear around 1780-1790, with earlier models being engraved (Hamilton 1982:89). However, Bouchard (1976:104) suggests that sideplates similar to the ones described above were manufactured around 1750. The fragment from 14SH305 retains the screw hole and is

morphologically similar to a serpent sideplate fragment, although a sufficient portion is not available to definitively be classified as such.

Sioux Quartzite (n=3)

Three fragments of Sioux Quartzite have been recovered. Two of these likely represent spalls from larger ground stone tools, or flakes from glacial cobbles created by modern agricultural activities. The final fragment is a large slab, lightly ground on one surface. It is possibly a fragment from a metate, or could have served as a whetstone for large metal objects. There are no definitive standardized ground stone tools in the Fool Chief collection, and all are made from local materials. This suggests ground stone technology may have already been largely replaced by introduced EuroAmerican trade objects at Fool Chief's Village. Future investigations at the site not relying heavily on metal detector survey should result in the recovery of a less biased sample to assess this hypothesis.

Snap Hook (n=1)

The iron snap hook from Fool Chief's Village is similar to an army-issue carbine sling swivel and snap hook (Cruse 2008:228). A similar style of snap hook was first introduced in 1839 and was common through the Civil War until 1885 (Cruse 2008:228). Although the model from Fool Chief's Village is slightly different than this model, it likely served the same purpose, and possibly dates to a similar time period. It is composed of a snap hook that would have attached to a ring on the stock of a carbine, and a square swivel that would have been secured to a leather sling.

Spike/Punch (n=3)

Three thick iron rods display sharp points on one surface. All three of these items are approximately square in cross-section, with ends that taper to a beveled point. Two are best described as railroad spikes without the heads. They are both around 132 mm long and 20 mm wide. One shows evidence of hammering on the proximal end, possibly from utilization as a wedge or punch. The third spike is longer at 211 mm, but only 13 mm

wide. It has a circular shaft that tapers to a beveled square cross-section near the tip. It may represent a picket pin fragment that is missing the tethering bail (Cruse 2008:184).

Spring (n=1)

A probable fragment of a copper/brass tension spring has been identified. This spring is incomplete, but exhibits the curl typical of a tension spring. Its age is unknown, and could possibly be incorporated from modern agricultural farm implements.

Tinkler Cones (n=3)

Three tinkler cones have been recovered from Fool Chief Village. Tinkler cones, variously referred to as jingles, jinglers, janglers, dangles, bangles, or simply "noise making instruments" were both Native-made as well as European produced (Erhardt 2005:119; Hothem 2003:273; Quimby 1966:72). Tinklers were fashioned by rolling a cut flat trapezoidal or square metal preform, likely from barrel hoops, recycled musket ramrod guides, or brass kettles and pots, to form a hollow cone with an open apex (Loren 2008:361; Roberts 1978:147; Smith 1950:5). These cones would then be suspended from a thong, often produced of hair, that passed through the open end of the cone and was knotted or occasionally fastened to a bead on the inside of the cone to allow free movement (Erhardt 2005:120). The tinkler would be hung or sewn as fringe decorations to pants, shirts, shoes, knife cases, and pouches, in close proximity so that movement by the wearer would cause contact between the cones and produce a "tinkling" sound (Beaudry 2006; Loren 2008:361; Richter 2001:43). It is not uncommon for hundreds of tinkler cones to adorn a single outfit in modern pow-wow ceremonies (Hungry Wolf 1999:122–127).

Three styles of tinkler cones, based on method of manufacture, are often observed on archaeological sites; edges either overlap to the right, curl to the left, or meet in the center when viewed from the distal end (Cruse 2008:181). This may be reflective of the handedness of the maker. Of the cones from 14SH305, two exhibit butted

edges while the third displays a left curl. One cone has an apex terminating in a sharp point which is morphologically different than other cones observed that typically terminate in a flat surface. This particular cone may have functioned as a conical arrow point. Thickness measurements for the two smaller cones are similar to those observed at Kansas Monument, suggesting certain materials were selectively targeted for recycling and manufacture into other objects. The larger cone is produced of sheet copper/brass that is twice as thick as typically observed for these artifacts.

Tobacco Pipe (n=1)

A fragment of the bowl of a tobacco pipe has been recovered from site 14SH305. This pipe is produced of a white ceramic, a material commonly used for the production of trade pipes of the era. It exhibits a line and raised bump decoration style on the outer surface. It likely dates to the Kansa occupation of the site.

Trap (n=1)

The economy of the Kansa was largely driven by trapping, with a market for skins provided by European and American traders (Unrau 1971:140). The single trap from Fool Chief's Village exhibits plain toothless, square jaws around 219 mm long that were mounted to the rest of the trap by a single screw on each side. Only the jaws and mounting screws remain. The size and style of this trap is consistent with beaver trap measurements produced from 1800 to 1820 and shortly after (Hothem 2003:72).

Tumbler (n=1)

Tumbler refers to part of the flintlock mechanism of a musket. The tumbler holds the tension of the mainspring when the flintlock is cocked. When released, the power of the mainspring is transmitted to the hammer, which springs forward to strike the frizzen. Some tumblers have a half-cock notch, which allows the hammer to be held in half-cocked position and prevents unintentional discharge of the musket. The tumbler from 14SH305, although heavily corroded, exhibits both half and full-cock notches.

Unidentified Iron (n=56)

Fifty-six items have been classified as unidentified iron. These ferrous items are typically too fragmentary to be classified as a known artifact, and presumed function cannot be inferred. It is likely many of these items represent post-Kansa occupation artifacts introduced through recent agricultural practices on farm machinery. It is also possible some of these represent only fragments of multi-component objects. Unfortunately, the fragmentary nature of these items does not allow for further interpretation as to form and function.

Unidentified Lead (n=2)

Two unidentified lead fragments are in the collection. One is a thin strip, bent back upon itself as if the edges were crimped. The other is a small lead fragment, possibly from a lead ammunition ball. The age of these items is unknown.

Unidentified Material (n=3)

Three objects are composed of an unidentified material. One is too small for accurate analysis as to what it represents. It is not magnetic, and displays features similar to small lithic shatter, but not convincing enough to be classified as such. The other displays characteristics of carbon, but has adhering ferrous corrosion. It is probable this second item represents post-Kansa activity at the site, and is likely associated with modern farm machinery, perhaps a battery fragment. A final item appears to be produced of thin sheet silver commonly traded during the period. It is lustrous and not magnetic. It is bent and possibly served as a finger or ear ring. It has a series of raised lines running horizontal across the face.

Washer (n=1)

A single split-lock washer represents post-Kansa activities at the site. It is probable this item was introduced through modern agricultural activities.

Wire (n=14)

Wire is difficult to accurately measure due to the bent nature of most specimens. For this reason, only diameter and weight measurements

were obtained for most wire fragments. In addition, other objects such as fragmentary nails, can be misidentified as wire fragments. The age of these specimens is unknown, but it is probable the majority were introduced to the site after the Kansa occupation through modern agricultural activities. Fourteen possible iron wire fragments of variable gauges have been identified in the Fool Chief collection. One fragment of unknown function is thick enough to perhaps be better described as a rod, but it is bent and distorted similar to the other wire fragments so included herein.

Faunal Analysis (n=885)

The faunal materials were sorted, counted, and weighed during this analysis and identified using the comparative collections housed at the University of Kansas. The bone fragments were identified to the nearest taxon, color, burning, fragmentation, weight, and calculation of minimum number of individuals.

To help eliminate confusion as to species when quantifying the unidentified 14SH305 faunal remains, class sizes were designated based upon taxa in the faunal assemblage. Faunal elements that could not be identified to any specific species or to species level, but were identified as mammal, were sorted by size, and given size class designations such as “medium mammal” for mammal bone elements equal to the squared measurements of deer and pronghorn bones, “large mammal” for elk, and small bison sized remains, and “very large mammal” for bison sized mammal remains (see Roper 1991). “Very large mammal” may also include large elk and horse elements. This type of size classification will help in elevating the emphasis or bias of any specific species as a food resource within an assemblage.

Analysis

A total of 885 bone fragments were recovered, with an average size of 40 millimeters. The total weight of the assemblage is 2056.1 grams. The unidentified to species bone count is 471 (53%), with a total weight of 270.3 grams (13%). The most abundant identified species is deer (*Odocoileus virginianus*). For this animal,

total n=295 (33%), and mass=967.6 grams (47%). Next most common is bison (*Bison bison*), total n=36 (4%), and mass=451.6 grams (22%), followed by elk (*Cervus canadensis*), with n=10 (1%), and mass=110.2 grams (5%).

Less abundant elements include horse (*Equis* sp.) (n=2 [3%], 67.6 grams [3%]); pig (*Sus scrofa*) (n=3 [<1%], 4.4 grams [<1%]); canid (*Canis* sp.) (n=6 [<1%], 2.1 grams [<1%]); eastern cottontail (*Sylvilagus floridanus*) (n=1 [<1%], 0.3 grams [<1%]); turkey (*Meleagris gallopavo*) (n=1 [<1%], 16.6 grams [<1%]); threeridge mussel (*Amblema plicata plicata*) (n=1 [<1%], 52.6 grams [3%]); and a species of turtle (*Testudine*) (n=1 [<1%], 0.4 grams [<1%]).

The most abundant elements identified only to taxa (see Table 2) are composed principally of mammal bone, totaling n=468 (52%), weighing 269.3 grams (13%), followed by mussel shell n=51 (5%), weighing 108.4 (5%), and avian n=3 (4%), weighing 1.0 grams (<1%). The identified species represented that are not likely culturally related or a food source are mouse (*Mus* sp.) (n=1 [<1%], 0.1 grams [<1%]), and a species of hawk (*Buteo* sp.) (n=2 [<1%], 1.1 grams [<1%]).

Cut marks were observed on 3% of the faunal materials and are consistent with butchering and procurement strategies. Rodent and predator gnawing is minimal and does not preclude positive identification of the materials. The elements identified only to taxa were abundant (53%), and have a small portion (<1%) exhibiting cut marks. These bones possibly represent food and cultural elements of the faunal assemblage; however, the possibility of determining subsistence and utilization of the site based upon these materials requires further identification.

Faunal Summary

The bone preservation at 14SH305 is sufficient for allowing a thorough analysis, for answering questions about butchery and procurement strategies, and for the interpretation of factors in the assemblage regarding seasonality, as well as period of occupation. The fragment size, good condition of the bones, as well as the abundant taxon present suggest good site

Table 2: Breakdown of Faunal Materials.

Taxon	Common Name	NISP	Weight (g)	MNI
<i>Bison bison</i>	bison	36	451.6	1 (left tibia)
<i>Cervus canadensis</i>	clk	10	110.2	1 (right mand M2)
<i>Odocoileus virginianus</i>	deer	295	967.6	3 (left mandibles)
<i>Equus</i> sp.	horse	2	67.6	1 (right metatarsal)
Bovid, cervid, equid	Large ungulate	3	26.3	-
<i>Sus scrofa</i>	pig	3	4.5	1 (right maxl M2)
<i>Canis</i> sp.	canid	6	2.1	1 (right scapula)
<i>Sylvilagus floridanus</i>	eastern cottontail	1	0.3	1 (innominate)
<i>Mus</i> sp.	mouse	1	01	1 (right innom.)
<i>Mam.</i> uid	very small mammal	35	16.5	-
<i>Mam.</i> uid	small mammal	2	0.2	-
<i>Mam.</i> uid	medium mammal	3	3.9	-
<i>Mam.</i> uid	large mammal	425	33.6	-
<i>Mam.</i> uid	very large mammal	27	15.7	-
<i>Meleagris gallopavo</i>	turkey	1	16.6	1 (right humerus)
<i>Buteo</i> sp.	hawk	2	1.1	1 (tarsometatarsus)
<i>Avian</i> uid.	large avian	3	1.0	-
<i>Testudine</i> uid	turtle	1	0.4	1 (carapace)
<i>Amblema plicata plicata</i>	threeridge mussel	1	52.6	1 (left valve)
<i>Bivalvia</i>	mussel	51	108.4	-

mam. uid = unidentified mammal, *Avian* uid. = unidentified avian

preservation, and appropriate excavation and screening technique necessary for substantial faunal recovery. Further investigation with smaller screen sizes and other micro recovery techniques (see Casteel 1976; Shaffer 1992) may produce a wider variety of smaller elements, such as fish and herpetological specimens, adding to a larger picture of the butchery techniques, subsistence strategies, and function of the site.

Conclusions

A total of 1303 artifacts and faunal remains have been analyzed and reported from Fool Chief's Village. Most artifacts are attributable to the Kansa occupation of the site, but intrusions of artifacts from later periods is common as well. Some artifacts pre-date the Kansa occupation of the village, suggesting long-term curation for specific artifacts amongst the Kansa. Similar trade objects have been observed at other contemporaneous and earlier sites, particularly the Pawnee Indian Village or Kansas Monument site, suggesting similar origins for certain trade goods at both localities. Future investigations at Fool Chief's Village will provide better documentation and a greater understanding of the material culture of the Kansa Indians during the early 1800s, ultimately characterizing Kansa culture for that period in northeastern Kansas.

Acknowledgements

This report grew out of a contract agreement with the Kansas State Historical Society. John Tomasic, Bob Hoard, Tricia Waggoner, and Chris Garst all lent support in processing of the collections and associated documentation at that institution. This report benefited greatly from the previous work on Fool Chief's Village conducted by Randy Thies and draws extensively from the ethnographic history compiled in James Marshall's report on Hard Chief's Village. Mary Adair provided space for research at the University of Kansas Archaeological Research and Collections facility.

References Cited

- Barry, Louise
1972 *The Beginning of the West: Annals of the Kansas Gateway to the American West, 1540–1854*. Kansas State Historical Society, Topeka.
- Bauer, Anne
2006 Archaeological Survey of KDOT Bridge Project Number K-7431-01 Topeka, Kansas. Archaeology Office, KSHS, Topeka. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka (Biblio Number 3765).
- Beaudry, M.C.
2006 *Findings: The Material Culture of Needlework and Sewing*. Yale University Press, New Haven, Connecticut.
- Blaine, Jay C., and R. K. Harris
1967 European Trade Goods: Guns. In *The Gilbert Site: A Norteno Focus Site in Northeastern Texas*, edited by Edward B. Jelks. Bulletin of the Texas Archaeological Society 37.
- Blouke, Kay L., and Steele Harvey
1993 *Indian Trade Goods*. Oregon Archaeological Society.
- Bouchard, Russel
1976 *Les Arms de Traités*. Collection Histoire Populaire du Quebec, No. 3. Les Editions du Boreal Express, Sillery, Quebec.
- Bray, Robert T.
1978 European Trade Goods from the Utz Site and the Search for Fort Orleans. *The Missouri Archaeologist* 39.
- Brown, Ian
1979 Historic Artifacts and Sociocultural Change: Some Warnings from the Lower Mississippi Valley. In *The Conference on Historic Site Archaeology Papers 1978*, 13:109–121. Institute of Archeology and Anthropology, University of South Carolina, Columbia.

Current Archaeology in Kansas

- Calver, William Louis, and Reginald Pelham Bolton
1950 *History Written with Pick and Shovel: Military Buttons, Belt-Plates, Badges, and other Relics Excavated from Colonial, Revolutionary, and War of 1812 Sites by Field Exploration Committee of the New York Historical Society*. The New York Historical Society, New York.
- Casteel, Richard W.
1976 *Fish Remains in Archaeology and Paleo-Environmental Studies*. Academic Press, New York.
- Cole, Fannie E.
1904 The Kansas Indians in Shawnee County After 1855. *Kansas Historical Collections* 8:481-483.
- Cruse, J. Brett
2008 *Battles of the Red River War: Archaeological Perspectives on the Indian Campaign of 1874*. Texas A&M University Press, College Station.
- Davis, William C.
1989 *Rebels and Yankees: The Fighting Men of the Civil War*. Thunder Bay Press, San Diego.
- Dixon, Benjamin Y.
2007 Furthering Their Own Demise: How Kansa Indian Death Customs Accelerated their Depopulation. *Ethnohistory* 54:3.
- Eddins, Ned
2003 The Northwest Indian Trade Gun. *Thefurtrapper.com*. Afton, Wyoming.
- Erhardt, K. L.
2005 *European Metals in Native Hands: Rethinking Technological Change, 1640–1683*. University of Alabama Press, Tuscaloosa
- Fontana, Bernard L., and Cameron J. Greenleaf
1962 Johnny Ward's Ranch: A Study in Historical Archaeology. *The Kiva* 28 (1 & 2).
- Fox, Leonard
1988 *The Jew's Harp: A Comprehensive Anthology*. Bucknell University Press, Associated University Presses, London and Toronto.
- Gilman, Carolyn
1982 *Where Two Worlds Meet: The Great Lakes Fur Trade*. Minnesota Historical Society Press, St. Paul.
- Gilmore, K. P.
2005 These Boots Were Made For Walking: Moccasin Production, Gender, and the Late Prehistoric Hideworking Sequence on the High Plains of Colorado. In *Gender and Hide Production*, edited by Lisa Frink and Kathryn Weedman. AltaMira Press, Walnut Creek, California.
- Good, Mary Elizabeth
1972 Gubert Site: An 18th Century Historic Kaskaskia Indian Village in Randolph County, Illinois. The Central State Archaeological Societies, Inc. Wood River, Illinois.
- Good, Mary Elizabeth, Lee Good, and George H. Odell
2002 Metal Artifacts from the Lasley Vore Site. In *La Harpe's Post: A Tale of French-Wichita Contact on the Eastern Plains*, edited by George H. Odell, pp. 281-289. The University of Alabama Press, Tuscaloosa.
- Hamilton, T. M.
1982 Concluding Comments on Gunflints. In *Indian Trade Guns*, edited by T. M. Hamilton, pp. 189-196. Pioneer Press, Union City, Tennessee.
- Hothem, Lar
2003 *Indian Trade Relics: Identifications and Values*. Collector Books, Paducah, Kentucky.
- Hughes, Elizabeth, and Marion Lester
1981 *The Big Book of Buttons*. New Leaf Publishers, Houston, Texas.

- Hume, Ivor Noel
1969 *A Guide to Artifacts of Colonial America*. University of Pennsylvania Press, Philadelphia.
- Hungry Wolf, Adolf
1999 *Pow-Wow: Dancer's and Craftworker's Handbook*. Canadian Caboose Press, Skookumchuck, British Columbia.
- Kerksis, Sydney C.
1982 *Plates and Buckles of the American Military: 1795-1874*. Stone Mountain Press, Stone Mountain, Georgia.
- Loren, Diana DiPaolo
2008 *Beyond the Visual: Considering the Archaeology of Colonial Sounds*. *International Journal of Historical Archaeology* 12:360-369.
- Maki, David
2007 *A Geophysical Investigation at Fool Chief Village (14SH305): Electrical Resistance and Magnetic Field Gradient Surveys at a 19th Century Kansa Village Site, Shawnee County, Kansas*. Report of Investigation Number 126. Archaeo-Physics, LLC.
- Marshall, James O.
2000 *Archaeology at Hard Chief Village: An Introductory Study of the Kansa Indian Experience in the American West, 1806-1846*. *The Kansas Anthropologist* 21:57-89.
- O'Donnell, Michael J., and Duncan J. Campbell
2000 *American Military Belt Plates*. O'Donnell Publications, Alexandria, Virginia.
- Olsen, Stanley J.
1963 *Dating Early Plain Buttons by Their Form*. *American Antiquity*. 28:551-554.
- O'Shea, John, and John Ludwickson
1992 *Archeology and Ethnohistory of the Omaha Indians: The Big Village Site*. University of Nebraska Press, Lincoln.
- Quimby, George
1966 *Indian Culture and European Trade Goods*. University of Wisconsin Press, Madison.
- Richter, D.K.
2001 *Facing East from Indian Country: A Native History of Early America*. Harvard University Press, Cambridge, Massachusetts.
- Roberts, Ricky L.
1978 *The Archaeology of the Kansas Monument Site: A Study in Historical Archaeology on the Great Plains*. Unpublished Master's thesis. Department of Anthropology, University of Kansas, Lawrence.
- Roper, Donna C.
1990 *Protohistoric Pawnee Hunting in the Nebraska Sand Hills: Archeological Investigations at Two Sites in the Calamus Reservoir*. Report to the U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, Grand Island, Nebraska.
- Russell, Carl P.
1957 *Guns on the Early Frontiers: A History of Firearms from Colonial Times Through the Years of the Western Fur Trade*. University of California Press, Berkeley and Los Angeles.
- 1967 *Firearms, Traps, and Tools of the Mountain Men*. Alfred A. Knopf, Inc. New York.
- Shaffer, B. S.
1992 *Quarter-Inch Screening: Understanding Biases in Recovery of Vertebrate Faunal Remains*. *American Antiquity* 57:129-136.
- Smith, Carlyle S.
1950 *European Trade Material from the Kansas Monument Site*. *Plains Archaeological Conference Newsletter*. 3 (2):2-9.

Current Archaeology in Kansas

Thies, Randall M.

2007 Phase III Investigation of F5 and F6 at 14SH305, KDOT Project K-7431-01, Shawnee County, Kansas. Report submitted to the Kansas Department of Transportation.

Tice, Warren K.

1998 *Uniform Buttons of the United States: 1776-1865*. Thomas Publications, Pennsylvania.

Unrau, William E.

1971 *The Kansa Indians: A History of the Wind People, 1673-1873*. University of Oklahoma Press, Norman.

Wedel, Waldo

1946 The Kansa Indians. *Transactions of the Kansas Academy of Science* 49(1):1-35.

Partnership to Help in Kansa Village Mitigation

Tricia Waggoner and Virginia A. Wulfkuhle
Kansas Historical Society

Introduction

The Kansas Department of Transportation (KDOT) will be undertaking improvement of US Highway 24 at Menoken Road in north Topeka, Kansas. This project will impact what is believed to be the location of a Kansa Village, specifically Fool Chief's Village (14SH305). The mitigation of impact to this site will take place in summer 2012 with cooperation among KDOT, the Kansas Historical Society (KSHS), and the Kansas Anthropological Association (KAA). The annual Kansas Archeology Training Program (KATP) field school, held June 2-17 at 14SH305, will provide a large volunteer effort to help in understanding this unique historic Kansa village.

History of Fool Chief's Village

In 1829 the Kansa left the village of Blue Earth (14PO24) near the modern city of Manhattan. By 1830 they had established three villages west of the modern city of Topeka. These were Fool Chief's Village (14SH305), Hard Chief's Village (14SH301), and American Chief's Village (never located) (Adams 1904; Marshall 2000; Wedel 1959, 1946). The three villages were named after the chiefs who led them. The names of Hard Chief and Fool Chief were hereditary titles (Adams 1904; Morehouse 1904), and American Chief was given his name probably because he visited President Thomas Jefferson in Washington D.C. (Marshall 2006).

Fool Chief, whose name *Kah-he-ga-wa-ti-an-gh* means chief (*kah-he-ga*) who is brave and courageous even to the point of rashness (*wa-ti-an-gh*), had the largest of the three villages

(Morehouse 1904). His village, *Ja-i-tci* Village or "Wooden House" village (Marshall 2006) was located on the north side of the Kansas River between the river and Soldier Creek (Adams 1904). The French fur trader Frederick Chouteau remembered that Fool Chief's Village numbered 700 to 800 people with six to ten people per lodge (Adams 1904) with the number of lodges estimated to be as many as 80 (Marshall 2006). Pierre-Jean De Smet, who visited the village and wrote about it in 1843, described the lodges as:

... solidly built and convenient. From the top of the wall, which is about six feet in height, rise inclined poles, which terminate around an opening above, serving at once for chimney and window. The door of the edifice consists of an undressed hide on the most sheltered side, the hearth occupies the center and is in the midst of four upright posts destined to support the rotunda; the beds are ranged round the wall and the space between the beds and the hearth is occupied by the members of the family, some standing, others sitting or lying on skins, or yellow colored mats (De Smet 1843:65-66).

This description matches well with houses excavated by Wedel (1959: 190-191) at Blue Earth Village and by the KATP in 1987 at Hard Chief's

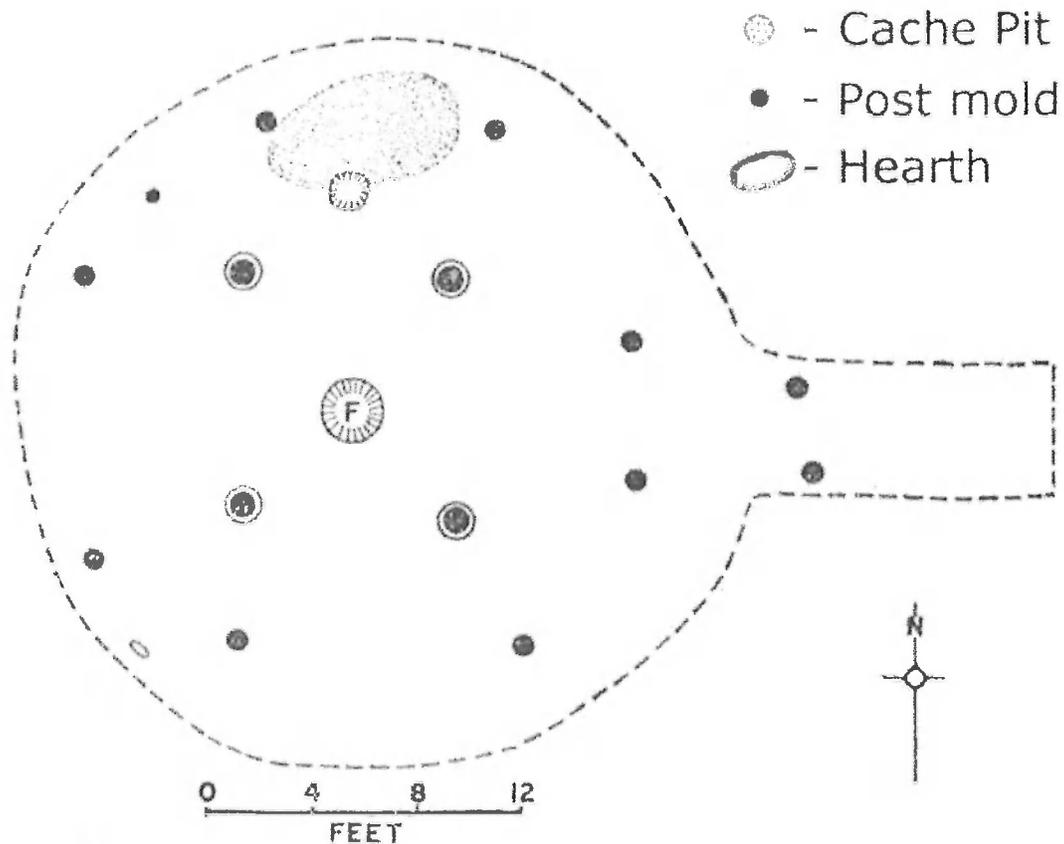


Figure 1. Kansa House from Blue Earth Village (Wedel 1959:190)

Village (Thies 1988). Both houses are shown in Figures 1 and 2.

While at Fool Chief's Village the Kansa were heavily invested in trade with European Americans. This trade was facilitated by Frederick Chouteau of the legendary Chouteau French fur trading family (Adams 1904). The Chouteaus traded all types of goods from kettles to beads for the furs of animals much in demand in the eastern states and Europe (Marshall 2006). The Kansa at the time were semi-agricultural, growing corn, pumpkins, beans, cabbage, turnips, and potatoes, but relied mostly on the bison hunts that took place twice a year and left the villages empty for about six months in a year's time (Bureau of Indian Affairs 1839, 1840). Fool Chief's Village was abandoned in 1844 after a very large flood destroyed the village. This flood,

which was five to six and one half feet higher than the Kansas River flood of 1951 (Barry 1972) filled the Kaw River Valley from "bluff to bluff," sweeping away crops, livestock, and houses (Bureau of Indian Affairs 1844). The Kansa never really recovered from this flood, and in 1846 they sold their reservation and moved to the Council Grove area (Marshall 2000).

Previous Excavations

Investigations for KDOT began in March and April 2006. KSHS Contract Archeology Program (CAP) archeologists Anne Bauer and Randy Thies, KDOT Archeologist Marsha K. King, and several volunteers conducted a Phase II pedestrian survey of the area. In addition, five shovel test pits were excavated and a limited metal detector survey was conducted. Crystal Douglas, a Kaw Nation

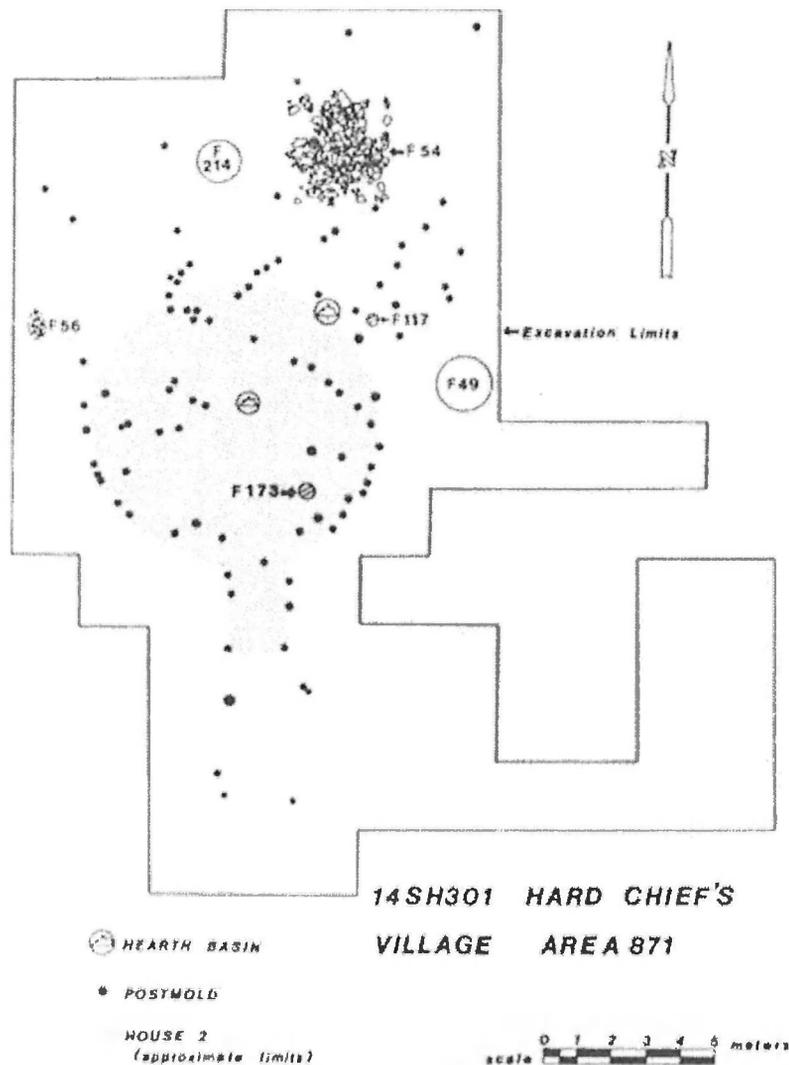


Figure 2. Excavated house from Hard Chief's Village (Thies 1988:101)

employee, operated a ground penetrating radar (GPR) unit as a supplemental survey. Several artifacts were recovered from the surface and by metal detectors (Bauer 2006).

Bauer recommended that a more intensive Phase II strategy was needed. Heavy machinery was used to strip away the plowzone in targeted areas within the project area in October 2006. Thies and King monitored the stripping. A large charcoal concentration, discovered during this stripping,

was interpreted to be the remains of a burned Kansa house (Thies 2006).

In November and December 2006 Thies and several volunteers excavated a one-meter-wide trench through the charcoal concentration. An intact hearth was discovered in the trench. This hearth was excavated with a one-meter-square unit. In addition to the hearth, several distinctive artifacts were found, including a broken metal arrow point, two gun flints, and a chain and toggles used to restrain horses (Thies 2007).

Current Archaeology in Kansas

In 2007 KDOT agreed to fund a geophysical survey of the site (Hoard 2008). David Maki of Archaeo-Physics LLC conducted the investigation using magnetic and resistivity devices. Numerous anomalies were found, three of which Maki thought were notable and which he recommended for investigation (Maki 2007).

In November 2007 Tricia Waggoner, Robert Hoard, and Sharon Sage conducted test excavations over the three anomalies noted by Maki. These efforts recovered historic period metal artifacts that appear to be 20th century objects and a steel spring trap that might date from the Kansa occupation. These metal artifacts might be the source of the anomalies. However, no features were encountered (Asher 2011; Hoard 2008).

The plowzone was again scraped off in a larger area in November 2007. Archeologists and several volunteers monitored the scraping. In addition four experienced metal detectorists surveyed the scraped area. This scraping resulted in several additional charcoal concentrations and many additional artifacts.

In June-July 2011 Dr. Margaret C. Wood of Washburn University conducted an archeological field school on the property. Dr. Wood and her students used a total station to pinpoint the location of two features that were uncovered during the 2007 KDOT project, and they excavated one of them. Three postmolds and several burned elements were identified (Wood 2012).

The Work This Summer

The KATP field school, held each June, offers a unique opportunity for members of the public to work alongside professional and avocational archeologists. Participants assist archeologists in surveying for archeological sites, excavating sites, and cleaning/cataloging artifacts in the lab. They learn related techniques in various courses, which may be taken for college credit. The volunteer

program was established in 1974 and continues under the joint sponsorship of the KSHS and the KAA.

This year the 2012 KATP field school will be held June 2-17 at the site of Fool Chief's Village and will contribute to the mitigation of the site for KDOT. This partnership will reduce the overall cost of the mitigation and allow avocationalists to help excavate this important site.

The project headquarters will be at the Kansas Historical Society, 6425 SW 6th Street in Topeka. Registration, the artifact-processing lab, including the soil flotation station, and some classes will take place at the KSHS complex.

Details are included in the registration packet, which is posted on the web site but also is available in hard copy. The packet contains forms for KAA and/or Kansas Historical Foundation (KHF) membership; registration and scheduling forms; options for lodging, camping, and food; a map of pertinent project locations; a list of recommended equipment; instructions for enrollment in formal classes; details about the KAA certification program; and a schedule of accompanying activities.

Registration forms submitted by May 1 qualify for a participation fee of \$20 for KAA and KHF members and \$80 for nonmembers. After May 1, the participation fee increases to \$30 for members and \$90 for nonmembers.

Although field and laboratory activities continue without stopping for the 16-day period, volunteers may participate for a single day or the entire time. Participants must be at least 10 years of age, and those younger than 14 must plan to work with a parent or other sponsoring adult at all times. A legally responsible adult must accompany participants between 14 and 18 years of age.

The KSHS and KAA do not discriminate on the basis of disability in admission to, access to, or operation of their programs; please make prior

arrangements to accommodate individuals with disabilities or special needs with the KSHS Public Archeologist at 785-272-8681, ext. 266.

The primary objective for the 2012 KATP field school is to recover as much information as possible from the part of 14SH305 that will be impacted by the KDOT project. KSHS Highway Archeologist Tricia Waggoner will serve as principal investigator for the 2012 project. She has identified research questions concerning trade, lodging styles, regional comparisons, and a number of other issues. These research questions are:

Trade Questions:

1. Other than bison, what animals for fur trade are represented in the faunal remains at the site?
2. Do faunal remains of fur trade animals show evidence of butchering and cooking?
3. To what degree are trade goods altered or repurposed by the Kansa at Fool Chief's Village?
4. Are any pre-contact manufacturing styles still being practiced by the Kansa at Fool Chief's Village, or has all manufacturing been altered by trade?
5. What is the origin of most trade goods found at Fool Chief's Village?

Lodge Style Questions:

1. Historical accounts describe the Kansa as living in both earth lodge villages and bark lodge villages. What style of lodge was being used at Fool Chief's Village?
2. Do lodge sizes vary at Fool Chief's Village? If so, why?
3. The drawing of Fool Chief's Village in *Letters and Sketches* by De Smet in 1843 shows one house that is rectangular, possibly the residence of the Principal Chief or of a European. Is there evidence of any houses that are not earth or bark lodges?

Regional Comparison Questions:

1. How does Fool Chief's Village compare with other known Kansa sites, such as Hard Chief's Village, Blue Earth Village, the Fanning Site, and Council Grove Villages?

2. How does Fool Chief's Village compare with a contact period Pawnee village, such as 14RP1?

Other Questions:

1. Historical accounts mention "swords" and "cutlasses." Wedel found evidence of pistols at Blue Earth Village. What evidence of non-hunting defense weapons are there at Fool Chief's Village?
2. Is there evidence of horses at Fool Chief's Village?
3. Is there evidence of dogs at Fool Chief's Village?
4. Where are the burials from Fool Chief's Village?
5. This site has a large amount of petoturbation; what effect does this have on artifact distribution?
6. The occupation of this site was ended by a large flood in 1844. What effect did this flood have on the preservation of the site?

Though not all of these questions may be answered during the KATP field school and further mitigation to follow, up-to-date excavation techniques and analysis will allow many of these and other questions to be answered, resulting in a greater understanding of Kansa life during this period of extensive cultural change and westward Euro-American expansion.

References Cited

Adams, F. G.

1904 *Reminiscences of Fredrick Chouteau. Kansas Historical Collections.* 8:423-34

Asher, Brendon

2011 *Artifact Analysis and Descriptive Report of the Kansa Village of Fool Chief (14SH305), Shawnee County, Kansas.* Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

Barry, Louise

1972 *The Beginning of the West: Annals of the Kansas Gateway to the American West 1540-1854.* Kansas State Historical Society.

Current Archaeology in Kansas

Bauer, Anne

2006 Archeological Survey of KDOT Bridge Project Number K-7431-01 Topeka, Kansas. Archeology Office, KSHS, Topeka. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

Bureau of Indian Affairs

1839 Annual Report of the Commissioner of Indian Affairs.

1840 Annual Report of the Commissioner of Indian Affairs.

1844 Annual Report of the Commissioner of Indian Affairs.

De Smet, Pierre-Jean

1843 *Letters and Sketches: With a Narrative of a Year's Residence among the Indian Tribes of the Rocky Mountains*. Philadelphia.

Hoard, Robert J.

2008 Progress Report Archeological Investigations at Fool Chief's Village (14SH305) Shawnee County, Kansas. Archeology Office, KSHS, Topeka. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

Maki, David

2007 Geophysical Investigation at Fool Chief Village (14SH305): Electrical Resistance and Magnetic Field Gradient Surveys at a 19th Century Kansa Village Site, Shawnee County, Kansas. Prepared for the Kansas Department of Transportation and the Kansas Historical Society by Archaeo-Physics, LLC. Minneapolis, Minnesota. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

Marshall, James O.

2000 Archeology at Hard Chief Village: An Introductory Study of the Kansa Indian Experience in the American West, 1806-1846. *The Kansas Anthropologist* 21: 7-89.

2006 The Kansa. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks. University Press of Kansas, Lawrence.

Morehouse, George Pierson

1904 Personal letter from George Pierson Morehouse to George W. Martin. April 16, 1904.

Thies, Randall M.

1988 Hard Chief's Village and the 1987 Kansas Archeology Training Program. *Kansas Anthropological Association Journal*. 8 (4-5):86-110.

2006 Phase II Subsurface Archeological Survey at 14SH305, KDOT Project K-7431-01, Shawnee County, Kansas. Archeology Office, KSHS, Topeka. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

2007 Phase II Investigation of F5 and F6 at 14SH305, KDOT Project K-7431-01, Shawnee County, Kansas. Archeology Office, KSHS, Topeka. Unpublished report submitted to KDOT. Copies available from the Kansas SHPO, Topeka.

Wedel, W.R.

1946 The Kansa Indians. *Transactions of the Kansas Academy of Science* 49 (1): 1-35.

1959 *An Introduction to Kansas Archeology*. Bulletin 174. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Wood, Margaret C.

2012 Fool Chiefs Village Report. In production. Draft report on file at the Kansas SHPO, Topeka.

Archaeological Maize in the Central Plains

Mary J. Adair
University of Kansas

Maize, or Indian corn (*Zea mays*) became the most economically important crop to Native populations in North America. At the time of European contact, this crop was grown over most of North America and was thus adapted to diverse environments, ranging from high altitudes, low precipitation levels, short growing seasons, and temperature extremes. The process by which maize spread throughout the continent and was accepted by diverse cultural traditions is both complex and not totally clear. In most agricultural complexes, corn was not the only crop grown, but intercropped with different squashes and pumpkins (*Cucurbita* spp.), beans (*Phaseolus* spp.), and indigenous plants. The crops of corn, beans and squash are often referred to as the “Three Sisters” to signify their combined importance in Native American societies. While these crops all originated in Mexico, their spread northward was temporally independent and, as advances in plant genetics demonstrate, likely followed different pathways.

This article focuses on maize. It provides a review of our current understanding of the timing and context of the northward spread of this crop out of Mexico, a discussion of the plant and the parts most commonly recovered from Plains archaeological sites, and how these remains, along with other sources of information, are used to interpret the presence of maize varieties. Emphasis will be placed on maize recovered from early historic Native sites in the central Plains, given the recent interest in this period and the corresponding quantity of maize recovered. Archaeologists have traditionally used the macro-morphological characteristics of the cob and kernel to address topics of diffusion and regional maize varieties. However, advancements in the recovery

and identification of microfossil remains (i.e., starch grains, phytoliths, pollen), the greater application of isotope analyses (Schoeninger 2009) and the analysis of ancient DNA allows for new approaches to these topics (Staller et al. 2006).

Origins of Maize

Maize probably originated in west-central Mexico where many closely related and wild ancestral grasses, especially teosinte (*Zea mays* ssp. *parviglumis*) and *Tripsacum* ssp., also thrive (Cutler and Blake 2001). Some of the oldest domesticated corn in Mexico comes from sites in the southern area and dates to ca. 7000 B.P., and perhaps as old as 10,000 years ago (Jaenicke-Després and Smith 2006). From this location, it spread into North America as a domesticated crop. It was originally thought that different varieties of maize grown in the Northeast, Southeast and Southwest United States were the result of separate diffusions along different pathways from eastern and western Mexico. From eastern Mexico, the pathway would have followed the coastal region of the Gulf of Mexico and possibly an inland route to southeast Texas. The west Mexico route would account for the presence of maize in the greater Southwest. Archaeological maize has been recovered in the Southwest and dated to at least 4100 B.P. (Huckell 2006). Maize and pepo squash (*Cucurbita pepo*) are the earliest domesticated plants grown in the Southwest. In parts of the eastern North America, the earliest evidence for plant domestication comes from the remains of an indigenous squash (*Cucurbita pepo* ssp. *ovifera* var *ovifera*) and native annuals [the common sunflower (*Helianthus annuus* var *macrocarpus*), marshelder (*Iva annua* var *macrocarpa*) and

chenopod (*Chenopodium berlandieri* ssp. *jonesianum*)]; all recovered thousands of years prior to the appearance of maize. This suite of indigenous domesticates is often referred to as the Eastern Agricultural Complex. The earliest maize in the eastern U.S. is currently accepted at 2350 to 2150 B.P. (Hart et al. 2007). Thus, the sequences for the development of domestication are very different in the Southwest and Eastern U.S., although both regions are considered independent areas of domestication. However, recent genetic evidence not only identifies a close relationship between the maize grown by eastern North American Indians to that grown in the Southwest, but also recognizes a significant difference to the varieties from eastern Mexico. The Southwest maize is also more similar to types from western or central Mexico than to the varieties of the Gulf Coast (Doebley et al. 1986; Jaenicke-Després and Smith 2006). Therefore, current research supports the pattern of a northward spread of maize out of Mexico into the Southwest and from there across the Plains to the Northeast and Southeast U.S. Reasons for the nearly two thousand years difference between the appearance of maize in the Southwest and the Eastern U.S. are probably found in the ecological factors and cultural processes associated with the spread of this crop.

The Maize Plant and Archaeological Remains

Maize is a member of the grass family and the basic structure of the plant is easily observable in any grass. This includes a single stem or stalk that grows vertically upward from the ground. The height of the stalk depends on the corn variety and the environment. Each stalk has a leaf with an associated bud and a stem section, arranged on alternate sides of an axis. Such a pattern is repeated in all parts of the plant, such that the tassel and ear of corn follow the same alternating pattern as the stalk. Some varieties of corn in certain environments produce a second stalk, known as a tiller, which grows outward from the main stalk at the base of the plant. Small ears that develop on the tillers are known as nubbins.

Maize plants consist of both male and female parts. The male part is the tassel, which

emerges at the top of the plant after all of the leaves have developed. The tassel contains many small flowers, each releasing thousands of pollen grains. An ear of corn, which is the female organ, is borne on the end of a branch at a node on the stalk. The immature ear consists of a cob, eggs that develop into kernels after pollination, and silks. The ear is protected by layers of husks. The very fine silks grow from each egg and eventually emerge together at the tip of the husk. Pollination occurs when the pollen from the male organ falls onto the exposed silks, traveling down the silks to a single egg. The fertilized egg develops into a kernel, with each kernel containing a single embryo, or new plant. Each corn plant may produce several cobs but the one located at the uppermost part of the stalk will be the largest ear. The kernels are typically arranged in pairs and form distinct rows around the cob. A pair of kernels sits within a cupule, which are arranged around the circumference of the ear. Each kernel is partially enclosed with soft glumes. For a more detailed discussion of the maize plant and differences between maize and teosinte, see <http://teosinte.wisc.edu/morphology.html>.

The preservation and recovery of maize remains from archaeological sites depends a great deal on the original use of the plant, the manner of preservation, and the location of the site. If a small amount of maize was grown and used primarily for ceremonial purposes (as has been suggested for the early use of this plant in parts of North America), it may be difficult to recover or identify from just the macroremains. Sites located in dry environments or in caves may provide the ideal environment for the preservation of corn stalks, ears, and isolated kernels in a desiccated state. Such conditions limit the deterioration of the maize parts, allowing them to retain most all of their defining characteristics. At most archaeological sites, and especially those located in open-air environments, plant remains must be partially burned to prevent decay or insect destruction. While the remains may retain their shape, some parts of the plant will not survive the burning process while other may become distorted. For Plains archaeological contexts, macroremains must

be charred for preservation. Exceptions to this are historic aged deposits that have survived due to their placement in an anaerobic environment (such as the base of a cache pit); but so far only desiccated squash and watermelon seeds have been recovered. Maize cobs that are only partially charred have also been recovered from historic period sites.

Maize macroremains (e.g. those remains visible to the naked eye or with low to medium magnification) that are most often recovered from Plains archaeological sites include the cob or a cob fragment (also referred to as a rachis), isolated kernels or cupules, and glumes. On rare occasions, part of the maize stalk has been preserved and recovered. Complete cobs are rarely recovered, but much can be learned from cob fragments. Decades ago, it was determined that the width of a single cupule in which a pair of kernels develops, is a reliable measure of the size of the cob and therefore, a good indicator of the number of rows. Kernel thickness may provide similar information. However, care should be taken when using this approach to avoid selecting distorted or popped remains or using cupules from the tip or butt section of the cob. Recognizing these characteristics is largely a product of experience and familiarity with archaeological maize. Cobs, or the by-product that exists after the kernels have been removed, provide the most information that can be useful in quantitative studies. Measurements including cob diameter, segment section and length, cob shape and cross-section, cupule width, cupule length/height, and row number have been shown to be the most reliable attributes in describing archaeological maize.

Plains Archaeological Maize

The pathway(s) by which maize traveled eastward through the Plains is not known, as the earliest maize recovered in the eastern U.S. is several centuries older than that recovered from a central or southern Plains context (Adair and Drass 2011). However, a pre-maize cultivation pattern is evident in the eastern portion of the central Plains with the recovery of an indigenous cucurbit from late Archaic sites and pepo squash, domesticated sunflower, marshelder, maygrass (*Phalaris*

caroliniana), little barley (*Hordeum pusillum*) chenopod (*Chenopodium berlandieri*) and erect knotweed (*Polygonum erectum*) from Middle Woodland contexts (Adair 2006; Adair and Drass 2011; Schroeder 2012). The small seeded starchy species, recently identified from flotation samples from the Renner site (23PL1) (Schroeder 2012), constitute about 65% of all identifiable seeds from this site. Thus, the pattern of initial agricultural development in the eastern Plains tends to parallel that noted in parts of the eastern U.S., but with a temporal difference. Although macro remains of maize have been recovered from several Middle Woodland Kansas City Hopewell sites, returned AMS dates have repeatedly shown this crop to be associated with later components (Adair 1996). However, at the time of this writing, various Hopewell artifacts have been submitted for specialized analyses in hopes of yielding microfossil remains of maize (e.g. starch grains, phytoliths, lipids). Ceramics, chipped stone and ground stone implements from four Kansas City Hopewell sites are being analyzed.

At this time, the oldest directly dated remains of maize from the central Plains comes from the Plains Woodland Avoca site (14JN332) where cob and kernel fragments were recovered from features associated with domesticated sunflower, marshelder, and squash (Adair 1991). Two AMS dates on maize and two other direct dates on other cultigens from this site (Table 1) place the observed intercropping system to 1220–985 B.P. Additional maize remains from Plains Woodland contexts include Andrews (25DO12), Two Deer (14BU55), Stiles (14MM13), Hatcher (14DO19), and Patsy’s Island (34HP70) sites, where the relatively small amounts are associated with other tropical and native cultigens (Adair and Drass 2011). Table 1 is a compilation of 32 radiocarbon dates from Plains Woodland sites from which maize has been recovered. Ten of the dates are AMS assays on maize and seven others are AMS assays on other cultigens. Most of the maize associated with the Woodland period consists of isolated kernels and cupules (Figure 1). While it is possible to measure the angle of the cupule to determine row number, this is not as accurate as



Figure 1. Crescent shaped kernels typically recovered from Plains Woodland sites. The kernels are usually wider than tall and lack the embryo, which accentuates the crescent shape

measurements taken directly from cobs. In addition, the small fragments provide no information on cob characteristics. The crescent shaped kernels lack the embryo and are indicative of a flint variety, but it is impossible to know if Woodland farmers grew more than one variety.

Maize intensification coincides with the Late Woodland to Middle Ceramic transition at ca. A.D. 900-1150 and is associated with increased sedentism, the construction of durable structures, and changes in ceramic and lithic technologies. Archaeobotanical remains from eastern central Plains sites dating to the Middle Ceramic period are dominated by maize, but include other crops of pepo squash, sunflower, marshelder, chenopod, little barley, tobacco, and the common bean (Adair 2003; Adair and Drass 2011). Although the maize remains are far more abundant than what is associated with the previous Woodland period, the morphological characteristics of crescent shaped kernels and narrow cupules continues. However, the recovery of cobs and cob fragments documents that 8, 10, 12 and 14 rowed maize was grown. Ten

and 12-rowed varieties (Figure 2) tend to dominate the archaeobotanical assemblages (Adair and Drass 2011:330), while 14 and even an occasional 16-rowed variety occur in small percentages. Cobs tend to be round to oval in cross-section with a tapered to straight shape and range in diameter from 6 to 17 mm (means of 9.5 to 12.2 are more common). Kernel pairing is a

weak to mild characteristic. Nubbin cobs are a rare occurrence.

Even with the ability to determine cob characteristics and row number, we are not able to precisely determine the presence of a particular race or races of maize from Plains Middle Ceramic period sites. Cutler and Blake (2011) provide an excellent review of the various races of maize, beginning with a summary of four distinct maize groups. The first group consists of small cylindrical or cigar shaped cobs with 12 to 14 rows of hard kernels and includes the known races of Small cob, Chapalote, Reventador, and North American Pop. Maize in this group is often characterized as a pop or very hard small flint corn and is commonly associated with an early use of the plant; however variants of a popcorn was grown in the Plains during the early historic period. In fact, isozyme studies have shown that Chapalote is not an ancient maize race at all (Doebley et al. 1985). The second group consists of larger ears and kernels and includes the Pima-Papago, Eastern Eight Row and Midwest Twelve Row races. Some of the maize in this group is historically a flour corn but was present as a flint corn in prehistoric contexts. Eastern Eight Row has been recovered from archaeological contexts over most of the United by larger cobs and shorter and wider kernels, this

Table 1. Radiocarbon dates for maize-bearing Woodland sites

Site number and name	Laboratory Number	Provenience	Material Dated	Dating Technique	Age rcybp	Sigma value	Two sigma calibrated date range	Relative area under probability curve	Median Probability	Taxonomic Designation
25DO12, Andrews	AA36097	Feature 9106	<i>Zea mays</i>	AMS	1050	40	892-1034	1	988	Loseke Creek
	AA36098	Feature 9101	<i>Zea mays</i>	AMS	1040	40	893-1043	0.98	996	Loseke Creek
							1105-1118	0.01		
							1144-1146	0.001		
WIS-2315	Feature 9101	charcoal	standard	910	95	905-911	0.003	1120	Loseke Creek	
							0.06	971-1278	0.99	
14DO19, Hatcher	UGa-4705		charcoal	standard	1075	65	778-1046	0.96	956	
							1090-1121	0.02		
							1139-1149	0.007		
	Beta-19873		charcoal	standard	970	60	973-1212	1	1085	
	ISGS-A1760	Area A, feature 2, pit	<i>Zea mays</i>	AMS	795	20	1216-1269	1	1242	
	ISGS-A1761	Area A, feature 2, pit	<i>Zea mays</i>	AMS	820	20	1181-1263	1	1228	
	ISGS-A1782	Area C, Feature 2, daub	<i>Zea mays</i>	AMS	890	15	1048-1085	0.31	1159	
							1122-1138	0.07		
							1150-1212	0.61		
	ISGS-A1783	Area C	ceramic residue	AMS	890	15	1048-1085	0.31	1159	
1122-1138							0.07			
1150-1212							0.61			

Current Archaeology in Kansas

14JN332, Avoca	AA39099	Feature 103, House 1	<i>Iva annua</i>	AMS	985	40	989-1155	1	1066	Grasshopper Falls
	AA36100	Feature 175, Hearth 1, House 1	<i>Iva annua</i>	AMS	1200	40	689-752	0.14	825	Grasshopper Falls
							761-899	0.82		
							919-948	0.04		
	AA36101	Feature 141, extramural pit	<i>Zea mays</i>	AMS	1165	40	722-981	1	865	Grasshopper Falls
	AA36102	Feature 141, extramural pit	<i>Zea mays</i>	AMS	1220	40	685-892	1	802	Grasshopper Falls
	Beta-3320	Feature 174, a post east of Hearths 1 and 2	charcoal	standard	1220	50	673-897	0.97	802	Grasshopper Falls
						922-942	0.03			
Beta-33220			standard	1170	50	711-746	0.05	857	Grasshopper Falls	
						766-986	0.94			
?			standard	920	60	1015-1226	0.99	1113	Grasshopper Falls	
						1233-1240	0.006			
						1248-1251	0.002			
14MM13, Stiles	UGa-4088	Feature 6	charcoal	standard	1795	145	8C 99-AD 565	1	230	Hertha
	UGa-4091	Feature 47	charcoal	standard	1225	75	662-904	0.9	801	Hertha
							913-970	0.09		

	ISGS-1785	Feature 62, associated with House 1	<i>Zea mays</i>	AMS	970	15	1020-1049	0.52	1051	Hertha
							1085-1124	0.38		
							1137-1151	0.09		
	ISGS-1786	Feature 23, hearth	nutshell	AMS	950	15	1025-1055	0.27	1101	Hertha
							1077-1154	0.72		
	ISGS-1787	Feature 23, hearth	nutshell	AMS	970	15	1020-1049	0.52	1051	Hertha
							1085-1124	0.38		
							1137-1151	0.09		
	14BU55, Two Deer	AA36111	House 1 floor, Unit 39	<i>Helianthus annuus</i> seed	AMS	935	45	1020-1190	0.98	1102
1197-1207								0.02		
AA36112		House 1 floor, Unit 41	<i>Iva annua</i>	AMS	940	35	1021-1170	1	1098	Bemis Creek
AA36113		House 1 floor, Unit 23	<i>Zea mays</i>	AMS	925	60	997-1005	0.008	1110	Bemis Creek
							1012-1223	0.99		
UGa-2503		House 1, Feature 19, post mold	charcoal	standard	1090	55	781-790	0.01	945	Bemis Creek
	807-1028						0.99			
UGa-2500	House 2, Feature 6	charcoal	standard	1065	65	780-792	0.01	967	Bemis Creek	
						804-1051	0.92			

Current Archaeology in Kansas

						1082-1126	0.05			
						1135-1152	0.01			
	UGa-2501	House 1, Feature 18, post mold	charcoal	standard	985	45	979-1162	1	1068	Bemis Creek
	UGa-1346	House 1	charcoal	standard	970	80	895-926	0.03	1081	Bemis Creek
	UGa-2504	House 1	charcoal	standard	950	135	779-794	0.008	1081	Bemis Creek
	UGa-1345	House 1	charcoal	standard	890	60	1027-1252	1	1196	Bemis Creek
	UGa-2502 ³	House 1, Feature 1	charcoal	standard	325	140	1401-1894	0.94	1598	Bemis Creek
							1904-1953 ³	0.05		
34PH70 Patsy's Island	Beta- 189691		Zea mays	AMS	1010	40				

¹ Calibrations were completed with Calib 6.1.0

² Date is not in agreement with the expected outcome, based on artifact styles of the main cultural

³ Dates are suspect due to impingement on the end of the calibration data set

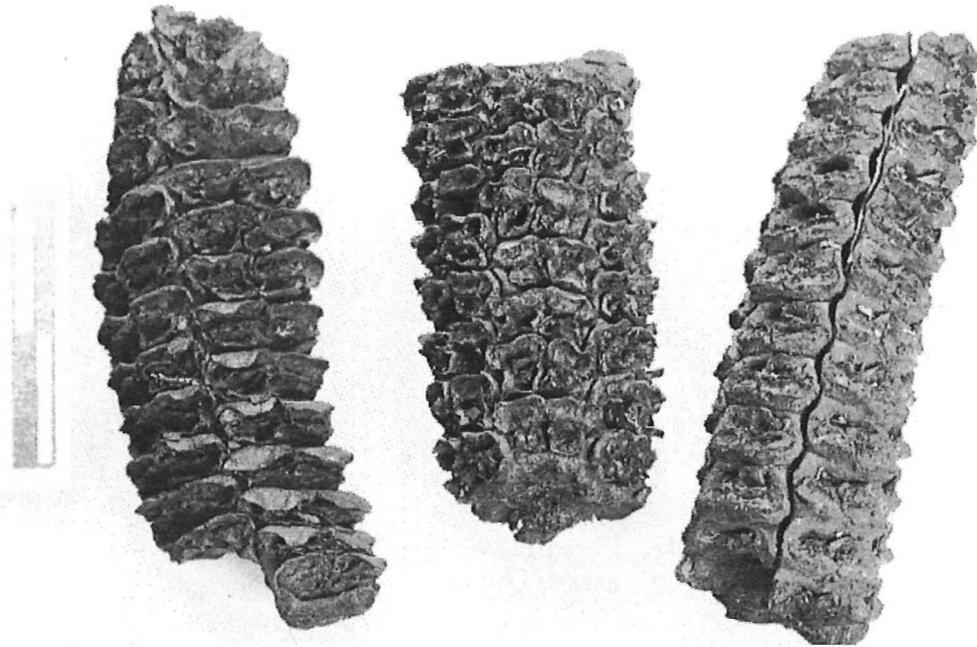


Figure 2. Cob sections from a Smoky Hill phase site. Variability in cupule width, row definition and cob size are evident. The rows on the right and left sample are clearly arranged, while the row on the middle cob are slightly distorted.

race can produce 8, 10 or 12 rowed cobs. Cutler and Blake (2011:11) consider both Eastern Eight Row and Midwest Twelve Row to be eastern expansions of the Pima-Papago race. The third group of maize consists of the dent varieties and the fourth group includes sweet corn. The modern corn belt variety is a mixture of Eastern Eight Row or Northern Flint (the modern landrace) and the Southern Dents (Anderson and Brown 1952)

Returning to the archaeological distributions of maize races, the intensification in the use of maize, evident in the Southwest at ca. A.D. 1-500 and in the East and Plains at ca. A.D. 800-1200, has often been attributed to the introduction of a new germplasm, offering a bigger and better maize variety with higher yields. Many have equated this improved maize to the introduction of the Eastern Eight Row race. However, others (see especially Fritz 1992, 2011) dispel the prime mover model and attribute the increased productivity associated with the Mississippian period in the East as associated with

such cultural markers as “individual or corporate group decision making and information sharing, field allocation policies, and responses to demands for increased surplus and tribute” (Fritz 1992:29). In the Plains however, this intensification was not correlated with the formation of hierarchical, mound-building

societies, but instead existed within the economically self-sufficient households of the Central Plains tradition. It is also important to note that the characteristics of the different maize groups are not easily applied to charred and occasionally distorted archaeological remains (Adair 1994). Use of terms such as Eastern Eight Row may offer misleading interpretations of the distribution of a known race or the importance of maize in regional areas.

By ca. A.D. 1400 the multicopping pattern of the Middle Ceramic period changed to a focus on maize as the primary crop and an intensification in the use of bison (Adair 2008; Scheiber and Rowe 2008). The native small seeded oily and starchy crops all but disappear from the archaeological record. This economic change is associated with increased trade with the Southwest and an increase in the use on exotic lithic resources. By the early 16th century, archaeological research indicates that groups began to coalesce in several areas in the central and southern Plains. Most of these sites (e.g., Great Bend aspect) show no evidence for defensive architecture, indicating that warfare was not a uniform reason for this reorganization. The presence of numerous, large cache pits in the Lower Walnut Great Bend sites are suggestive of some sort of storage and redistribution of surplus crops.

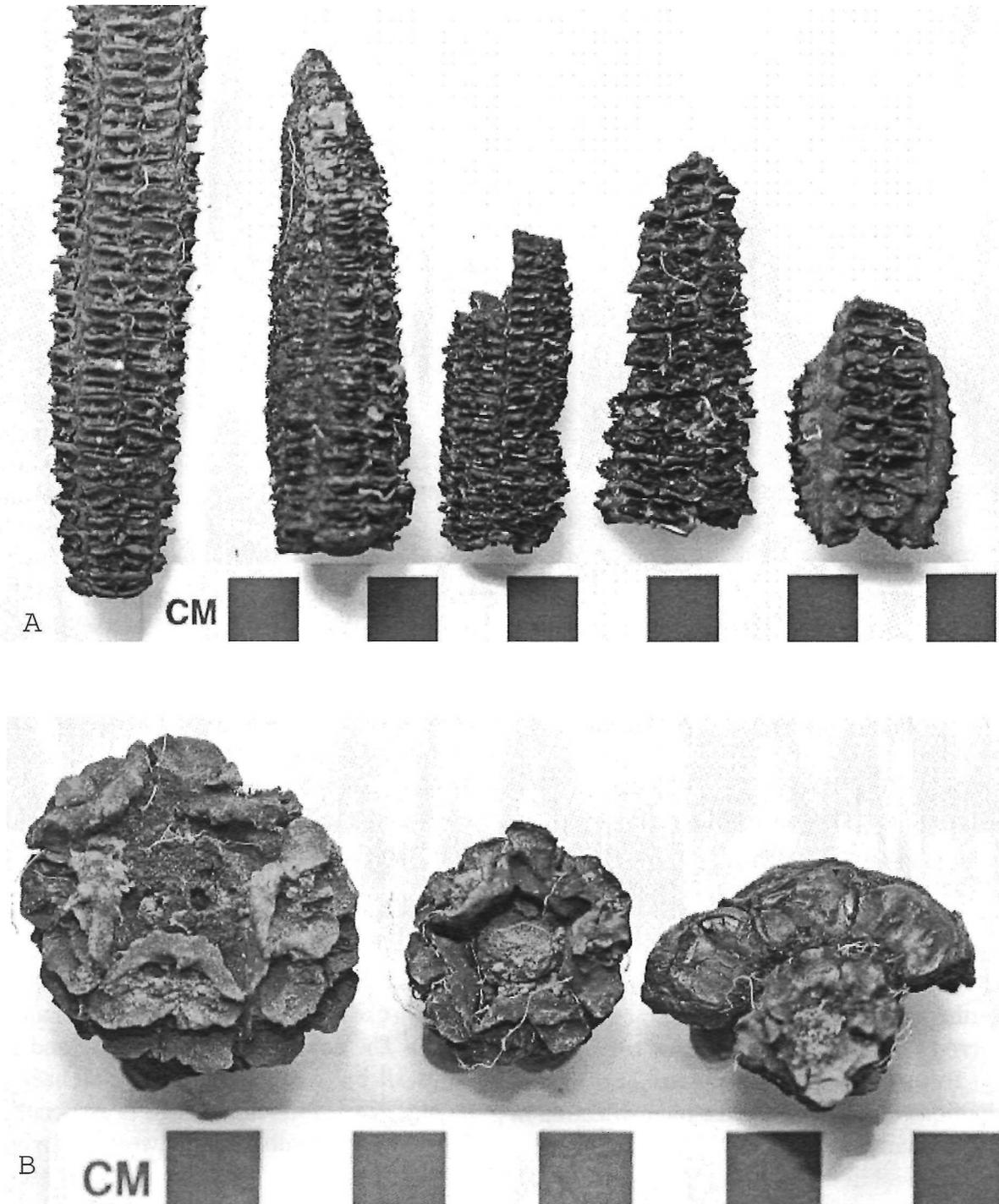


Figure 3. Maize cobs from 14RP1, a late 1700s Pawnee village. A) The cobs on the far left and far right show strong row pairing. The cob second from the right is probably a tip fragment and thus shows some distortion of the row arrangement;;B) cross section of three cobs showing variability in cob diameter, pith diameter, and row number. The left and middle cobs have 10 rows, the right has 8 rows. Note that the two left remains are not completely charred.

Variations in the morphology of the maize remains (Figure 3a and b) suggest the presence of more than one variety, an evaluation that is also evident from other early historic sites (Table 2). Cobs are considerably larger, ranging from 12 to 16.5 mm in diameter and 49 to 85 mm in length, with some showing moderate to strong kernel pairing. Eight to 16 rowed varieties exist, but the 8 and 10 rowed cobs tend to dominate. Kernels vary from the crescent shape, prevalent in earlier times, to a more triangular or blocky shape with the embryo attached (Figure 4). The small kernels suggest the continued use of a popcorn variety.

Historic documents (Gilmore 1977; Will and Hyde 1917) are good references to help with the analysis of historic aged archaeological maize. These documents provide descriptions of Plains Indian maize varieties, including the kernel color, row number, and maturity date. The use of maize in spiritual beliefs impacted the selection of maize for different purposes, the growing conditions, and the mode of processing. Gilmore (1977:15) notes that all of the tribes of Nebraska (probably refers to the Dakota, Omaha and Pawnee) grew dent corn, flint corn, flour corn, sweet corn and popcorn and that most of these types had several varieties. The varieties were maintained over several generations

Table 2. Attributes of historic maize

Site	Cultural Association	Count	Row Number Percentages					Reference
			8-row	10-row	12-row	14-row	16-row	
14MN328	Great Bend	34		38	47	5	10	Adair 1989, 1994
14RC8	Great Bend	46	24	33	30	13		Cutler and Blake 2001
14RC8	Great Bend	42	35	18	33	14		Adair 2000, 2007
14RC5	Great Bend	8	12	75	12			Cutler and Blake 2001
14CO385	Great Bend	3	25	50	25			Adair
	Dismal River/Plains							
14SC1	Apache	16	48	46	6			Adair 1994
	Dismal River/Plains							
14SC1	Apache	14	29	43	7	14	7	Cutler and Blake 2001
	Dismal River/Plains							
25CH1	Apache	5	100					Adair 1992
	Dismal River/Plains							
25DN1	Apache	24	44	52	4			Adair 1992
Ponca Fort	Ponca	4	75	25				Adair 1992
	protohistoric							
25CX1	Pawnee	9	22	67	11			Adair n.d.
14RP1	Pawnee	49	55	37	8			Adair 2007
								Adair n.d. Cutler and Blake 2001
25DK5	Omaha	16	50	50				Adair n.d.
255T1	Omaha	32	53	41	8			Adair n.d.
23SA2	Missouri	66	47	38	13	2		Cutler and Blake 2001
23VE4	Osage	328	63	30	6	1		Cutler and Blake 2001
23VE3E	Osage	15	47	33	13	7		Cutler and Blake 2001
14SH305	Kansa	15	40	53	7			Adair 2007
14DP1	Kansa	2	50	50				Cutler and Blake 2001
14DP2	Kansa	9		33	56	11		Wedel 1959
	Oneota/							
23BN1	Kansa	742	42	32	19	5	2	Cutler and Blake 2001



Figure 4. Variability in size and shape of historic aged maize kernels. The top row reflects larger 8 or 10-rowed maize varieties. Note that all of the embryos are still attached. The middle row includes a number of medium sized kernels, some of which have retained their embryo, but in general are more square. The bottom row consists of small kernels, likely from a multi-rowed maize variety, such as pop corn

by selecting typical ears from each harvest for planting and by planting varieties some distance from each other to avoid cross-pollination. Some varieties were consumed in their green stage while others were allowed to fully ripen. From this information, it is easy to recognize that archaeological remains may represent a maize type, a variety of that type, residue from parching or grinding, or maize stored for planting the following year. Thus while the macro-morphological attributes may help sort out some of the maize variability, the context of recovery during excavation may provide additional and extremely valuable information. This is particularly helpful in the central Plains where heritage varieties of Indian maize are either non-existent or represented by a few curated samples.

Equally valuable information may be available from the analysis of ancient maize DNA. This work has demonstrated that three vital genes, whose effects are not readily observable in archaeological cob remains, greatly influenced maize plant architecture and starch and protein levels. These genes include 1) *tb1* or *teosinte-branched 1* which influenced the maize plant form; 2) *pbf* or *prolamin box-binding factor* which regulates the storage of proteins in the maize kernel; and 3) *su1* or *sugary 1* which influences the starch biosynthesis pathway (Jaenicke-Després and Smith 2006). Each of these genes is represented by different alleles, or an alternative form of the gene that occupies a given locus on a chromosome. Depending on the natural environment or cultural preferences, one allele can

be more advantageous than another. Early farmers and farmers in different regions could have unknowingly selected those alleles that were linked to preferred characteristics, thus giving rise to regional varieties of maize.

As Table 2 indicates, maize remains in sizeable quantities have been recovered from several early historic Native American sites in the central Plains. The majority of these remains were recovered without the benefit of modern field techniques, such as flotation or fine-mesh screening during excavation. Large cobs or larger fragments, which are easily noticeable in the field, were collected. While we lack data on the total subsistence economy, the maize remains provide a valuable data set from which to explore the importance of this crop to historic Plains tribes, compare the variability in maize morphology among the sites, and compare the qualitative characteristics to the historic record in an attempt to determine the presence of a particular maize variety. Future systematically collected archaeobotanical remains from historic Native sites will add significant new data to our current knowledge.

References Cited

Adair, Mary J.

1989 Floral Remains. In *1986 Archeological Investigations at 14MN328, a Great Bend Aspect Site along U.S. Highway 56, Marion County, Kansas*, compiled by William B. Lees, pp. 90-103. Manuscript on file, Kansas State Historical Society, Cultural Resources Division, Topeka.

1991 Macrobotanical Remains from the Avoca Site: The Role of Agriculture during the Early Ceramic Period. In *The Avoca Site (14JN332): Excavation of a Grasshopper Falls Phase Structure, Jackson County, Kansas*, edited by Timothy Baugh, pp. 85-95. Contract Archeology Series Publication No. 8. Kansas State Historical Society, Topeka.

1992 Inventory and Analysis of Archaeobotanical Remains from Plains Sites. University of Michigan, Ethnobotanical Laboratory, Ann Arbor. Notes in possession of the author.

1994 Corn and Culture History in the Central Plains. In *Corn and Culture in the Prehistoric New World*, edited by Sissel Johannessen and Christine Hastorf, pp. 315-334. Westview Press, Boulder.

1996 Woodland Complexes in the Central Great Plains. In *Archaeology and Paleoecology of the Central Great Plains: A Volume in the Central and Northern Plains Archeological Overview*, edited by Jack L. Hofman, pp. 101-122. Research Series 48. Arkansas Archeological Survey, Fayetteville.

2000 Analysis of Archaeobotanical Remains from Rice County, Great Bend Sites, at the National Museum of Natural History, Smithsonian Institution. Notes in possession of the author.

2003 Great Plains Paleoethnobotany. In *People and Plants in Ancient Eastern North America*, edited by Paul E. Minnis, pp. 258-346. Smithsonian Institution Press, Washington D.C.

2006 Paleoethnobotanical Research in Kansas. In *Kansas Archaeology*, edited by Robert J. Hoard and William E. Banks, pp. 248-263. University Press of Kansas, Lawrence.

2007 Variability in Maize Morphology: Examples from Five Central Plains Maize Collections. *Current Archaeology in Kansas* 7:1-7.

2008 Changing Economies: Archaeobotanical Data. In *Archaeological Investigations on a Portion of 14RC410, Rice County, Kansas*, edited by Donna C. Roper, pp. 305-321. Report submitted to the City of Little River, Kansas.

Adair, Mary J. and Richard Drass

2011 Patterns of Plant Use in the Prehistoric Central and Southern Plains. In *The Subsistence*

- Economies of Indigenous North American Societies: A Handbook*, edited by Bruce D. Smith, pp. 307–352. Smithsonian Institution Scholarly Press in association with Rowman & Littlefield Publishers, Inc., Washington D.C.
- Anderson, Edgar and William Brown
1952 The History of the Common Maize Varieties of the United States Corn Belt. *Agricultural History* 26:2-8
- Cutler, Hugh and Leonard Blake
2001 *Plants from the Past*. The University of Alabama Press, Tuscaloosa.
- Doebley, John, Major Goodman, and C.W. Stuber
1985 Isozyme Variation in the Races of Maize from Mexico. *American Journal of Botany*, 72:629-639
- Fritz, Gayle J.
1992 “Newer, “Better” Maize and the Mississippian Emergence: A Critique of Prime Mover Explanations. In *Late Prehistoric Agriculture: Observations from the Midwest*, edited by William I. Woods, pp: 19–43. Studies in Illinois Archaeology No. 8, Illinois Historic Preservation Agency.
- 2011 The Role of “Tropical” Crops in Early North American Agriculture. In *The Subsistence Economies of Indigenous North American Societies: A Handbook*, edited by Bruce D. Smith, pp. 503–516. Smithsonian Institution Scholarly Press in association with Rowman & Littlefield Publishers, Inc., Washington D.C.
- Gilmore, Melvin R.
1977 *Uses of Plants by the Indians of the Missouri River Region*. University of Nebraska Press, Lincoln
- Hart, John P., Hetty Jo Brumbach, and Robert Lusteck
2007 Extending the Phytolith Evidence for Early Maize (*Zea mays* ssp.) and Squash (*Cucurbita* sp.) in Central New York. *American Antiquity* 72(3): 563–583.
- Huckell, Lisa W.
2006 Ancient Maize in the American Southwest: What Does it Look Like and What Can it Tell Us? In *Histories of Maize: Multidisciplinary Approaches to the Prehistory, Linguistics, Biogeography, Domestication, and Evolution of Maize*, edited by John Staller, Robert Tykot and Bruce Benz, pp. 97–107. Elsevier.
- Jaenicke-Després, Viviane R., and Bruce D. Smith
2006 Ancient DNA and the Integration of Archaeological and Genetic Approaches to the Study of Maize Domestication. In *Histories of Maize: Multidisciplinary Approaches to the Prehistory, Linguistics, Biogeography, Domestication, and Evolution of Maize*, edited by John Staller, Robert Tykot and Bruce Benz, pp. 83-95. Elsevier.
- Scheiber, Laura L., and Matthew J. Rowe
2008 The 14RC410 Fauna. In *Archaeological Investigations on a Portion of 14RC410, Rice County, Kansas*, edited by Donna C. Roper, pp. 282-304. Report submitted to the City of Little River, Kansas.
- Schoeninger M. J.
2009 Stable Isotope Evidence for the Adoption of Maize Agriculture. *Current Anthropology*. 50(5):633-40.
- Schroeder, Marjorie
2012 Renner Site 2009 Excavations: Archaeobotanical Analysis. Draft Report.
- Staller, John E., Robert H. Tykot and Bruce F. Benz, editors
2006 *Histories of Maize: Multidisciplinary Approaches to the Prehistory, Linguistics, Biogeography, Domestication, and Evolution of Maize*. Elsevier.

Wedel, Waldo R.

1959 *An Introduction to Kansas Archeology*.
Bulletin 174. Bureau of American Ethnology,
Smithsonian Institution, Washington D.C.

Will, George, and George Hyde

1917 *Corn Among the Indians of the Upper
Missouri*. University of Nebraska Press, Lincoln.

A Report of Possible Ridged Field Agriculture at the Kansas Monument Site, 14RP1

Donna C. Roper
Kansas State University

Small gems of information sometimes are found hiding in plain sight. While recently searching portions of kansasmemory.org for material related to another topic, I came across a short manuscript with the title “The Republican Pawnee Indian Village,” written in 1900 by a J.C. Price. This seemed an obvious reference to the Kansas Monument site, 14RP1, the Republican Pawnee, or Kitkahahki, village site, a part of which now is held by the State of Kansas as the Pawnee Indian Village State Historic Site. After a few inquiries, I found that the manuscript was not known to others concerned with this site. Accordingly, I have transcribed it and begun to look further into its background. I intend to publish the transcription, with commentary, in another venue. My purpose here is to record notice of this manuscript and discuss a couple of pieces of information that are particularly pertinent to the archaeological study of this village.

As yet I know basically nothing about J.C. Price, except that on p. 3 of the manuscript he records that in spring 1871 he was “called to survey sections Two and Three, of what is now White Rock Township, Republic Co.” Evidently, therefore, Price was a land surveyor. The Kansas Monument site lies in Section 3 of White Rock Township. The Government Land Office surveys here were run in 1858, but the county and township were organized in 1871, so possibly Price was subdividing the sections and marking boundaries of land holdings.

In any event, he continues his narrative as follows:

In running the south line of section Three, we came to a tract

which showed that it had once been cultivated. It had been ridged and had the appearance of a field that had been listed and allowed to sod over. The ridges however, were farther apart than is usual in a listing, probably about five feet. I immediately recognized it as an Indian cornfield, having seen several such fields in southern Michigan.

None of our party knew anything of the history of the place, but by inquiry from soldiers who had been in a company guarding against the Indians, found that it was known as an old Pawnee village (Price 1900:3-4, capitalization and punctuation as in the original)

Price gives us two interesting pieces of information here. The first is that in and certainly even before 1871, at least some people knew of not only the presence of the village site, but specifically that it represented the remains of a Pawnee village. The explicit mention of the legal location makes it perfectly clear that Price and the soldiers he consulted were referring to the Kansas Monument site, not the Hill site (25WT1) farther up the Republican River in Webster County, Nebraska. How the soldiers knew this identification for the village is not known. My analysis of the documentary evidence shows that this site was abandoned possibly around 1801/1802 but no later than 1809, and that 1820s references to a Kitkahahki village site in the Republican River

valley (and it is always a village and not villages) are to the Hill site (Roper 2009). The Americans came into possession of this territory only with the Louisiana Purchase of 1803 and the only documented visit by an American expedition to a Kitkahahki village in that same decade was Pike's 1806 visit to the Hill site. Further, the Pawnee had abandoned the Hill site about 1831 and then ceded all lands south of the Platte River, including the Republican River country, by the Ellsworth Treaty of 1833 (Kappler 1904:416-418). By 1871, therefore, all Kitkahahki village occupation in the Republican River valley was but memories of places no longer inhabited. In spring 1871 also, though, all bands of Pawnee were still occupying villages in the Loup River valley of Nebraska and the Massacre Canyon battle with the Sioux that led to the Pawnee movement to Oklahoma was still over two years into the future. Memories of previous villages were still strong and administrative records still referred to them—an 1825 treaty with the Kansa, for example, used an *old* [i.e., no longer inhabited] Pawnee village, almost certainly 14RP1, when referencing boundaries (Kappler 1904:222). It is likely that the specific locations of the Republican River villages, including Kansas Monument, were never really lost to memory and were passed down via oral tradition both among the Pawnee, and between them and at least some non-Indians.

The other piece of information Price gives us in the quoted passage is his report of a field he said was ridged and that he identified as an Indian cornfield such as he had seen in southern Michigan. In addition to the text, the manuscript contains a map that portrays the village location with a set of parallel ridges immediately to the south (Figure 1). Since Price was a land surveyor, it is no real surprise that the map is very much in the style of a plat map. It probably was based either on actual measurements, which Price would have been doing as part of a land survey, or a very practiced eye, or both. The map, and the legal location, make it clear that this field is in the uplands, adjacent to the village. What stands out, therefore, is both that this field is in the uplands and that it is described as a ridged field. Neither of these characteristics is

normally associated with native village agriculture, either among the Pawnee in specific or Plains Village tribes in general (cf. Will and Hyde 1917).

Ridged fields are a form of raised fields, defined as “prepared land involving the transfer and elevation of soil above the natural surface of the earth in order to improve cultivating conditions” (Denevan and Turner 1974:24). They are not simply soil that is turned over and temporarily fluffed up, but actual permanent constructions in which humic-rich topsoil is pulverized, piled up, and concentrated around the plants. Rises can take a variety of forms and vary over a considerable range of height and width. While labor-intensive to construct, they are a form of land reclamation in which the fertility of soil on land that is that is somewhat marginal for agriculture is enhanced and crop productivity is augmented. Intentionally or perhaps sometimes as a by-product, raised fields may serve to drain excess water from crops, and it has been shown experimentally that can they also retard frost damage by draining cold air from the higher ridges into the lower furrows between ridges (Riley and Freimuth 1979). Raised fields are most closely associated with intensive agriculture and relatively dense population (Denevan and Turner 1974; although focusing on the Old World tropics, the article also is a solid overview of form, function, and circumstances of raised field agriculture in general, and is the classic statement about this agricultural technology).

Denevan and Turner (1974:24) find that, in plan view, raised fields take several forms, including mounds and linear ridges. While we do not have extensive accounts of specific Pawnee agricultural practices, mounds, often called cornhills, are attested. The best account is one told to Gene Weltfish by Effie Blaine, a Pitahawirata woman, who said that her mother

would make round mounds of earth, and dig a hole in the top of each one for the seeds. She put seven grains of corn in each mound and she would make sure that the individual grains were well spaced.

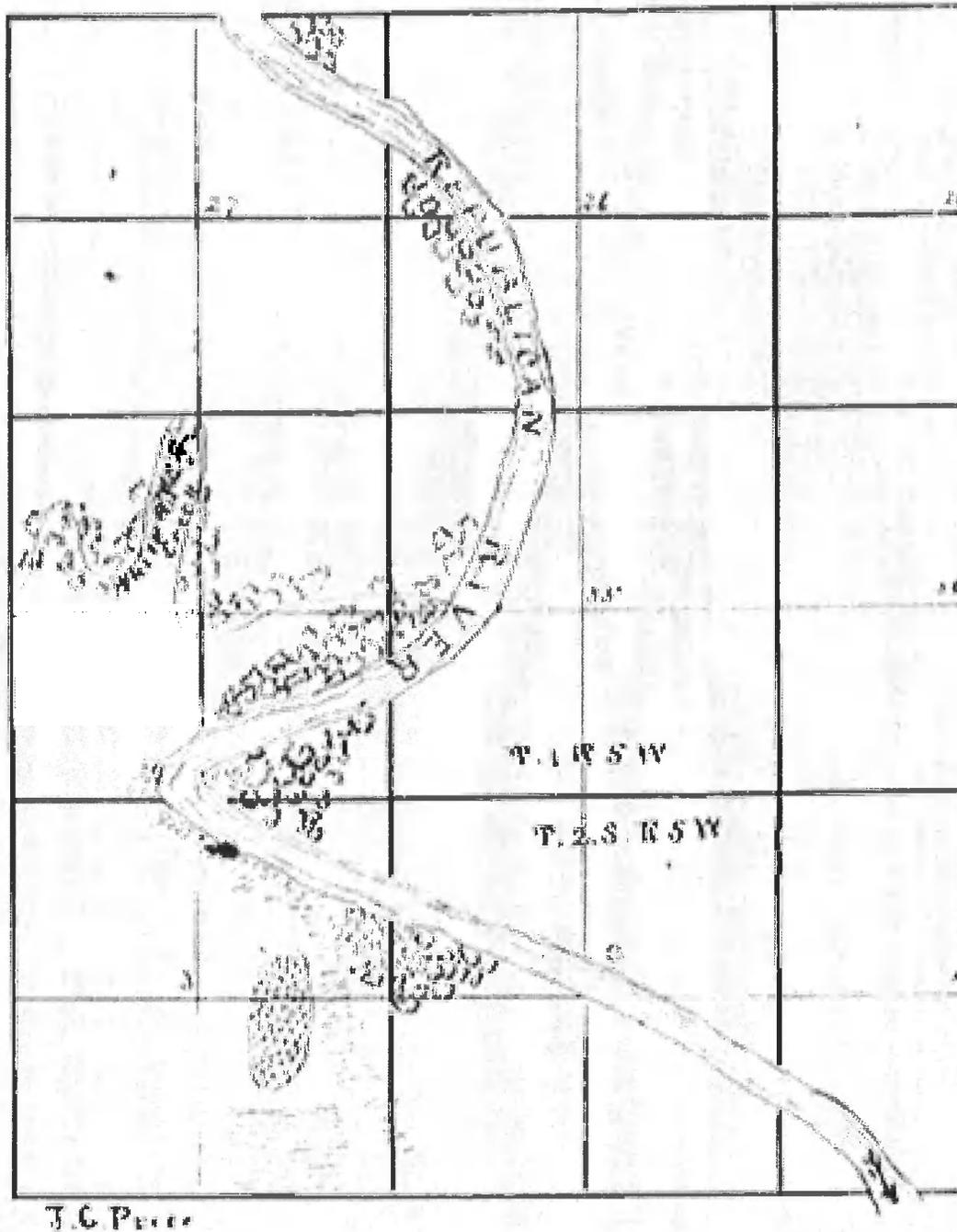


Figure 1. Price's Map of the Pawnee village site location (in Section 3), portraying what he described as ridged fields immediately south of the village

Then she covered them over with earth and smoothed out the mound (Weltfish 1937:38).

This form of cornhill planting is reported for many Plains Village tribes. Some of the references to

Plains tribes surveyed by Will and Hyde (1917:77-91) indicate that individual mounds were in the same place each year, perhaps implying that they were more or less permanent constructions. Sizes mentioned in in those same references suggest mounds of a foot-and-a-half, to two feet, to up to

three feet in diameter, and spaced two or three feet apart. Mounds were arranged in rows.

The Pawnee use of cornhills placed in rows at once does and does not provide an alternative to Price's account of the field having been ridged. Mounds at a village location that had been abandoned for over half a century could well have become somewhat eroded and more or less begun to flow together. But while this might have produced something of an appearance of ridging, sediment should have flowed not only between mounds in each row, but between rows, thus detracting from the appearance of ridging. Further, Price suggested that the rows were "probably about five feet" apart, which is farther apart than accounts of Plains cornhill agriculture report. The case for this being an observation of cornhills seems somewhat dubious.

In fact, though, a literal reading of Price's account says that he saw ridged fields, i.e., those in which ridges are continuous and laid out in one of a number of configurations. In this case, the reported configuration is parallel linear ridges. Ridged field agriculture is known in other parts of the native mid-continent (Denevan 1970; Doolittle 2000; Gallagher et al. 1995; Gartner 1999; Moffat 1979; and references cited in those sources). Ridged fields are most common in Michigan (where Price says he saw them) and Wisconsin, but also have been documented in Illinois, Iowa, Georgia, Florida, and a perhaps a few other states, none of them on the Plains. They appear to be most common in Oneota and Mississippian context. Knowledge of this distribution is possible because their remains are preserved, either by lack of later occupation that left them largely intact and observable to nineteenth-century witnesses, or by burial by natural deposition (e.g., Gallagher et al. 1985; Gartner 1999), or surface construction that sealed them from any disturbance (e.g., Kelly 1938, which reports remains of a ridged field below a burial mound at Ocmulgee in Georgia). They sometimes are shown on plat maps with records of the Government Land Office (GLO) surveys, and it probably is no accident that many of the known records of unburied ridged fields are from the nineteenth century (Hubbard 1878, where he

also presents a classification of configurations; Lapham 1855:57, where he references what he calls garden beds appearing in numerous places in Wisconsin), prior to the advent of Euroamerican settlement. In a real sense, Price's observation report of a ridged field at Kansas Monument could be one of these nineteenth century records.

It is valid, however, to ask if this field was actually associated with the Pawnee occupation at Kansas Monument. That is a question that cannot be answered definitively at this point, except to note that there is no real candidate other than the Pawnee for having constructed these fields and that the way Price drew the village and ridged fields certainly gives the impression of a planned landscape rather than an accidental juxtaposition of two non-contemporaneous features (the field and the village). The cultural context is not one for which ridged fields are previously reported, but it is obvious from surveys in the literature cited above that they are not so much a cultural trait as a technological solution to an agricultural problem that is most often adopted by intensive agriculturalists.

The upland location also would be unusual for a Pawnee agricultural field or, for that matter, an agricultural field of any of the Plains village tribes. The few accounts that tell where Pawnee fields lay on the landscape place them in bottomlands (Dunbar 1880:276; Carlton 1983:75) or in the sides of deep ravines (James 1905:216). Interestingly, Dunbar and Carlton use qualifiers—"usually" or "generally"—when describing this setting, perhaps allowing for the possibility of upland fields on occasion.

There actually is a plausible explanation for an upland field at the village now represented by 14RP1. For the Pawnee, more than for any other Plains village tribe, it is amply reported that bottomland fields lay at distances as much as 5, 8, or even 10 miles from the village. But then, unlike those of the other village tribes, the Pawnee villages were away from the Missouri River valley, and expanses of suitable bottomland agricultural soils in the immediate village vicinity were considerably more limited than they were for tribes in the large valley. Substituting upland acreage would have

reduced the distance from the village needed for fields. Moreover, in addition to the reported distances being extraordinary for traditional agriculturalists to travel to tend their fields, it becomes clear from the accounts that these long distances to the fields left the women vulnerable to raiding parties. Security surely would have been a concern to the Kitkahahki at the Kansas Monument site. It is, after all, a fortified village and for good reason. Historic accounts indicate that the Kansa were raiding the Pawnee at this village and that it is what drove them from there and from the Republican River valley in the first years of the nineteenth century (as well as from this and/or the village represented by the Hill site in 1809 and 1831). The village was placed on a high point on the landscape that would have afforded an opportunity to sight advancing raiding parties while they still were at a distance. Placing fields adjacent to the village, in addition to reducing travel time to the fields, also would have allowed for a timely retreat inside the fortification in the event of an impending attack.

Of course, much of this is circumstantial and conjectural at this point, but it need not necessarily remain that way. Ridged fields can leave signatures in the archaeological record, even in situations where modern cultivation is superimposed on them (e.g., Fowler 1969). Remote sensing might detect them, and ridged fields have been revealed by the time-honored technique of simply excavating over their former locations. Examining profiles or following observable soil differences in plan view have revealed their remnants. Ash and other village trash, including culturally diagnostic artifacts, have been used to determine who constructed these agricultural features. Soils testing, particularly for such characteristics as phosphates may be helpful. This is not to say that any of this will decide whether the field seen in 1871 at Kansas Monument is indeed a ridged field, and whether it is Pawnee, or even if anything at all would be found. I have briefly examined aerial imagery from Google Earth, filtering the image in several ways, and have not found it revealing. On the other hand, this is hardly definitive at this point. Price's account,

however, remains tantalizing and it seems worth a try to further investigate the situation if suitable arrangements can be made.

As a final note, the information in the Price manuscript underscores how much remains to be learned about the Kansas Monument site. A map of the Hill site held in the site files at the Nebraska State Historical Society shows, in addition to the lodge area, such features as a horse corral, hoop-and-pole game field, burial area, and a trail into the village. For Kansas Monument, we have only the lodge area with a portion of the fortification. This contrast has vexed me for some time, for it seems that surely there must have been other specialized areas associated with the village. Price's account, once validated, may begin to change this situation—the manuscript also contains a little more information about the village remains. I have scoured kansasmemory.org for more gems hidden in plain sight that might produce additional information. Correspondence from Elliott Coues and James Murie relates to the search for the village where Pike hoisted the American flag, a topic Price also touched on later in his manuscript, is available on that website and would bear some examination. Accessing other document repositories probably also would be productive.

References Cited:

- Carlton, J. Henry
1983 (orig. 1943) *The Prairie Logbooks: Dragoon Campaigns to the Pawnee Villages in 1844, and to the Rocky Mountains in 1845*. University of Nebraska Press, Lincoln.
- Denevan, William M.
1970 Aboriginal Drained-Field Cultivation in the Americas. *Science* 169:647-654.
- Denevan, William M., and B.L. Turner, II
1974 Forms, Functions, and Associations of Raised Fields in the Old World Tropics. *Journal of Tropical Geography* 39:24-33.
- Doolittle, William E.
2000 *Cultivated Landscapes of Native North America*. Oxford Geographic and Environmental

- Studies. Oxford University Press, Oxford, England.
- Dunbar, John B.
1880 The Pawnee Indians: Their History and Ethnology. *Magazine of American History* 4:241-281.
- Fowler, Melvin L.
1969 Middle Mississippian Agricultural Fields. *American Antiquity* 34:365-375.
- Gallagher, James P., Robert F. Boszhardt, Robert F. Sasso, and Katherine Stevenson
1985 Oneota Ridged Field Agriculture in Southwestern Wisconsin. *American Antiquity* 50:605-612.
- Gartner, William Gustav
1999 Late Woodland Landscapes of Wisconsin: Ridged Fields, Effigy Mounds and Territoriality. *Antiquity* 73:671-683.
- Hubbard, Bela
1878 Ancient Garden Beds of Michigan. *The American Antiquarian* 1:1-9.
- James, Edwin
1905 *Early Western Travels, vol. 15:Part II of James's Account of S.H. Long's Expedition, 1819-1820*, edited by Reuben Gold Thwaites. Arthur H. Clark Company, Cleveland, Ohio (accessed electronically)
- Kappler, Charles J. (editor)
1904 *Indian Affairs: Laws and Treaties, Volume 2: Treaties*. Reprinted 1972, Interland, New York (also available electronically at digital.library.okstate.edu/Kappler/).
- Kelly, A.R.
1938 *A Preliminary Report on Archaeological Explorations at Macon, Georgia*. Bulletin 119. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.
- Lapham, Increase
1855 *The Antiquities of Wisconsin*. Contributions to Knowledge 7. Smithsonian Institution, Washington, D.C. (available electronically via Google Books).
- Moffat, Charles R.
1979 Some Observations on the Distribution and Significance of the Garden Beds of Wisconsin. *The Wisconsin Archeologist* 60:222-248.
- Price, J.C.
1900 The Republican Pawnee Indian Village. Unpublished ms. available electronically at kansasmemory.org/item/219582/.
- Riley, Thomas J., and Glen Freimuth
1979 Field Systems and Frost Drainage in the Prehistoric Agriculture of the Upper Great Lakes. *American Antiquity* 44:271-285.
- Roper, Donna C.
2009 Pawnee Identity and Documentary History. Draft manuscript.
- Weltfish, Gene
1937 *Caddoan Texts: Pawnee, South Band Dialect*. Publications of the American Ethnological Society, Volume XVII. G.E. Stechert & Co., New York.
- Will, George F., and George E. Hyde
1917 *Corn Among the Indians of the Upper Missouri*. Reprinted 1964. University of Nebraska Press, Lincoln.

A Comment on the Trinomial Site Numbering System

Chris Garst
Kansas Historical Society

I have just finished reading Nick Macaluso's informative and helpful article, "Three Systems for Designating Kansas Counties Compared" in Number 8 (2009) *Current Archaeology in Kansas*. I want to clarify one point. In the first paragraph he mentions the "**KSHS trinomial site numbering system**". This system was developed by the Smithsonian Institution in the 1960s and **not** by KSHS. Additionally, it is widely used by most professional archaeologists and related institutions or agencies in Kansas and

across the United States. Below is a link if you are interested in learning more about how the trinomial system came to be: www.oregon.gov/OPRD/HCD/ARCH/.../Smithsonian_Trinomial_Numbers.rtf

I think Nick's comparative chart will be most helpful because we, too, have struggled with the difference between the Smithsonian, KGS's, and the DMV's county designation. The chart is a great idea, Nick.



