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Contents

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KANSAS ANTHROPOLOGICAL ASSOCIATION

The Kansas Anthropological Association is the oldest amateur archeological organization in the state. Its membership is made up of individuals and institutions interested in the prehistoric and historic peoples of the area. The objectives and goals of the Association are the preservation and interpretation of archeological and ethnographic remains within the state; the scientific study, investigation, and interpretation of archeological remains and ethnographical materials; the publication and distribution of information concerning Kansas archeology and ethnology; and the development and promotion of a greater public interest and appreciation for the heritage of the state.

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PUBLICATIONS

Each year members receive four issues of the *Kansas Anthropological Association Newsletter* (ISSN 1069-0360) and one journal, *The Kansas Anthropologist* (ISSN. 1069-0379). They also receive six issues of *Kansas Preservation*, the newsletter of the Cultural Resources Division of the Kansas State Historical Society. All members and interested individuals, professional or amateur, are invited to submit material to the editors for use in these publications. Back issues of the journal or newsletter, if available, may be ordered from the Historian-Recorder at the address listed above. Prices will be furnished upon request.

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The Hallman Site (14PH524), Harper County, Kansas: New Light on Bluff Creek

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The Kansas Anthropologist 21:1-33

The Hallman site (14HP524) along with more than 40 other sites located along Bluff Creek in south-central Kansas constitute the Bluff Creek complex. Surface surveys and limited excavations have revealed projectile points, scrapers, expediency tools, and some pottery that point to a semi-sedentary culture, subsisting on hunting and some horticulture, typical of Middle Ceramic phases. Previous analyses have linked the Bluff Creek people to the south with Antelope Creek and Washita phases, to the southeast with Mississippian peoples, and to the Central Plains.

Analysis of the Hallman site materials has shed light on a wide variety of implements and tools consistent with other Bluff Creek sites and also consistent with the model of the Bluff Creek complex as a northern extension of a Southern Plains lifestyle. Both horticulture and bison hunting were a substantial part of the Bluff Creek complex subsistence strategy and suggest a more sedentary lifeway than originally believed.

Site History

The Bluff Creek complex, a loosely defined Middle Ceramic complex located in south-central Kansas, is known primarily from surface surveys and limited excavations. Collections of projectile points, scrapers, expediency tools, and some pottery gathered during these investigations indicate a semi-sedentary culture subsisting on hunting and some horticulture.

In 1988 Mrs. Erma Hallman and Patricia and James Robb of Harper County, Kansas, provided the Kansas State Historical Society (KSHS) and the Kansas Anthropological Association (KAA) the opportunity for a large-scale excavation of a Bluff Creek site. For many years Mrs. Hallman and the Robbs had privately collected and inventoried artifacts from a site located on their property, sharing it with local communities through exhibits and presentations. It was their intention, through the Kansas Archeology Training Program (KATP) excavation, to bring the site's data to a wider public audience and to professional anthropologists as well.

Field Methods

In 1988 a 16-day KATP field school was conducted to recover materials at the Hallman site (14HP524). Areas of concentrated cultural material and highly organic soil were located by testing with a coring tool. Two such areas on the hilltop were excavated and a series of 2- x 2-m test pits were dug on the downslope leading toward the creek (Figure 1). Although no house floors were identified, excavations on the upland portion of the site revealed storage pits, post molds, three trenches, and large shallow "borrow areas." Samples of soil were taken for flotation that was completed at the site. Artifacts were found in situ when possible, although all soil from the pits was screened through ¼-inch hard mesh screen.

Research Methods

After the 1988 KATP excavation, Hallman site artifacts were washed, bagged, and stored. In 1998 the

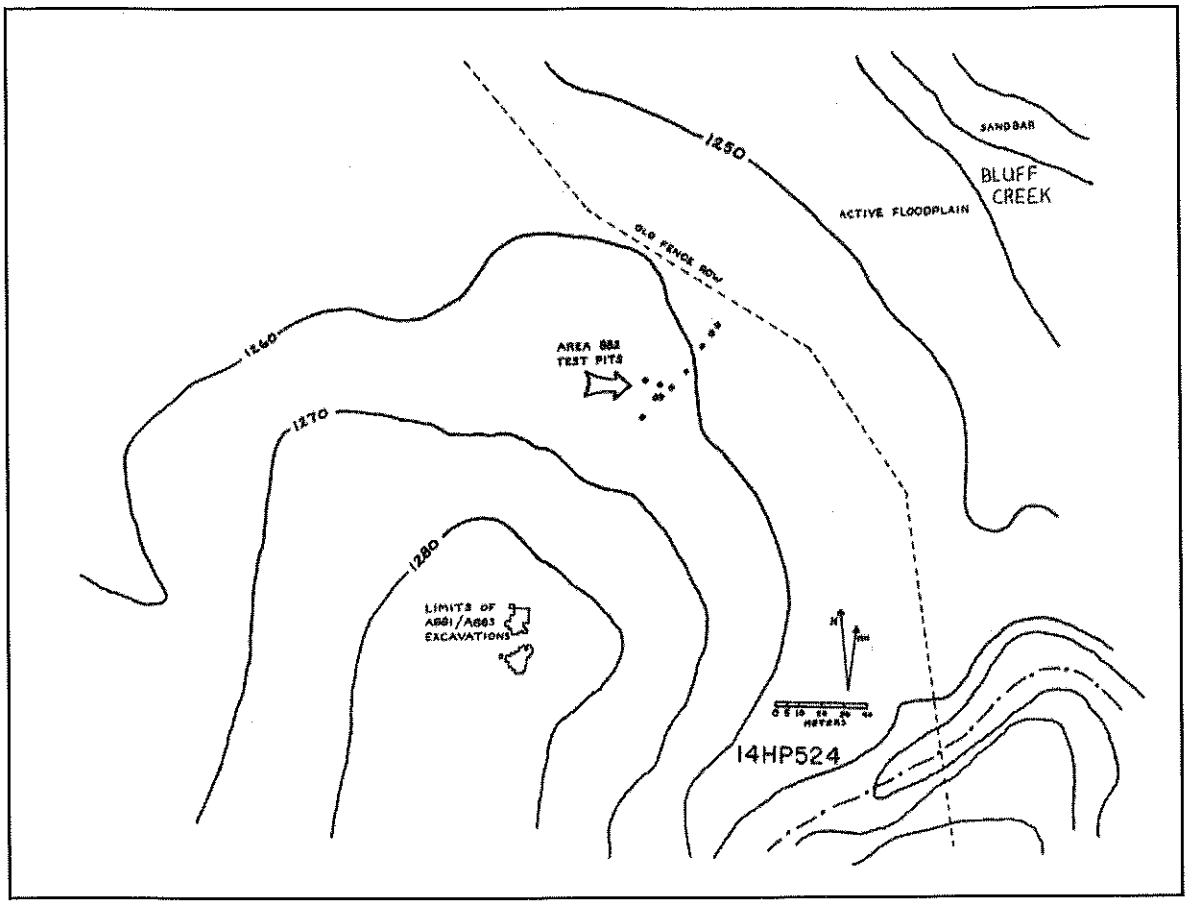

Figure 1. Placement of excavations on hilltop and alluvial slope areas at 14HP524.

ceramic specimens were removed from the collection for analysis by University of Kansas (KU) graduate student Shelly Berger. The present analysis of non-ceramic artifacts was carried out for the purposes of determining the use of 14HP524, further refining the definition of the Bluff Creek complex, defining where 14HP524 fits into the Bluff Creek context, and reporting on the ongoing investigations at 14HP524. To this end in June 1999, the KSHS and the KAA jointly sponsored a 10-day KATP workshop to prepare the remaining artifacts for analysis and to begin the initial analysis. The artifacts were sorted, weighed, catalogued, and recorded, then transported to Wichita State University (WSU) for further analysis and reporting.

In the 1999 field laboratory lithic samples were visually inspected and categorized by geological source and further categorized into heat-treated and raw materials. Next, all formally defined and expediency tools were identified. Debitage was examined for use-wear using hand lenses and analyzed for microflaking and step-fracturing. Ground stone was separated from the chipped stone, and a large metate was partially reconstructed.

Faunal remains were analyzed to determine species, element, and side (right or left). Lacking a comparative collection, the team members assigned to this task used reference books and their own field experience. Some of the bone elements were cleaned with soft brushes, and a few samples were reconstructed and preserved using acetone.

Heavy flotation was sorted, using hand lenses, and grouped into categories: ceramic fragments, mussel shell, bone, burnt bone, charcoal and other burnt organic materials, daub and burnt earth, and lithic debitage.

Once the collection was moved to the WSU anthropology laboratory at the conclusion of the KATP workshop, all lithic artifacts were examined under a 20-power microscope and analyzed for degree of polish, step-fracturing and crushing, and microflaking. All faunal materials were double-checked against WSU's comparative collection. Further examination and interpretation of the tool kits were completed, and photographs of the various artifacts were taken.

Previous "Bluff Creek" Excavations

The first "Bluff Creek" site to be excavated was the Anthony site (14HP1), sometimes referred to as the Dow Mandeville site, by Marvin Munsell in the fall-winter of 1959-1960. In many respects it strongly resembled the Hallman site in that no houses or structures, except for some quantities of daub, were found. Finds included large quantities of mammal bone, quantities of charred corn, scapula hoes, triangular projectile points, alternate and unifacially beveled knives, a "loaf-shaped" sandstone abrader, a slab metate, awls, and a "musical rasp." The ceramic vessels were unremarkable globular forms, primarily sand tempered, yet having some bone tempering as well. Additionally, one complete and one partial human burial were recovered.

Based on scanty data and Waldo R. Wedel's early prediction for a Central Plains connection for south-central Kansas, Munsell (1961) posited a Central Plains phase/Smoky Hill aspect affiliation for this site. However, he also noted similarities to Antelope Creek, western Oklahoma sites, and some Mississippian connections as well, based on the shell-tempered pottery and a single ceramic effigy tortoise of Mississippian origin that had been privately collected from the site.

In 1967-1968 State Archeologist Thomas A. Witty, Jr. excavated the Armstrong site (14HP5) after new road cuts disclosed the presence of a site. Witty (1969) investigated the contents of several storage pits and borrow areas but was denied access to the adjacent land that had more visible features. Ronald R. Gould (1975) of WSU analyzed the artifacts from this project in his master's thesis. The globular form ceramic pots were primarily sand tempered with some shell temper. Lithic artifacts were made from Kay County chert (96 percent) and included Fresno, Washita, and Harrell type arrow points, alternately beveled knives, and end and side scrapers.

During the summer of 1969, a KSHS crew under Witty's direction excavated the Buresh/Nulik (14SR303/305) sites. According to informants, the Buresh/Nulik sites were similar in artifact content to the Armstrong site. Partially located in an unplowed field, the sites were identified as a village due to the numerous low mounds indicative of house structures. Three houses were chosen for excavation, ranging in size from 20 x 20 feet (6.1 x 6.1 m) to 10 x 20 feet (3.1 x 6.1 m) to 10 x 14 feet (3.1 x 4.3 m). These structures had center post molds, extended entryways, one interior hearth, and one exterior hearth. Located outside the houses were series of cylindrical refuse-filled storage pits, some crosscut by borrow areas. Extensive lithic and bone tool kits also were recovered, consisting of triangular projectile points, alternately beveled diamond-shaped knives, end scrapers, bison scapula hoes with the glenoid fossa removed, cleavers made from reworked hoes, and deer tibia shaft wrenches. Ceramic vessels comprised sand- and bone-tempered globular forms, as well as some red-slipped trade wares and some older Woodland forms. Although Witty (1969) did not describe the faunal refuse, the tool kits were consistent with a localized subsistence that included bison hunting, garden hunting, and horticulture.

At least two temporal components were represented. The presence of Woodland ceramic forms, tool kits, numerous corn remnants, houses, and storage pits indicated that the site was occupied over a long period of time. The borrow areas that cross cut the storage pits may have resulted from the activities of later house occupants or of later unrelated settlers. A metal projectile point, found about 4 inches (10.2 cm) below the surface of the unplowed site, attested to a historic connection. In his brief report about the excavations, Witty (1969) placed the Buresh/Nulik sites in the Washita focus.

Finally, the Gould survey, conducted in 1973-1975, covered Bluff Creek in both Harper and Sumner counties. Through pedestrian survey, surface collection, and interviews with landowners along Bluff Creek, Gould mapped as sites some 40 areas of varying densities of cultural scatter on the ridges, terraces, and slopes of the bluffs. In his thesis he presented the Bluff Creek locality as a series of densely utilized ridge settlements, fed by fresh water springs adjacent to the fertile creek floodplain, which was utilized for growing crops and remote work areas.

Radiocarbon assays of other Bluff Creek complex sites returned dates of A.D. 1005 and 1195 for the Buresh site, A.D. 1280 for the Nulik site, and A.D. 1195 for the Hallman site. All samples, except the one from14HP524, were analyzed by the Gakashuin Laboratories, and Blakeslee (1994) has proposed that Gakashuin dates are unreliable. However, recently Shelly Berger of KU obtained another ^{14}C determination, which places the Hallman site at about A.D. 1250. This new date is consistent with the previous dates, suggesting that they may be reliable in this case.

Ecological Setting

The Bluff Creek locality is situated in the Wellington-McPherson lowland area, a landscape characterized by soft ridges and terraces formed by a north-

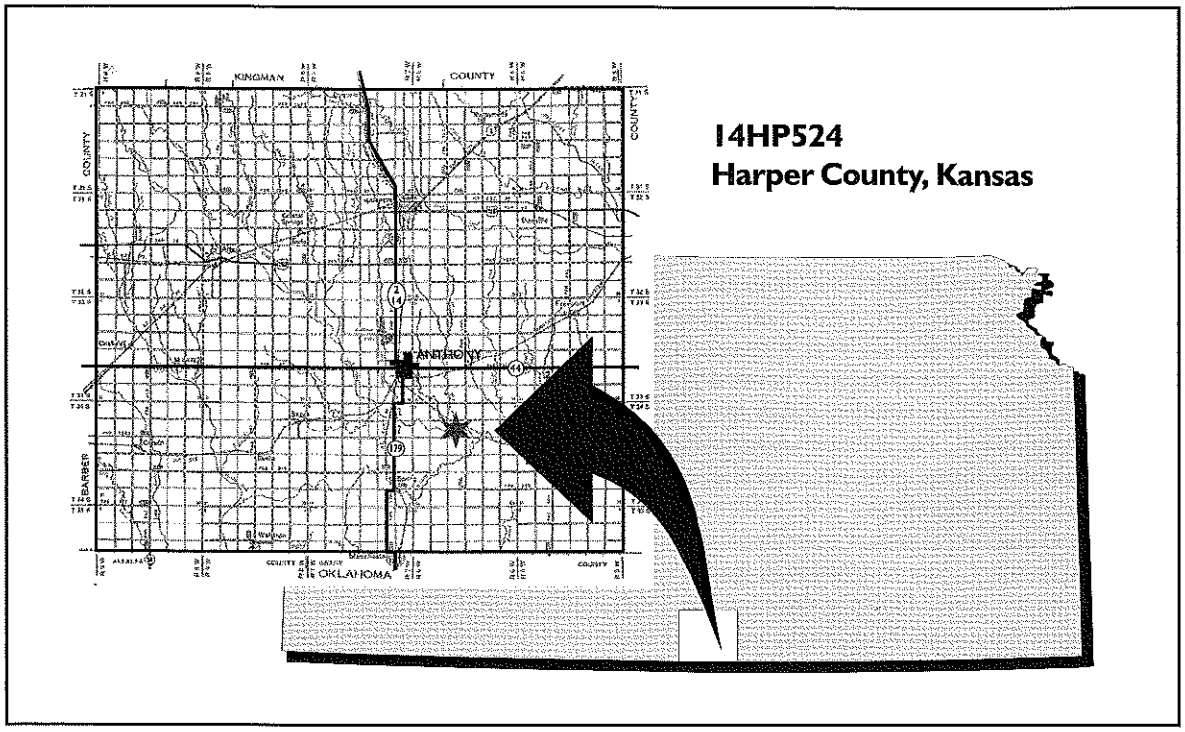

Figure 2. Location of 14HP524 near Anthony, Kansas.

erly extension of the Red Hills shales and sandstones. Riverbeds are filled with aeolian sands derived from Quaternary alluvium. The lower Bluff Creek is part of a mixed-grass ecotone, lying between tall-grass prairie to the east and the short-grass plains to the west. Fauna represented in the 14HP524 assemblage are deer, pronghorn, opossum, raccoon, cottontail rabbit, fox squirrel, turtle, gopher, pack rat, fresh water mussels, and a large quantity of bird bone, including heron.

The Hallman site is situated on an upland that slopes gently to the creek almost .2 mile (1.9 km) away (Figure 2). The land is tilled, plowed to about 15 cm below ground surface (bgs) and deep chiseled to 23 cm bgs. A uniform surface layer of mixed and well-fragmented cultural debris, extending to 15 cm bgs, generally characterizes the hilltop stratigraphy. Recognizable features with associated artifacts begin appearing at about 15 cm, with clearly defined features appearing at 23 cm and extending to about 60-70 cm bgs. The slope region is characterized by a less dense surface cover of the same cultural debris as the hilltop and layers of varying concentrations of cultural debris below.

The .5-m-deep cultural deposits on the hilltop and 1-m-deep cultural deposits on the adjacent slope indicate that, at the time of occupation, the hill and slope were steeper and more defined. Plowing has acted to partially deflate the hilltop and level the slope. Wind and rain erosion from the hilltop caused the deeper stratified deposits downslope. Closer to the creek, periodic flood events and aeolian deposits most likely caused the lenses of sterile soil that overlie the layers of prehistoric use (Figure 2).

Subsistence Economy

Horticulture

Floral Remains

The botanical remains from borrow area Feature 151 were analyzed by Jennifer Brown (1996) of KU. Corn (*Zea mays*) in the form of cupules, cob fragments, and kernels was the most ubiquitous botanical remain in the sample, followed by amaranth (*Amaranthus sp.*) and sunflower (*Helianthus annuus.*). Brown also found smaller amounts of grasses, marsh elder (*Iva annua*), goosefoot/lamb's quarters (*Chenopodium spp.*), grape (*Vitis sp.*), clover, bulrush (*Scirpus sp.*), and sumac. Carpetweed was also present, but Brown felt that those seeds were present-day additions to the botanical collection. Other flotation samples yielded a squash seed. However, Brown pointed out that soil flotation methods may have destroyed the smaller, more delicate flora and biased the analysis results in favor of larger botanical remains.

A significant amount of charcoal and burnt corn was recovered from the flotation heavy fraction. How-

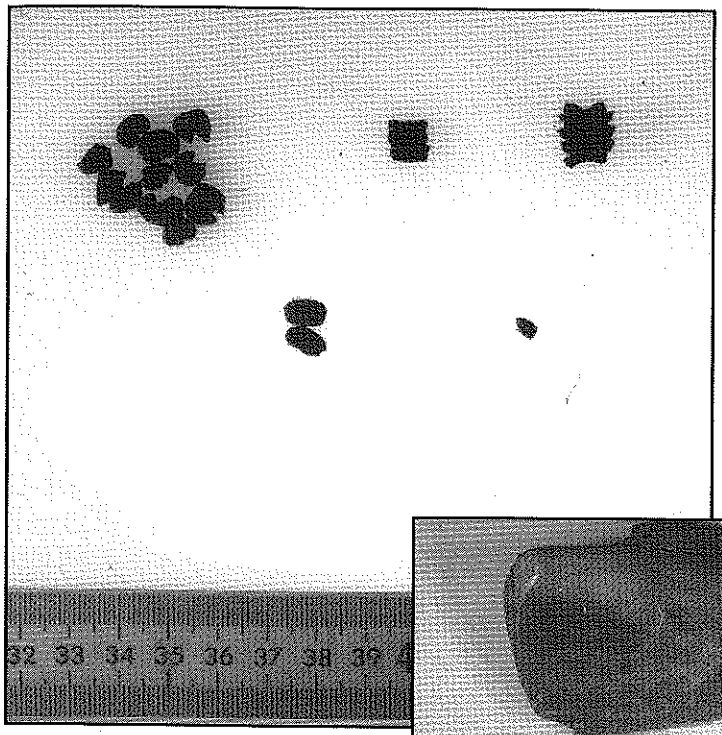

Figure 3. Botanical remains. Pictured clockwise from upper left are burnt corn kernels, two burnt corncobs, possible grape pip, and possible squash seed.

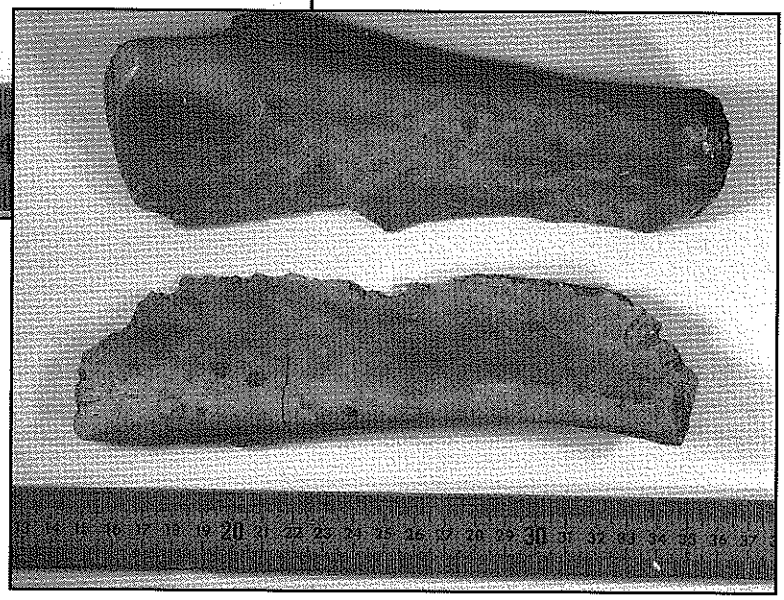

Figure 4. Hafted hoes made from scapula posterior margins.

ever, charcoal typically was recovered in quantities less than 3.0 g in weight, and no tree species were identifiable.

In addition to the corncobs and cupules, impressions of corn husks were noted in trench Feature 60 below the disturbed fill. Both charcoal and burnt corn remains often were found well mixed with fill in most of the numerous pit and trench features, suggesting hearth-cleaning activities. In addition to the charcoal and corn, burnt grass remains were recovered, also located below the disturbed plow zone. A possible burnt squash (*Cucurbita sp.*) seed and possible burnt grape pip were recovered from the flotation heavy fraction (Figure 3). All botanical remains from the Hallman site were preserved in a burnt state.

Bone Tools – Hand Hoes, Hafted Hoes, Tibia Digging Stick Tips, and Ulna Picks

In the recovered floral material the large amount of corn was consistent with the large number of horticultural implements. Bison bone was used to produce a variety of horticultural implements, including hand hoes, hafted hoes, and digging stick tips. Stylistically, bone tools from 14HP524 and other Bluff Creek sites are similar to tool types from areas south and west of the site.

Two implement fragments (Figure 4), thought to be hafted hoe blades constructed from bison scapula, do not fit any of Gould's (1975) hoe descriptions. Hallman site hoe manufacture differed from a more northern style (with hafting on the articular surface of the glenoid fossa) and other Bluff Creek hoe types in

Figure 5. Bone tools. From left to right the first three implements are hand hoes and the fourth is a tool of unknown function. First and third tools are scapula posterior margins, while second and fourth are scapula anteriors.

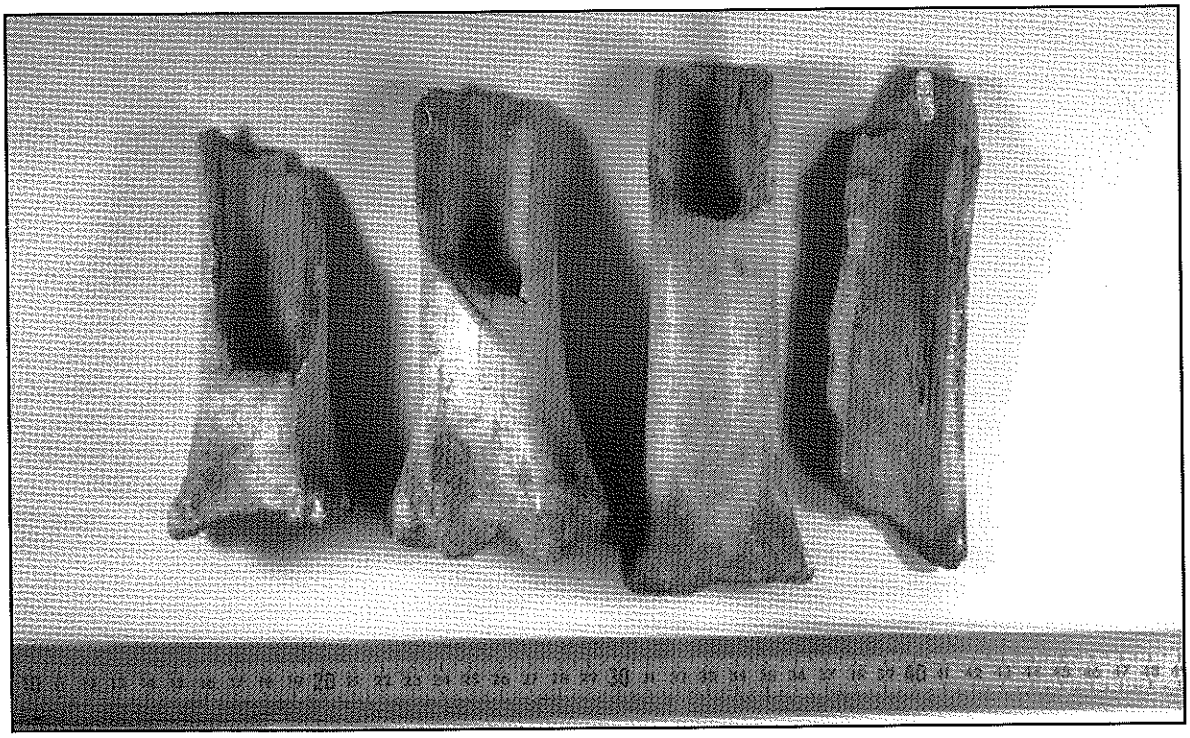

Figure 6. Digging stick tips.

two aspects: 1) removal of the glenoid fossa and blunting of the neck for hafting and 2) removal of the anterior edge, including the dorsal spine. As expected, the distal ends of the blades are highly polished from wear, but in addition these tools were bifacially reduced by heavy grinding. One very fragmented scapula section, the interior portion with the spine crudely removed, tentatively was identified as part of one of Gould's (1975:73) "Type B" hoes. These tools most likely were used for earthmoving, especially in preparation for planting and for digging the shallow basin pits.

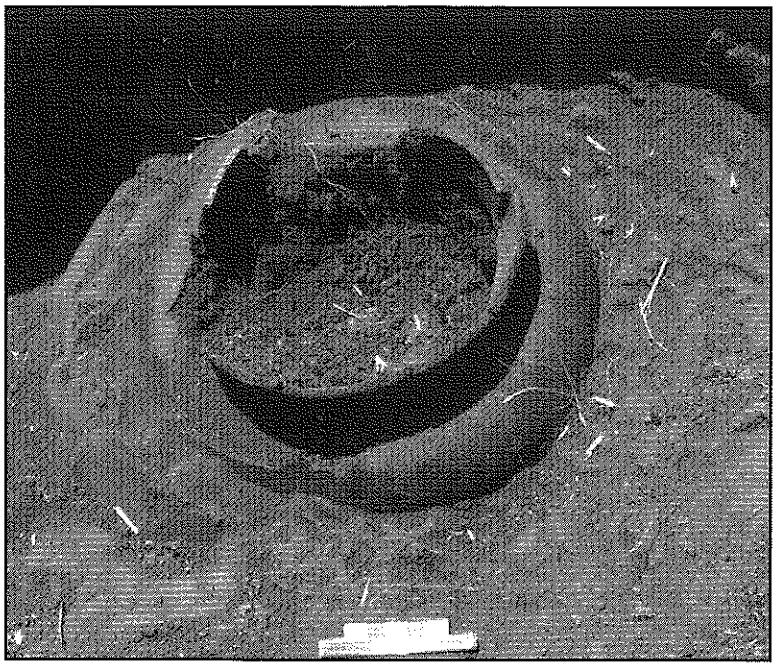

Figure 7. Complete cordmarked pot at the base of trench Feature 60.

Referred to in previous literature as "cleavers" or "squash knives," the most common tools found at 14HP524 were made from bison scapulae (Figure 5). These "cleavers" fit Gould's (1975:75) description of bone knives. In appearance they do resemble a butcher's cleaver, with short sturdy handles, leading into large squared to triangular blades, which typically show evidence of beveling by grinding down the edges. The handles were formed from the thick bone of the margins and necks of the scapulae and were battered until they presented no rough edges and provided a triangular grip. Blades reveal evidence of beveling and high polish along the straight square edges (toward the medial margins) of the blades but never on the thick boney margins. Tool scratch marks indicate that blades were formed using the "score-and-snap" method. Five are left and four are right scapulae. Of the nine "cleavers," seven were manufactured from the scapula portions along the posterior margins and were probably functionally different from at least one of the other two, which were made from the anterior margin portions.

Two other "cleaver"-type tools were manufactured from the anterior portions of scapulae, with the dorsal spines neatly removed. These tools more closely follow the trajectory for reuse proposed by Hill (1988:111). One implement with a concave leading edge that was lightly sharpened was probably also a hand hoe. Another delicately tooled implement was made from a scapula anterior border, with the spine carefully removed and ground down and a thin semicircular blade bifacially reduced. This tool was probably too delicate to be a digging implement, but otherwise its function is unknown.

The digging stick tips were produced from the distal ends of tibiae, consistent with the high number of fragmented proximal tibiae recovered. The tibiae pictured in Figure 6 distinctly show the beveled cutting along the blades, probably formed by grinding on a whetstone. There is also distal crushing toward the hafting portion, perhaps marking an attempt to elongate the blade and maximize use life as the blade wore down.

Only one ulna fragment that may have been used as a pick was found. It was neatly drilled through the proximal end, which probably was part of the hafting element.

Ceramic Artifacts

Initial ceramic analysis by Berger (2001) indicates that the plain cordmarked globular form, constructed by coils and primarily sand tempered, constitutes the bulk of the ceramic collection. Bone-tempered pieces also were tempered with quantities of sand. Paste texture is friable to compact, and the pots were fired in an oxidizing atmosphere. Berger does not describe any trade wares but notes a few sherds of red-slipped pottery, mostly typed as Geneseo Plain. The most significant ceramic find was a nearly whole pot (Figure 7), discovered in place at the base of Feature 60, the main trench feature.

Table 1. Adult and Juvenile Bison Minimum Number of Individuals.

	Element	Bison – Adult								Bison – Juvenile							
		Left			*Right*			Unidentified/ Not Paired	MNI	*Left*			*Right*			Unidentified/ Not Paired	MNI
		Proximal	Distal	Left	Proximal	Distal	Right			Proximal	Distal	Left	Proximal	Distal	Right		
Axial Skeleton	Mandible			1			1		1								
	Maxilla						1		1								
	M1 & M2						1		1								
	Sternum							2	1								
	Vert – C1							1	1								
	Vert – C3							1	1								
	Vert – Lumbar							2	1								
	Vert – Thoracic							3	1								
	Vert – Unid							3	1								
	Vert -- Caudal							3	1								
Forequarter	Scapula			5			10	3	10						2		2
	Humerus	2	1		0	1			2			1			1		1
	Radius	3	0		2	3		2	3						1	1	1
	Ulna			2			1	4	2								
	Scaphoid						1		1								
	Metacarpal		3						2								
Hindquarter	Pelvis			1			2	1	1								
	Sacrum							1	1								
	Femur	1	1		3	3			3			1			1		1
	Patella			1			3	2	3								
	Tibia	6	0		1	0		3	6	4							4
	Tarsals							2	1								
	Lunate			1			1		1								
	Magnum						1		1								
	Metatarsal						2		1								
Foot	Phalange			2			2	1	1								
								Total MNI – Adults	10							Total MNI – Juveniles	4

Ground Stone

A highly fragmented sandstone slab metate was collected and partially reconstructed. Fragments of possibly two other metates and the remnants of two broken manos were recovered from 14HP524.

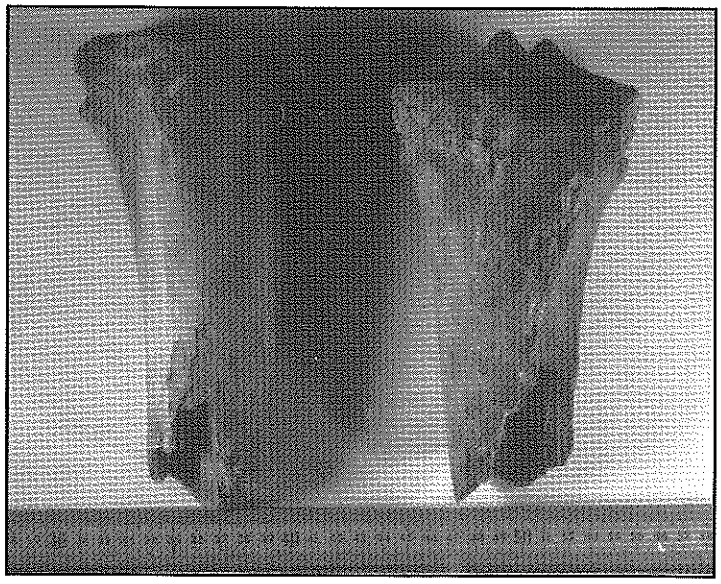

Figure 8. Crushing on proximal ends of bison tibias.

Interpretations

All hoe and digging stick tip samples show a high degree of polish on the extant blades, which resulted from repeated use in the soil. In addition, the Hallman site people favored beveled edges on their digging implements, probably because beveled edges would be accentuated by arcing-use motion, as occurred either at the end of an arm swing or at the end of a handle. Also, with use, a beveled edge is more stable than a bifacial edge. Whereas a thin, delicate bifacial edge tends to flatten out and dull almost immediately, a beveled edge stays essentially beveled, although it eventually requires sharpening.

The presence of high polish, a beveled edge, and a large flat blade has suggested to others (Baker and Baker 2000; Rohn and Emerson 1984) that these "cleavers" were actually hand-held digging implements, useful for digging pits where hafted hoes would be limiting and impractical. The proposition that these implements were in fact cleavers or squash knives derived primarily from the morphology of the tools. Limited ethnohistorical accounts of squash processing reported that squashes were roasted first and the skin rubbed off after the fruit cooled. Peeling with a knife was considered wasteful (Weltfish 1965:238-253). It seems unlikely that the thick diagonal blade with its beveled edge was ever sharp enough to repeatedly cut through the longitudinal fibers of a squash. Furthermore, botanical evidence is not sufficient to demonstrate that squash cultivation was the significant contribution to the Hallman site harvest as the number of "cleavers" or "squash knives" would signify.

All phases of horticulture took place at the Hallman site, including spring soil preparation and sowing and late summer harvesting and processing. Soil preparation probably incorporated spring tilling and digging storage pits. Processing may have included roasting and shucking the corn or drying the kernels before storage. Even though no hearths were recognized on the hilltop, the ash lens in the midden near the creek, the burnt corn cobs and cupules, and numerous burnt features attested that there were fires on the site and that the inhabitants may have been using dried corn cobs as fuel (Drass 1993). The large array of bone tools used specifically for horticultural purposes, combined with the ubiquity of corn in the flotation samples, suggested that horticulture was a well established and more important part of the subsistence strategy than previous investigations in the Bluff Creek area have implied.

Hunting

Faunal Remains

The faunal assemblage is dominated by fragmentary adult bison (*Bison bison*) bones, the majority of which are small, unidentifiable pieces of long bone diaphyses and ribs. There are also quantities of burnt bone and a substantial quantity of identifiable pieces. The minimum number of individuals (MNI) count of adult left scapulae establishes that at least 10 adult bison were present in the excavated features (Table 1). Interestingly, the MNI count of other elements signals that scapulae are over represented. Right femurs and left tibiae indicate six individuals, and right scapulae indicate five individuals. At least four sub-adult bison, represented by proximal left tibia, were recovered from site features (Table 1). Still other elements, such as the ankle bones, equal no more than one individual. The least represented of all elements are lumbar and thoracic vertebrae, pelves, and crania. Overall, tibia and scapula are represented in the greatest frequency, both as tools and as fragments.

The most frequent use-wear on the bison bone is concoidal and irregular fracturing (Figure 8). Pit fill yielded several articulated joints that exhibit irregular

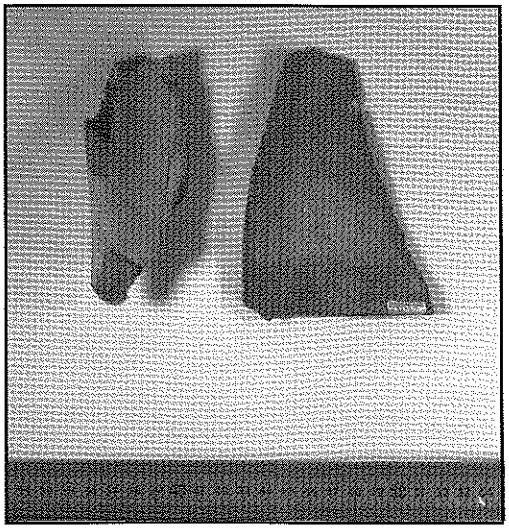

Figure 9. Cut marks on bison bone.

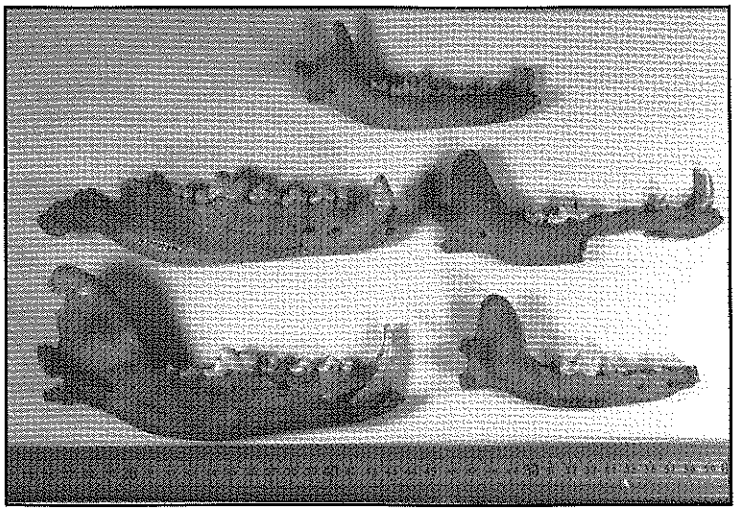

Figure 10. Canid mandibles, including *Canis latrans* and *Canis lupus*.

fracturing below the joints. Presumably this damage occurred during the last phase of butchering, while gathering bones for use as tools or as preparation for making grease. Where tendons made the joints too tough to cut through, the bones were battered apart just above or below the joints. While some butchering marks are visible (Figure 9), most cut marks seem to be associated with tool making, particularly with the scapula.

In addition to bison, there was a dependence on dog and deer. Two types of canid species were recognized: the smaller, more gracile, yet fully developed coyote (*Canis latrans*) and the larger, more robust wolf (*Canis lupus*). Evidence of these two types is most apparent in the mandibles (Figure 10). At least five adult individuals and probably one other adult are represented by mandibles (Table 2). Four of the adult individuals are coyote, while the fifth and possibly the sixth individuals are wolf. At least two sub-adults were identified from left humeri. Feature 151 yielded most of the canid remains, and at least two other adults were found deep in the first test pit on the slope.

Similar to the bison remains, canid joints were butchered by battering just beyond the joint (Figure 11). However, unlike the bison remains, canid crania are frequent; one complete cranium (Figure 12) was recovered, as well as the mandibles of other individuals. In addition a relatively large number of cervical vertebrae, especially C1 vertebrae, were found. The presence of the crania, cervical vertebrae, and articulated limbs (Figures 13-15), such as the forepaw, make it appear that these elements were detached and disposed of without being used. Perhaps wolf and coyote

Table 2. Canid Adult and Juvenile Minimum Number of Individuals.

	Element	Canid – Adult								Canid – Juvenile							
		Left			*Right*					*Left*			*Right*				
		Proximal	Distal	Left	Proximal	Distal	Right	Unidentified/ Not Paired	MNI	Proximal	Distal	Left	Proximal	Distal	Right	Unidentified/ Not Paired	MNI
Axial Skeleton	Crania											1					1
	Mandible			5			2		5 (6)								
	Maxilla			1			1		1								
	Vert – C1							3	3							1	1
	Vert – C3							1	1							1	1
	Vert – Lumbar							1	1							4	1
	Vert – Thoracic							2	1							1	1
	Vert – Unid															1	
	Vert -- Caudal																
Forequarter	Scapula											1					1
	Humerus											2			1		2
	Radius						1								1		1
	Ulna						1		1								
	Astragalus							3	2								
	Scaphoid																
	Metacarpal																
Hindquarter	Pelvis			2			2		2						1		1
	Sacrum																
	Femur						1									1	1
	Patella																
	Tibia			1			1	2	2								
	Fibula			1			1		1								
	Calcaneus						1		1								
	Tarsals																
	Lunate																
	Magnum																
	Metatarsal							4	1								
Foot	Phalange							13	1								
								Total MNI – Adults	5 (6)							Total MNI – Juveniles	2

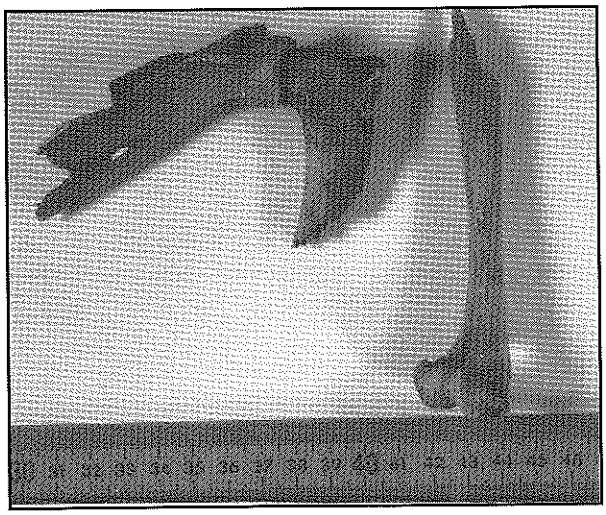

Figure 11. Use-wear on canid bones, showing crushing on distal end of humerus and scapula and cut marks on distal end of humerus.

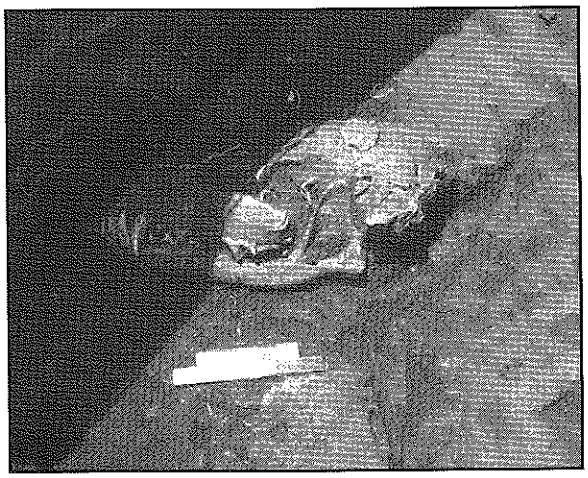

Figure 12. Canid cranium in situ.

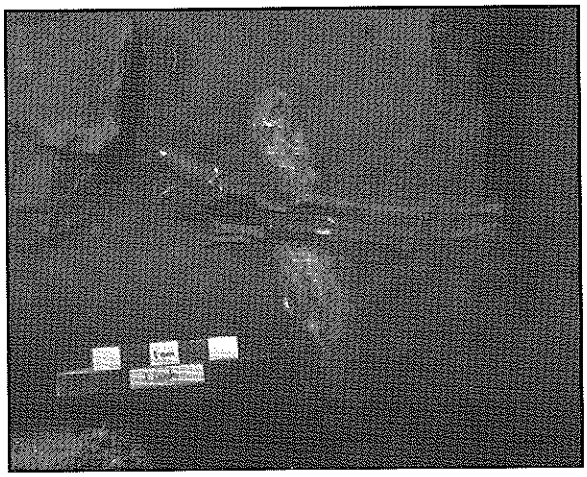

Figure 13. Canid articulated fibula, tibia, and metatarsals in situ.

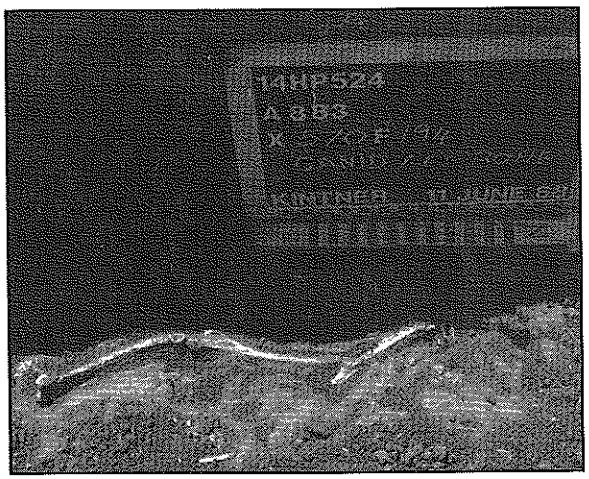

Figure 14. Canid remains in situ.

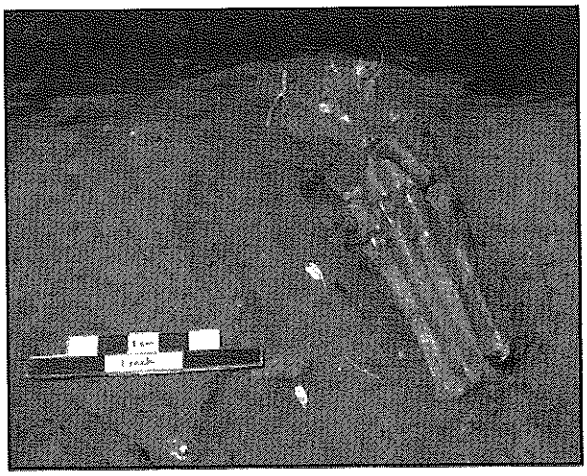

Figure 15. Canid remains in situ.

Table 3. Deer Minimum Number of Individuals.

	Element	Deer – Adult							
		Left			*Right*				
		Proximal	Distal	Left	Proximal	Distal	Right	Unidentified/ Not Paired	MNI
Axial Skeleton	Cranium-Occip.							1	1
	Mandible								
	Maxilla								
	M1 & M2								
	Sternum								
	Vert – C1								
	Vert – C2							2	2
	Vert – C3							1	1
	Vert – Lumbar							1	1
	Vert – Thoracic							2	1
	Vert – Unid							1	1
	Vert – Caudal								
Forequarter	Scapula			1					1
	Humerus			3					3
	Radius			2				1	2
	Ulna						1		1
	Scaphoid								
	Metacarpal							2	1
Hindquarter	Pelvis								
	Sacrum								
	Femur			1			1	1	2
	Patella								
	Tibia			2			1		2
	Astragalus			1			1	1	2
	Calcaneus			1			1	1	2
	Tarsals								
	Navicular-Cub.			1					1
	Lunate								
	Magnum								
	Metatarsal							1	1
Foot	1 & 2 Phalange							8	1
								Total MNI – Adult	3

were used opportunistically, quickly butchered for the large, usable portions, skinned for the soft pelts, and the rest discarded.

Three adult deer (*Odicoileus virginius*) were identified from three left humeri, as well as two sub-adults from right femurs (Table 3). Most of the deer remains were scattered along the ridge toe and shallowly buried on the slope.

Bird bones, including those of Cooper's hawk (*Accipiter cooperii*), turkey (*Meleagris gallopavo*), goose (*Branta* sp.), raven (*Corvus corax*), and sparrow hawk (*Falco sparverius*) were identified. Interestingly, these came primarily from Feature 151, a large borrow area, probably last used as a refuse pit.

Fishing and Aquatic Resources

One bone tool, resembling a fishhook, was collected from 14HP524. The hook's shaft measures 5.0 x 3.5 mm with a hook span of 15.6 mm and a length of 27.5 mm, although the shaft is broken off at the top.

A few isolated and highly fragmented mussel shells and fish remains were retrieved, mostly in the flotation heavy fraction. No shell middens were found

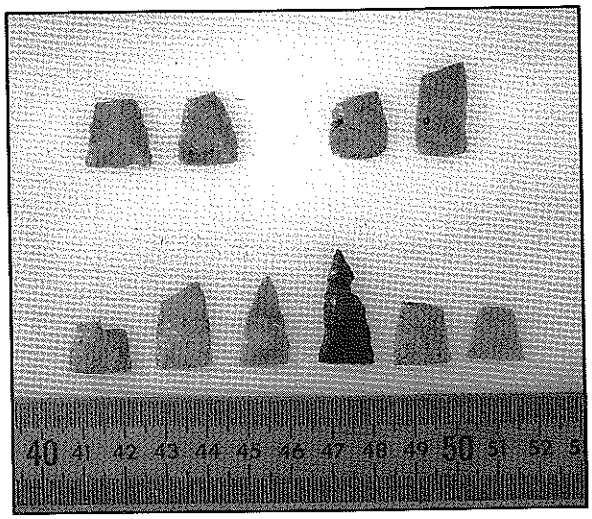

Figure 16. Fresno arrow points.

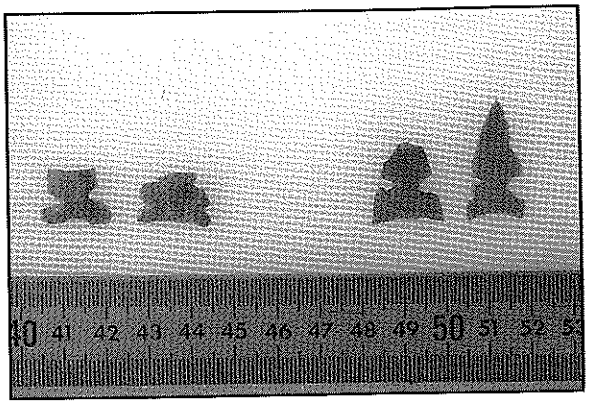

Figure 17. Washita arrow points.

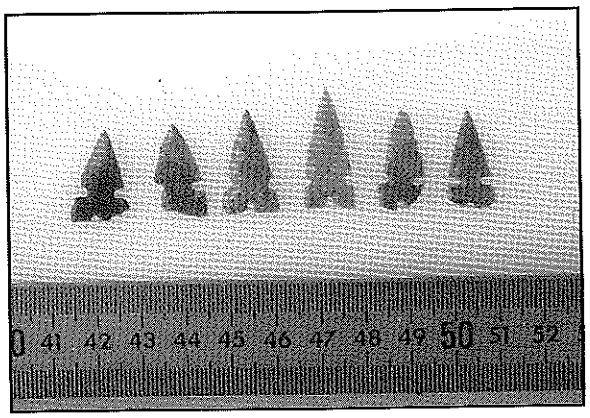

Figure 18. Harrell arrow points.

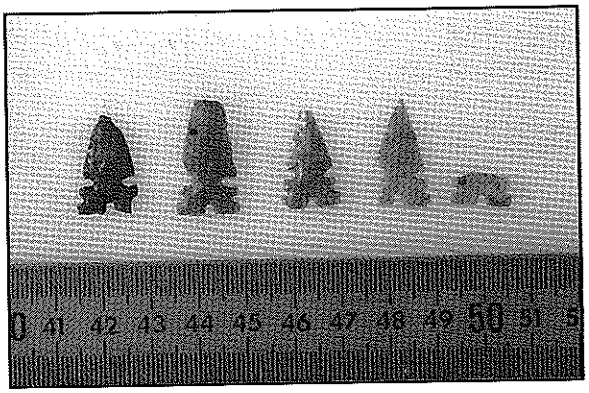

Figure 19. Huffaker arrow points.

at 14HP524 and the scarcity of mussel shells is consistent with the lack of shell tempering in the ceramics. Fish are represented by only the more robust vertebrae, although this bias may result from flotation techniques. There are a few turtle remains, although not enough to suggest that turtle was a significant part of the Hallman site residents' diet.

Hunting Equipment

All of the Hallman site projectile points (n=33) are triangular notched (40 percent) or unnotched (60 percent) arrow points. Four types, distinguished by the number and location of notches, are Fresno (unnotched) (Figure 16), Washita (single side notched) (Figure 17), Harrell (single side and base notched) (Figure 18), and Huffaker (double side and base notched) (Figure 19). These types are more similar than different and usually occur concurrently on sites, as they did at 14HP524. The points in the Hallman site collection have straight to convex bases (only rarely concave) and straight (45 percent) to convex sides (55 percent). Interestingly, specimens that have straight sides also tend to have straight bases, and points that have convex sides tend to have convex bases. Two variations of these arrow point types also were present: 1) side notched with a distinctly convex base and 2) small side and base notched with a distinct square base and truncated blade. There were also 42 point fragments, mostly blades not sufficiently complete to be included in the metric analysis.

For the notched varieties the important dimensions appear to be the base height, width between notches, and the base height:notch width ratio (Table 4). Of the 28 measurable points the average base height is 7.0 mm, and the average notch width is 6.8 mm, giving a ratio of 1.03. Some 70 percent of all notched projectile points have a base height:notch width ratio that falls between 0.9 and 1.1. Average blade length is 21.5 mm, and maximum width (typically at the base) is 13.6 mm. Both of these measurements are essentially multiples of 7.0, creating a uniform, stable form. Blade thickness is fairly

Table 4. Projectile Point Dimensions.

Notched	Length Overall	Max Width	Base Height	Notch Width	BH:NW Ratio	Thickness	Base	Sides
Single Side & Base	11.8		6.2	7.3	0.85	2.8	Straight	Convex
Single Side & Base	16.8	8.2	5.6	6.2	0.90	3.3	Straight	Convex
Single Side & Base	21.2	20.6	6.3	5.7	1.10	2.6	Straight	Convex
Single Side & Base	23.5	13.0	8.5	8.5	1.00	2.6	Straight	Straight
Single Side & Base	16.9	12.8	6.1	8.2	0.74	2.6	Straight	Straight
Single Side & Base	22.8	10.8	6.9	6.3	1.10	2.8		Convex
Single Side & Base	22.4	11.6	5.3	4.8	1.10	2.5		Straight
Single Side	20.2	14.9	7.4	7.9	0.94	3.4	Straight	Straight
Single Side	15.1	13.9	5.6	5.7	0.98		Straight	Straight
Single Side	21.0	11.2	7.5	6.7	1.12		Straight	Convex
Double Side & Double Base	25.0	13.4	7.4	6.5	1.14	3.3	Straight	Straight
Double Side & Double Base	23.0	11.5	6.8	6.8	1.00	2.5	Straight	Straight
Double Side & Double Base	21.1	12.0	6.7	7.5	0.89	2.6	Straight	Convex
Double Side & Double Base	20.7	12.8	6.3	4.6	1.37	2.9	Straight	Straight
Double Side & Double Base		13.1	7.1	5.6	1.27	2.4	Straight	
Double Side	13.5	17.6	9.1	8.9	1.02	4.0	Concave	
Double Side	29.0	14.3	8.9	7.4	1.20	3.4	Concave	Convex
		16.8	6.0	7.6	0.79		Concave	Straight
	18.8	7.5	8.5	7.3	1.16		Concave	Convex
Unnotched	27.0	6.8				3.5	Straight	Convex
Unnotched	7.1	12.1				1.8	Straight	
Unnotched	16.9	16.3				4.1	Straight	Straight
Unnotched	16.1	14.4				2.8	Straight	Straight
Unnotched	13.7	13.2					Straight	Straight
Unnotched	13.3	15.4					Convex	Convex
Unnotched	22.0	13.1					Convex	Convex
Unnotched	13.1	14.5				2.4	Straight	Straight
Unnotched	24.7	14.5				4.5	Convex	Convex
Unnotched	19.9	16.2				2.7	Straight	Straight
Unnotched	17.8	14.7					Straight	Convex
Unnotched	22.0	11.8					Straight	Straight
Unnotched	22.4	17.5				3.1	Convex	Convex
Unnotched	16.0	14.2				3.2	Convex	Convex

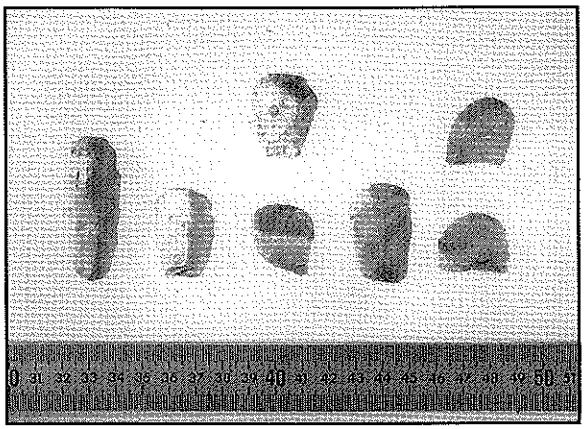

Figure 20. Typical scrapers.

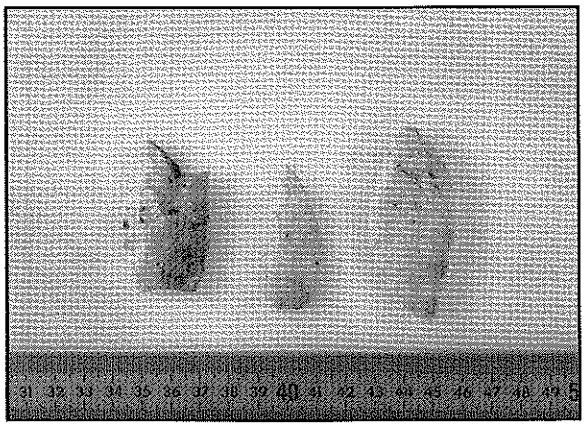

Figure 21. Typical diamond-shaped beveled knives.

consistent at 3.0 mm, the unnotched being slightly thicker than the notched varieties.

All except one projectile point were made from Permian chert, and 90 percent were heat-treated chert. The single blade fragment of a triangular arrow point was made from Smoky Hill jasper.

Thirty-five percent of the projectile points were directly associated with features; the rest were scattered throughout the site. A significant number were located either on the surface or shallowly buried from 0 to15 cm bgs. Otherwise, they were evenly mixed in the strata below 20 cm bgs.

Only very loose generalizations can be made about the associations of the different varieties, considering the low number of features with points. Fresno and Washita points were generally associated with the trench features and the borrow areas: Fresnos with the surface, the long trench Feature 60, and the borrow area Feature151; Washitas with the borrow area Feature 39. The Harrell points were found predominantly at the surface and in the upper deposits of the downslope portion of the site.

Butchering and Meat Processing Tools

The amount of animal bone indicates that the people living at the Hallman site processed large quantities of meat and hides. In addition to projectile points, lithic tools consist of formal scrapers, beveled knives, and drills, as well as numerous expediency tools. In order to assess the function of these tools, they were examined in terms of morphology, intentional reduction, and use-wear and then classified (excluding drills) into either scraping edges or cutting edges.

For the use-wear analysis fairly broad categories and degrees of use were defined. Attributes are described in the following terms: flake/tool thickness as thick, medium, and thin; polish and step-fracturing as high, medium, and low; bevel angle as steep, moderate, and shallow; microflaking and beveling as present unifacially or bifacially. Formal tools were distinguished by their high degree of intentional reduction and shaping, whereas expediency tools were typified by edge trimming or light reduction, and utilized flakes lacked intentional reduction but had other use-wears associated with them.

A concern regarding the use-wear examination was that debitage might be mistaken for utilized flakes. Both Schultz's (1992) survey of Pawnee bison processing techniques and Vaughan's (1985) experimental use-wear studies concluded that use-wear consists of a suite of characteristics. The presence of one characteristic alone, such as step-fracturing or microflaking, is not sufficient to define a flake as "utilized." Edges used on a soft material, such as muscle, fat, or skin, must also exhibit polish and rounding of the step-fractures as well.

Of 245 flakes or possible tools chosen for analysis, 155 were identified as hide and meat processing tools and utilized flakes. The remainder was classified as cores, spall pieces, drills, or debitage. The collection of formal and expediency tools is best characterized by the presence of beveled edges, which maintain the integrity of the hide during skinning and defatting. The bit edges of these tools display step-fractures that have been polished and rounded, as would be expected on tools used in cutting through muscle or fat.

Formal scrapers (Figure 20) are dominated by thick flakes with steep unifacial bevels, a polish zone along the curved bit edge, and medium to high intensity step-fracturing (Table 5). In contrast, formal knives (Figure 21) were made from thin to moderately thick flakes with a moderately to steeply beveled edge, a

Table 5. Formal Scraper Use-Wear.

	Bevel		Polish		StepFracture
FlakeThickness	Bi/Unifacial	Steep/Shallow	Bi/Unifacial	H/M/L	H/M/L
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	High	High
Thick	Unifacial	Steep	Unifacial	Medium	High
Thick	Unifacial	Steep	Unifacial	Medium	High
Thick	Unifacial	Steep	Unifacial	Medium	High
Thick	Unifacial	Steep	Unifacial	Medium	High
Thick	Unifacial	Steep	Unifacial	Medium	Medium
Thick	Unifacial	Steep	Unifacial	Medium	Medium
Thick	Unifacial	Steep	Unifacial	Medium	Medium
Thick	Unifacial	Steep	Unifacial	Medium	Medium
Thick	Unifacial	Steep	Unifacial	Low	High
Thick	Unifacial	Steep	Unifacial	Low	High
Thick	Unifacial	Steep	Unifacial	Low	Medium
Thick	Unifacial	Steep	Unifacial	Low	Medium
Thick	Unifacial	Steep			
Thick	Unifacial	Steep			
Thick	Bifacial	Steep	Unifacial	Medium	Medium
Moderate	Unifacial	Steep	Unifacial	Low	High
Moderate	Unifacial	Steep	Unifacial	Low	Low
Moderate	Unifacial	Steep	Unifacial	Medium	High
Moderate	Unifacial	Moderate	Unifacial	Medium	Medium
Moderate	Unifacial	Moderate	Unifacial	Low	Medium
Moderate	Unifacial	Shallow	Unifacial	Low	Medium
Moderate	Unifacial	Shallow	Unifacial	Low	Medium
Moderate	Unifacial	Shallow	Unifacial	Low	Medium
Thin	Unifacial	Steep	Unifacial	Low	Low
Thin	Unifacial	Steep	Unifacial	High	High
Thin	Unifacial	Shallow			Low

Table 6. Formal Knife Use-Wear.

	Bevel		Polish		StepFracture	
FlakeThickness	Bi/Unifacial	Steep/Shallow	Bi/Unifacial	H/M/L	H/M/L	Comment
Thin	Bifacial					Bifacially beveled tool fragment
Thin	Bifacial	Moderate	Bifacial	Medium	Medium	Diamond-shaped beveled knife
Thin	Bifacial	Shallow			High	Tear-shaped beveled knife
Thin	Bifacial	Shallow			Medium	Diamond-shaped beveled knife
Thin	Bifacial	Shallow	Bifacial	Low	High	Diamond-shaped beveled knife
Thin	Bifacial	Shallow	Bifacial	Low	Medium	Diamond-shaped beveled knife
Thin	Bifacial	Shallow	Bifacial	Low	Medium	Diamond-shaped beveled knife
Thin	Bifacial	Steep			Medium	Diamond-shaped beveled knife
Thin	Bifacial	Steep	Bifacial	Low	Medium	Diamond-shaped beveled knife
Thin	Bifacial	Steep	Bifacial	Medium	Low	Diamond-shaped beveled knife
Thin	Unifacial	Shallow	Bifacial	Medium	High	Diamond-shaped beveled knife
Thin	Unifacial	Shallow	Unifacial	Medium	Medium	Diamond-shaped beveled knife
Moderate	Bifacial	Steep	Bifacial	High	High	Diamond-shaped beveled knife
Moderate	Bifacial	Steep	Edge	Low	Medium	Diamond-shaped beveled knife
Moderate	Unifacial	Moderate	Unifacial	Low	High	Diamond-shaped beveled knife w/serrated edge
Moderate	Unifacial	Steep			High	Diamond-shaped beveled knife
Moderate	Unifacial	Steep	Unifacial	Low	Medium	
Moderate	Unifacial	Steep	Unifacial	Medium	Low	Knife fragment
Thick	Unifacial	Steep	Bifacial	Medium	Medium	
Thick	Unifacial	Steep	Unifacial	Medium	High	Diamond-shaped beveled knife

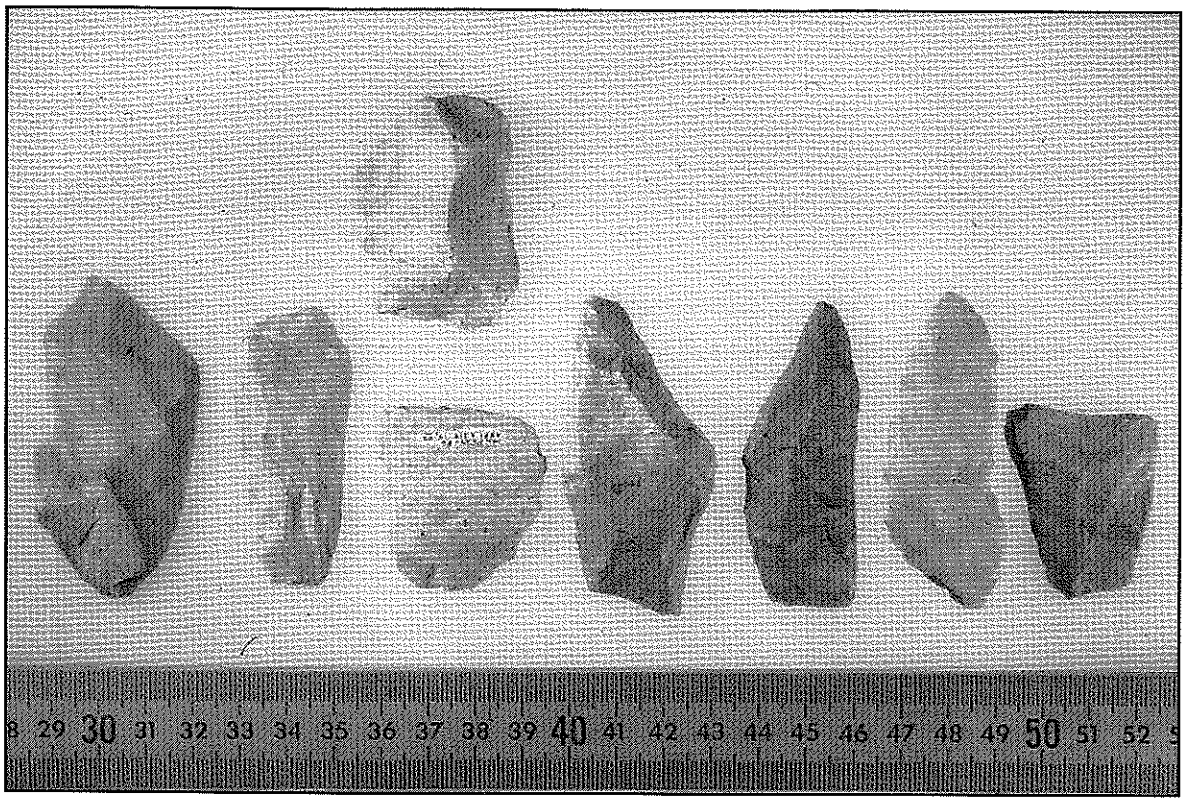

Figure 22. Expediency tools.

polish zone often on both sides of the bit, and medium to high intensity step-fracturing (Table 6). Two very thin leaf-shaped knives without beveling exhibit extensive bifacial reduction and are probably functionally different than their beveled counterparts. Beveled knives were probably skinning tools, whereas bifacially thinned knives were probably slicing implements. There is a definite scarcity of formal cutting implements. The formal tools show the most consistency in use-wear characteristics, possibly because they were single-use tools or because either the shape of the tool or hafting restricted the way that the tool was used. Morphology, especially in regard to flake thickness and bevel angle, clearly is key in defining tool function.

While not as rigidly defined as for the formal tools, morphology is also key in determining the function of expediency tools (Figure 22). Unifacially beveled tools, manufactured from moderate to thick flakes, most closely resemble formal scrapers in morphology and use-wear, having a moderate to steep bevel, a unifacial polish zone, and medium to high intensity step-fracturing. The thin flake unifacially beveled (Table 7) and bifacially beveled (Table 8) expediency tools fill the "slicing niche." These thin tools are shallowly beveled with a polish zone and medium intensity step-fracturing. Tools meeting these criteria were primarily associated with Feature 151 between 15 and 45 cm bgs.

Sixteen flakes were possibly utilized flakes, primarily exhibiting polish and light step-fracturing along at least one edge, usually the edge opposite the bulb of percussion. These, too, were probably slicing implements.

Interpretations

The faunal remains demonstrate that the Hallman site residents relied on bison both as a source of bone for tools and of meat and hides. That the MNI for bison was not constant among the different elements could indicate that bison were being hunted off-site and preferred parts were being brought back to the site or that the people were trading for certain elements desired for tool manufacture (Drass 1997). The low number of such elements as vertebrae and anklebones probably suggests that the people took advantage of the occasional bison close to home. However, the substantial percentage of bison rib fragments would seem to corroborate local hunting. Also, the large quantity of small debris from crushed long bone diaphises might indicate that non-tool-source bone was being harvested for grease making. The high number of scapula hoes

Table 7a. Unifacially Beveled Expediency Tools.

	Bevel		Polish		StepFracture
FlakeThickness	Bi/Unifacial	Steep/Shallow	Bi/Unifacial	H/M/L	H/M/L
Thick	Unifacial	Steep	Bifacial	Medium	Medium
Thick	Unifacial	Steep	Unifacial	Low	Medium
Thick	Unifacial	Steep	Unifacial	Medium	Medium
Thick	Unifacial	Steep	Edge	Low	Low
Thick	Unifacial	Steep	Edge	Low	
Thick	Unifacial	Steep			High
Thick	Unifacial	Steep			High
Thick	Unifacial	Moderate	Bifacial	Medium	Medium
Thick	Unifacial	Moderate	Unifacial	Low	Medium
Thick	Unifacial	Moderate	Unifacial	High	Medium
Thick	Unifacial	Moderate	Edge	High	Medium
Thick	Unifacial	Moderate			Medium
Thick	Unifacial	Moderate			Medium
Thick	Unifacial	Shallow	Unifacial	Medium	High
Thick	Unifacial	Shallow	Unifacial	High	Medium
Thick	Unifacial	Shallow			Low
Thick	Unifacial	Shallow			Medium
Moderate	Unifacial	Steep	Bifacial	Low	High
Moderate	Unifacial	Steep	Unifacial	Medium	Low
Moderate	Unifacial	Steep	Unifacial	Medium	Medium
Moderate	Unifacial	Steep	Unifacial	Medium	High
Moderate	Unifacial	Steep	Unifacial	Low	Medium
Moderate	Unifacial	Steep	Unifacial	Low	Low
Moderate	Unifacial	Steep	Unifacial	Low	Low
Moderate	Unifacial	Steep	Edge	Low	High
Moderate	Unifacial	Moderate	Unifacial	Medium	Low
Moderate	Unifacial	Moderate			
Moderate	Unifacial	Shallow	Bifacial	Low	Low
Moderate	Unifacial	Shallow	Unifacial	Low	Low
Moderate	Unifacial	Shallow	Unifacial	Low	Medium
Moderate	Unifacial	Shallow	Unifacial	Low	High
Moderate	Unifacial	Shallow	Unifacial	Medium	Medium
Moderate	Unifacial	Shallow	Unifacial	Medium	High
Moderate	Unifacial	Shallow	Unifacial	High	Medium
Moderate	Unifacial	Shallow	Edge	Low	Low

Table 7b. Unifacially Beveled Expediency Tools.

FlakeThickness	Bevel		Polish		StepFracture
	Bi/Unifacial	Steep/Shallow	Bi/Unifacial	H/M/L	H/M/L
Thin	Unifacial	Steep	Bifacial	Medium	High
Thin	Unifacial	Steep	Unifacial	Low	Medium
Thin	Unifacial	Steep	Unifacial	Low	Medium
Thin	Unifacial	Steep	Unifacial	Low	High
Thin	Unifacial	Steep	Unifacial	High	High
Thin	Unifacial	Moderate	Unifacial	Medium	Low
Thin	Unifacial	Moderate	Unifacial	Medium	Medium
Thin	Unifacial	Moderate	Unifacial	Medium	Medium
Thin	Unifacial	Moderate	Unifacial	Medium	Medium
Thin	Unifacial	Moderate			Medium
Thin	Unifacial	Moderate			Medium
Thin	Unifacial	Shallow	Bifacial	Low	Medium
Thin	Unifacial	Shallow	Bifacial	Low	High
Thin	Unifacial	Shallow	Bifacial	High	Low
Thin	Unifacial	Shallow	Unifacial	Low	Medium
Thin	Unifacial	Shallow	Unifacial	Low	Medium
Thin	Unifacial	Shallow	Unifacial	Low	Medium
Thin	Unifacial	Shallow	Unifacial	Low	High
Thin	Unifacial	Shallow	Unifacial	High	Medium
Thin	Unifacial	Shallow	Edge	Medium	
Thin	Unifacial	Shallow	Edge	Medium	Medium
Thin	Unifacial	Shallow	Edge	High	
Thin	Unifacial	Shallow	Edge		Low
Thin	Unifacial	Shallow			
Thin	Unifacial	Shallow			Low
Thin	Unifacial	Shallow			Medium
Thin	Unifacial	Shallow			Medium

Table 8. Bifacially Beveled Expediency Tools.

FlakeThickness	Bevel		Polish		StepFracture
	Bi/Unifacial	Steep/Shallow	Bi/Unifacial	H/M/L	H/M/L
Thin	Bifacial	Shallow	Bifacial	Medium	Medium
Thin	Bifacial	Shallow	Bifacial	Medium	Medium
Thin	Bifacial	Shallow	Bifacial	High	Medium
Thin	Bifacial	Shallow	Bifacial	High	Medium
Thin	Bifacial	Shallow	Bifacial	High	Medium
Thin	Bifacial	Shallow	Unifacial	Low	Medium
Thin	Bifacial	Steep	Edge	Medium	Medium
Moderate	Bifacial	Moderate	Edge		Medium
Moderate	Bifacial	Moderate			High
Thick	Bifacial	Moderate			Medium

compared to the relatively low number of tibia digging stick tips is probably due to the fragility of the thin scapula bone.

The Hallman site inhabitants also utilized dog, even more so than deer. Bozell (1988:97-99) identified four types of dog-like animals in ethnographic accounts and the archeological record: coyote, coydogs, a medium-sized domestic dog, and wolves. In his analysis of mandibular measurements of more than 110 canid individuals, Bozell determined that the specimens clustered into four groups. Cluster 4 included the smallest individuals, or coydogs and coyotes. Clusters 2 and 3 were interpreted as intermediate-sized individuals, similar in size to and probably reflecting sexual dimorphism among the ethnographically reported "Sioux dog." Cluster 1 included the largest individuals, or wolves (Bozell 1988:101). Based on Bozell's clusters, the four smaller mandibles are classified as coyote/coydog, while the two larger specimens are classified as wolf.

Reports by both Witty and Frantz (1964) and Hughes (1968), reviewing ethnohistoric accounts of dog use, indicated that dogs were domesticated as pets, pack animals, or both, or as food sources. In his comparison of historic Arikara, Pawnee, Wichita, and Caddo tribes, Hughes (1968:338) observed that the Pawnee and Wichita reportedly used dogs as pack animals as well as kept them as hunting and guard dogs and as pets. Witty and Frantz (1964:4-5) reported that there was a correspondence between historic dog use and historic attitudes toward dogs. That is, cultures that had dog fear, dog taboos, or dog burials (Wichita, Skidi Pawnee, Osage, and Omaha) used dogs as pack animals, whereas cultures that had no such attitudes (Arikara, South Pawnee, and Kansa) generally used dogs for food.

Prehistorically, after A.D. 1200 dog interments were fairly frequent, especially in Caddoan sites in northeast Texas along the Red River (Yates 1999:352). However, dog burials, such as at the Arthur site, a Wichita River site (Brooks 1987), and at the Hurricane Hill site, a Middle Caddoan site (A.D. 1250-1375) (Pertulla 1999:135; Yates 1999), were fully or almost completely articulated skeletons and usually occurred in isolation in shallow pits. Both of these burials were determined to be coyote-like animals. In contrast Great Bend aspect sites, such as 14MN504 and 14MN328, exhibit different species of canids – a "secondary burial" (a complete but not articulated and not butchered skeleton) of a small *canis familiarus* and the scattered remains of one coyote-like and one wolf-like animal (Rohn and Emerson 1984:186).

The butchered, disarticulated, and ignominiously buried canids at 14HP524 are a definite departure from the Caddoan dog interments that have been examined archeologically.

The high number of articulated canid limbs suggests that the Hallman site residents used only specific elements of the coyote, the larger edible portions of the dog, and the pelts. An association was noted between canid and adult (as opposed to juvenile) bison remains. Corresponding to ethnohistoric accounts which presented dog meat as a delicacy, the Hallman site people may have been selecting young, tender meat whenever possible, opting for young dog if young bison were not available. Canids and deer were probably being killed on or near the site, since MNI counts of various elements are much more consistent than those for bison. The likelihood is that the Hallman site canids were not domesticated animals but rather were wild prey.

A point of interest in the 14HP524 faunal assemblage is the lack of diversity of species. The Hallman site people utilized bison, supplemented with canids and deer. Some aquatic resources, small woodland game, and birds were exploited but not extensively.

The quantities and functions of the stone tools underscore the fact that one of the predominant activities at the Hallman site was the initial processing of meats and hides. However, the tools necessary for the finish processing and working of hides – beamers and fleshers, awls and needles – were noticeably absent or scarce. Quite possibly hunting parties were able to make kills in the site vicinity, or they brought most of the large portions of the kill back to the site. There the skins and meat were separated, the skins stretched out, defatted, and dried, and the meat jerked.

Tool Manufacture

Evidence of tool manufacture at the Hallman site was very slim. The stone-working tool kit consists of one deer antler tine, well worn, with a broken tip and rodent gnawing. Only one fragmentary hammerstone with pecked surface wear was found.

Both deer tibia shaft straighteners and multi-sided and loaf-shaped sandstone abraders, used for arrow shaft manufacture, were recovered. The shaft wrenches were constructed from the distal ends of two right and one left adult deer tibiae. The oval holes for the shaft are offset on the anterior and posterior sides of the tibiae. The holes for two of the wrenches measure 12.5 x 16.0 mm, while the opening in the third wrench is slightly smaller, 9.0 x 12.0 mm. The maximum notch width of the Hallman site projectile points and, therefore, the maximum desired shaft diameter did not exceed 9.0 mm. One shaft wrench has a few lightly incised lines, perpendicular to the length of the shaft, in association with the hole.

The shaft abraders, whether multi-sided (typically four-sided) or loaf-shaped, display rounded or V-shaped

Table 9. Lithic Sources.

Lithic Source	% of Lithic Assemblage	% of Lithic Assemblage by Weight
Permian Chert – Heat Treated**	86.5	80.1
Permian Chert – Non-Heat Treated**	11.8	11.7
Quartzite	1.1	5.8
Unsourced Chert	0.8	1.1
Smokey Hill Jasper	0.2	0.6
River Gravel	0.2	0.4
Feldspar	0.1	0.1
Alibates	0.0*	0.1
Sugary Quartzite	0.0*	0.0*
Pennsylvanian Chert	0.1	0.0*
Granite	0.0*	0.0*
Chalcedony	0.0*	0.0*

* Present in amounts less than 0.1%
** Kay County or Florence A cherts
All cores (4) are heat treated Permian chert.
Does not include ground stone artifacts or hammerstones.

depressions, which probably reflect functional differences. The rounded depressions, with a maximum width of 9.0 mm, were probably used on arrow shafts. On the other hand, the V-shaped grooves with their flat sides and maximum width of 5.1-6.5 mm probably were used for smoothing and sharpening flat surfaces, such as the edges of bone tools and scapula hoes and the ends of digging stick tips and bone awls. Of the seven abraders, two are the loaf-shaped variety, only one of which has a rounded depression. Three are multi-sided, two with only V-shaped depressions and one with both V-shaped and rounded depressions. That particular abrader also has two sides with rounded, but S-curved depressions. One abrader has only a very shallow groove down the center, extending over one end. A fragmentary abrader has at least part of a rounded depression.

Six drills were identified by their thin cylindrical form and bifacial beveling with moderate to heavy step-fracturing along the bit edges. Interestingly, there are no stone tools that might have served as gravers or flakes with crushed edges that might have been used for scoring bone tools.

Debitage from stone tool manufacture was abundant and included a small proportion of primary flakes, but predominantly secondary and tertiary, thinning and retouch flakes. Over 90 percent of the tools and debitage in the collection were made from chert that originated from the Permian or Flint Hills formation, with bedrock sources outcropping at quarry sites, such as Maple City some 50 miles (80 km) east of the Hallman site (Table 9). Only about 15 percent of the Permian chert was not heat treated, and all four cores were heat treated. Other sources are represented in trace amounts, including Smoky Hill jasper from the Niobrara Chalk formation, quartzite available from quarries to the west, Alibates agatized dolomite from the Texas Panhandle, feldspar, chalcedony, and sandstone.

Clothing and Personal Items

Several items that might have been used in hide working, for the manufacture or ornamentation of clothing or as personal items, were recovered from the Hallman site. Several partial awls and one possible needle make up the sewing kit. All of the awl remains are highly fragmentary. Use-wear consists of longitudinal or transverse and diagonal scratches and polish. Different wear patterns possibly indicate different functions or use (i.e., longitudinal wear from punching and diagonal wear from a rotating motion) and, therefore, different products (e.g., baskets). However, there was no other evidence that baskets were being made at the Hallman site or any other Bluff Creek site. One of the awls was manufactured from the center split distal end of a deer metapodial. On both sides of the concave split surface, transverse scratches from manufacture are visible in spite of use-wear polish. Along the convex outside are longitudinal scratches. Two fragments of proximal metapodial were collected, both burnt and with high polish and longitudinal scratches along the

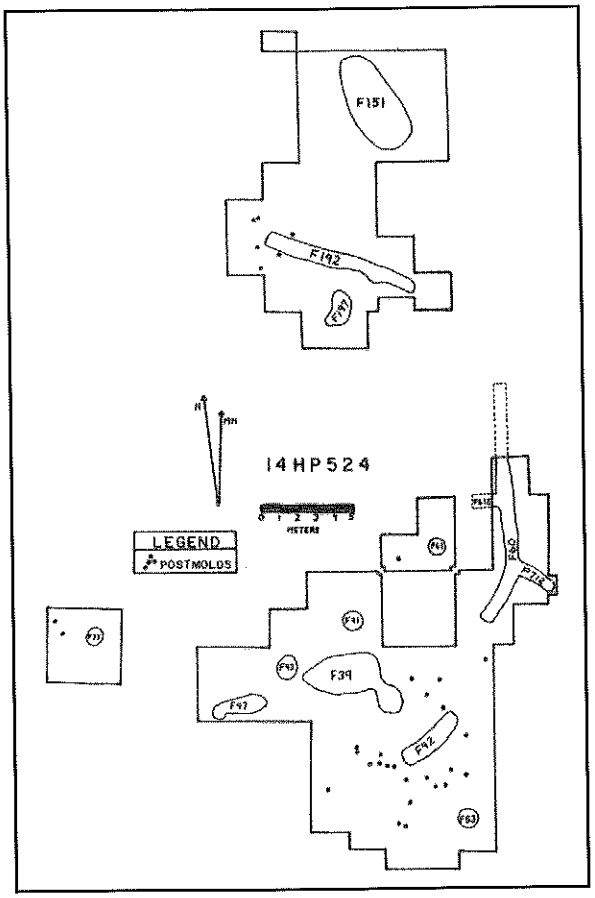

Figure 23. Main features identified at 14HP524.

tapering cylindrical shafts. Also, two sets of highly fragmented cylindrical and tapering bone have diagonal and transverse wear. Both show a high polish, and one is burnt. All of the presumably pointed awl ends are missing.

One very narrow and sharply pointed needle-like tool was made from a rounded bone splinter. It has longitudinal scratches along a flattened side, probably produced during manufacture.

Three bird bone bead fragments were found. One bead, made from very small bone, is 17.0 cm long and 3.2 cm in diameter and has incised lines along one edge. A second is a small, 12.0 mm-section of highly polished bone with a hollow center for stringing. The third segment has a much larger diameter of 13.0-14.0 mm and may have been broken during manufacture or is a manufacturing scrap. The remnants of incised lines at the margins look like scoring marks rather than decoration.

Three pipe bowls were recovered. One, a fired clay piece, is being analyzed as part of the ceramic collection (Berger 2001). The second of quartz conglomerate is practically complete with orifices of about 17.0 mm in diameter. The third is just a small fragment, manufactured from a very fine sandstone, well smoothed on both inner and outer surfaces, with a curvature suggesting an inner diameter of about 10.0-15.0 mm.

One item made from a deer phalange is thought to be the cup portion of a "cup-and-pin" game. The proximal end of the bone was removed, the shaft hollowed, and a groove made in the distal end of the bone down the midline. A hole was punched through the distal end, where sinew may have attached it to the pin.

Work And Living Areas (Figure 23)

Post Molds

Several post molds, appearing as circular soil discolorations that tapered at the base, many with charcoal fragments inside, were located on the hilltop. The post molds were not indicative of a complete house structure, although some did appear to enclose one of the trench features, Feature 42. Post molds came in three diameters, 5, 14, and 22 cm, reflecting a wattle and daub construction that used poles, larger poles, and support beams. Most of the post molds were identified at the bottom of the plow zone. No post molds were recognized on the downslope area.

Cylindrical Pits

Five cylindrical pits were excavated, each approximately 1 m in diameter and 60-70 cm deep with straight sides and flat bottoms. They were characterized by unremarkable and homogeneous fill. Features 41, 53, 61, and 77 were almost identical in fill content, which incorporated small quantities of daub; charred organic material; some small unidentifiable bison bone fragments; considerable numbers of rodent, bird, and turtle bone; some chert flakes; and a few lithic tools. Feature 61 contained bird and mammal bone, turtle and mussel shell, burnt earth and daub, burnt organic material, ceramic sherds, chert flakes, projectile point fragments, and a sandstone abrader. Just below the plow zone, this feature was defined as a discolored circular area, 47 cm in depth. Feature 77 held organic materials including charcoal, seeds, bird bones, mammal bone fragments; as well as chert flakes, notched and unnotched projectile point fragments, a sandstone pipe bowl, ceramic body sherds, and unfired clay from pottery making.

Feature 43 was unusual in that it contained more ceramic fragments than the other trash-filled pits, along

with large quantities of charred organic material, including corn and other seeds. In addition, it was the only pit that yielded identifiable juvenile bison remains. Other animal remains were rodent bone and turtle shell. One hand hoe was recovered from this pit, as well as a large quantity of chert flakes, quartzite cobbles, and sandstone nodules.

Basin Pits

Four long, shallow, and irregularly shaped basins were the richest in artifact content. Witty (1969) proposed that these basin features were borrow areas; that is, "borrowed" soil was scooped out to make daub. The basins finally were used for trash disposal. Within their highly organic fill were large complexes of identifiable bone fragments and an array of tools. Burnt organic materials included charcoal, seeds, and corn. Significant quantities of burnt earth and some of the larger ceramic sherds were discovered in the borrow areas. For example, Feature151, the northernmost borrow area, contained several red-slipped ceramic sherds. Bone tools from these basin pits consisted of numerous hand hoes, awls, shaft wrenches and abraders, scrapers, knives, expediency tools, and manos.

Both bison and canid bone distributions were densest in the borrow area features. Feature151 yielded the following bison remains: patella of at least two adults, radii of three adults, ulna of two or three adults, scapulae (many utilized as tools) and tibiae of at least four adults, and generalized fragments of at least one sub-adult. This feature also held parts of three adult canid individuals and at least one sub-adult. Neither Feature 39 nor 47 had any canid remains at all. However, they did contain at least three sub-adult bison (left tibiae) and seven adult bison, mostly in the form of utilized scapulae. On the alluvial slope bison remains were much more generalized and predominantly adult.

The very generalized remains of two deer were found in Feature 151. Otherwise, deer bones were scattered throughout the excavated portions of the site. Some fragments of a human cranium (parietal) and deciduous teeth were recovered from Feature 151 as well.

Feature 714 was notable in that this storage pit was crosscut by trench Feature 60. Except where truncated by the trench, it was almost circular in shape, measuring about 1.4 m in diameter. The excavators did not interpret Feature 714 as part of Feature 60 but as a shallow (about 30 cm in depth) area of mixed soils and artifacts adjacent to Feature 60.

Trenches

Three unusual trench features were excavated on the hilltop. They were about 1 m wide and .5 m deep, with sides curving into uneven bottoms. All three of the trenches became visible at the bottom of the plow zone. Trench fill consisted of a dark brown matrix and was different from the fill of the borrow areas in that it did not incorporate numerous bone complexes.

The large trench Feature 60 and its offshoots, Features 612 and 712, were squarish in cross section, with straight sides rounding into flat floors about 65 to 75 cm in depth. The main trench Feature 60 was approximately 50 cm wide, while Feature 612 was about 60 cm wide and slightly shallower, and Feature 712 appeared to be narrower and about 65 cm deep. Feature 712 sloped downward from Feature 60 and was rounded toward the end. Feature 60 was excavated to its terminus in the south-southwest but not at the north end, where only coring was used to determine that it extended about 4 m beyond the excavation. The terminus of Feature 612 also was determined by coring to extend about 1 m beyond the excavation.

In addition to the daub, burnt earth, charred seeds, and charcoal in the other trenches, this trench complex also contained a significant bone bed, consisting of bison and pronghorn antelope remains and bone fragments. The fairly homogeneous fill yielded a number of tools, such as a tibia digging stick tip, scrapers, chert flakes, a drill base, three partial projectile points, and scapula fragments. In addition to some ceramic sherds, a nearly complete vessel was found at the bottom of Feature 60 (Figure 7). Large chunks of charcoal, oriented diagonally to the trench axis, were recovered from the length of the trench at the same level, well below the plow zone. Some of this charcoal apparently resulted from burning in place, while some appeared to be discarded cold ash. Field notes stated that Feature 60 "ramps up" at one end. The large trench also crosscut basin pit Feature 714.

Feature 192, the northernmost trench, was oriented in a west-northwest to east-southeast direction. It measured 9.0 m in length with an average width of 80 cm, tapering to a width of 40-60 cm at the east-southeast end. Feature 192 was characterized by parallel sides, which curved very gently to the southeast at the east-southeast terminus. The bottom contour was fairly regular and gently sloping. This feature was similar to Feature 60 in that it contained primarily burnt earth and charcoal, bone fragments, chert flakes, a hammerstone, a rim sherd and other ceramic fragments, but it also encompassed a thin bone bed, mostly of bison bone. In addition, a significant complex of burnt earth and wood charcoal, forming a crescent ring, was located in the east-southwest end of the trench. Earth at the ring's margins indicated that the charcoal burned in place. However, a mound-like area of brown fill lay below the ring, suggesting to excavators that a burning mix

had been poured over the brown fill, where it continued to burn.

Feature 42, the southernmost trench, was oriented in a northeast-southwest direction, measuring 3.7 m long and a maximum of 90 cm wide at the center portion. The ends of the trench narrowed to a minimum width of 40 cm. From the northeast end of the trench, the bottom sloped gently to a maximum depth of 40 cm and then rose abruptly at the southwest end. Relative to the other trenches, Feature 42 was a clean area, the fill characterized by bone fragments, burnt earth and charcoal, daub, a few chert flakes, mussel and turtle shell. In comparison to the other two trenches, the walls of Feature 42 were more irregular, sloping slightly inward, and shallower.

Ash Lens and Miscellaneous Burnt Features

Although no hearths were discovered, one ash lens was found on the slope area close to the creek and about 60-80 cm bgs.

On the hilltop and near basin pit Feature151, a shallow semicircular basin, about 70 cm in diameter and ringed by an additional 20 cm of gravel mixed with orange dirt, was investigated. The pit was approximately 26 cm deep. Excavators thought that the gravel ring was natural.

An irregular area of burnt earth was located in basin pit Feature 53, about 30 cm long and 15 cm wide. The burnt area had an uneven surface.

An unassociated small area of burnt earth, 15 cm in diameter and only about 1 cm deep, was exposed in the vicinity of trench Feature 42. This feature had a convex surface, which was finished with a "pottery-like" surface but graded into unburnt soil.

Interpretations and Posited Sequence of Construction

Sequence of Construction

Because basin pit Feature 714 was crosscut by trench Feature 60, the pit must have been dug, utilized, abandoned, and filled with trash some time before the trench was dug. After the trenches were dug, the pot was placed in the bottom of Feature 60 and then abandoned.

Feature Functions

Taken alone, the numerous post molds could simply be remnants of meat drying racks, hide stretching stakes, or awning supports. However, the quantities of daub recovered would imply that some kind of structure (a house, outbuilding, or storage structure) had existed in the vicinity of the excavated portion of the site. Moreover, many of the larger (22-24 cm in diameter) post molds would be rather substantial for a wind shelter or temporary structure.

Two types of pit features at the Hallman site also have been reported from Plains Village sites on the Southern Plains: cylindrical and basin pits (Drass 1997). The depth of the Hallman site cylindrical pits ranges to the small end of the scale, probably due to the deflated nature of the hilltop. They undoubtedly served to store food originally and then, when mold took over, were consigned to use as trash receptacles. Basin pit features first were created as the byproduct of house construction and later were filled with trash. Neither of these two feature types showed any evidence of use as hearths or roasting pits.

Evidence from both the hilltop and the remote area by the creek indicated that, while there are no hearths as such, there certainly were fire pits of some kind on the site. In regard to the trenches, there are no features analogous to these on the Plains during the time of the Middle Ceramic occupation of the Hallman site.

Site Function and Interpretations

Although numerous post molds and quantities of daub were found at the Hallman site, excavations nevertheless failed to identify a definite house or structure, leaving the site's function open to some debate. However, various studies of Plains Village cultures at least narrow the range of possibilities.

In Wyckoff's (1980) discussion of 229 Caddoan site types for the eastern Oklahoma Arkansas River valley, he mentioned five site types that lack mounds: base and secondary camps, farmsteads, hamlets, and villages. Light artifact scatters and hearths or burnt rock clusters are evidence of secondary camps. Base camps differ in that they also may contain roasting pits, middens, and refuse pits, all features associated with permanent settlements. Wyckoff noted that, because of excavation and sampling methods, any base camp might have an undiscovered house as well. Farmsteads contain all of the above features but also include one house and perhaps a small cemetery. Hamlets may have two to three houses, while villages have four or more houses (Wyckoff 1980:233-236). In other studies, such as Drass' (1997) examination of culture change in western Oklahoma and Lintz's (1984) analysis of Antelope Creek architectural site types, storage units were discussed in terms of permanent settlements (villages, hamlets, or farmsteads).

In comparison to other Bluff Creek sites, such as the Armstrong site, the Hallman site collection revealed few tools (Table 10). From just a few storage pits at 14HP5, which had other visible but inaccessible features (thought to be houses like the low mound fea-

Table 10. Tool Classes.

		Tool Class	Tools Recovered
Horticultural or Earth-Working Tools	*Bison Bone*	**Scapula Hoe** (No dorsal spine)	2
		Scapula Hoe (Gould "Type B")	1
		"Cleaver" (Caudal margin – probable hand hoe)	7
		"Cleaver" (Cranial margin – possible hand hoe)	1
		"Cleaver" (Cranial margin – function unknown)	1
		Digging Stick Tip (Distal tibia)	6
		Pick? (Drill-pierced proximal ulna)	1
Grain & Seed Processing	*Ground Stone*	**Slab Metate** (Sandstone)	1 – 3
		Manos	2
Hunting	*Bone*	**Fishhook**	1
	Chipped Stone	**Fresno**	14
		Washita	3
		Harrell	7
		Huffaker	2
		Haffaker variety (Double-side and double-base notched)	5
		Toyah/Scallorn	2
		Fragments	41
		Possible Preforms	1
Meat & Hide Processing	*Chipped Stone*	**Formal Knives**	20
		Formal Scrapers	34
		Unifacial Expediency Tools	75
		Bifacial Expediency Tools	10
Tool Manufacture		**Flaker** (Deer antler tyne)	1
		Shaft Straighteners (Deer tibia – distal)	3
	Bone	**Hammerstones**	1
	Ground Stone	**Shaft Smoothers** (Only rounded depressions)	3
		"Shaft Smoothers" (Only v-shaped depressions)	3
		Shaft Smoothers (Both v and rounded depressions)	1
	Chipped Stone	**Cores**	4
		Formal Drills/Drill Preforms	5/2
Clothing & Personal Items	*Bone*	**Awl** (Deer metapodial)	5
		Needle?	1
		Bird Bone Bead	3
		Cup portion of a Cup & Pin Game	1
	Gound Stone	**Pipe Bowl**	2
	Ceramics	**Pipe Bowl**	1

tures at the Buresh/Nulik sites), 13 bison scapula hoes, 20 "cleavers," 20 awls, and 16 diamond-shaped beveled knives were recovered (Gould 1975:67-76). In contrast, the Hallman site had 2 hoes, 7 or 8 hand-held hoes/"cleavers," 3 to 5 possible awls, 15 diamond-shaped knives, 6 tibia digging stick tips, and a large array of expediency tools. Also, Gould identified three styles of manufacture for both hoes and "cleavers," whereas 14HP524 has one style of bone hoe and one or two styles of hand-held hoes/"cleavers." However, the Hallman site did yield items that would not be expected at a mobile site, such as unfinished bone beads, the cup-and-pin game, the large metate, manos, and ceramic artifacts. Like the Anthony site, there were traces of a wattle and daub structure and numerous storage pits. Judging by Wyckoff's observations on Arkansas River valley Caddoan settlement patterns and the relative intensity of activity as gauged by numbers of tools, the Hallman site was about one-half to one-third the size of the Armstrong site – perhaps one house in contrast to three or more or an isolated farmstead as opposed to a hamlet or village.

Of course, there is still the possibility that the Hallman site could have been a base camp. The term "base camp" in other models, such as Roper's (1989) Pawnee hunting model, implies the temporary, though intensive, usage of a site that was at least a day's journey away from the village. Therefore, it would seem unlikely for the Bluff Creek people to have a base camp within a 2 or 3 miles (3.2 or 4.8 km) of a major settlement like the Armstrong site, assuming that they were occupied contemporaneously. However, possibly the Hallman site represents a remote but extensive and intensive work locale near the fields. It would have provided a substantial facility with windbreaks and awnings for the processing of corn and other domesticated plants, a storage place, a station for the messy initial butchering of bison and other game, and a dump for disposal of waste generated there. Activities that did not take place at the site included fine hide work and beading, the manufacture of bone and stone tools, and most likely the making of ceramics. All of these activities indicate that the Hallman site was not an actual residence, even though it may have seen daily use.

Miscellaneous Observations Regarding the Trenches

Thus far, interpretation of the Hallman site's function has not addressed the trenches. The principal investigators have considered and rejected several ideas, including water containment or irrigation ditches, linear storage facilities, and "fighting trenches" (Thies 1989:189-190). In fact, no features known on the Plains for this time period have these or similar characteristics. Possible functions for comparable structures have been suggested, but they are associated with later cultures.

Having stated that no house floors were recognized at the Hallman site, it is nonetheless apparent that post molds southwest of the trench Feature 42 appear to form a northwest-southeast perpendicular line and the corners of a square structure, including possibly part of an extended entryway. The pattern would define a house that measured approximately 4.5 x 6.0 m. The sloping nature of the Hallman site trenches does suggest that they were ramped for ease of entry. Additionally, the area around the trench and enclosed by the post molds was fairly clean of artifacts. Most of the daub came from this area of the site, particularly from the northeast end of the trench. However, assuming that all three trenches functioned in the same capacity, superimposing the same width dimension over the other two trenches reveals that the borrow area Feature 197 would fall within the house walls belonging to Feature 192.

If these features represent a house's deep central trench and extended entryway, it would be a departure from house types reported in the Antelope Creek and Zimms areas and from other excavated Bluff Creek site houses. However, there are houses in both Antelope Creek and Nebraska phase sites with multiple entryways (Cooper 1985; Lintz 1984:147), which is interesting considering the multiple trench Feature 60/612/712 and the complete pot placed at the base of the large trench.

Joining the trench features in a circle, as though other trenches existed, creates an area roughly 90 feet (27.4 m) in diameter. The Edwards I and Duncan sites, both attributed to the Wheeler phase, had trenches that were interpreted as fortifications (Drass and Baugh 1997). These enclosures were roughly 50 m in diameter (Drass and Baugh 1997:192), making them almost one and a half times as large as the Hallman site trenches. Wheeler phase trenches are about 1 m deep and 2 m wide at the surface, narrowing to 1 m at the bottom. Excavations exposed post molds within the trenches. Trenches at the Edwards I site returned calibrated ^{14}C dates of A.D. 1718-1819, and those at the Duncan site were dated at A.D. 1747-1805 and A.D. 1398-1524.

Closer in time but farther from south-central Kansas are five sites dated to the Little Sioux phase, Initial variant, Middle Missouri tradition (A. D. 1100-1250). They were described with single ditch and double ditch features, interpreted as defensive fortifications (Lensink and Alex 2000). In these ditches post molds have been found, spaced 65-80 cm apart. The trenches at 14HP524 are not continuous, which would have limited their usefulness as fortification trenches; furthermore, no post molds were recovered within the features.

While it poses a less likely possibility, the trenches might be related to Great Bend aspect "council circles," as described by Wedel (1959:574) in his *Introduction to Kansas Archeology*. These consist of a low central mound, 20 to 30 yards (18.3-27.4 m) in diameter, around which there is either a continuous or discontinuous series of oblong depressions, placed end to end and forming a roughly circular or elliptical pattern. In some cases the central mound is surrounded by two concentric ditches. At the Tobias site in Rice County, the inner ditch was interpreted as the center trenches of four houses, placed in a square and surrounded by shallow "borrow areas" (W. Wedel1959; M.Wedel1981). The overall size of the Tobias site ring ditch was about the same as the Hallman trenches, but the individual segments of the Tobias site trenches were quite different in terms of size and proportion. Tobias site trenches were about 1-1.5 feet (.3-.5 m) deep and 12-15 feet (3.7-4.6 m) wide. Waldo and Mildred Wedel agreed that the Tobias site trenches were the complete house floors, not just the central trenches of houses. Additionally, core testing of the Hallman site hilltop did not disclose the existence of any further trenches on the west side of the site.

Other Area Cultures and the Bluff Creek Complex

Other nearby cultural complexes that existed in the same general time frame as the Bluff Creek sites (A.D. 950/1000-1250/1300) share many cultural traits with Bluff Creek. The most relevant of these are the Custer and Paoli phases of the Redbed Plains variant (A.D. 800/900-1250) (Drass 1997:18) and, just slightly later, the Turkey Creek and Washita River phases of the Redbed Plains variant (A.D. 1250-1450) (Drass 1997:18). Other culture complexes include the Zimms complex (A.D. 1250-1450) (Drass 1997:19) and Antelope Creek focus (A.D. 1200-1500) (Drass 1997:19; Lintz 1984:52-53).

In general terms Plains Villagers were primarily sedentary peoples, building substantial dwellings grouped in settlements that ranged from solitary farmsteads to hamlets and villages, although some temporary camps also have been identified. They shared a mixed economy, based on bison hunting supplemented with local game (especially deer), and corn horticulture supplemented with gathered plant resources and sometimes other cultigens. Cylindrical pits facilitated the long-term storage of these resources. Evidence of these activities is supported by a variety of stone and bone tool kits. Stone tools that emphasize the importance of bison processing include expediency flake tools, formal scrapers, and beveled knives. Horticultural tools include bison scapula hoes and tibia digging stick tips.

This overall similarity has led Plains researchers to investigate questions of cultural origin, migration, and destination, primarily in terms of chronology and the relationship of prehistoric to historically known Native American cultures (Krieger 1946; Hughes 1968). These have been supplemented with ecological and climatic studies. More recently the very specific arrays and proportions of artifact types and manufacturing methods and game and other resource utilization from complex to complex has led to models of in-situ development and culture change (Drass 1997). Equally compelling are questions of degrees of increasing contact, trade, and influence or, conversely, isolation between complexes and other regions.

The Bluff Creek complex was clearly a Plains Village, Middle Ceramic-period culture with emphasis on utilization of specific local resources. However, the analysis of the Hallman site materials alone did not answer many of the questions posed above. In fact, the extant work on Bluff Creek sites has offered only thought-provoking hints.

As defined by Drass (1997, 1999), the earlier Custer and Paoli phases and the later Turkey Creek and Washita River phases are a cultural continuum, representing the in-situ development of Woodland groups in the geographical area encompassing the Canadian and Washita rivers in western Oklahoma. Drass and others have described these different phases as sharing a basic Plains Village lifestyle with a gradual change in house styles, a change from corner-notched to side-notched projectile points, and changes in ceramic forms and manufacturing techniques. Corn horticulture expanded over time to include beans and squash. Also, Drass proposed that the frequency of bone and stone tool types corresponded to changes in faunal species frequencies.

The most current culture-change model for the southern Plains area was proposed by Drass (1997). Using Leonard's (1989) work on culture change in the southwest, Drass suggested that cultural change in Oklahoma's Washita River valley occurred due to the development of buffer mechanisms that served to minimize risk resulting from the selection of available resources. Essentially Drass posited that growing populations led to the specialization of food procurement, particularly the intensification of corn horticulture, which in turn led to increased sedentism after about A.D. 900. Between A.D. 900 and 1300 increased sedentism and population growth led to the depletion of local resources, especially major game. During the drying trend that started about A.D. 900 or 1000, horticultural resources became less dependable, thus in-

creasing the risk associated with reliance on cultivated plants. Against the depletion of resources and crop loss, peoples experiencing these stresses developed buffer mechanisms that might include the further intensification of agriculture by technical means, such as irrigation; increased production by adding new crops, such as beans and squash; inclusion of other resources, such as aquatic resources; adjustment of populations through migration to other areas; increased storage capacity for food stuffs against lean yields; and the establishment of trade and social networks.

In the Washita River valley Drass specifically identified change from a bison/deer/small mammal economy in the Paoli phase to primarily a bison/aquatic resources economy in the Washita River phase, when deer and other small game became scarce. In terms of horticulture, corn supplemented with gathered plants characterized the Paoli phase, while corn with beans and squash characterized the Washita phase. Frequencies of bison bone tools increased as bison became more accessible, and frequencies of formal stone tools increased with the growing importance of bison processing in the Washita phase.

With regard to the Bluff Creek complex, the question of in-situ development should be treated as two different issues. First, there is the issue of origin; that is, whether or not Bluff Creek developed from local Woodland roots. One of the most compelling reasons to consider the Bluff Creek complex as an in-situ development from Woodland culture is the consistent and similarly styled array of bone and stone tools over a relatively long time period. Also, preliminary reports from the Anthony, Armstrong, and Buresh/Nulik sites indicate their Woodland roots in ceramic forms and a low percentage of corner-notched projectile points.

The second question concerns the development of the culture that has currently been identified as Bluff Creek. Radiocarbon dates from these sites indicate a long (about 300-400 years) occupation of the area. Regardless of whether or not Bluff Creek was a development of a Woodland culture, Drass' culture change model is interesting, simply because it provides a base comparison among other contemporaneous cultures exhibiting similar lifestyles, resources, and ecological stresses.

If the Hallman site is at all representative of the Bluff Creek complex, corn was a well-established and significant part of the subsistence. Other cultigens either were not established or did not survive in the archeological record. In terms of Drass' model, the faunal evidence is far less clear. At other Bluff Creek sites faunal analyses with emphasis on species variability have not been addressed, although most of the preliminary reports indicated that large quantities of bison bone were present at the sites. However, at the Hallman site the faunal evidence suggested a dependence on bison, a secondary utilization of canids and deer, and a limited variability in other species – a pattern that can be explained outside of Drass' model, which assumes that deer was the desire game. At the Hallman site either the canids and deer were the major game that supplemented limited bison hunting (as in the Paoli phase), or the canids were the new source of game after deer were depleted. A third alternative is that deer never were a major part of Bluff Creek faunal resources.

The Hallman site lithic toolkit was geared primarily for processing bison and hides or for manufacturing and maintenance of other tools. Expediency and flake tools made up 64 percent of the lithic tools, while formal tools, including drills, made up the remaining 36 percent. In the case of the Hallman site, these numbers may represent the transition from a more generalized hunting economy to a specialization in bison hunting and processing. To test this hypothesis, a comparison to other Bluff Creek tool assemblage frequencies is needed. Triangular forms with or without side notches comprised 97 percent of the projectile points, while corner-notched forms were almost incidental.

There was a relatively high variability in ceramic forms and manufacturing techniques throughout all of the known Bluff Creek sites (Bevitt 1995). Ceramic seriation could both demonstrate transition in types and shed light on sites with two or more suspected temporal components. Furthermore, ceramics indicated incipient trade ties with Caddo groups to the southeast (Bevitt 1995). Compare those ties with a nearly total reliance on a non-local lithic source to the east. Both of these are indicators that increased mobility had resumed or had never fully stopped for Bluff Creek people.

Ceramic forms in the Paoli/Washita River phases made a slow transition in form, temper, and finish. In the early Paoli phase vessels had primarily conical bases, sand and bone temper, and cordmarked finish. The forms slowly transformed into flat bases, shell temper, and smooth surface finish in the Washita River phase. Intermediate assemblages include varying percentages of these attributes. Bluff Creek assemblages resemble these Redbed Plains variant assemblages in frequency of vessel forms, attributes, and the presence of Caddoan trade wares.

Conclusion

Tentatively, the Hallman site is posited as a Middle Ceramic-period, single-component, long-term habitation site. It had substantial wattle and daub structures, the construction of which required large amounts of

daub made from the ridge soils. Although not as large as other known Bluff Creek sites, 14HP524 was the base from which some fairly intensive activities were carried out. Corn horticulture was a significant contribution to Hallman site subsistence, as is evident in the numerous horticultural tools, corn remains, and cylindrical storage pits. Additionally, bison processing was at least begun at the site, especially the stretching, defatting, and drying process for hides and the rough butchering, slicing, and drying of meat. The lithic tool kit was geared for this intensive bison processing. Two-thirds of the tools were expedient multi-functional tools, used in cutting, skinning, and scraping; while the remaining one-third are formally crafted scrapers and knives. Dog and deer were secondary elements in the Hallman site subsistence. Faunal refuse supports these observations.

While hunting was probably a locally based activity, a significant amount of effort must have been expended in acquiring the bedrock source Permian chert that accounted for more than 95 percent of the lithic raw material. Tools used in subsistence activities were maintained, although not necessarily manufactured, at 14HP524. However, the Hallman site people did manufacture items for personal use and for fine decorative work. Although not fully addressed in this paper, ceramic vessels were an important craft product.

In spite of consideration of several possibilities, the trench features are still an enigma.

Initially, one of the objectives of this analysis was to refine the definition of the Bluff Creek complex. Until further analysis of the other extant Bluff Creek sites is completed, many of the larger questions raised by this analysis will remain unanswered. An analysis and seriation of Bluff Creek ceramics currently in progress (Berger 2001) should help to clarify the Hallman site's place earlier or later in the 300-400-year time span set by the available ^{14}C dates. One intriguing line of inquiry is whether or not bison, dog, and deer are present in the same proportions at other sites. An in-depth study of the botanical remains from other Bluff Creek sites would be invaluable in confirming or denying the conclusions about corn horticulture that the Hallman site's remains suggest.

Acknowledgments. It is widely known that the Kansas Anthropological Association has a reputation for diligently working to preserve the prehistoric and historic heritage of Kansas through responsible excavation and recovery of local archeological sites. They also have had the foresight to underwrite, with the Kansas State Historical Society, several site analyses such as this one. I would like to thank the KAA and KSHS first for the wonderful opportunity of having this project; and then for their invaluable labor in completing the cataloguing and performing the initial analysis of the artifacts, including all stone sourcing, initial lithic use wear identification, and identification of the faunal remains.

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Originally it was my intention to meet with the Trish and Jim Robb in order to see the Hallman site and examine their personal collection. I truly regret that this never came to pass.

Although I have sought and received insight, advice, and guidance from many people, any errors or omissions found herein are my own.

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NOTES

Further Excavations of a Life: Floyd Schultz Revisited

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The Kansas Anthropologist 21:35-46

Clay Center, Kansas, businessman Floyd Schultz led a double life as an amateur anthropologist, excavating sites in the lower Republican River valley and collecting material culture and filming activities on the Potawatomi Reservation at Mayetta. The subject of several previous papers (i.e., Hawley 1991a, 1991b, 1992, 1993), this paper adds detail on several subjects: 1) his association with two directors of the Kansas State Historical Society, William Connelley and Kirke Mechem; 2) contact with George Lamb, a Nebraska amateur archeologist and sometime assistant to A. T. Hill; 3) botanical collection efforts on the Potawatomi Reservation; and 4) his collaboration with Albert C. Spaulding. The paper is based largely on primary source materials at the Kansas State Historical Society and the Smithsonian Institution.

Floyd Schultz (Figure 1) died in 1951. In a life that began in 1881, nine years before the emotional climax of the Indian Wars at Wounded Knee, and ended deep in the Age of the Automobile, he was a railroad mechanic, businessman, civic leader, and amateur anthropologist. He qualified as an anthropologist because, unlike many contemporaries, he was interested in both the vestiges of the past and the still living cultures of the reservation present. Accordingly, he dug nearly 50 sites, often singlehandedly, and did a credible job of cataloguing and conserving the remains and artifacts he excavated. He also visited the Potawatomi Reserve north of Topeka, shooting both still and motion images, collecting items of material culture, and taking notes (Hawley 1991a, 1991b, 1992, 1993).

This paper presents previously unavailable information that extends, clarifies, and revises the picture of Schultz, his activities, attitudes, and associations, especially with personnel of the Kansas State Historical Society (KSHS). Perhaps more importantly, it provides a glimpse of the social milieu in which Schultz and other like-minded individuals pursued their archeological interests, particularly in Kansas in the 1920s and 1930s. Interestingly, the trend toward professionalism in academic anthropology is evident in even the non-academic setting of the KSHS during Mechem's tenure. This study is based largely on primary documents, including correspondence, dating from 1923 to 1938, between Schultz and two successive KSHS secretaries, William Connelley and Kirke Mechem. Correspondence between Mechem and Nebraska amateur George Lamb furnishes additional detail. Some new information on the collaboration between Schultz and Albert C. Spaulding was found in the National Anthropology Archives at the Smithsonian Institution. Through the exchange with Spaulding, one can sense the possibility that Schultz's archeological perceptions had matured over time.

Schultz and the Kansas State Historical Society

The extant correspondence between Schultz and Connelley and later Schultz and Mechem, now curated in the KSHS Archives, Correspondence on Archaeology, is the source for this section. The Schultz-Connelley correspondence begins abruptly in 1923, ending 31 letters later on the eve of Connelley's death in 1930. In between it is clear that there are many chronological breaks. Both sides of the correspondence are represented but not for every exchange. From the

Figure 1. Floyd Schultz, 1881-1951.

abrupt beginning and the contents of the first letter in 1923, it is clear that the two men were already on friendly terms. Indeed, Schultz himself confirms this when he commented to Connelley in 1923, "when I was in your office a little over a year ago ..." (Schultz to Connelley, letter, August 11, 1923).

The record of communication between Schultz and Connelley's successor, Kirke Mechem, is limited to 17 letters, all composed between 1931 and 1938. As with the Connelley correspondence, it begins and ends suddenly; the gaps are more pronounced, except for a series of exchanges in 1937-1938, involving a possible publication. That this exchange seems more complete suggests differential curation on Mechem's part. In particular, the letters alter considerably this author's previous position regarding Mechem's purported lack of interest in archeology (Hawley 1993:44-45).

Schultz and Connelley

William Connelley (Figure 2) displayed an almost exuberant interest in archeology, having written several papers of an archeological or ethnological nature (e.g., Connelley 1918a, 1918b, 1923). He was openly critical of his predecessors, especially George Martin, for not encouraging archeological pursuits and acquiring collections – especially the massive, overly coveted J. V. Brower collection from the Kansas River basin. Some efforts had been made to integrate archeology into the Society's mission prior to his tenure. In the 1880s and 1890s, Franklin Adams had maintained a strong interest in archeology, presenting papers at local scientific meetings. Through the offices of Elizabeth Johnson of rural Republic County, the KSHS acquired the Monument site, a historic Pawnee site, long

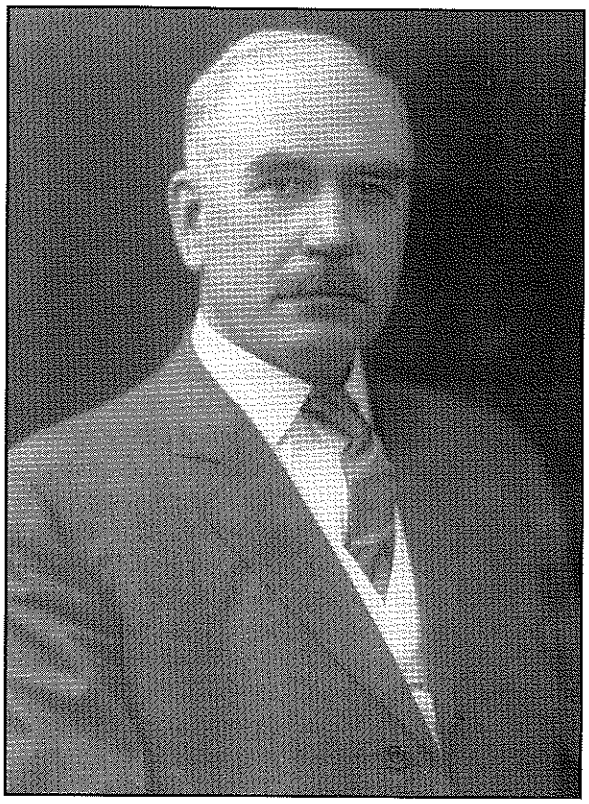

Figure 2. William Connelley. Courtesy of the Kansas State Historical Society.

thought to be the location of the village visited by Zebulon Pike in 1806. Arguably, interest in the site was based on its alleged historic significance and not its value in elucidating the Native American occupation of the Central Plains. In 1907 it was noted that while "Archeology is a very important feature of the work of this Society ... it has been greatly neglected because of want of general interest" (KSHS 1907:34).

Upon assuming duties as the Society's secretary, Connelley explicitly set out to reverse the situation and

> ... established an archaeological section and appointed a committee charged with the duty of interesting Kansans in its prehistoric affairs ... and to solicit the giving to our Society of those collections which enthusiasts had gathered. A circular letter was prepared and sent out to many, annual reports of this committee were made, and the results have been very satisfactory. Many collections have been given or acquired and several rich fields for exploration have been found and partially developed (Morehouse 1927:46).

Typical for the era, the focus was on the acquisition of collections. Schultz and Connelley shared some of the same goals, including the acquisition of collections. Both were also loyal to Kansas, protective of collections and what they perceived as key "heritage" sites.

In archeological matters Connelley had developed a curious reliance on Mark Zimmerman, the duly appointed "state archaeologist," an unpaid commission to dig with the blessing of the KSHS. At the request of Lyons, Kansas, newsmen Horace and Paul Jones, Connelley dispatched Zimmerman and his assistant Edward Park to Lyons in 1927 to assist in the investigations of the location of Quivira. Although invited, Schultz watched the proceedings from afar.

Zimmerman, an eccentric genius, was an imaginative syncretist, melding into a potent brew Christian apocrypha, Masonic lore, myths of "Welsh" Indians, and information gleaned from wide reading in the historical and anthropological literature (e.g., Zimmerman 1928). For Zimmerman, history, pseudohistory, archeology, and ethnography provided the stuff of his own private vision of transcendence: "hoping some time, after the end of sun time of days, months and years, to attain perfection, beyond which point, evolution will cease to function" (Zimmerman to V. N. Robb, letter, September 2, 1927; emphasis in original). He was bold

in the extreme in the promulgation of these notions – his convictions no doubt bolstered by Connelley's letter of commission – even infecting otherwise sober researchers (see Jones 1929:161-163).

At Malone and other sites in Rice County, Zimmerman, Park, and the Joneses surface-hunted artifacts, examined private collections, and trenched several low mounds – putative "houses" (Zimmerman and Park 1929). The media, probably because the Joneses were newsmen, paid attention. Connelley was aware that such scholars as George Parker Winship, James Mooney, and F. W. Hodge had argued that Quivira was in fact in Kansas, somewhere north of the Great Bend of the Arkansas River (Connelley 1918:441-442, Map 2). For his part, he expressed no surprise at the reports from Rice County.

In some senses, the archeological investigations — and the phrase is used loosely – of the mid-1920s were unnecessary and contributed nothing new. Johan Udden (1900) already had demonstrated archeologically, through the recovery of a rusted mass of chain mail, an early Spanish presence in central Kansas. The link was made to Quivira and the Wichita. The Joneses knew this, of course. Nonetheless, the investigations, especially as presented by Paul Jones in his book *Quivira* (later reprinted as *Coronado and Quivira*), were important in that they popularized the connection between central Kansas and Quivira (see Jones 1928; Ross 1928). In effect, the Joneses' work supplied the necessary imaginative counterpoint to already ascertained historical and archeological fact (see Wedel 1990). Why they ever thought they needed Zimmerman or Schultz is unclear. The answer in part may lie in consensus building, as some scholars disagreed. Joseph Thoburn, a historian, amateur archeologist, and director of research at the Oklahoma Historical Society (Lambert 1980) with an eye toward the late Wichita villages on the Red River, was inclined to believe the sites were Pawnee. He, in turn, sought affirmation of this opinion from Southwestern archeologist Alfred Kidder and geologist-archeologist Vernon Allison (KSHS 1929).

As important as the work near Lyons was, of even deeper concern to Connelley, and probably Schultz as well, was the controversy growing around the KSHS' claim that the so-called Monument site (14RP1) in Republic County was *the* Pawnee village visited by Zebulon Pike in 1806. Connelley seems to have been genuinely interested in the search for Quivira, but curiously it did not arouse the same degree of passion in him as did the alleged Pike-Pawnee site. Discovered in the 1870s by Elizabeth Johnson, the site was purchased, and in 1899 an 11-acre tract was presented to the KSHS (Martin 1902). A large granite obelisk was erected in 1901, commemorating Pike's visit.

Not all shared this belief. A. T. Hill, Nebraska pioneering amateur archeologist, long dissented, and in 1923 he found a site near Red Cloud, Nebraska, that better fit Pike's description of the setting than did the site in Kansas (Hill 1927). Excavation of a Pawnee grave recovered a Spanish-made bridal bit and spur, strongly suggesting that the site was indeed the correct location. Wily Addison Sheldon, editor of *Nebraska History*, fanned the embers of controversy into "the Nebraska-Kansas war" or vice versa, depending upon which side of the state line one lived. He devoted an entire issue of *Nebraska History* (July-September 1926) to the topic and publicly called for a special Smithsonian Institution commission to investigate (see Taylor 1988 for a full review).

In the dispute with Sheldon and the Nebraska State Historical Society, Connelley counted Schultz an ally. Repeatedly he exhorted Floyd to "read Pike's journal" and "find time and opportunity to make an examination of our ... village site ... and also of the site on the farm of Mr. Hill ... and give us your opinion as to which is the real Pike village, or whether neither one is the proper site" (Connelley to Schultz, letter, June 14, 1926). Never mind that at least one KSHS member who did tour the sites with an entourage led by Sheldon reached the conclusion that the Hill site fit better the topographic requirements of the Pike narrative (Taylor 1988:165).

Archeology, or more properly historical speculation about an archeological site, was to be deployed to provide a patriotic service for Kansas by proving that the Monument site – or if not it, then another site in Kansas — was the Pawnee site visited by Pike. Ironically, while the controversy raged (and "raged" probably is too strong a word), the Monument site fell into decrepitude. The fence rusted away or was knocked down by the neighbor's cattle, and even the foundation of the monument itself crumbled (KSHS 1931:40, 69-70). Nebraska amateur George Lamb even excavated at the site, apparently without the authorization of the KSHS (KSHS 1931:50); the incriminating photographs were sprinkled throughout the Pike-Pawnee village issue of the *Nebraska History* magazine. Was the *idea* of the site more important than the site itself?

Connelley's aims and his own beliefs notwithstanding, Schultz seems to have pursued his own interests. He continued his investigations in the lower Republican River valley and apparently never visited the Hill site as requested. His solution to the problem was simple: "The best way to locate the Pike village is to leave it located in Republic Co., Kansas. If you let a commission do the investigating and exploring they will pack off all the material they find and Kansas will be

out some more valuable relics" (Schultz to Connelley, letter, January 26, 1928). Carlyle Smith, who excavated a part of the site in 1948 for the KSHS (Figure 4), remembered Schultz as "a Kansas patriot," fiercely loyal to the end to the notion that 14RP1 was indeed the village visited by Pike (C. S. Smith, personal communication 1992).

Although the controversy probably affected Schultz's relationship with A. T. Hill and other Nebraska amateurs – to his own detriment, as he stood to learn a lot from them – his real concern, aside from the veracity of Kansas' claim on the Monument site, was the negative effect of the publicity. It could be useful, as Schultz was well aware. Frequently, he used it to further his own quest for information on sites and to obtain collections. It had a downside, however, one forcibly impressed upon him. Publicity, Schultz claimed, led "a friend curio collector [to ruin] an earthlodge for me" (Schultz to Connelley, letter, October 27, 1927). Apparently the incident was prompted by a *Clay Center Times* article, reporting Schultz's interest in a site (14CY16) on the Gersham Ware farm (*Clay Center Times* 1927:4), and itself attracted favorable media coverage. What is more, Connelley even included the subsequent *Times* article in the *Collections* for that year (Connelley 1928:862). The damage to the Ware site earthlodge seems to have lingered in his mind, as Schultz asked for a commission, similar to Zimmerman's, from Connelley and the KSHS. The laudable goal of the request was that he could use it to conduct "archaeological research...on behalf of the society" *and* "to prevent relic and curio hunters from devastating lodge and burial sites" (Schultz to Connelley, letter, January 26, 1928). Schultz was quick to publish news of his commission (*Clay Center Times* 1928:1).

The larger concern, the possibility of non-Kansas institutions taking collections, remained. By 1930 Schultz and Connelley were discussing legislative measures to protect sites and, perhaps more importantly, to prevent collections from being removed from Kansas. The actual spark for proposing a law, though, appears to have been the media furor over the work in Rice County. Following the 1929 publication of Paul Jones' book *Quivira*, Warren King Moorehead, possibly intending to expand upon the manuscript for his book *The Archaeology of the Arkansas River*, issued a statement indicating that the Phillips Academy would mount its own expedition to further investigate the sites. For Schultz two threats to key archeological sites in Kansas in just a few years was too much. To Connelley he fretted, "You remember the last time that I visited ... I remarked that some eastern college expedition would sooner or later come out here and take more relics from this state ... This will be the fruit of too much publicity on the one hand and the lack of funds on the other" (Schultz to Connelley, letter, January 18, 1930). A law, they consoled one another, would end the threat.

Taken at face value, the desire to protect sites can only be applauded, and in principle the men showed commendable foresight. However, it should be pointed out that mounds appear to have been protected under state law, and it certainly did not stop the curious or the archeologically inclined from opening them. In 1907 Allen Jesse Reynolds, later a member of Connelley's Archaeological Committee and the secretary-treasurer of *The Archaeological Bulletin*, inquired of the KSHS:

> I think I have discovered a locality rich in archeological material, both prehistoric and modern. But before I commence investigating the graves I would like to know if there is a state law against the opening of Indian graves when it is done for scientific purposes only. Please let me know.

The inquiry was forwarded to the state's Attorney General, F. S. Jackson. Jackson offered an enlightened summation:

> In answer to your inquiry enclosing a letter from one Allen Jesse Reynolds, relative to the opening of Indian graves in the interest of archeological research, and asking if there is any law preventing such investigations I have to say:
>
> Chapter 63, page 887, Revised Statutes of 1905, provides that dead bodies under certain circumstances may be delivered to medical societies to be used 'only for the promotion of medical and surgical science within the state of Kansas.' Paragraph 4221 of said chapter makes it a misdemeanor to deliver up a dead body for any other purpose. (State v. Lowe, 6 Kan, App. 110.) The law nowhere permits the opening of graves for archeological and scientific research.
>
> 'It may be state as the universal rule of law in civilized countries that it is an indictable offense to disinter and remove dead bodies wantonly or for the sake of gain.' (13 Cyc. page 276, and cases cited in note 41.)
>
> 'In most states in the Union the violation of sepulture is made a specific offense by statute.' (13 Cyc. 276)
>
> I know of no reason why an Indian grave should be despoiled any more than another. The rights of the red man should be respected

> as much as those of whites and blacks. All the natural instincts and feelings as much as cry out against the violation of sepulture. Except in the interest of justice or prompted by motives of love and duty, the sanctity of each deceased person's 'six feet of earth' should not be disturbed (KSHS 1909:11-12).

Published in the Society's *Biennial Report*, it is difficult to believe that the Attorney General's opinion was unknown to one or both men. Arguably, Connelley was in a position to direct Schultz's efforts away from burials. This did not happen. Would a more general antiquities law fare any better? Schultz obviously did not think that it would in any way censure his own activities, and Connelley would not have meant it to. Like the emergent archeological community of the era, both appear to have been largely indifferent to the legal, moral, and political issues involved in the exhumation of native burial sites (Ferguson 1996).

That Schultz intended to publish the results of his efforts is clear and, contrary to my own analysis (Hawley 1991a, 1991b, 1993), the KSHS offered an outlet for such a publication. Schultz himself broached the subject.

> I have been gathering data and material of an archaeological nature from this vicinity ... If you wish, and consider it worth while to publish an article in the next annual report in regard to, 'Some Burial Mounds and Archaeological Specimens of the Republican Valley', I would be pleased to work with to work up what material I have for same (Schultz to Connelley, letter, August 7, 1924).

Connelley readily agreed: "Please keep a very accurate account of the mounds which you have opened and keep the skulls and other bones which you have found identified with the mounds" (Connelley to Schultz, letter, August 9, 1924). Generally Schultz did (see Hawley 1993:22-40). Although he missed the deadline for Volume 16 of the *Collections*, Connelley encouraged Schultz to continue. "Please do not relax your efforts ...," Connelley admonished and kept after Schultz to write (Connelley to Schultz, letter, November 7, 1925). In May 1926 Schultz presented a paper at a local club. Reported by the *Clay Center Dispatch*, it was picked up by the *Kansas City Star*. This could, Connelley wrote, be expanded into "a longer and more extended paper" for Volume 17 (Connelley to Schultz, letter, June 18, 1926). The promise to do so was reiterated.

A work in progress, the paper was apparently added to as time permitted and other mounds were found and excavated. Connelley told Schultz: "Your article is going to be the pioneer article on this subject in your part of Kansas and I know you are going to make it a fine one" and further asked him to "include in your paper scientific measurements of some of these skulls" (Connelley to Schultz, letter, April 13, 1924). The University of Chicago or some other institution could assist in this, he thought. Connelley may have overburdened Schultz with this latter request. After all, Schultz did not have archeological or indeed any scientific training beyond his high school education. The key may be the phrase "to work with you" in his initial letter to Connelley in 1924. Perhaps Schultz was looking not only for a venue to present his findings but for more direct guidance as well. The pressure was apparently too much; the article did not appear, and no further mention of it was made. In Volume 17 was published not a "pioneer article" by Schultz but instead "Ruins at Oak Hill," the story from the Clay Center paper about Schultz's "curio collector friend" ruining an earth lodge.

Schultz and Mechem

Connelley died in 1930, and within a few months the board of directors chose his replacement, Wichita, Kansas, newsman Kirke Mechem (Figure 3). Probably at the annual meeting that same year, Schultz and Mechem met. Like his predecessor, Mechem supported Schultz's archeological activities. When a woman in Marshall County informed Mechem of a mound location near Vermillion, Mechem in turn passed on the information to Schultz.

The main topic of discussion between the two was a manuscript and its possible publication (Hawley 1993:44-45). For the second time Schultz attempted to publish on his mound explorations. In 1938, after presenting a paper before the local library club (Appendix A in Hawley 1993), he sent Mechem a copy, anxious to see if it was of sufficient quality to be printed in the *Kansas History Quarterly*, the revamped *Collections* of Connelley's day. Mechem was at first reluctant, cautioning his friend, "we have not found it advisable to use much material in the QUARTERLY about artifacts ..." (Mechem to Schultz, letter, February 1, 1938). He did consent to read the paper, however. His response is revealing:

> I have read your article twice. It contains much valuable information and I should like to use it in the Quarterly. However, I do not think the style of the paper is exactly suitable and I feel that you have not been specific

Figure 3. Kirke Mechem. Courtesy of the Kansas State Historical Society.

> enough about how your excavations were done and what you found. I can understand that you had to write the paper this way for the literary club. But for the Quarterly, where we must attempt to treat this subject scientifically, I fear it is a little too general and perhaps also a trifle imaginative. I do not mean it is guess work, but some of the conclusions with regard to the ceremonies might be questioned by archeologists, if not criticized.
>
> Would it be possible for you to describe in detail several of your excavations on the Republican? You would want to do it in the accepted style of these reports, making it a scientific study (Mechem to Schultz, letter, March 15, 1938).

It would seem that Mechem wanted the archeology done right.

Schultz rewrote. To Mechem, he observed:

> I am sure that my conclusions relative to ceremonies in all probability would be criticized ... [but] I do believe that some very interesting ceremonies did take place at these burials, and that the use of fire had a very important part; also the breaking up and the burning of the skelta [*sic*] material and artifacts ... As for the details – one dream is as good as another. I am satisfied that all archaeological conclusions of this nature are based upon certain facts, and the balance upon imagination" (Schultz to Mechem, letter, March 26, 1938).

For his rewrite, of which no copy has yet been found, he described several burials in detail to the point where he worried about it being "boresome." He had hoped to enlist the assistance of Warren King Moorehead, but Moorehead informed him he would have no time to identify artifacts and materials as he was set to leave for Europe in a matter of days (Schultz to Mechem, letter, June 18, 1938).

Mechem had the manuscript typed and reported to Schultz in August that "[w]e have sent it [the manuscript] on to Waldo Wedel of the Smithsonian Institution who is acting as our technical advisor in this field of research" (Mechem to Schultz, letter, August 18, 1938). How or when this probably informal arrangement came about is not known, although Wedel had been known to the KSHS since the late 1920s while a student at the University of Arizona (Zimmerman 1931:39). Probably by 1938 he had inspected the ar-

cheological holdings at the KSHS. After all, he was involved in a four-season campaign of archeological exploration in Kansas, sponsored by the Smithsonian Institution (Wedel 1959).

Wedel responded positively. "Mr. Schultz has collected some extremely interesting information which certainly ought to be placed on record. I thoroughly agree with you that Mr. Schultz deserves recognition since he is unquestionably in position to contribute yet more data on the archeology of the Lower Republican valley in Kansas" (Wedel to Mechem, letter, September 28, 1938). The paper was not free from defects, however. Wedel criticized a vague typology of internal mound structural characteristics. "In some instances, they are undoubtably valid; in others, the basis for differentiation seems inadequate." To clarify the matter, Wedel recommended simplifying the typology and adding illustrations. The paper's lack of citations, even of work published within the past few years in Nebraska, was also troubling. However, these problems were minor; in the end, Wedel "hope[d] that Mr. Schultz can be persuaded to revise his paper." Schultz sat down to revise, or at least he told Mechem that this was his intention. The exchange ends, and no paper by Schultz on any topic was ever published in the *Kansas History Quarterly*.

The Schultz-Mechem correspondence, as well as other information at hand, documents a remarkable transformation in how archeology was perceived by the KSHS. In some respects Mechem had a decided advantage over Connelley: he knew that he did not know anything about archeology or the way in which it was practiced. He apparently came quickly to the realization that archeology was a legitimate concern of the KSHS and to have recognized his deficiencies.

This is not to say that Mechem ever understood or even read much archeology; instead, he turned to those who had the knowledge he needed. Initially this included Schultz. Within a couple of years, the circle had widened to include Moorehead. Mechem had suggested at the Society's 1933 annual meeting "the formation of an archaeological group within the Society." He hoped to consult with the ubiquitous Moorehead, an established professional, about the possibility (Mechem to George Lamb, letter, November 13, 1933). A 1934 statement makes clear that this group would function in part to impart scientific standards upon the amateur community (KSHS 1934:97). The plans, however, did not materialize. Moorehead canceled his nationwide tour, including his Topeka stopover; failing health prevented a reschedule (Hawley 1993:93-96). Concurrently Mechem was in regular communication with at least one member of the archeological community forming in Nebraska, that being George Lamb. In 1933 Mechem even authorized Lamb to conduct archeological investigations in Kansas on behalf of the KSHS (Mechem to Lamb, letter, November 28, 1933). By 1938, when the correspondence with Schultz ends, he relied on Smithsonian Institution staff. Mechem apparently had come to understand that archeology was about more than collecting artifacts. In a seemingly offhand manner, a newspaperman *cum* historian managed to shift the emphasis of his agency's interest in the deep past from the antiquarian to the archeological.

Schultz and Lamb

George Lamb was a minor figure in the professional community developing in Nebraska and, as he understood it, was a fervent advocate of scientific archeology. He otherwise possessed skills and knowledge few, if any, in the Kansas amateur archeological community possessed. A resident of Williams, Nebraska, Lamb occasionally, by virtue of proximity, ranged into the Republican River basin in Kansas. In 1932 he crossed paths with Schultz.

The relationship with Schultz began in June of that year with the excavation of an earth lodge in Republic County, Kansas. In June 1932 Raymond Harris of rural Cuba, Kansas, tilled an unbroken meadow and immediately recognized signs of Indian occupation. Ed Dannefer, the postmaster in Cuba, was informed. He, in turn, informed Lamb, who soon thereafter visited the site. A small test hole was dug with a spade, and it was clear that a lodge lay intact beneath the surface. Permission secured, Lamb prepared to excavate, but not before Dannefer invited Schultz to participate. Lamb "agreed ... and when I was informed that Schultz was connected with the Kansas State Historical Society, I agreed that what material was taken should go to Kansas" (Lamb n.d.a:1). Relations were not immediately cordial; Lamb groused about excavation technique, adding that, "I was not satisfied with covering the dirt over the ruin without a picture of the floor and did not go back to the job" (Lamb n.d.a:2).

Apparently Schultz and Dannefer failed to open the entire lodge floor. Lamb decided to do so and in November 1933 excavated the whole, exposing, drawing a plane table map, and photographing the floor. It is not clear if Schultz was ever informed of this work; Lamb noted in a letter to Schultz in May 1933, "I wish that we knew of something close at hand where we could work it out together. I was sorry that I did not get to help finish the Harris site with you, but that powderman's job was part of my bread and butter during the winter" (quoted in Hawley 1993:80). Unmentioned was any concern about how the excavations had

Figure 4. Floyd Schultz, Carlyle S. Smith, and Marguerite Schultz at 14RP1. Courtesy of Carlyle S. Smith.

proceeded. Clearly Lamb's experience with Hill made him the better excavator. Schultz rarely, if ever, opened an entire lodge and so never saw completely exposed floors or the wall line (Hawley 1993). He stood to learn a lot from Lamb.

Schultz on the Reservation

The circumstances of Schultz's forays onto the Potawatomi Reservation have been something of a mystery, but it is now clear that, despite a few early entries in his ethnographic catalogue, they began in 1927. According to a letter to Connelley, "[t]he fair association here [in Clay County] wants to obtain some Indians for an Indian village attraction" (Schultz to Connelley, letter, August 11, 1927). Quite likely this was Schultz's idea and not that of the fair association. At any rate he approached Connelley for "the addresses of any parties that I can make arrangements with in securing some Potawatomi Indians," which information Connelley supplied. Family friend and Rotary Club member Elizabeth Schlichter (1946:68-69) confirms this: "[t]hrough a contact he made several years ago when he obtained a group of Indians to give a native dance at a county fair ... Schultz has become well acquainted with the Potawatomi at the Mayetta Reservation ... He has been privileged to associate with them and photograph them, their dwellings, customs, dress, and so on."

Schultz observed, recorded notes, photographed traditional activities, and shot 74 minutes of motion picture footage. He also collected, ultimately acquiring 200 to 250 items of material culture (Hawley 1993). Schultz also collected plants, recording in his notes the various uses made of them by the Potawatomi (Hawley 1993:142-145). The specimens themselves were thought to have been discarded at some later time. However, among "the major accessions" to the Kansas State Agricultural College (now Kansas State University) Herbarium in 1941 was "a small [collection] from the Indian reservation in Jefferson County by Floyd Schultz" (Gates 1942:93). Herbarium curator Iralee Barnard reports that the collection was probably later integrated into the larger aggregate of botanical specimens, now totaling more than 165,000 items (Barnard to Hawley, letter, February 7, 2000). Unfortunately, in terms of documenting Schultz's collecting activities, the plants are accessible only by plant name. This information was not recorded in the extant field notes, probably having been recorded elsewhere, and possibly with Gates' input.

Schultz and Spaulding

After several missed opportunities, time and chance finally brought to Schultz's very doorstep a professional archeologist in search of collections and sites. Through his friendship and collaboration with Albert Spaulding, Schultz was finally published. The contact led as well to the donation of his collection of more than 3,000 catalogued items to the University of Kansas (Smith 1949; Hawley 1993). In 1994 during a visit to the National Anthropological Archives at the Smithsonian Institution, seven letters, mostly from Schultz to Spaulding, were found in the A. C. Spaulding Collection. The letters are related to the preparations

for the *American Antiquity* paper on the James Younkin mound (14GE6) and add a few details of interest.

Spaulding held a joint teaching position and curator post in the Department of Sociology and the Museum of Natural History at the University of Kansas from early 1946 into mid-1947. During his brief tenure at the university, he organized collections; initiated cooperation with the Interagency Archeological Salvage Program or River Basin Surveys, as it was known; tested a burned rock midden in southeast Kansas; and visited several of the state's amateurs for information (Hawley 1992). Spaulding had heard of Schultz from someone at the University of Kansas, and on a tour of Kansas in late summer 1946, he stopped in Clay Center for a visit. Finding Schultz absent, he soon dispatched a letter; so began an unusual collaboration (Hawley 1992:48-49). From the outset, Spaulding approached the Kansas amateurs with a measure of respect. Also, in Schultz's case, Carlyle Smith (personal communication 1990) recalled that both he and Spaulding found Schultz to be fairly knowledgeable. He was, in short, someone with whom they could talk shop.

Three items stand out in these letters. One is a comment made by Schultz on perforated tortoise shell sections: "These sections have holes drilled in them, so they must have been used as rattles, as I have a specimen of the modern Chippewa Indians — a tortoise shell rattle which is drilled full of holes to releas [*sic*] the sound" (Schultz to Spaulding, letter, February 18, 1947). This is a rather obvious use of ethnographic analogy or reasoning that similar objects in the ethnographic and archeological records may share other similarities, including function. No doubt based on specimens in his ethnographic collection, Schultz proposed that incised deer rib sections in the Younkin site collection "might be the frame work of a cradle board?" (Schultz to Spaulding, letter, January 27, 1947). This analogy was disputed by Spaulding, who informed Schultz that similar incised bones had been reported by William Duncan Strong from historic Pawnee sites and that they were "beaming tools, to take the hair off hides after they had been soaked and treated" (Spaulding to Schultz, letter, March 4, 1947). By analogy, Spaulding suggested this use for the objects from the Younkin mound.

The second item is a question put to Spaulding:

> Just a thought — a large quantity of obsidian blades were [*sic*] found in the Hopewell mound, and no doubt this material is of the Yellowstone, W[yoming] orgin [*sic*] — now, if this was passed through the hands of the Plains tribes in trade & barter, why is it that we do not find more of it on our prehistoric village sites & burials? (Schultz to Spaulding, letter, March 1, 1947)

The question is a sophisticated one. Spaulding admitted it as such, referring to it as "a sticker," and could offer only a few inadequate ideas:

> One would expect these western villages to be way stations on an obsidian route, but if so, the material must have been too precious to waste on the country bumpkins. Another possibility is a time difference — the western Hopewell-like sites may have been inhabited before the Ohio people acquired a taste for obsidian, but after the basic Hopewell burial practices, pottery styles, etc. were developed ... (Spaulding to Schultz, letter, March 4, 1947).

Finally, the letters reveal the article to have been the product of a true collaboration, with Schultz contributing maps and some text. Schultz sought Spaulding's advice on how best to proceed "in my lead off of the opening chapter of the article that I am to contribute to the paper ... I want to make the right start" (Schultz to Spaulding, letter, January 27, 1947).

In June 1947 Spaulding resigned his position at the University of Kansas and returned to the University of Michigan to teach. The collaboration resulted in a paper, published the following year (Schultz and Spaulding 1948). Almost three years later on April 8, 1951, Floyd Schultz passed away following a brief illness. Shortly thereafter, Spaulding offered his condolences to Schultz's widow, Marguerite. Unfortunately, this letter appears to be no longer extant. The reply is:

> June 13, 1951
>
> Dear Mr. Spaulding,
>
> Your letter was the source of much comfort and gave me renewed pride in Floyd's contribution in the field of archaeology.
>
> He would have been happy indeed to know that he had been a source of inspiration and courage to you.
>
> Your acquaintance and friendship gave him a means and method for summarizing his life's ambition and made it possible for him to place the archaeological phase of his Indian hobby where it will have scientific significance.
>
> His contacts and experiences at the Uni-

versity of Kansas were a source of much pleasure, pride and satisfaction to him.

Floyd was a man of high integrity and his passing has left a void not only in our home, for he was a wonderful husband and companion, but in the entire community ... .

With kindest personal regards,
Sincerely,
Marguerite Schultz

Acknowledgments. I would like to thank the staff of the National Anthropology Archive, Smithsonian Institution, and Terry Harmon, formerly of the Kansas State Historical Society, for access to the documents used in this paper. Iralee Barnard, curator of the Kansas State University Herbarium, valiantly attempted to track down the botanical collection. I am, of course, solely responsible for the end result.

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Non-mound Schultz Phase Burials from the Elliott Site, Geary County, Kansas

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The collections from past excavations at the Elliott site in Geary County contain fragmented human remains. These are here interpreted to represent fragments of burials plowed out on this shallow site. A case for associated funerary objects is strong, albeit circumstantial. The burials are assigned to the Schultz phase and placed in time at around A.D. 450–700. They are the only non-mound Schultz phase burials encountered to date. Implications of the analysis for understanding Schultz phase lifeways and mortuary behavior are discussed.

The Elliott site (14GE303 and other numbers as described below) is an important upper Kansas River drainage site. Occupying a large area on the north side of McDowell Creek in north-central Geary County, it contains material attributable to every prehistoric period from Early Plains Archaic through Middle Ceramic. Periodic investigations at Elliott span more than a century. The most recent investigations are the excavations that Kansas State University conducted in the 1970s and 1980s. Scattered human remains were recovered during those excavations (O'Brien et al. 1973; Sorrell 1974).

The excavated portion of the site is a habitation area assigned to the Early Ceramic period Schultz phase. Although numerous Schultz phase burials had been excavated, the Elliott site was the first habitation site to be excavated. There was at the time, therefore, no basis for assessing the significance of the recovered human remains; nor could the possibility that funerary objects were associated with them be reliably assessed. The more recent excavation of additional Schultz phase habitation sites and the accumulation of other information that can be used to evaluate the Early Ceramic period occupation in the greater Manhattan area provides a means to reassess the Elliott site materials. This paper, therefore, reconsiders the nature of the human remains, seeks to determine if funerary objects were associated with them, and, in the course of accomplishing the second goal, demonstrates the potential of the Elliott site collection to contribute further significant information regarding the nature of Early Ceramic period lifeways in northeast Kansas.

The Elliott Site

The Elliott site lies on the north (right) bank of McDowell Creek, near the point where East McDowell and West McDowell creeks join to form McDowell Creek proper and about 12 miles upstream from the point at which the overall north-flowing McDowell Creek joins the Kansas River (Figure 1). It can be a confusing site. The entire area to which the designation applies covers some 40 acres of stream bottoms and is referenced by State of Kansas archeological site number 14GE303. Prehistoric cultural debris is not continuous across this area, however, instead appearing as reasonably discrete clusters, each of which has its own site number (O'Brien et al. 1973:54-57). The Elliott *site* would more appropriately be designated the Elliott *locality*. Work reported by McDonald (1967) and O'Brien et al. (1973) shows that Early Plains Archaic Logan Creek complex materials are found there (Brower [1898:38] also illustrated points that now would be assigned to the Logan Creek complex), as are later, although still Archaic, Munker's Creek phase materials, as well as Woodland tradition and Smoky Hill phase materials.

It is pertinent to note that the cultural complexes

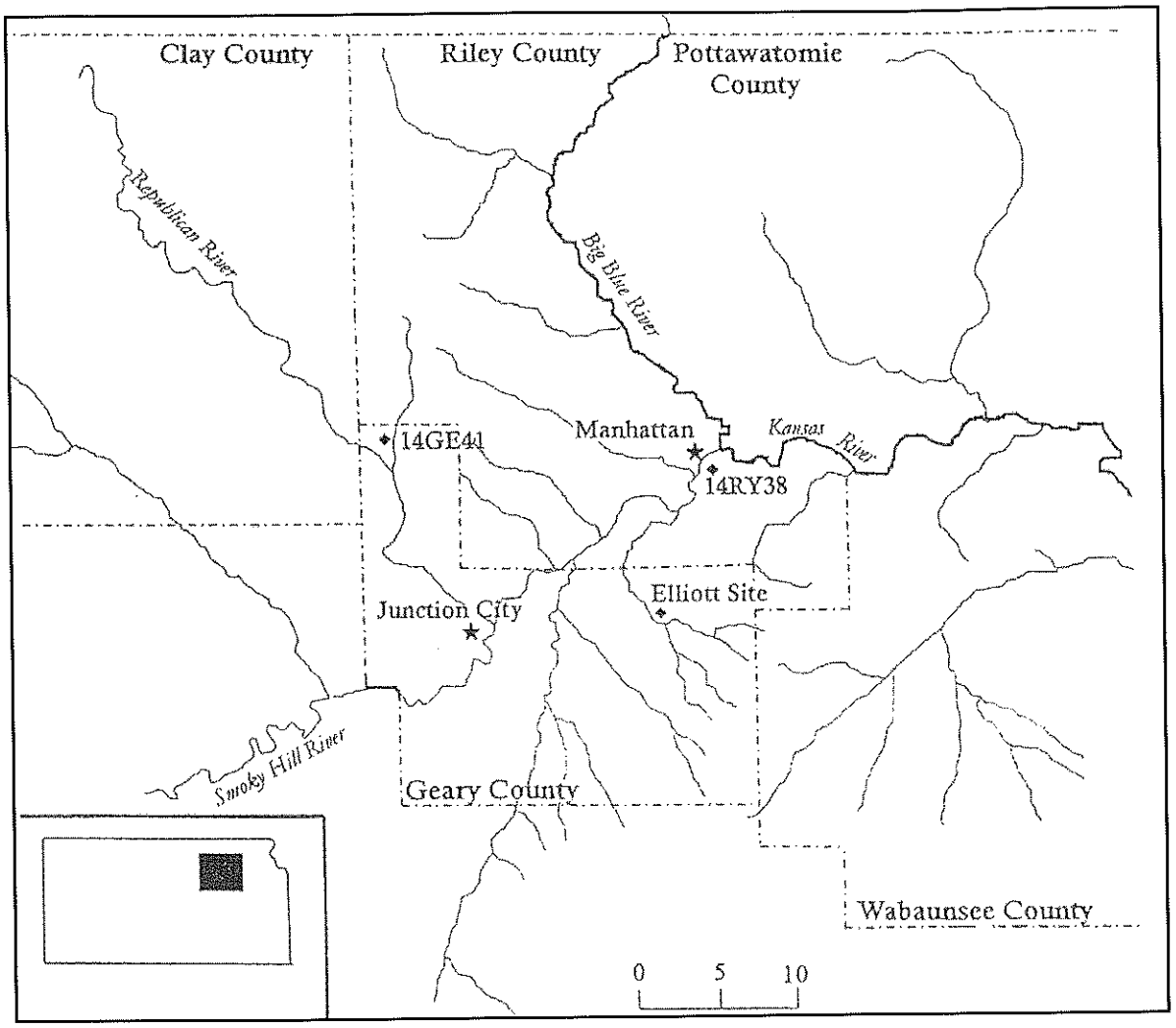

Figure 1. Upper Kansas River drainage, showing the location of Elliott and other sites mentioned in the text. Map was executed by Cindy LaBarge.

represented at Elliott span at least 8,000 years of prehistory, that *all* represented complexes are expressed on the surface, and that debris does not extend very far below the plow zone. All these circumstances would seem to imply a considerable age for the alluvial landform on which the site lies. In fact an old Geary County soils compilation (Eikleberry et al. 1951) for the Elliott site area maps a soil that also is shown in Kansas River valley positions that appear to correspond to mapped exposures of the Buck Creek terrace (Sorenson et al. 1987:95). The Buck Creek is a Pleistocene terrace the exact age of which is not determined, but it certainly predates the late or terminal Pleistocene (Sorenson et al. 1987:94). If this landform assignment were correct, it would mean that archeological sites of any age would not be buried but rather would lie on the terrace surface, that sites would be relatively shallow, and that repeated occupations in the same place would be superimposed with no vertical separation. This is the apparent situation at Elliott.

A more modern soil survey (Bidwell 1959), however, maps a soil series that correlates with exposures of the early- to mid-Holocene-age Newman terrace (Sorenson et al. 1987:98). If this landform assignment were correct, then the terrace would have been aggrading during at least part of the Archaic period, and Archaic materials should be buried within the terrace, not exposed on the surface as they apparently are at Elliott. Additionally, if this were a Newman terrace exposure, individual scatters may not necessarily be shallow, and vertical separation of sequential earlier occupations is possible. Ceramic period occupations, though, should

lie atop the terrace and could be shallow. The geomorphic context is a key point for interpreting the site's deposits, but further fieldwork obviously will be required to clarify the situation.

The Elliott site is at least as remarkable for its history of investigations as it is for the archeological record it contains. It was named for L. R. Elliott, a Manhattan amateur archeologist active in the late nineteenth century. In 1895 Elliott submitted material from the site that now bears his name to Jacob V. Brower of Minneapolis, Minnesota. Brower, who had for some years been conducting archeological investigations in the Mississippi and Missouri river basins (Brower 1897), later traveled to Manhattan and, accompanied by Elliott and W. J. Griffing, visited the site on November 20, 1896. He was mightily impressed by what he saw there, but even more impressive was what he made of it. He subsequently pronounced the site to be the location of the province of Quivira, visited by Coronado in 1541 but in essence "lost" during the intervening centuries.

Descriptions and illustrations of Elliott site materials contained in several monographs published by Brower (1897:161-176, 1898, 1899, 1903) clearly show that, using remains from Elliott and other sites in the greater Manhattan area, he correctly identified the three prehistoric cultural complexes now designated Munker's Creek, Woodland, and Smoky Hill. Brower also recognized Udden's (1900) soon-to-be-published Paint Creek site materials – now assigned to the Great Bend aspect – as representing a fourth distinct complex in the general central Kansas area. Ironically, although the Great Bend aspect materials are now recognized as representing the material remains of Coronado's Quivira, Brower discounted them and decided that the Munker's Creek culture complex materials represented the remains of the Quivirans. Munker's Creek, of course, dates nearly five millennia before Coronado's *entrada* (Witty 1982:219-222).

Recent Investigations

One of the larger debris clusters on the Elliott site is designated 14GE312. It represents an Early Ceramic period, Woodland tradition Schultz phase[1] occupation or occupations. Kansas State University students under the direction of Patricia O'Brien excavated a portion of 14GE312 during 1970, 1971, 1972, and 1982. Preliminary reports of the 1970 (O'Brien et al. 1973), 1971, and 1972 (Sorrell 1974) excavations are primarily descriptions of the artifacts and other materials recovered. Those materials include pottery, chipped stone tools and debitage, animal bone, and floral remains. Human bone fragments, mostly skull parts and teeth, also are listed for the 1970, 1971, and 1972 excavations (O'Brien et al. 1973:66; Sorrell 1974:180). A few more human bone fragments were recovered during the unpublished 1982 excavation. No funerary objects are identified as such in the reports.

Human Remains and Associated Funerary Objects

The Kansas State University archeological collections catalogue assigns seven numbers to human remains from the Elliott site.[2] This total includes the fragments listed in the published reports, as well as those in the undescribed and unpublished part of the collection. The small aggregate of identified human bone includes skull fragments and teeth from at least two individuals: one adult and one subadult. The bone fragments were collected from a relatively restricted part of the excavation block (Figure 2). Animal bone is relatively abundant in the collections and, like the human remains, often is high fragmented. It is possible that additional human bone fragments are mingled with the unidentifiable animal bone and are not recognizable as human.

A case for the presence of funerary objects at the Elliott site is strong, although necessarily circumstantial. Both the 1970 and the 1971 and 1972 excavation reports list plain and decorated bone beads (O'Brien et al. 1973:64-65; Sorrell 1974:179-180). More beads were collected during the 1982 excavations. Therefore, the collection as a whole contains 27 bone beads. These objects, either plain or with spiral or annular incised decoration, are a defining characteristic of the Schultz phase (Eyman 1966; see also Schultz and Spaulding 1948). They are abundant in mortuary context and appear exclusive to that context, since neither 14GE41 (Parks 1978) nor 14RY38 (Banks et al. 2001), the only other excavated Schultz phase habitation sites, contained these objects. The bone beads from the Elliott site are spatially associated with the human remains (Figure 2), suggesting an original placement with them. A polished bone rod, what appears to be a fragment of an incised bone pin, and a shell bead also are artifact types that appear in Schultz phase mortuary contexts and were probably funerary objects at Elliott. Like the bone beads, these objects were found in close proximity to the human remains (Figure 2).

Far more tenuous would be the identification of pottery and Scallorn projectile points as funerary objects. Both artifact classes do appear in Schultz phase burials (Eyman 1966) but are far from exclusive to that context. Pottery, in fact, is not particularly abundant in Schultz phase mortuary sites, but it is in living site con-

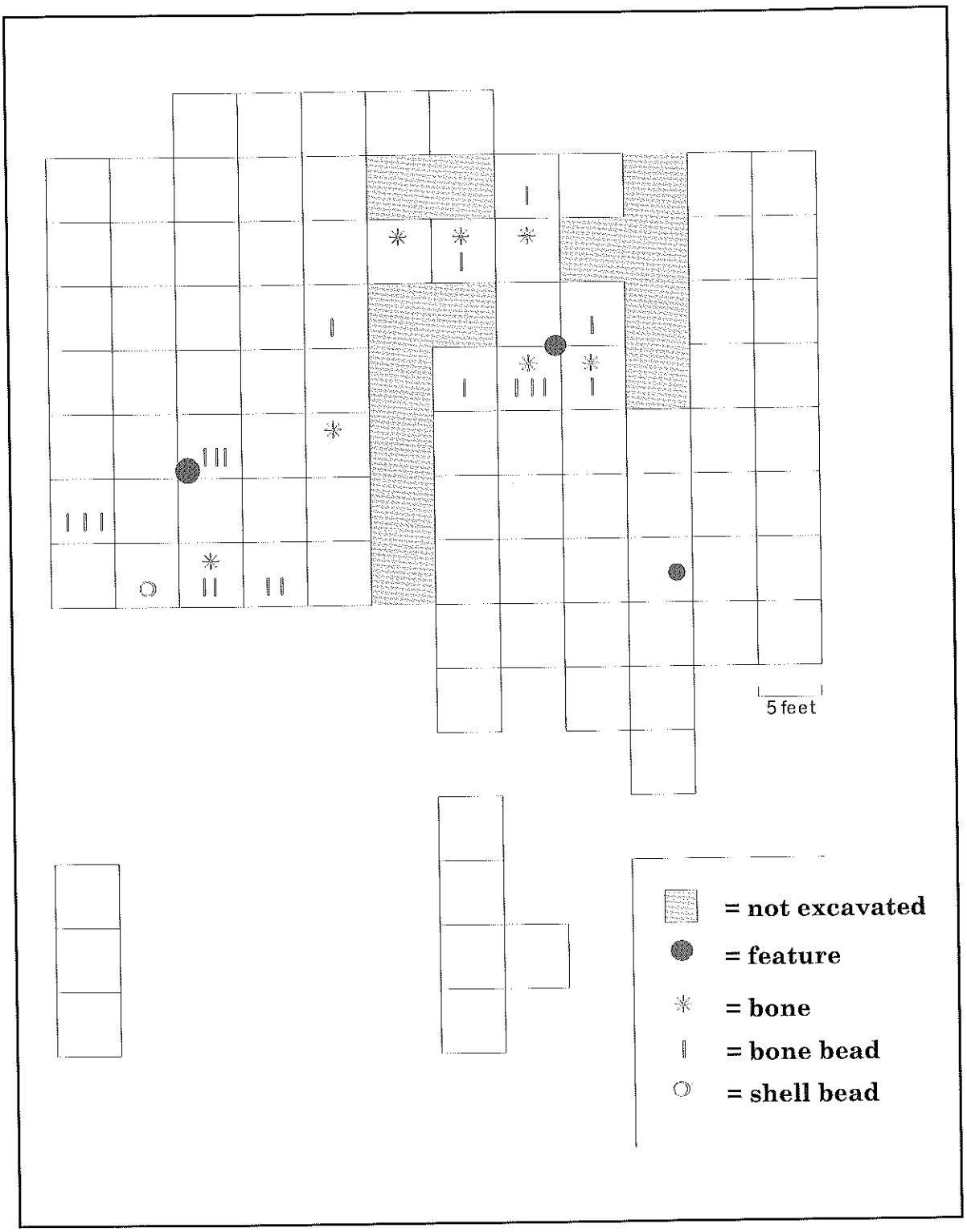

Figure 2. Distribution of human bone fragments and the inferred funerary objects at 14GE303.

text. The Elliott site excavations yielded a rather substantial quantity of pottery. Sherd sizes range from smaller than a dime to 3 or 4 inches in maximum dimension. With this much variation, a distribution plot of simple frequencies would be misleading; size grade and/or aggregate weight distributions would present a better picture of pottery distribution. It is clear, though, that the pottery was distributed across the entire excavated area of the Elliott site and does not seem to show any particularly strong spatial association with the human remains and bone beads.

The case for Scallorn points being funerary objects is even less convincing. Scallorn points do occur in Schultz phase mortuary context, but of course they also are ubiquitous and abundant on habitation sites of this and other late Woodland complexes. Their distribution at the Elliott site is largely discordant with that of the human remains and funerary objects (Figure 3). The few drills and scrapers recovered during the excavations are spatially associated with the projectile points. In turn, all chipped stone artifact classes appear clustered around the three hearth features uncovered during the four seasons of excavation (Figure 3). All these circumstances suggest that the pottery and projectile points at Elliott are not funerary objects, or at least that, if a specific piece did originally accompany the human remains, there is no way to distinguish it from the general occupation debris.

Discussion

There is no question of the assignment of both the habitation assemblage and the funerary objects to the Schultz phase. This means that the human remains and funerary objects are related to the major occupation of 14GE312. The question is the nature of that relation.

The report of the 1970 excavations interpreted the human remains to represent "dissection of the dead" (O'Brien et al. 1973:66). This interpretation is repeated in the report of the 1971 and 1972 excavations (Sorrell 1974:181) and follows Phenice's (1969:57) identification of body dissection as one means of skeletalization practiced by the builders of the Schultz phase burial mounds. The inference may or may not be valid in this case, but regardless of whether or not the Elliott site remains were skeletalized, they apparently were interred with funerary objects in this open site – not in a mound. The field containing the site has been cultivated for many years; even in 1898 Brower said that it "has been cultivated for nearly half a century" (Brower 1898:20). Presuming continuous cultivation since it was opened in the mid-nineteenth century, the field had been cultivated for well over a century by the time of the 1970 Kansas State University excavation. Observational and experimental data suggest that, while materials in a plowed field will be somewhat dispersed, most materials are not far removed from their original location. The concentration of the recovered bone fragments, teeth, and associated funerary objects within a restricted area of the excavation block is consistent with what would be expected of shallow interments – skeletalized or not – in a long-tilled field.

The distribution of tools also strongly hints that a comprehensive spatial analysis of the debris recovered at Elliott would shed considerable light on the nature of Woodland period settlement systems in the Kansas River drainage. The projectile point plot, as well as some other preliminary plots not shown here, are reminiscent of the results of an analysis this author conducted with materials from an late-Middle/early-Late Woodland site in the White Breast Creek valley of central Iowa. There, tools were tightly clustered around hearths and not randomly distributed across the site (Roper 1994). The study concluded that the site represented a periodically reoccupied camp of a population that was seasonally mobile within and through a specific river drainage. Kansas River drainage Woodland period prehistory would be well served by a more detailed knowledge of settlement systems, and the Elliott site collection appears to have the potential to provide important information bearing on this problem.

A single radiocarbon age determination of 1935±75 radiocarbon years before present (rcybp) (calibrated two-sigma range: 98 B.C.-A.D. 252) was obtained on Elliott site feature charcoal (O'Brien et al. 1973:70). The association of this early a date with Scallorn points is suspicious and, as will be discussed momentarily, so is the association of this early a date with pottery in the greater Manhattan area. The age determination probably should be discounted as a result of dating old wood (Bowman 1990), a spurious association (Waterbolk 1971), a hearth from an older and poorly understood occupation – this is, it will be remembered, a shallow site with perhaps 8,000 years of prehistory represented on the surface and in the thin upper sediment unit – or other form of error.

A more likely date estimate for the Schultz phase is the age range of A.D. 423-685, obtained by averaging and calibrating (two-sigma date range) the two statistically equivalent age determinations of 1535±85 and 1250±165 from 14GE41 in the Milford Lake area about 17 miles northwest of the Elliott site (Parks 1978:45). Further chronometric evidence was recently obtained at the stratified multicomponent Macy site (14RY38) in the Kansas River valley at the edge of Manhattan about 11 miles northeast of the Elliott site (Figure 1).

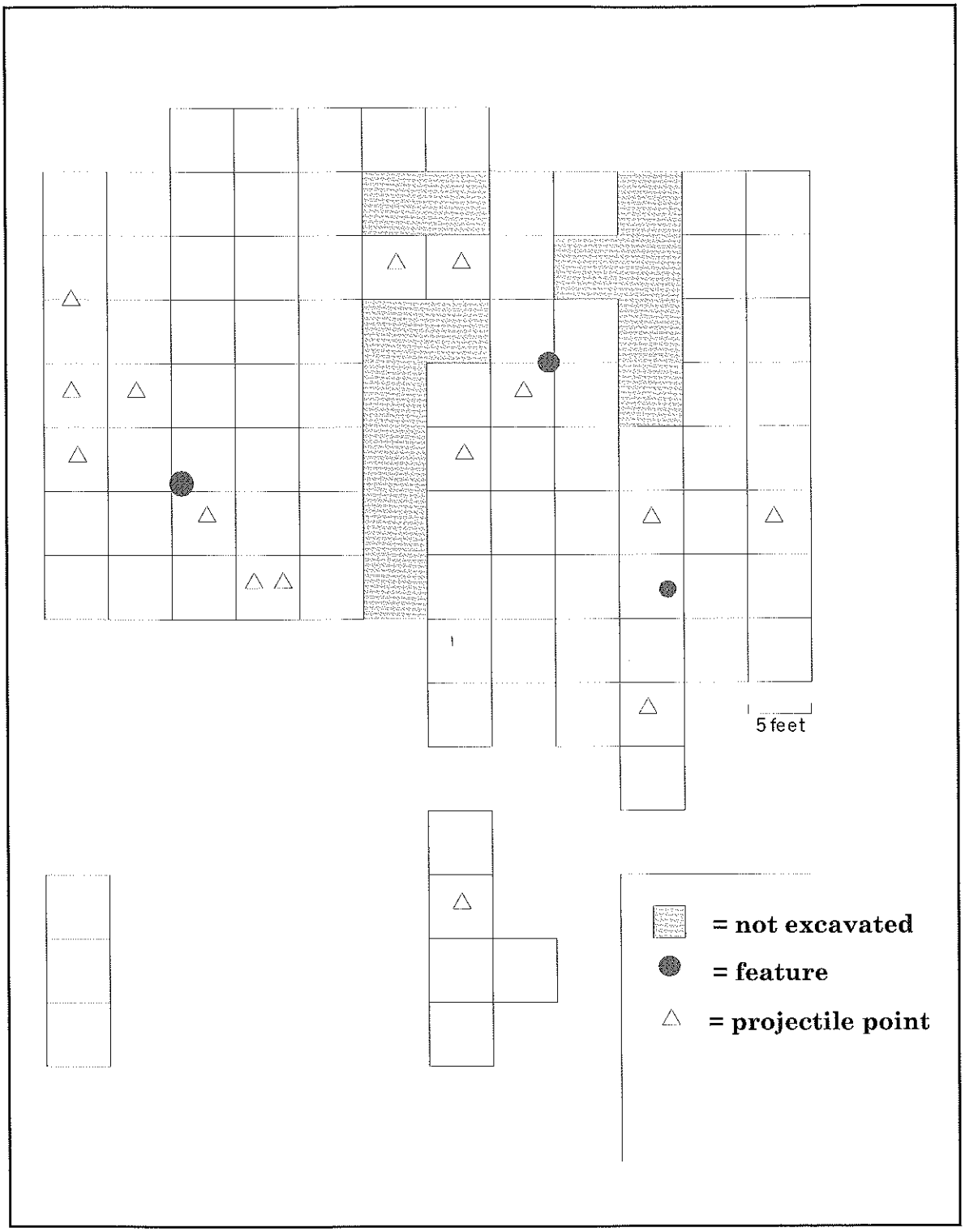

Figure 3. Distribution of projectile points at 14GE303.

Here, pottery that closely resembles the material from both Elliott and 14GE41 appeared in a cultural horizon dated to A.D. 531-654 (two-sigma calibrated date range on a single age determination of 1490±40 rcybp) (Banks et al. 2001). The Macy site sequence spans the entire Early Ceramic period as it is conventionally designated (ca. A.D. 1-900). Occupations from the first several centuries, however, are devoid of pottery; only a single sherd was recovered below the horizon dated to A.D. 531–654, and that sherd was immediately below the dated horizon (Banks et al. 2001). All this evidence taken together, therefore, suggests that the Schultz phase occupation and burials at the Elliott site should be attributed to a time interval rounded to ca. A.D. 450–700.

The Schultz phase was defined as, and to a large extent still is, a mortuary complex and even more specifically a burial mound complex (Eyman 1966; Phenice 1969; Schultz and Spaulding 1948). Schultz phase mounds are abundant on the bluffs overlooking the valleys of the Kansas River and its tributaries and have been the focus of investigation for well over a century (Brower 1899; Failyer 1881). Johnson and Johnson (1998:208) recently noted that Schultz phase habitation sites contain no burials. However, identification of the habitation sites of this phase is relatively recent, and excavations within them remain limited to Elliott, 14GE41, and 14RY38. The recognition that isolated burials do appear at the Elliott site, therefore, contributes to our understanding of Plains Woodland mortuary behavior and variability within that behavior.[3]

The obvious question, though, is why the individuals interred at the Elliott site apparently were excluded from the ritual burial normally accorded the dead (Krause [1995] has considered the meaning of this in some detail), which is to say, why these individuals were not buried in a mound. Age, gender, or status differences need not be postulated, for individuals of both sexes and all ages are represented in mounds (Phenice 1969), and there are no particular indications of status differentiation in access to mound burial by Schultz phase people (Johnson and Johnson 1998:208; Krause 1995:132-136). The preliminary plots of the distribution of habitation debris would seem to indicate relatively short and perhaps repeated occupations of the Elliott site by Schultz phase people. A death or deaths during a time of high mobility can pose a definite problem for disposal of the body. Historical accounts of bison-hunting villagers, for example, occasionally describe prompt on-the-spot burial of a deceased member of the hunting party (e.g., Dunbar 1918:605) rather than the return of the body to the home base for a more traditional burial. While the subsistence/settlement behavior of Woodland and historic village populations is very different from that of the historic Plains villagers, the problem of what to do about death in a location removed from the long-term home is the same. Even today, with the comparative ease of transporting the bodies of those who unexpectedly die away from home, burial sometimes is accomplished where the death occurred.

Other scenarios are possible and would not have to be mutually exclusive with the possibility of death away from the home base. Indeed, in light of the transitory nature of the Schultz phase occupation and the likelihood that base camps and the mounds that accompany them are concentrated in the larger river valleys, any number of scenarios can be imagined that would start from this point. The apparent funerary objects, the nearly century-and-a-half of cultivation of the Elliott locality, the extensive collecting that has gone on at this site (e.g., Brower 1897:163-164), and the possibility of additional human remains among the unidentifiable bone also must be considered.

The Elliott site burials, their context, and the arrangement of the habitation site remains among which they lie thus provide a small but important window through which to view aspects of Woodland-period culture in the greater Manhattan area. This, in turn, is a critical step in elucidating the evolution of the Ceramic-period cultures of the Plains and in understanding the relations of Woodland culture-bearing peoples of the eastern Plains to their contemporaries to the east.

Notes

1. Following the taxonomic system in use at the time, the Schultz complex was originally defined as a focus (Eyman 1966). It technically has never been formally redefined as a phase, but it probably could be considered to meet the criteria necessary for designation as a phase, and it has been so referred to in the literature (Johnson and Johnson 1998:208). This latter usage is followed here.

2. The Elliott site collection is curated in the Kansas State University archaeology laboratory. The human remains and funerary objects described in this paper are listed on Kansas State University's NAGPRA inventory. Their ultimate disposition will be in accordance with the results of ongoing consultation.

3. I am being conservative here. Actually, the validity of the Schultz phase is questioned and rightly so, if one adopts a view of phases as representing discrete peoples – tribes, if you will – who came into,

lived in, and left a particular area. The view is different if we postulate long-term continuity and see phases as simply arbitrary divisions of time (and, to an extent, space, although that is not the concern here). Some Schultz phase mounds contain cross-hatched rims reminiscent of Hopewellian vessels. Indeed, the first site of this complex described in the literature is headlined as a Hopewellian site (Schultz and Spaulding 1948). Other mounds contain obvious Central Plains tradition objects (Eyman 1966). As I look at various Woodland – both "Hopewellian" and Schultz phase – collections, though, I fail to see a major difference, and I certainly find no evidence for the implied temporal difference between them. The Macy site (14RY38) sequence, limited though it is in size, appears to show this quite nicely. The so-called Hopewellian occupation and the Schultz phase in the Manhattan area simply are the same thing. The Manhattan area material is no more Hopewellian than the Smoky Hill phase, with its occasional shell-tempered vessel, is Mississippian. On the other end of the temporal continuum, I have for some time been of the opinion that the Central Plains tradition represents a transformation of at least certain aspects of the lifeways of an otherwise enduring people (Roper 1995:217) or, if you will, that the Central Plains tradition grew out of Woodland. The presence of Central Plains tradition, i.e., Smoky Hill, materials in mounds may reflect a continuation, for a time at least, of the public monument-building discussed by Krause (1995). Of course, far more work with the Woodland materials is needed to validate this. My discussion in this paper, however, will not be negated by such work, for I know of no scattered human remains or bone beads in the local "Hopewellian" sites.

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NOTES

Archeology at Hard Chief Village: An Introductory Study of the Kansa Indian Experience in the American West, 1806 - 1846

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The Kansas Anthropologist 21:57-89

This study is an addendum to previously published archeological reports concerning excavations carried out at Hard Chief village, 14SH301, a historic Kansa Indian village. The excavators were members of the Kansas Anthropological Association, participating in the 1987 Kansas Archeology Training Program field school, sponsored by the Kansas State Historical Society. Added to the previous reports is a detailed description of the recovered artifacts and an introductory historical review of events and personalities that led to the establishment of the village and during its occupation from 1830 to 1847.

The presence of overlapping houses tends to confirm historical documentation that Hard Chief abandoned the site in 1844 and that another village, led by a chief identified as Broken Thigh, existed there until 1847.

There were other occupants at the site, but they are only noted in this report. The emphasis is on the Kansa Indian occupation. Some cord-roughened pottery sherds and stone tools are identifiers of an earlier Woodland culture, known as the Grasshopper Falls phase. Other specimens are remnants of modern farming activity.

The Kansas State Historical Society and the Kansas Anthropological Association sponsored an archeological field school in 1987 at a site near the junction of Mission Creek and the Kansas River in Shawnee County, Kansas. Two reports have been published that summarized the activity of the field school and the information that was recovered from the excavations (Reynolds 1987; Thies 1988a, 1988b). The Society archeologists were distracted from their intention to follow these summary reports with a formal analysis. The author was asked, as a volunteer researcher, to fulfill that obligation.

The site, listed in the Kansas inventory of archeological sites as 14SH301, was not an unknown entity. It had long been recognized as the locale of Hard Chief village, a Kansa Indian village that flourished from 1830 to 1846 (Wedel 1946:3). Broader studies have been done using archeological, ethnohistorical, and historical resources to relate a cultural history of the Kansa Indians. George P. Morehouse (1908), Waldo R. Wedel (1946, 1959), and William E. Unrau (1971) are authors of these major studies.

The historical scope of this study is more limited. The focus is within a historical setting that is concerned with the Kansa experience with the Americans as they began to move into their newly purchased Louisiana Territory.

Objects recovered from the surface of the site and from the excavations give evidence of other occupants. They are identified as post-reservation or modern farmers and a prehistoric Woodland culture that had already been designated with the archeological taxon the Grasshopper Falls phase (Reynolds 1979). The purpose of this study, however, is to define the Kansa village, which is significant because it is one of two nineteenth-century Kansa villages that have been investigated by ar-

cheologists and historians. Records are reviewed, indicating that other Kansa villages existed, but few sites have been located. Historians have noted this imbalance between archeological and historical research (Unrau 1971:xxiii). This study, by defining the Kansa Indian occupation at the site and describing the material recovered from the excavations, can be added to the records concerning the Kansa and may begin to bring the two research disciplines back into balance.

The author joins with the participants of the field school as another volunteer with the hope that this report will be accepted as a contribution to the cultural history of Kansas that is equal to the contribution of the excavators of Hard Chief village.

Geographical Setting

The site of Hard Chief village is on a high ridge that is a part of the formation of the southern edge of the Kansas River trench. The east-flowing river meanders within the valley. Maps drawn before the turn of the century show the river abutting the base of the ridge; however, today the river loops a little more than a mile north of the ridge and then meets the southern wall of the trench just east of the site. The river then continues its course along the southern wall through the city of Topeka. The floodplain is about 3 miles wide.

The highest contour on this ridge is 1,030 feet above sea level. A less precipitous east-facing slope defines the western wall of a valley within which Mission Creek flows from south to north, where it joins the Kansas River. The Mission Creek valley is about a mile wide across the mouth of the creek. Hard Chief village sits 130 feet above the bottomland, overlooking the junction of these two drainages

The Chicago-Rock Island Railroad was constructed to follow along the base of the southern wall of the Kansas River valley. The town of Silver Lake is within the floodplain and is located about 1.5 miles north of the site. Another community, Valencia, is just west of the site. The Kansas River valley from the mouth of the river west to Manhattan, Kansas, is today a major agricultural corridor protected from flooding by a series of dams constructed on major rivers that feed into the Kansas River.

The erosion-resistant rock has been sculpted by the river, and the creeks are strata of sedimentary shale and limestone. Strata of Scranton Shale is overlain by Bern Limestone (Buchanan 1984:188). The topography south of the Kansas River is classed as Osage Cuestas, whereas north of the river the underlying strata have been covered with glacial-deposited materials. All of northeast Kansas is a glaciated region (Buchanan 1984:3, 16-17).

The Kansas River and all the rivers and streams that join it drain some 60,000 square miles. Some 4.75 million acre-feet of water per year drain into the Missouri River (Buchanan 1984:188). Today the Kansas River trench is a locale of agricultural, industrial, and urban development, but before this – before railroads and steamboats, before being contested as a free or a slave territory, before being set aside as a reservation for indigenous and immigrant Indian tribes, and before being the gateway to the Oregon and Santa Fe trails to the west – the river was the homeland of the Kansa Indians. This has never been disputed archeologically, and there is historical documentation that reaches back to the eighteenth century, most of which are accounts of French explorers.

Current residents can only imagine the scene of the Kansas River valley and envy early travelers who admired the area. John Charles Fremont camped on the edge of the trench which, as he described, "commanded a fine view of the river valley, here from three to four miles wide" (Jackson and Spense 1970:175). A belt of heavy timber aligned the river and, as Fremont wrote, "nearer the hills the prairies were of the richest verdue" (Jackson and Spense 1970:172). The small, well-timbered feeder streams reminded Fremont of trenches in the prairie. He recorded that the trench was about 3 miles wide. He shared his enchantment of the open upland prairie, enlivened with splashes of color from blooming wildflowers. Fremont wrote:

> Along our route the amorpha has been very abundant but variable bloom; in some places bending beneath the weighted purple clusters: in others without a flower. It seems to love best the sunny slopes, with dark soil and southern exposure. Everywhere the rose is met with, and reminds us of cultivated gardens and civilization. It is scattered over the prairies in small bouquets and, when glittering in the dews and waving in the pleasant breeze of the early morning, is the most beautiful of the prairie flowers (Jackson and Spense 1970:191).

One more delightful narration must be referenced. John K. Townsend encamped on Vermillion Creek, which is just west of Mission Creek, after having been in one of the Kansa villages. The party fished and caught an abundance of catfish. This attracted flocks of ravens that, as they are described, "hopped about the ground all around the camp; and as we left it, they came in pell-mell, croaking, fighting, and scrambling for the few fragments that remained" (Townsend 1966:149).

A day or so later the journal reads:

> The little streams of this part of the country are fringed with a thick growth of pretty trees and bushes and the buds are now swelling, and the leaves expanding to 'welcome back the spring'. The birds too, sing joyously amongst them grosbeaks, thrushes, and buntings, a merry and musical band. I am particularly fond of sallying out early in the morning, and strutting around the camp, the light breeze just bends the tall tops of the grass on the boundless prairie, the birds are commencing their mating carolling, and all nature looks fresh and beautiful (Townsend 1966:150).

A ribbon of deciduous forest reached westward toward an ocean of prairie and grassland that stretched to the Rocky Mountains. The woodland within the river valley supported elk, deer, antelope, bear, and beaver, as well as a profuse and varied collection of bird species. Turkeys were particularly abundant. The grassland was the domain of the bison. Fremont was riding leisurely along one afternoon when all of a sudden he was caught in a moving herd of bison. He first noticed, as he described,

> clouds of dust in the ravines among the hills to the right, suddenly attracted our attention, and in a few minutes column after column came galloping down, making directly to the river. By the time the leading herds had reached the water, the prairie was darkened with dense masses. Immediately before us, when the bands first came down into the valley, stretched an unbroken line, the head of which was lost among the river hills on the opposite side, and they still poured down from on our right. From hill to hill, the prairie bottom was certainly not less than two miles wide, and allowing the animals to be ten feet apart, and only ten in line, there were already 11,000 in view . . . In a short time they surrounded us on every side, extending for several miles in the rear, and forwards as far as the eye could reach (Jackson and Spense 1970:191).

These eyewitnesses were not intending to be romanticizing propagandists. Everyday they were confronted with tribulation, and often their very lives were at stake. But here they have shared a reflective moment, and the reader can enjoy a sense of wonderment of this country in its pristine state.

Previous Research

The first archeological excavations at Hard Chief village were carried out in 1987. The location of the village and its identification, however, were published in 1906 (Kansas State Historical Society 1906:573). Before the turn of the century, researchers at the Kansas State Historical Society were beginning to extract a history from records left by explorers, missionaries, fur traders, and others who had visited the Kansa villages. Franklin Adams, the Secretary of the Kansas State Historical Society, had a map drawn of the Blue Earth village, a Kansa village at the junction of the Blue and Kansas rivers in the vicinity of Manhattan, Kansas. Ruins of the lodges were still visible (Kansas State Historical Society 1881:283). Some eyewitnesses to the Kansa villages on Mission Creek were still living in the 1880s. They were contacted and, through letters and interviews, recollections were collected. For example, one unique document, contributed by Adams and W. W. Cone, is an 1880 interview that was done with Frederick Chouteau in which he related his memories of his life as a fur trader with the Kansa (Adams 1904:423-424).

Archeology was still in its infancy at the turn of the century in that the purpose of excavating was a means of collecting Indian curios. Still, pioneer archeologists were beginning to make a contribution. J. V. Brower visited Hard Chief village around the turn of the century, and he had a sketch map drawn of the site that roughly shows the extent of the village and the position of the ruins were lodges once stood (Thies 1988a:96). Frederick H. Sterns did some excavating at Blue Earth village in 1914 (Mollory 1993:188). Sterns also visited other sites that were known to local collectors. One of these, located on Wolf Creek in Doniphan County, was later named the Fanning site. Sterns concluded that it also represented a Kansa occupation (Wedel 1959:95-96).

Modern systematic archeological methodology can be credited to Waldo R. Wedel when he was assessing the archeological potential in Kansas for the U.S. National Museum in 1937. Blue Earth village and the whole Kansa question was more intensively researched by Wedel (1946, 1959:187-197). Wedel wished to compare artifacts from the Blue Earth village with the collections that he previously had excavated from the Fanning site (14DP1) and the Doniphan site (14DP2). The Doniphan community in Doniphan County was known as a site of Indian occupation, but it had been overlooked by collectors. Wedel believed that this site was the Kansa village that had been visited by Etienne Veniard Bourgmont in 1724. The site was given the distinction of being the earliest histori-

cally identified village in the state. The Fanning site, Wedel suggested in concurrence with Sterns, may have been a Kansa village that was inhabited at the time of the Jolliet expedition in 1673. Wedel's goal was to arrange the three sites in a chronological order, extending from the nineteenth century back into the seventeenth century.

The excavations at Blue Earth village revealed that by the beginning of the nineteenth century, the Kansa were completely dependent upon European trade and that they had lost many of their traditions of native manufacture. No artifacts were recovered that could be compared with the collections from the Doniphan or Fanning sites. Reliant upon archeological evidence alone, Wedel could not relate the Blue Earth village to the earlier occupations that were identified tentatively as Kansa villages (Wedel 1959:197).

Resolving this problem was a goal of Roscoe Wilmeth, Kansas' first state archeologist. He wished to continue an archeological and historical research program with the hope that, sooner or later, items of native manufacture would be found that would make possible the identification of pre-European villages (Wilmeth 1960:157).

Most of the historically identifiable Kansa villages were nineteenth-century occupations. The antecedent of these villages is controversial and remains an unresolved historical and archeological problem. Blue Earth is considered the parent village of the Mission Creek villages, but only two of the known villages have undergone limited excavation.

The Mission Creek villages had been visited and surface collections gathered every so often over the years. Wilmeth collected some material in 1957. Thomas A. Witty, Jr. and the author spent a day or two in 1967 at Hard Chief village and at another village known as Fools Chief village. Witty was then the state archeologist for Kansas. The areas have been more systematically surveyed since then, but it was not until Hard Chief village was selected to be the site of the Kansas Archeology Training Program field school that Witty had the opportunity to excavate.

Perhaps the real success of the 1987 field school was that it demonstrated that these villages are still partly intact and can be salvaged. The activity also attracted positive publicity. People in and around the Topeka urban area gained an awareness of their historical and archeological treasure, and they were able to see for themselves the effort that was involved in investigating it. A real appreciation of this segment of history remains to be seen.

It is too late for the Blue Earth village. Erosion by the Kansas River and the encroachment of the town of Manhattan has all but obliterated the site. This sad and irreplaceable loss means that Hard Chief village and the others are more precious than ever as remnants of the cultural history of Kansas and the West.

Historical Setting

Colleagues cautioned William I. Unrau, before he undertook to write his history of the Kansa Indians, that the record was inadequate and unremarkable for a vibrant history. One notable source that was lacking was an adequate archeological guideline for the prehistoric period or the period of time prior to European contact (Unrau 1971:xxii). Also lacking was an archeological guideline for the historic period or the time throughout which the Kansa were in contact with Europeans.

Another expressed concern was that readers of the history would find it rather dull and lackluster (Unrau 1971:xxiv). The history that Unrau has produced is not dull and lackluster but is a tedious list of examples of greed, coercion, and fraud. As events unfolded, the Kansa could only react, and each incident was more diminishing to their society than the one before.

This study does not mean to rewrite the history of the Kansa Indians. Rather the intended contribution is an examination of some archeological material that can be added to the research resources that concern the Kansa Indians. A historical setting is reviewed to position the Kansa on and around Mission Creek, and specifically at Hard Chief village, from 1830 to 1847.

Unrau discovered that what is truly remarkable about the Kansa was their tenacity in maintaining their society when confronted with an aggressive European culture intent upon domination. There was no one dramatic event, such as a decisive war, to which he could refer. The history is a rapid deterioration of Kansa society that ended with an assignment as a powerless minority to Indian Territory in 1873 (Unrau 1971:215).

The Kansa had already absorbed the impact of 100 years of French exploitation of the Missouri River valley when the Louisiana Purchase was concluded. Now all the tribes were part of the American West. Two dates bracket the period from the time that the Americans introduced themselves to the last days the Kansa would live in their own homeland: October 4,1806, and June 3, 1825.

A New Government, a New Policy

Zebulon Pike recorded in his journal that on a Saturday, October 4, 1806, "Two French traders arrived at the village in order to procure horses to transport their goods from the Missouri to the village. They gave us information that Captains Lewis and Clark, with all

their people, had descended the river to St. Louis. This diffused general joy through our party. Our trade for horses advanced none this day" (Jackson 1966:1:330). Pike was in a Pawnee village on that October day and was well into his mission.

Pike had already returned ransomed Osage captives to their own village. He continued on, led by Osage warriors, to a Pawnee village where he held council with the Pawnee and arranged a truce between the Osage and the Kansa, resolving animosities between these two tribes as competitors in the Spanish and French trade. This treaty between two closely related antagonists, the Osage and the Kansa, was the most successful diplomatic accomplishment of the expedition; however, history has made famous the act of the Pawnee chiefs lowering the Spanish and hoisting the American flag. This act showed the momentary confusion of the Pawnee chiefs. The first flag represented an allegiance to Spain to which the Pawnee chiefs had committed (Ewers 1997:103-118). The village had just been visited by a Spanish military patrol, and the Pawnee had been requested to halt the American advancement. Now they witnessed Kansa and Osage representatives, their enemies, committing to the Americans and to each other. The Pawnee chiefs had to sort all of this out in just a few days.

The return of Osage captives was in keeping with a truce that President Jefferson arranged a year earlier. A peace treaty was agreed to between the Osage on one part and the Delaware, Miami, Potawatomi, Kickapoo, Sac, Fox, Kaskaskia, Sioux, and Iowa on the other part. One young Kansa warrior was at this council in Washington and met President Jefferson.

Pike was carrying to all tribes a general order that the United States was now the controlling power and that the President would no longer tolerate intertribal wars. Jefferson's message was that "the late stroke (attack) of the Pottawattomie on the Osage must be strongly reprimanded. The Indians on this side of the Mississippi (western) must understand that the river is now ours and is not to be a river of blood" (Jackson 1966:1:287).

No one knew the southern limits of the Louisiana Territory. A boundary between the United States and Spain was not defined until the Adams-Onis Treaty of 1819. Spain settled by not claiming Oregon and by selling Florida. In return she was guaranteed the possession of Texas (Wishart 1979:14). Prior to this treaty, war had been thwarted by an informal agreement that a neutral zone between Arroyo Hardo and the Sabine River in Texas would be respected (MacGregor 1969:120). Pike had been ordered to do nothing that would antagonize the Spanish authorities in Santa Fe.

Osage warriors guided Pike and his men from Manual Lisa's trading post at the town of the Grand Osage to the Pawnee village. Unknown to Pike, he was led on a roundabout route that skirted the western limits of the Kansa domain. Pike later commented that he had not appreciated just how apprehensive the Osage were of the Kansa. On a Friday, September 12, 1806, the expedition was hiking over the Flint Hills, probably within present-day Marion County, complaining of sore feet. Osage guides informed Pike that they were in Kansa hunting country and that they wished to kill all the game they possibly could to deny the Kansa (Jackson 1966:1:317).

The Pawnee were met 13 days later, and it was learned then that the Spanish were aware of the American presence. The Spanish had sent out a military patrol in force that was led by Don Facundo Malgares with the objective of intercepting the American expedition (Goetzmann 1991:37). The Osage and representatives of the Kansa were allowed into the Pawnee village on September 26. Two days later they smoked the peace pipe. By October 3 the Pawnee chiefs decided that they had extended enough hospitality. They were not going to stop Pike, but neither were they going to escort him on to a council with the Comanche. The Kansa were asked to leave the village with a gift of a gun and a promise of some horses. Apparently the Kansa were reminded of what war was like with the Comanche (Jackson 1966:1:328-329, 1966:2:153).

Pike continued on his own adventure and Spanish captivity. The Kansa returned, most likely to the Blue Earth village, which is located on the map, "The Internal part of Louisiana" (Jackson 1966:1:459). Pike's contribution to this map was his own route on the Missouri River to the Osage town and then across Kansas to the Pawnee village on the Republican River.

Meriwether Lewis and William Clark reported two villages on the Kansas River and the ruins of an older village on the Missouri River just above the mouth of the Kansas River. They wrote in their journal that, "On the banks of the Kansa reside the Indians of the same name, consisting of two villages, one at about 20, the other 40 leagues from its mouth, and amounting to about 300 men" (Coues 1970:34). Their information was hearsay, but it is reasonable to conclude that the far village was the Blue Earth village, which is the oldest village on the Kansas River that has been located and identified as of yet (Wedel 1959:52).

An Indian Policy

Following their return from their explorations, Captains Lewis and Clark were promoted to new assignments with new obligations. Lewis, as governor of the Louisiana Territory, and Clark, as Indian agent for the tribes and commander of the Louisiana Militia,

were to be the implementers of Indian policy (Steffen 1978:53-66).

The policy was conceived by Thomas Jefferson. All of the tribes east of the Mississippi River would be transplanted to the west, leaving the eastern half of the continent empty to be filled with settlers who would fulfill Jefferson's concept of a country founded upon agrarian expansion. Americans would assume the fur trade, thus assuring a presence that would challenge the growth of the British sphere of influence, and these traders would explore and map the territory in preparation of future settlement (Wishart 1979:17-18).

The intellectual foundation of Jefferson's reasoning rested upon a scientific view of mankind that reflected the thinking of the American Enlightenment. Environmental factors caused the Indian societies to be less civilized than American society, but the Indians, having the same attributes as all men, adapted to their wilderness very successfully. Once exposed to American society, the Indians would adapt equally as well again and progress to a level of civilization that was compatible to American civilization. Jefferson's references were the philosophers of the Enlightenment, and he was convinced of the inevitable success of his Indian policy. A regulated commerce, not military, would be the controlling force by which all the inhabitants in the Louisiana Territory would be coerced to accept American interest. This force, in turn, would generate a decrease of British and Spanish influence (Steffen 1978:53-66). The weapon of choice, by which policy would be implemented, was the Indian factory system. Trade would be regulated, American interest protected, and the tribes assimilated into an agrarian society.

Federalist opponents of Jefferson argued that if the population dispersed into the wilderness, it would be too unmanageable to govern. Instead of civil progression, people would revert to some stage of savagism (Wishart 1979:17). More realistic questions were raised about how these tribes would be induced to move. Assurances were given that the tribes would be protected and that controlled settlement would fill vacant spaces one step at a time. The fur trade would represent American interest, and this trade would be regulated by the factory system. The first factory was established at Bellefontaine near St. Louis in 1805. Soon another was built at Fort Madison and then another at Fort Osage near present-day Kansas City.

Lewis and Clark came to their new offices with a clear understanding of the policy that they were entrusted to implement. Their overall view of the problems confronting the government on this new American frontier and the established French colony was insightful. Lewis wrote the following views in an essay on Indian policy (Coues 1970:1215-1243).

> The wrongs of previous French and Spanish trade practices had to be corrected. Corruption in granting trading privileges had taught the tribes to be demanding and aggressive, which eroded respect for authority. The tribes, once satiated with trade goods, asserted their independence and raided one another or unprotected Europeans on the frontier. Corruption also was inviting the real enemy of America – the British, and particularly the Northwest Company – to dominate the territory economically and politically. The British fur trading companies were first and foremost implementers of policy for the British crown.

Lewis recognized that a cultural dichotomy existed among the tribes. Some tribes were sedentary horticulturists, while others were organized in roving bands that made them difficult to govern. The Kansa were mentioned by name as having an existence that had fully adapted to the pattern brought about by the horse and the gun (Secoy 1966). The Kansa were loyal to whomever was the source of the trade, and it made little difference to them if the source was American, British, Spanish, French, or some independent origin (Coues 1970:1234). They had learned that "the white men are like dogs; the more you beat them and plunder them, the more goods they will bring you, and the cheaper they will sell them" (Coues 1970:1219).

The Indian factory would be a place where roving tribes could gather to benefit from a government-regulated trade under the supervision of a government agent. The vastness of the country prohibited the dispensing of agents to the tribes. Lewis argued for a strong military presence that would enforce policy applicable to the Indian and fur trader alike. He reasoned that the hearts and minds of all had to be won by word and deed.

The Kansa were not held in high regard. Lewis held the opinion that the Kansa were, in his own words, "dissolute, lawless banditti who were plundering traders as they ascended and descended the Missouri River" (Coues 1970:34). He also expressed a fear that the Kansa were considering commitment to the Spanish. Lewis reported to the Secretary of War that the Kansa, bands of Pawnee, Omaha, and Ponca might decide to join the Spanish, which would leave the Osage as the only American ally west of the Missouri River. The Spanish had invited these tribes to a council at the Great Saline in 1808. Louise Barry (1972:59-60) suggested that the site of this meeting, the Great Salt Plains meet-

ing, was present-day Alfalfa or Woodward County, Oklahoma.

Kansa flirtation with Spanish authority may have resulted from the tribe's first experience with the factory system. After leaving Pike at the Pawnee village, the Kansa spent a season hunting and trapping and then learned that they would not be hosting traders in their Blue Earth village. They were expected to travel to Fort Osage, where George C. Sibley had been appointed head factor. He previously served as assistant factor at Fort Bellfontaine. The Kansa arrived at Fort Osage in a truculent mood, and they demonstrated their feelings by robbing and abusing traders whom they happened to meet. Trading was always a cottage industry in the Indian villages. No class of professional merchants ever evolved. Thus, the whole village had to trek to Fort Osage, making them vulnerable to Potawatomi, Sac, and Fox raiders, who had been well armed by the British.

Sibley found the behavior of the Kansa intolerable and ordered that an embargo be put into effect. The Kansa turned to the Chouteau family to address their grievances, which made the government even more reliant upon the Chouteaus. The government, fur companies, and independent traders were all competing to dominate the trade. At the same time these organizations and individuals were joined in a rather symbiotic relationship that was focused upon profit and the threat of British domination. The imposed embargo forced the Kansa to affirm their loyalty to the United States. The Osage, however, were maneuvered to conclude a treaty by which the Americans acquired most of the land that was to become Missouri and Arkansas in return for a small annuity and the protection of the government (Barry 1972:61).

The fur trade expanded rapidly. Hard on the heels of Pike and Lewis and Clark, the trails to Santa Fe were rediscovered. Fur companies moved in force up the Missouri River toward the rich trapping grounds in the Northwest Territory. Americans joined with French engagés and, led by men such as Manual Lisa, formed a new society of traders who became known as Mountain Men. This new society of adventurers was destined to challenge the British and finally to lead the wagon trains of settlers over the Santa Fe and Oregon trails.

Intertribal wars had the potential to threaten expensive fur trade investments. It was just such a war that flared between the Pawnee and the Kansa, making it necessary for Sibley to go on a fact-finding mission in 1811 to arrange peace between the warring tribes (Unrau 1971:90). Sibley's optimistic and glowing report now characterized the Kansa as a noble and industrious people, who had the potential of reforming and becoming one of the best tribes in the agency. Historians have recognized this report as an argument for the success of the factory system. There was no realistic appraisal of the intertribal wars, and there was no consideration of the needs of the Kansa as they were trying to adjust to the factory system and the disrupted fur trade in general (Unrau 1971:91). In the face of rapid and momentous changes, the Kansa were forced to fend for themselves.

Within less than 20 years from the time that the Kansa met with Pike, Meriwether Lewis met his untimely death. The Louisiana Territory became the Territory of Missouri, the state of Louisiana was created, and a two-and-a-half-year war with Great Britain had been concluded. When William Clark was appointed governor of the Missouri Territory in 1813, the population was estimated to be 20,000 people. Eight years later, when proclaimed a state by President Monroe, the population was recorded as 70,000 (Barry 1972:69, 96).

The War of 1812 was the climactic event of a conflict that extended from 1794 to 1818. The Kansa were located too far west to be directly involved in the fighting. However, Americans were forced to consolidate their military strength, so the very few troops that were on the Missouri River were removed. Fort Osage was closed in 1813 (Steffen 1978:91). Clark had the task of keeping the tribes neutral. He relied upon and appreciated the influence that the Chouteaus and Manual Lisa exerted upon the tribes.

The closing of Fort Osage and the curtailment of the trade made the Kansa more aggressive and truculent than ever. Fort Osage, according to the Astorian Company trapper and explorer Robert Stuart, who wrote in 1813, "has been the means of reducing the turbulent Kanzes [*sic*] to a proper sense of the true relation in which Indians stand with their civilized neighbors" (Barry 1972:70). Clark was soon concerned that British influences were reaching the Kansa and Osage. He ordered Sibley to start another factory at Arrow Rock on the Missouri River in order to keep open trade with the tribes.

Records never indicate that the Kansa were ever really enemies of the Americans. They tormented, humiliated, and abused traders, sometimes approaching the point of torture, but they seemingly never set out to kill them. Henry M. Brakenridge noted this fact. He wrote that the Kansa rarely spilled the blood of white men, but, "when a hunter is found on their lands, they take his furs and his arms; he is then beaten with ramrods and driven off" (Unrau 1971:94).

Kansa strategy, recognized only by Lewis, was consistent: mistreatment of white men resulted in more abundant and even cheaper trade goods. American strategy was also consistent, due only to Clark. The 1815 treaties – arranged with the Kansa and with the

eastern tribes, which were more directly affected by the War of 1812 – illustrated Clark's commitment to Jefferson's policy (Barry 1972:74). Because of the war, American attitude changed from a Jeffersonian perspective to a Jacksonian view. Both positions had the goal of claiming land, but now efforts to assimilate Indians were given a low priority. Americans were moving west into an American territory that was formally defined by the Adams-Onis Treaty of 1819. Kansa territory decreased. Clark ordered Sibley to create a provisional treaty with the Kansa in 1818 in which the Kansa sold their land as far west as the present Delaware River (Barry 1972:79).

The Cow Island Incident

The war years made clear to Americans that the frontier needed protection from Indian tribes. Now the Kansa strategy was to be confronted head-on by American authority. A military force returned to the Missouri River in 1818 as the Missouri Expedition. The expedition, designed by the Secretary of War J. C. Calhoun, was of three parts: the Missouri Expedition, the Mississippi Expedition, and the Scientific Expedition.

The Scientific Expedition, which was under the command of Major Stephan H. Long, has received most of the attention of researchers, particularly Dr. Thomas Says' visit to the Blue Earth village on August 20, 1819 (James 1966). An advance party of the Missouri Expedition had reached Cow Island a year before and established Martin Cantonment. The First Battalion of the Rifle Regiment was commanded by a Colonel Chambers, but he was called back to Bellefontaine while the boats were journeying north. He appointed Captain Wyle Martin as temporary commander (Nichols 1969:6-8). Ten officers and 347 enlisted men arrived in 10 boats on October 18, 1818. Each boat carried a four-pound Howitzer gun and enough supplies to support the battalion for one month. A week later another boat arrived carrying a load of trade goods that belonged to the Missouri Fur Company (Nichols 1969:31).

The Kansa Indians went to work. They plundered a boat on or about October 20. Then they boarded a contractor's boat and stole a shipment of flour. They moved on to Cow Island on November 2 and set up 30 brightly painted tipis (Nichols 1969:33). A display of artillery and a concert by the military band impressed the warriors, but not for long. The very next day the sutler's store was robbed, and other equipment around the camp was stolen. Meanwhile, a party of army hunters had been captured and robbed of their clothes and the game they had shot. Captain Martin then learned, while he was searching for the hunters, that still another boat had been fired upon.

Martin's patience was wearing thin. He arrested a Kansa chief as a hostage and prepared his command for an attack. Orders were issued to arrest any Indian who could be captured. On November 23 the captives stood before Captain Martin, charged with theft and of generally being treacherous ingrates who were undeserving of confidence and protection. The Kansa chief then responded to the charges with the following words.

> Father – your young men are prescribed within certain bounds. Not one of them can pass that chain of sentinels without your permission. Thus ever within your power you govern them with ease. But my warriors, impatient of restraint as the wild horse in the toils of the hunter, brook no control. Free as the air which they breath, light and impetuous as the Antelope, they bound mountains and more in pursuit of pleasure which nature has ordained they should enjoy. To confine them to one valley would deprive them of their subsistence: they would pine and die in penury and want.
>
> These woods and streams are ours: the beaver which inhabit this river and the buffalo which range in these forest are ours; their skin afford us clothing and shelter from the rude blast of winter; their meat a luxurious subsistence.
>
> Should we then who are Lords of the forest quit the pleasures and the adventures of the hunt, and like you, confine ourselves to one solitary valley, to practice discipline and subordination, to live in idleness and indolence. No father. In pursuit of the Elk and the Antelope we will sniff the morning breeze on the mountain, and in the evening repose among the lillies of the valley revelling in the spoils of our hunters and the embraces of our wives.
>
> Father – these pleasures we invite you to participate, we also invest you with an equal right with ourselves, to take meat from our forest and fish from our mountains as freely as the Great Spirit gave them to us.
>
> Father – we love and respect you, and mourn that there are bad men among us who have done you wrong. Their actions were not within my control. Punish not the innocent for the guilty. Free our hands from these chains. We will seek out the

culprits who have injured you, although they crouch in the thickest glen, or lie concealed in the recesses of the most inaccessable [*sic*] mountain.

Father – we will deliver them to you, to punish to your satisfaction, for the outrages they have committed against you, and pledge ourselves, that should one of our nation at any future period invince an evil disposition towards you, we will give him to your power, that with the rod of correction, you may open your ears to reproof (Nichols 1969:39-40).

Captain Martin found the prisoners guilty and had five of them flogged, "to mend their manners and morals" (Nichols 1969:40).

The Aftermath of Cow Island

About a month after the trial, Captain Martin learned from fur traders on the Kansas River that the Kansa chiefs had punished those who had abused the army hunting party. The following spring Colonel Henry Atkinson arrived with the 6th Infantry Regiment to reinforce the command. Preparations were already underway to move the army north to Council Bluffs. Benjamin O'Fallan, the Indian Agent for the tribes on the Upper Missouri and a member of the Missouri Fur Company, called together some 200 Kansa Indians to council in August 1819. O'Fallan distributed some gifts and told the Kansa what their behavior was expected to be from then on.

A day or so after this council, members of the Scientific Expedition returned to the cantonment from visiting the Blue Earth village. Despite the confrontations with the military authorities, the members of the expedition had been very well received. The Americans now knew that the Kansa chiefs were in some turmoil, fearing that the army was going to exact more vengeance. They were afraid, in fact, that the army was going to kill them all (James 1966:188).

The hereditary chief or the principal chief of Blue Earth village was identified as Ca-ega-wa-tan-minga or the Fool Chief (James 1966:191). The chiefs at Cow Island were Long Neck and Little Chief. Big Knife was identified as a war chief, and another warrior named White Plume was gaining in stature and would become a future leader (James 1966:177).

Under the leadership of zoologist Thomas Say, the Scientific Expedition collected a considerable amount of ethnographic information during its four-day stay in the village. The Americans learned a number of other facts, too: Frenchmen were permanent residents in the village, the 1806 peace treaty with the Osage was still in effect, there were many Osage-Kansa mixed marriages, and the Kansa were at war with the Pawnee (James 1966:183-211). In fact, the visitors experienced the war when they left the village to rejoin the troops. The party was pounced upon and robbed of its supplies. It was not until a month later that the Americans learned that the Republican Pawnees had attacked them. The Pawnee chiefs returned the supplies that had been seized (James 1966:243).

The French residents in the village may be likened to those who appeared at Council Bluffs on December 31, 1819.

> Several Canadians in the employee of the Missouri Fur Company came this evening to dance and sing before us, agreeably to the custom of their countryman, in celebration of the termination of the year. They were adorned with paint after the indian manner, clothed with bison robes, and had bells attached to different parts of their dress. So completely were they disguised, that three of their employers, who happened to be present, had much difficulty in recognizing them. This dance is called La Gineolet … we gave them what was expected, whiskey, flour, and meat (James 1966:274).

Charles E. Hoffhaus (1984:168, 199) explained that the song, a rousing piece traditionally sung in celebration of the New Year, was "La Guignolle." There can be little doubt that the song would have been heard that New Year's eve in the Blue Earth village.

In the spring of 1820, members of the Missouri Expedition learned that their appropriations had been cut and that they would not be advancing to the Yellowstone River, which was the original destination. The Engineer Cantonment at Council Bluffs was to be a permanent post. The soldiers mistakenly thought that the Missouri Territory had become a state without slave restrictions. In fact, Missouri did not become a state until 1821 because of the slavery issue (Nichols 1969:84).

Opposition to the government factory system finally realized a political victory. The last factory closed in 1822 (Foley and Rice 1983:175). The system had been in competition with the French establishment, and all the while the Americans relied upon the experience and knowledge of the old French fur trade culture. Now the Chouteau family officially reclaimed the enclave at the mouth of the Kansas River, which was known as Kawsmouth or the "Chez Les Canses" (Hoffhaus 1984).

The Kansa and a Changing America

A Kansa chief, shackled and standing before Captain Martin, had asked if the Kansa were to confine themselves to a solitary valley where they were to live with discipline, subordination, idleness, and indolence (Nichlos 1969:39). The answer, of course, was "yes." This had always been the intent of American policy, but American attitudes changed after the 1812 war. The war, pressures caused by illegal emigrates, and the slavery issue all but obliterated any idea of an enlightened assimilation policy. Hard and differing political agendas now dictated policy (Able 1904:72-86).

Two such agendas that became political bedfellows were the religious, philanthropic view of Reverend Issac McCoy and the pro-slavery view of John C. Calhoun. Calhoun desired to create an Indian buffer zone that would be a barrier to free-state expansion. McCoy had a paternalistic view. The tribes needed to be isolated and protected from socially and morally destructive forces before they could be elevated to higher degrees of civilization. The concept of a reservation was a compromise in that an indigenous tribe could be protected in isolation and at the same time restricted within an area that would assure that there would be room for displaced emigrant tribes.

The Kansa have the distinction of being one of the first to be assigned to a reservation, which by the Kaw and Osage Treaty of 1825 was created out of their own homeland (Able 1904:72-86). A provision was included in this treaty that 23 sections of land along the north side of the Kansas River was to be given to "half-breeds," while "full-blooded" Kaws shared the reservation in common (Able 1904:76). The 23 sections were given as compensation to the French residents, who were thoroughly assimilated into the Indian culture. These "half breeds," as they were noted to be, were assumed to be more civilized than the "full blooded" Indians. There was a vague hope that the French-Indians would take to farming and that the rest of the Indians would follow their example. These low French, who also were described as being "infected with papacy," found themselves as too Indian to be French and too French to be Indian (Hoffhaus 1984:138). They were fated to become expatriates in their own country, while their Indian kin were to be reservation dwellers.

The Kansa took little notice of the conversion of their homeland into a reservation. French-Kansa residents began to gather in a community in the southeast corner of the easternmost section of the compensatory land. The Kansa Agency was established in this community of Williamstown that was described as a "half savage white settlement" (Barry 1972:139). Most of the residents continued to participate in trade, and some became government employees on the reservation. These people were particularly valuable as language interpreters for the Americans.

The government was concerned that the Kansa would block the commerce that was expanding over the Santa Fe Trail. The 1825 treaty contained a provision that water courses through Kansa land would be navigated freely, but another treaty was necessary to assure that the overland routes could be traveled unmolested. A second route west was soon defined. First known in 1827 as Sublettes Trace, it became the Oregon Trail. A part of the route followed an old Kansa trail (Barry 1972:137).

As early as 1820 the Kansa were recognized as living in three bands. Hard Chief led one band. Fool Chief, replacing a head chief, led the second, and American Chief led the third. A flood may have damaged Blue Earth village in that year, which prompted the Kansa to think about moving on. In any event the village already had separated into the three partisan groups that would establish villages in the Mission Creek area (Barry 1972:94).

Prince Paul of Wuerttemberg, Germany, wrote his impressions after meeting with American Chief in 1823. The tribe, normally divided into bands, collected in one village. Political subordination under a single authority occurred only when the hunt was on or if the tribe was threatened by an outside danger (Barry 1972:95). Prince Paul and American Chief met on the Missouri River near Randolf Bluffs. The Prince camped some days before at the recently abandoned Fort Osage. American Chief may have learned from this visit that the factory had been closed. Prince Paul described American Chief as a progressive chief, who was esteemed by Europeans because he was a proponent of friendly relations and trade (Barry 1972:95, 112).

The Kansa and Osage trade anchored the Chouteau family business. The Chouteau company, the French Fur Company, became active in the Kansa River valley after the War of 1812 concluded and the factory at Fort Osage ceased operations. During these years the name of the French Fur Company was changed to the American Fur Company. The French may have had some doubts about just how the war was going to end. Now, however, they seemed to be committed Americans. The American Fur Company was interested in the Kansas River valley, not only because of the trade with the Kansa, but also because displaced Indian tribes were beginning to move in from the east. The company wanted to invest in this potential trade, too.

The Kansa began to drift east to settle into the

Mission Creek villages. They probably decided, after the experience of treking to Fort Osage to trade, that they once again would assert their independence and host the trade in their villages. This time an agency and missionaries had to be tolerated as a price for a local trading post.

The Kaw Reservation

Major Angus Langam was issued orders on September 14, 1824, to lead a survey party to map the extent of the 1,600-square-mile Kaw Reservation. Langam was stationed at Jefferson Barracks, Missouri. Troops E and F of the Second United States Calvary escorted the party. The survey party marched into Indian country in March 1826. The records note that the Kansas River was referred to as the Topeka River, but after February 1827 it was the Kansas River again. This fact may be local myth rather than history.

The Question of an Agency

John C. McCoy identified the agency as being on Horseshoe Lake about 8 miles above present-day Lawrence, which would be at Williamstown (McCoy 1890:303). Frederick Chouteau had his trading post there in 1829, then he moved to American Chief village in 1830 (Adams 1904:425).

Milton E. McCoy, himself a civil engineer and a descendent of John C. McCoy, concluded that the agency was built at present-day Silver Lake and that the building stood at that time and still today as a private residence. The information apparently was accepted as fact and published in the local newspaper, becoming part of the history of Shawnee County (McCoy 1940; Tabor 1946:17-18; *Topeka Daily Capital* 15 September 1946:7A). There is no evidence to support the location of an agency at Silver Lake.

An annuity payment was made to the Kansa in 1825. Barnett Vasquez met the Indians on the Missouri River and paid them in goods worth $3,500. Vasquez, the first agent to the Kansa, died in 1828. Frederick Chouteau called him a heavy drinker. Daniel D. McNair, the next agent, made payments at the agency on the Grasshopper River, which is the Delaware River (Adams 1904:423-424). The agents never lived at the agency. They would appear once a year about Christmas time, when the Kansa returned from their hunt (Adams 1904:431). The missionary William Johnson (Johnson et al. 1925:231) thought that the government was doing nothing for the tribe except supplying a farmer and a blacksmith.

Frederick Chouteau and his Trading Post

Frederick Chouteau's succinct recollection of his career never mentioned that his name and business represented a family tradition of trading with the Kansa Indians that began in 1786 (Foley and Rice 1983:41). In 1825 when he was fifteen years old, Frederick joined his older brothers, Cyprien and Francois, at Kawsmouth. Four years of schooling in the business prepared him to branch off to another post at Horseshoe Lake, where he stayed for two years. The post was established at American Chief village on Mission Creek in 1830. Chouteau stayed with the Kansa until 1853, following them to their relocated villages at Council Grove (Adams 1904:425).

Chouteau related that he lived at the post for most of the year. In the summer he delivered to the Indians goods that they would buy on credit. In winter the villages were empty, since the Kansa were on the hunt. A store of fur and hides was gathered when the Kansa returned in the springtime. Chouteau then transported the bales of pelts to the Missouri River to be loaded onto a steamboat and eventually carried to St. Louis. The trip down the Kansas River in a keel boat was an ordeal when the water was low (Adams 1904:428).

Kettles were the only trade item described. Iron and copper kettles were delivered in a nest, one kettle inside another, containing 10 different sizes. The largest kettle had a capacity of about 15 gallons. Copper or brass kettles sold for about a dollar per pound; iron kettles were somewhat cheaper. Copper kettles came with lids. Brass kettles were manufactured from single pieces of brass, while the iron and copper varieties were riveted and soldered (Adams 1904:431).

Chouteau's method of operating the business was explained in a rather matter of fact manner. He had a medicine man in his employment who acted as an enforcer, wielding the power of life and death. Anyone, man or woman, who misbehaved or who became forgetful about unpaid accounts could expect a beating by this self-appointed policeman. Even the chiefs felt the wrath of this strong-arm enforcer (Adams 1904:430-431).

There is no information about the trading post itself or who lived there. Frederick had four wives during his life, and not one of them was mentioned (Foley and Rice 1983:211). Two other brothers, Pharamond and Charles, assisted Frederick at the post, but they were not remembered either (Foley and Rice 1983:190).

The Reverend J. T. Perry was sent to carry on missionary work to the Kansa at the Methodist mission that had been built on Mission Creek by the Rev-

erend William Johnson. According to Perry, Charles Chouteau and Seth Hays were in charge of the trading post. Both men were kind and neighborly, and Perry's association with them was always agreeable. Perry does not mention Frederick Chouteau (J. T. Perry to W. W. Cone, letter, 30 December 1880).

The Reverend William Johnson and the Methodist Mission

The Reverend William Johnson established the Methodist mission at the Kansa villages on Mission Creek five years after the trading post began its operation. Johnson's labors were heroic, futile, and tragic.

The Kansa were always polite to Johnson. They always took care that a token child or two attended the mission school. Fool Chief even professed to being a Methodist for two or three years (Adams 1904:426). The most notable conversion was that of Major Daniel Boone, who was the farmer or agricultural agent for the Kansa (Johnson et al. 1925:228). Boone was the son of the Daniel Boone of Kentucky.

Reverend Johnson devoted seven years to the Kansa mission, during which time he became a student of the Kansa language. He saw his beloved daughter Mary Frances die when an epidemic swept through the villages in 1840. He wrote that "the awful cries of the Indians around the dead sounded in our ears" for days (Johnson et al. 1925:231).

Johnson died from pneumonia and overwork in 1842. He collapsed while on a trip to the Shawnee Mission. Indian runners carried the news to Mrs. Johnson, who immediately prepared to travel the 60 miles to be with her husband. Twenty Kansa chiefs and warriors gathered to escort Mrs. Johnson, as a guard of honor, to the Shawnee Mission. Reverend Johnson died an hour before she arrived. This man of uncompromising convictions was the best of the experiences that the Americans shared with the Kansa. The Kansa related to Reverend Johnson, not out of fear or dependency, but because he earned their respect. Reverend Johnson's fellow churchmen wrote of his death, "He had few equals and no superiors" (Johnson et al. 1925:234). Reverend Johnson likely would have reminded them that he did have a superior, as they all did.

Mrs. William Johnson must have been magnificent as the supportive missionary wife. Mary Jane Chick had married William in her family home in Howard County, Missouri, in May 1834. William was assigned to the Shawnee Mission, where they both arrived within a few days after their wedding. The move to Mission Creek occurred just a few months later. Mary Jane spent nine years in the Kansa villages. Mary's brother, W. S. Chick, visited her in the summer of 1836. Years later he wrote that Mary stayed on at the mission after William died. Subsequently she married John T. Perry, who was sent to continue the work that Johnson had begun. Perry had the task of building a manual labor school. The church authorities had hope that the mission could succeed primarily because of the influence that Mary had with the Kansa. She could speak the Kansa language (W. S. Chick to W. W. Cone, letter, 5 December 1880).

The mission was built in the summer of 1835. A two-story log cabin, 36 feet long and 18 feet wide, was raised. Chouteau helped to select the site with the agent, Major Robert Cummings. Daniel Boone was to plow a 300-acre field on Mission Creek and another 300-acre field on the north side of the Kansas River (Cone 1881:277).

The Kansa Chiefs and their Villages

The names of the chiefs, Chouteau explained, were meant to reflect the peculiar characteristics of each man (Adams 1904:42). Their names also identified each village: Fool Chief village, American Chief village, and Hard Chief village. However, one reference indicated that the villages had names different from those of the chiefs. The village that was headed by Fool Chief was called Prairie village (Barry 1972:166).

American Chief was thought to be about 75 years old in 1841, according to church leaders who visited the Methodist mission. He was described as a man of great strength and size in his youth. The old chief proudly showed the visitors the medals that had been given to him by President Thomas Jefferson years before. Perhaps he also had a story to tell about visiting Boston at that time. On the other hand, the opinion of the churchmen was that American Chief's son was a "vile wretch" (Johnson et al. 1925:263-264).

American Chief village consisted of 20 lodges, according to Chouteau. The lodges were good-sized, permanent earth lodges that were located on bottomland on the west side of Mission Creek, about two miles south of the Kansas River. Each lodge could house from 6 to 10 people. The village population was estimated to be about 100 people (Adams 1904:425).

Fool Chief was better known than the other two chiefs to Chouteau, who described him as being rather peaceful when sober but not a very brave man. Fool Chief had only two wives and three or four children. This chief was prone to drink liquor and exhibited uncontrollable rages when drunk. Fool Chief was killed by one of his own warriors, acting in self-defense, dur-

ing one of these drunken rages (Adams 1904:426-427). Fool Chief or Prairie village, home to 700 to 800 people, was the largest village. It was located on the north side of the Kansa River between the river and Soldier Creek (Adams 1904:425-428).

Hard Chief's age was estimated by Chouteau to be 40 to 45 years. This chief, as the name implies, may have been the most stern and conservative of the chiefs. Hard Chief refused to let the children of his village attend the mission school, especially after several returned to the village, became ill, and died. Another story stated that, when a Pawnee killed his brother San Oreilles, Hard Chief sent some 200 warriors on the warpath to avenge the death. He demanded that 100 scalps were necessary for retribution (Adams 1904:428-429).

Hard Chief village was established at about the same time that Chouteau moved his trading post to American Chief village, which would have been around 1830. An estimated 500 to 600 people lived in the village. Its location was about a mile away from the post on high ground near the Kansas River (Adams 1904:425).

White Plume fulfilled the predictions of the members of the Missouri Expedition and became a principal chief. He was, perhaps in 1830, about 50 or 55 years old. White Plume was one of those who was too French to be Indian and too Indian to be French. He finally decided to be Indian. For a time he lived near the agency at Williamstown in a stone house that the government built for him, but he soon became dissatisfied with this mode of living and left the house to return to Fool Chief village. He died sometime between 1835 and 1840 (Adams 1904:432), possibly in 1839 (Johnson et al. 1925:230).

White Plume was obviously a Kansa Indian, but he illustrated just how tightly the French culture was woven into the fabric of the Indian culture. One historian described White Plume as having the "heart, mind, and tongue of a Frenchman." In fact approximately 50 percent of the French-speaking tribal members were actual descendants of the French presence that reached to the early eighteenth century (Hoffhaus 1984:137, 142).

A number of anecdotes have been related about the chiefs that are supposed to be humorous, but the stories illustrate an American attitude of cultural superiority. One such story was that, while visiting Baltimore, Fool Chief found his hotel room stifling hot. He was later discovered cooling himself on the street, having removed all of his clothes (Adams 1904:426). Chouteau stated that these chiefs were men of great dignity and status. It was regarded as a great favor to be permitted to speak with them or to have social intercourse. Gifts, such as horses, had to be given before an audience was granted. Chouteau remembered that as many as 150 horses were given to three chiefs in order to gain their favor (Adams 1904:429).

Penury and Want in a Solitary Valley

William Johnson understood quite clearly the predicament of the Kansa Indians. The government was doing nothing for them, but still the Kansa were expected to accept inevitable changes. Johnson realized that the tribe would be destroyed if they refused to give up their traditional lifeway of leaving their villages to hunt bison twice each year. Game already was becoming scarce, forcing the Kansa to journey farther and farther west to buffalo country. A faction of the tribe left the Mission Creek villages to establish a new village some 40 miles west in order to be nearer the buffalo (Johnson et al. 1925:238). By 1837 the Kansa were traveling 200 miles or more to reach a hunting ground.

Devastating epidemics swept through the villages. In the epidemic of 1840, which claimed Johnson's daughter, as many as five individuals died per family. Very few families escaped. These epidemics caused the villages to be abandoned. Ordinarily, Johnson estimated, a village would be empty about one-third of the year, but during an epidemic the villages were empty two-thirds of the year (Johnson et al. 1925:232).

The Kansa were involved in perpetual war with the Pawnee and were always preoccupied with Pawnee retaliation. Even when the tribe was in the villages, large war parties were away raiding Pawnee villages and hunting parties. When the Kansa left their villages to escape the 1840 epidemic and to hunt bison, Pawnee raiders attacked them and stole some horses. The Kansa retaliated by raiding an unprotected Pawnee hunting encampment, while the Pawnee warriors were away on their own hunt. Ninety-three people, mostly women, children, and old infirm men, were killed. The raid degenerated into a ghastly butchery, which was later celebrated in the village by days of dancing and singing. Preparations then had to be made for the expected retaliation. Excited, newly made braves made sport of and humiliated the few families who were trying to build houses and change themselves into farmers (Johnson et al. 1925:233-234).

The missionaries noted that another village, composed of 25 bark-covered lodges, was located 8 miles west of Mission Creek. Church officials, who visited the village in 1841, identified the chief as being a man named E-ya-no-sa (Johnson et al. 1925:264). The Catholic priest, Father P. J. DeSmet, visited the Kansa in 1841. He described a village of some 20 lodges that

reminded him of "stacks of wheat which cover our own fields in harvest time" (DeSmet 1966:198). He saw the Kansa as living in two villages. One village was 6 miles from his camp, which was probably at the junction of Soldier Creek and the Kansas River (DeSmet 1966:197-198). This village was Fool Chief village, and White Plume hosted DeSmet there. DeSmet then traveled west to Vermillion Creek and "turned left" or south to the village where the lodges reminded him of stacks of wheat. Hard Chief and American Chief villages apparently were missed, or DeSmet saw these three villages as being one large settlement. He estimated the total Kansa population at about 1,900 people. The Methodist missionaries estimated the population to be 1,500.

DeSmet knew of the outrages that the Kansa committed on the Pawnee the past spring and that they were expecting nothing less than a full retaliatory attack. Pawnee warriors had already devastated some of the fields that the government had plowed and planted. The Pawnee were gathering to mount an attack (DeSmet 1966:206-207). This merciless cycle of raiding and suffering retaliation, in addition to the other factors that have been noted, had terrible consequences. An example can be found a few years earlier. In 1831 Hard Chief journeyed to Cantonment Leavenworth to inform the authorities that the Kansa had been raiding the Republican Pawnees and admitted that for the past year Pawnee scalps had been collected. Marston G. Clark, an agent for the Kansa, offered an explanation:

> The Kansa Indians are at this time as retched as human beings can well be. The severity of the winter prevented them from hunting and destroyed nearly all of their horses which rendered them incapable to resume their hunting or packing provisions from the white settlements if they had anything to purchase with: but that is not the case. They are roving about on foot begging and stealing both food and horses ... their natural disposition driving on also by distress they have renewed the war with the Pawnees and have lately taken scalps and horses (Barry 1972:183).

Clark's description of a particularly distressful time endured by the Kansa revealed factors, other than war, that were weakening the resolve of the Indians. The Kansa were begging for food and stealing from settlers. Natural causes were another factor, and in the end a catastrophic flood was the final victor over the Kansa.

The reservation was sprinkled with homesteads of illegal settlers. These squatters were "white" people and Indians of displaced tribes. The Kansa could sell their land in common, but the sale of private holdings was blocked. The French-Kansa "half-breeds" viewed the sections of land that had been given to them as saleable property rather than as potential farms. Squatters soon assumed ownership, while the owners spent much of their time in St. Louis, trying to gain payment. It was not until 1968 that the heirs of these holdings were paid $5.00 an acre, a price that was based on the 1862 evaluation. A court decision in 1984 asserted that all ancestral claims to these lands were lost forever (Hoffhaus 1984:144).

Some did settle on their "half-breed" reserve. Joseph Papin and his half-Kansa wife, Josette Gonville established a ferry crossing, which today is still a Topeka landmark. Her father was Louis Gonville, who was an interpreter and trader. Josette was raised in the home of Francois and Berenice Chouteau at Kawsmouth (Hoffhaus 1984:139-140).

The Kansas River valley was not a final goal of the Americans. The valley was a route to the west, traveled by explorers and settlers. One such traveler, Dr. Wislizenu, an emigrant from Germany, was with a party of American immigrants on Sublette's Trace, headed for Oregon in 1839. Dr. Wislizenu, biding his time while some of his party visited William and Mary Johnson, walked into Hard Chief village. The village was deserted at the time, but Wislizenu had a look around, and he later described what he saw.

> The village was on an elevation from which one can enjoy a pleasant and wide view. The whole village consists of 50 to 60 huts, built all in one style, in four somewhat irregular rows. The structure is very simple. On a round, arched frame of poles and bark, earth is placed with grass or reeds: at the top, in the middle, an opening is left for light and smoke; in front, at the ground, a similar opening as an entrance; and the shanty is finished. At the open door there is usually a reed-covered passage, extending a few steps into the street. There are about twelve cut braces inside the house; the fireplace is under the opening in the roof; at the side are some bunks of plaited strips of wood. The whole is rather spacious (Barry 1972:368-369).

Three years later John C. Fremont traveled the same route, which was then called the Oregon Trail rather than Sublette's Trace. When he crossed the Kansas River at the Ford of the Kansa on June 17, 1842, he considered that he had crossed a line dividing civilization and Indian country. Only 36 years had passed since

Pike was in the Pawnee village, listening to a trapper tell him that Lewis and Clark had made it safely home and at that moment were near St Louis. Fremont learned something entirely different. As he recorded in a journal, a wagon train of immigrants bound for Oregon was about three weeks ahead of him.

> ... a party of immigrants to the Columbia River, under the charge of Dr. White, an agent of the government in the Oregon Territory, were about three weeks in advance of us. They consisted of men, women, and children. There were sixty-four men and sixteen or seventeen families. They had a considerable number of cattle and were transporting their household furniture in large, heavy wagons. I understand that there had been much sickness among them, and that they had lost several children. One of the party, who had lost his child and whose wife was very ill, had Left them about one hundred miles hence on the prairies: And as a hunter Who had accompanied them visited our camp this evening, we availed Ourselves of his return to the States to write to our friends (Jackson and Spence 1970:175).

Fremont hired experienced men for his expedition. Most had been engagés in the employment of a fur company. This party attracted a gathering of Kansa Indians. The Kansa surprised Fremont by speaking fluent French to his men. Fremont remarked that the Indians spoke French "with as much facility and as little embarrassment as any of my own party, who were nearly all of French Origin" (Jackson and Spense 1970:174).

Fremont moved on a day or two later, and when he reached Vermillion Creek, he turned south to explore on his own. He came upon a deserted village in charred ruins. The Pawnee had retaliated in the spring of that year (Jackson and Spense 1970:175-176).

Fremont would have been confronted with an entirely different scene had he returned exactly to the Ford of the Kansa two years later on his homeward journey. Torrential rains fell in the spring of 1844. Eyewitness accounts, many given by those who were with stranded wagon trains, described the rain and ensuing flood in biblical proportions. The Kansas River was 8 to 10 miles wide after overflowing from bluff to bluff (Barry 1972:515-516). Eighty hours of rain fell on the Kansa villages in mid-June and the settlements were swept away by the raging river. The homes of the French-Indian community at Kawsmouth were destroyed, too. The Francis Chouteau farm was left buried under 5 feet of deposited sand (Barry 1972:518). Fremont did not escape the floods. His party was caught in a flash flood on the headwaters of the Smoky Hill River in July. He lost his specimen collection and almost all of his baggage (Barry 1972:521-522).

Recovery did not begin until September and October. At this time John Perry and Mary Jane (Chick) Johnson were married. Perry returned to the Methodist mission on Mission Creek in April 1845 with the intention of starting a manual labor school. Now a chief named Pi-hu-sca-goth-ra was at the village on the hill. The American translation of his name was Broken Thigh. Hard Chief had moved his village to Red Vermillion Creek. He was now the head chief, succeeding Fool Chief, who had been killed in January of that year (Barry 1972:542).

Old American Chief had moved his village to Mill Creek. He died before September 1845. He and some 200 others were victims of an epidemic that was attributed to killing all the horses. Deer and raccoons exhibited the same symptoms that afflicted the horses (Barry 1972:564).

The Kansa were not able to recover from the 1844 flood. The tribe gathered at the Fort Leavenworth Agency in February 1846, where they were supplied with food, blankets, and clothing, as well as guns and horses. The Kansa chiefs, led by Hard Chief, met the American authorities and surrendered their homeland. The Kansas River Reserve was sold for $202,000 to be paid over a period of 30 years. Destitution and starvation were not enough of an insult; the Kansa had to pay for their supplies and the expenses created by the sale of the reserve. The Methodist Episcopal Church was paid $400 for their Kansa mission.

American events moved on. President Polk declared war with Mexico in 1846. The Kansa prepared to move to Council Grove on a trail that eventually would lead to assignment to Indian Territory.

Archeology at Hard Chief Village

Roscoe Wilmeth had recommended that the site of the village should be investigated with test excavations. Efforts were made to do this as a prelude to nominating it to the National Register of Historic Places; however, the landowner was opposed to anyone having access to the site, so its precise location was not learned until surveying was done in preparation for the 1987 excavations (Thies 1988a:98-99).

Method of Excavation

The site was divided into two areas, 871 and 872. Area 872 had been planted in wheat and could not be excavated until after the harvest, which was too late in the season for the planned field school. Various locations within Area 871 were explored using soil cores to search for subsurface features. Thirteen potential subsurface features were noted along with two possible lodges. A datum was established (N1000E1000), and the potential features and possible lodges were mapped in relation to the datum. A north-south line was extended from the datum in alignment with magnetic north. A grid of 2 x 2-m squares was staked out. Each square was assigned a number preceded by the letter X, denoting an excavation unit. Any evidence of occupation was denoted by a number preceded by the letter F, referring to a feature number. The horizontal and vertical positions plus descriptions of each feature were written on record sheets.

An exploratory excavation began in X150 and extended west to X155. A north-south-oriented trench, extending from X91 to X226, was excavated crossing the east-west excavation. The archeologists were soon aware that a Woodland manifestation was present. Cord-roughened pottery sherds indicated a northeast Kansas Woodland culture that Reynolds (1979) had previously studied and assigned the archeological taxon the Grasshopper Falls phase. A decision was made to excavate a location recorded as House 2. A slight depression was visible, but the expectation was that the village had been erased by years of agricultural activity. Wilmeth had reached the same conclusion in 1957 (Thies 1988a:98). The excavations were expanded to completely uncover House 2 (Figures 1 and 2).

A total of 199 field school participants spent 15 days in a focused effort to define the Kansa Indian occupancy at the site. The excavators were responsible for recording their own observations. The occupations are described below as post-reservation farming activity, Hard Chief village (A.D. 1830-1847), and Grasshopper Falls phase (A.D. 400-1000).

Post-reservation Farming Activity

Post-reservation farming activity was represented by a few artifacts that were recovered from the surface of the site. One exception is a modern copper jacket .22-caliber bullet, found in X127, 0-15 cm below ground surface (bgs). Other items include a piece of a riveted leather strap with an iron harness ring, two square nuts threaded onto a bolt, a farm implement bolt that could be from a plow or a lister, and fragments of metal banding. The largest item is a piece of iron clamps that once was fastened on a shaft. The implement bolt was from X212 and the bolt with the square nuts was from X136. The rest of the items were the surface collection from the site, gathered before the grid system was established (Figure 3).

Several fence staples were recovered across the southern limits of the excavated squares X215, X218, X226, X228, X231, X232, X240, and X241. Apparently a fence crossed the field at one time (Figures 2 and 4h).

Hard Chief Village (A.D. 1830-1847)

The sub-surface features that define the village component are post molds, pits, and concentrations of rock. One concentration tentatively was thought to be a village feature (Thies 1988a:105-107).

House 2

A pattern of post molds defined a circular structure that was about 9 m (27 feet) in diameter with an extended, south-facing entryway. A hearth (F50) and a small cache pit (F173) were located within the structure (Figure 2). Two large post molds were at either side of the entryway, positioned just inside the periphery of the circle. F50 was at the approximate center of the lodge. Two other large post molds were located side by side southeast of the hearth, and one large post mold was southwest of the hearth. These molds showed where interior posts were placed to support the lodge entrance and roof. The paired posts suggested that repairs had been made with one post reinforcing or replacing the other.

The large post molds were 15-20 cm (6-8 inches) in diameter and were set into the ground 20-30 cm (8-12 inches) deep. The roof supports were placed 4 m (12 feet) apart. Similar posts, it is surmised, stood northeast and northwest of the hearth, marking the corners of a square that was about 4 x 4 m (12 x 12 feet). The posts that bracketed the entryway were set 3 m (9 feet) apart. Posts that outlined the lodge wall were 10 cm (4 inches) in diameter and were set at a depth of 10-15 cm (4-6 inches) below the floor level. Placement of these peripheral posts was rather haphazard, but the builders intended to set them about 40 cm (15-20 inches) apart.

A change in soil color also defined the lodge limits. A color differentiation was noted at 15 cm bgs. The circular stains, showing where posts once stood, appeared at a depth of 28-30 cm bgs, which means that the lodge was a semi-subterranean structure.

The north half of the lodge had been disturbed by

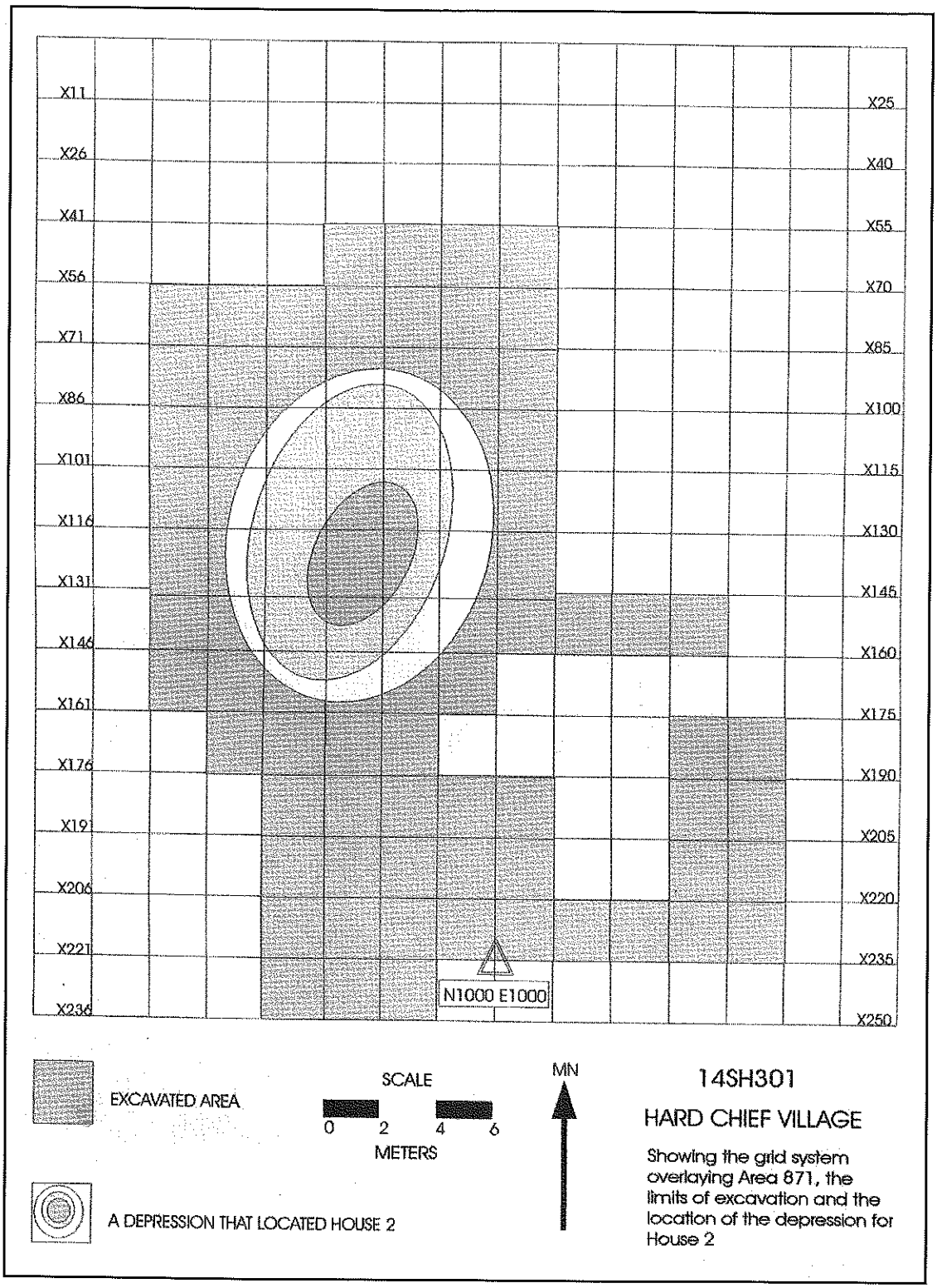

Figure 1. Plan map of Hard Chief village, showing the grid system overlying Area 871, the limits of excavation, and the location of the depression for House 2.

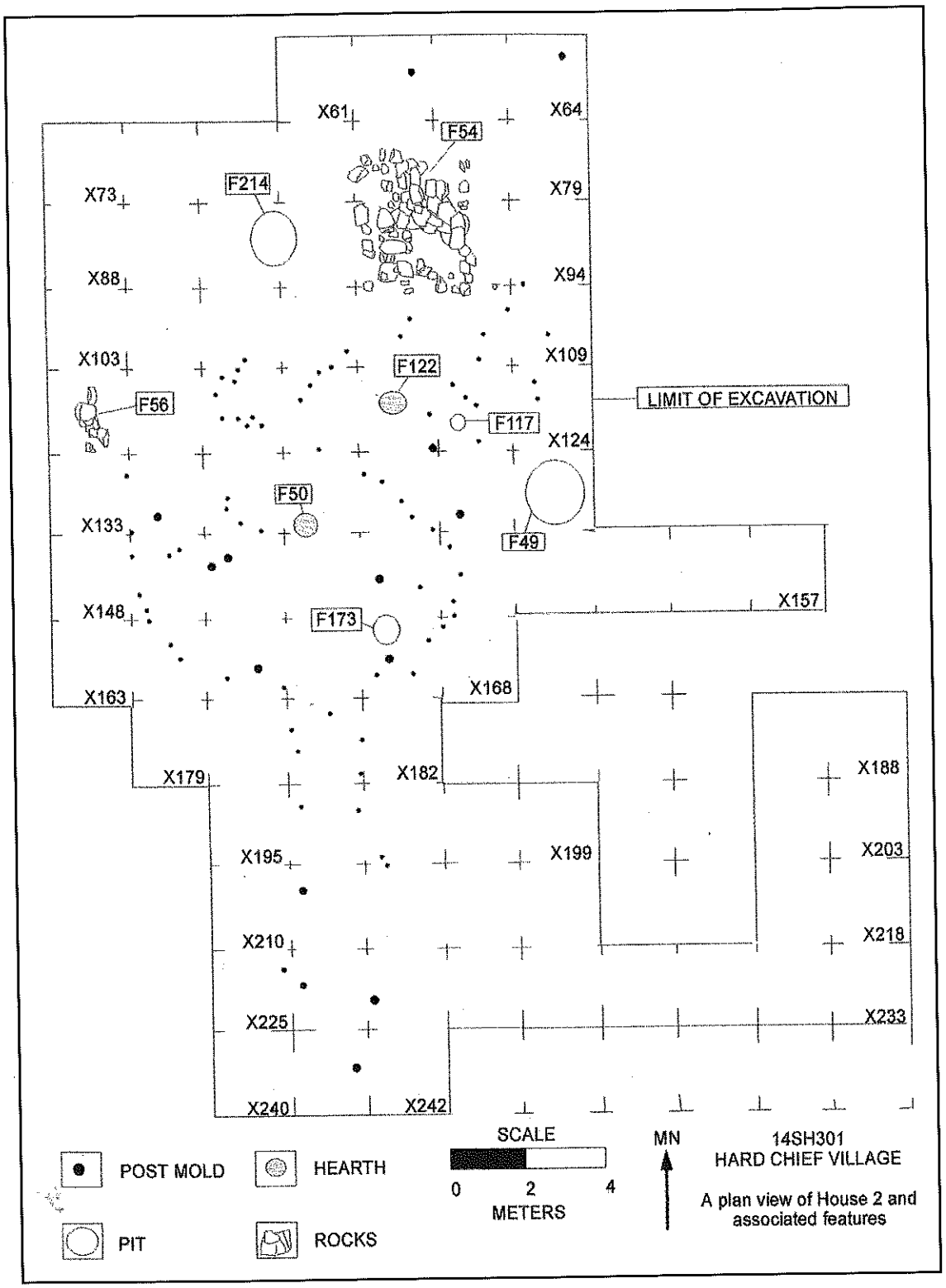

Figure 2. Plan view of House 2 and associated features at Hard Chief village.

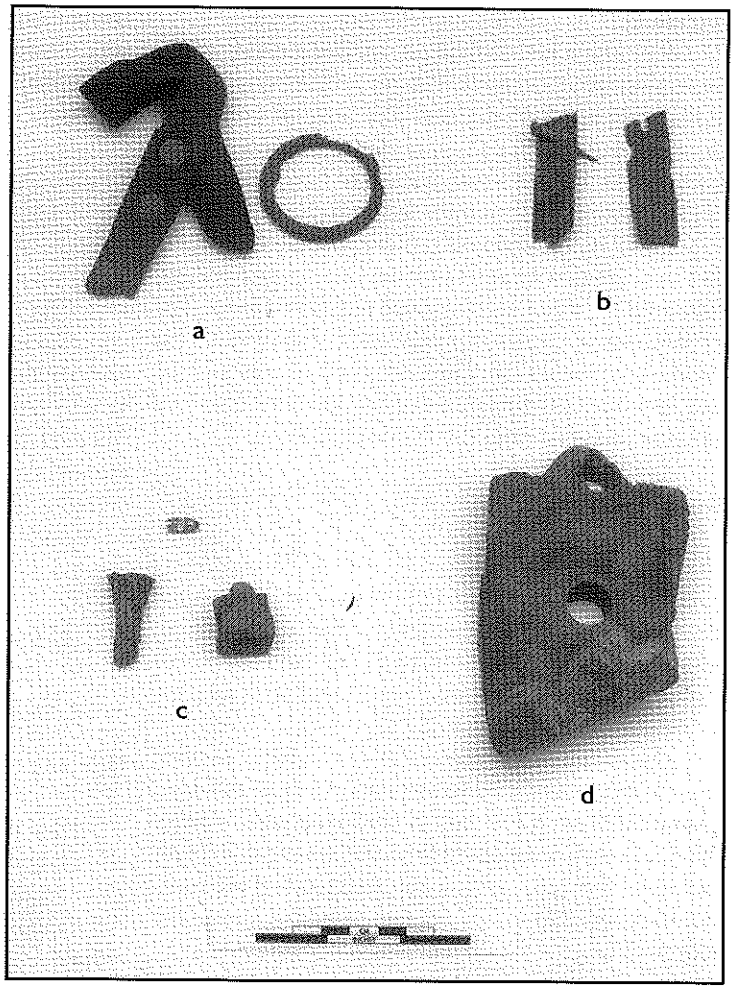

Figure 3. Post-reservation farming debris:
a) piece of riveted leather strap and iron ring,
b) pieces of strap iron,
c) implement bolt, square nut and bolt, and .22-caliber bullet, and
d) section of a clamp.

another structure. No patterning within the intersecting portions of the two structures was discernable, but another hearth (F136) and an adjacent cache pit (F117) indicated that two structures partially had obliterated each other (Figure 2).

Two pits and two concentrations of rock were excavated outside of the post mold pattern. One pit (F49) was located beyond the eastern limit of the lodges, while another pit (F 214) was north of these structures. Near F214 was a large concentration of limestone rocks. Another smaller concentration of rocks (F56) was uncovered west of House 2 (Figure 2).

Hearths

F50 was a shallow, circular basin that was filled with compacted burned earth and ash. The basin measured 60 cm in diameter and 7 cm deep. This ash-filled pit was the central hearth for House 2. A small fragment of rusted iron (F77) was recovered from within the hearth (Figure 2).

F136 was another shallow, circular basin that was filled with charcoal-flecked burned earth. The basin measured 70 cm in diameter and 10 cm in depth. A bison vertebra was found within the orifice of the basin, and a concentration of small fragments of bone (F183) was sitting at the edge of the orifice. The basin was interpreted to be the central hearth of the structure that intersected and obliterated almost half of House 2 (Figure 2).

Pits

F173 within House 2 was a pit that measured 44 cm in diameter and 29 cm deep. The pit contained burned corn cobs under a layer of burned earth, flecked with charcoal (Figure 2).

F117 was a cylindrical pit that was 22 cm in diameter and 20 cm in depth. A siltstone elbow pipe blank (F113) was recovered in the pit's orifice at the lodge floor level. An iron hoe and the head of a poll ax were found in the pit lying on a layer of burned sticks

(Figure 2).

F49 was a bell-shaped pit, located outside of the eastern limits of House 2. The pit orifice was 1.46 m in diameter and 1.45 m deep. The body of the pit expanded to a diameter of 1.76 m. Small chips of chert, a few pebbles, burned wood, a flake of iron, and a piece of glass were excavated from the pit bottom (Figure 2).

Pit F214, located north of the post mold complex that was thought to represent the intersecting lodges, measured 1.4 m across the orifice and 1.5 m deep. The pit had straight walls that expanded slightly to a flat floor. The feature fill was composed of ash, burned soil, burned vegetation, and bone fragments. One iron nail was recorded from the fill (Figure 2).

Rock Concentrations

East of pit F214 was a 3-m-square concentration of limestone rocks, laid within a shallow depression. The stones seemed to have been fitted into position, with one stone overlapping another. Nothing found among the stones associated this feature with any one of the occupations (Figure 2).

One other small cluster of rock (F56), located immediately outside the western periphery of House 2, measured 90 cm by 50 cm. A cord-roughened pottery sherd, representative of the Woodland occupation, was recovered from the general fill that overlaid the rock. The rock was exposed at a depth of 33 cm, while the pottery piece was found at 19 cm bgs (Figure 2).

Grasshopper Falls Phase (A.D. 500-1000)

A few pieces of distinctive pottery of native manufacture related to the Woodland occupation. The ceramic type, Grasshopper Falls Ware, and the archeological culture, Grasshopper Falls phase, were defined by Reynolds (1979). Sites have been found on terraces adjacent to secondary drainages throughout northeast Kansas, but each site may consist of only one or two houses. This culture flourished between A.D. 500 and 1000 (Reynolds 1979:73, 75).

Thirty-nine pottery sherds were found. Twenty-three were recovered from X212, the rest from X211 and X225 (Figure 2). Some stone items, described along with the material culture of the Kansa village, also are related to the Woodland culture. Future excavations may determine if a Grasshopper Falls phase component is present at 14SH301 or if the artifacts were collected from another place and kept as curiosities. Woodland materials might have been exposed during the construction of the Kansa village or when ground was plowed for gardens. The Kansa were certainly aware that there had been other occupants at their village site.

Material Culture of Hard Chief Village

The artifacts that represent the Kansa Indian occupation at 14SH301 are presented under headings that identify the materials from which they were manufactured: iron, lead, brass, glass, ceramics, and stone. There are no bone tools. The bone specimens are discussed as faunal remains, along with shell. Vegetal remains make up a category of their own. Everything remaining is mentioned under a miscellaneous heading.

Description of the Artifacts

Iron Objects

Belt Axe (Figure 4i)

One belt axe was recovered from X106 at a depth of 26 cm. A lead piece and a small stone were found in association, and the three items were recorded as F55.

The axe was manufactured from a single wedge-shaped piece of iron that was bent over onto itself, forming a circular socket. The two halves of the blade were forged or welded together. Half of the blade has split apart and is broken off at the socket. The bit seems to have been honed to a cutting edge, which indicates that the axe was used after it had been broken.

The axe is 17 cm long. The inside diameter of the socket is 40 mm, and the iron that forms the socket is 10 mm thick. The blade increases in width from 44 mm at the socket to 88 mm across the bit, which has a convex cutting edge. The top edge of the axe forms a straight line. The specimen was subjected to the electrolytic reduction method of removing corrosion, but no maker's stamp or any other identifying mark could be found.

Poll Axe (Figure 4j)

A poll axe was recovered from F117 within X123. A socketed iron hoe was found in association with the axe.

The axe is of a type referred to as an American felling axe, which was manufactured on the "Kentucky" or "New Jersey" pattern (Kaufman 1972:16-51). The

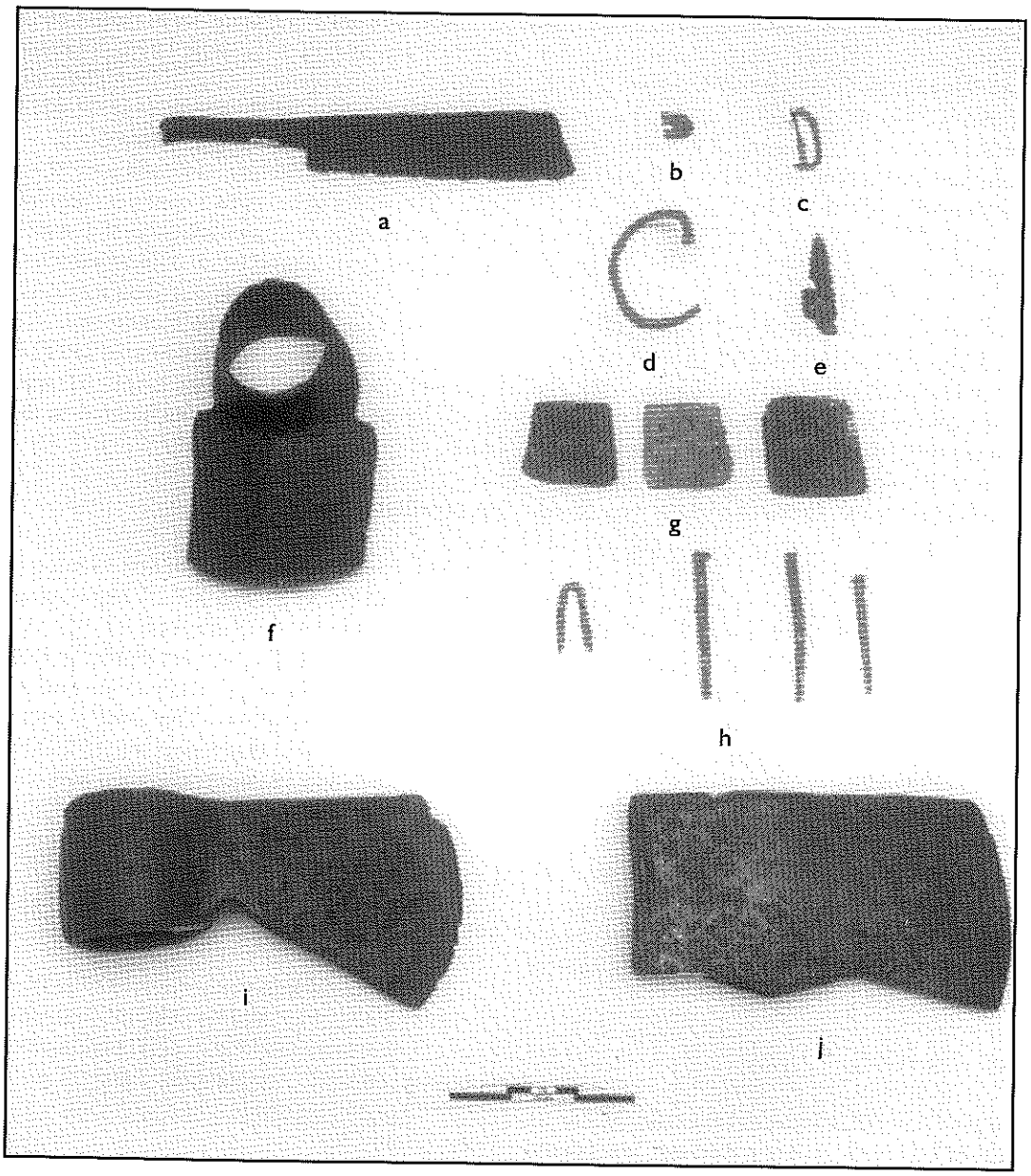

Figure 4. Objects of iron:
a) drawknife
b) perforated piece of iron,
c) buckle fragment,
d) iron bracelet,
e) iron projectile point,
f) adz,
g) unidentifiable pieces of iron,
h) stable and nails,
i) belt axe, and
j) poll axe.

specimen is 16 cm long. The widths are 72 mm across the poll, 80 mm across the socket, and 85 mm across the bit. The thickest portion of the head is 20 mm. The socket has a narrow elliptical shape, measuring 8 mm wide and 55 mm long. The poll end of the axe is badly dented, and one face of the head is scarred, suggesting that the axe was used as an anvil. Corrosion was removed by the electrolytic reduction method, but no manufacturer's stamp was found.

Adz (Figure 4f)

The adz was recovered from F117 within X123 along with the poll axe. The slightly downward curving blade measures 80 mm long and 85 mm wide. The interior diameter at the top of the socket is 55 mm. The socket tapers toward the bottom to an interior diameter of 45 mm. Corrosion was removed by the electrolytic reduction method, but no identifying marks were found.

Drawknife (Figure 4a)

A section of a drawknife was recovered from X165 at a depth of 31 cm. The specimen consists of a blade section and a tang to which a handle was fitted. The piece is 21 cm long. The drawknife was cleaned in an electrolytic bath, but no identifying marks were found.

Buckle (Figure 4c)

A buckle fragment was recovered from the overburden between X89 and X90. These units were excavated to a depth of 25 cm. The badly rusted and fragile specimen is a buckle, but identifying it as a harness buckle is only a guess.

Bracelet (Figure 4d)

An iron bracelet was recovered from X226. A thin piece of iron stock, 4 mm in diameter, was bent to form an unenclosed oval. The shaped resembles the letter "C." The overall dimensions are 65 mm long and 46 mm wide.

Projectile Point (Figure 4e)

A projectile point, recorded as F178, was recovered from X134 at a depth of 25 cm bgs. Sloping shoulders join the stem, forming obtuse angles. The encrusted and very fragile projectile point is badly deteriorated. Measurements were taken in the field. Length is 60 mm, and width across the shoulders is 15 mm. The stem is about 10 mm long and 13 mm wide.

Nails (Figure 4h)

Nineteen nails or fragments of nails were found. One nail was associated with pit F214. The rest were gathered from the general fill, 15-25 cm bgs, of X93, X106, X107, X121, X122, X134, X138, X165, X187, X202, X211, X225, X226, X229, and X233.

The nails are machine-cut nails and of various sizes. The shafts taper on two opposite sides, and the edges on the other two sides are parallel to each other. One nail has an L-shaped head. Others seem to be 10 penny (10d) foundry or finish nails, measuring 3 inches long. One specimen could be a clout nail. The remaining examples suggests sizes of a 6d nail (2 inches long) and a 3d nail (1 1/4 inches long). All appear to be a style of nail that was manufactured in the late 1830s.

Unidentifiable Pieces.

Four unidentifiable pieces of iron were excavated from X93, X166, X179, and X211. Their vertical locations range from 15 to 29 cm bgs.

Three pieces (Figure 4g) are similar in that they are roughly square in shape. They range in size from 40 x 43 mm to 45 x 55 mm. They are 3-4 mm thick. One piece (Figure 4b), which measures 15 x 15 mm, is only 1 mm thick and has been perforated with a 4-mm-diameter hole.

Lead Objects

Spatters (Figure 5f)

One spatter of lead was recovered from the fill of a hearth pit (F122 in X123). The other spatter was from a pocket cache (F117 in X123). Lead spatters are amorphous in shape, weighing 20 g and 3.5 g.

Pellet (Figure 5e)

The lead pellet was found in X152, 15-25 cm bgs. The pellet is misshapen, that is, partially flattened. The size and shape suggest that it could be a bullet, nominally a .35- or .36-caliber ball. The diameter of the pellet is .353 inches or 11 mm, but it weighs only 5 g. This is far too light for a bullet unless it was flawed during casting.

Casting Fragment (Figure 5d)

This piece of lead was recorded as part of F55 within X106 and was found lying next to the belt axe. The specimen may represent a flawed attempt to mold

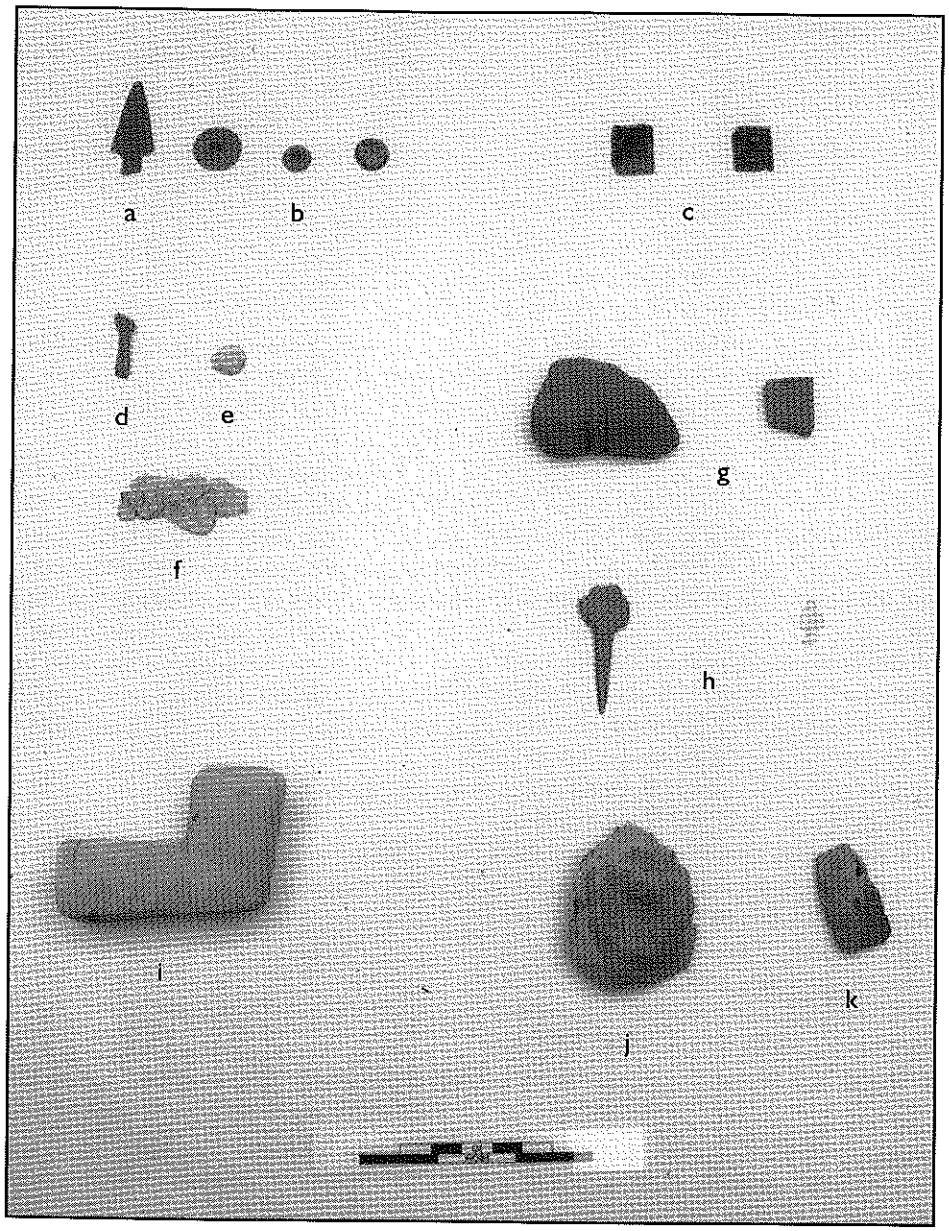

Figure 5. Objects of brass, lead, and stone:
a) brass projectile point,
b) brass buttons,
c) gun flints,
d) lead sprue,
e) lead sphere,
f) lead splatter,
g) pieces of catlinite,
h) drills and projectile,
i) siltstone pipe blank,
j) biface, and
k) projectile point fragment.

a bullet. A sprue extends from a remnant of a core. The overall length of the specimen is 25 mm.

Brass Objects

Projectile Point (Figure 5a)

A brass projectile point was recovered from X155 at a depth of 6 cm. The projectile point is a stemmed variety similar to the previously described iron point. The junction of the stem and the shoulders form obtuse angles. The point is 41 mm long. The blade is 17 mm wide across the shoulders. The length and width of the stem are 6 mm.

Buttons (Figure 5b)

Four brass button parts were found in four excavation units, X119, X133, X139, and X226. All were recovered from the general fill, ranging in depth from 7 cm to 18 cm.

Three of the buttons are military buttons of the Sanders type, standard issue to the U.S. Army throughout the 1830s and until 1850 (Reynolds and Good 1983:94-98). Two of the specimens are the outer convex blank, stamped with the image of an eagle bearing the letter "D" on its breast. The "D" is indicative of a uniform button worn by a mounted dragoon soldier. The eagle faces right and grasps a cluster of arrows in one claw. The other claw grasps an olive branch with five leaves. The diameter of these buttons is 13 mm.

The remaining examples are disks to which the stamped convex segments were attached. Brazed-on loop shanks are on the backs of the disks. The disk diameters are 11 mm and 19 mm.

Glass Objects

Thirty-one pieces of glass were recovered from the site. Specimens were found in 23 excavation units and on the ground surface. Three fragments exhibit decoration, and one piece is part of a bottle neck (Figure 6). Six specimens are glass beads (Figure 7a). The rest of the glass is differentiated by color.

Group One

The one specimen in this category was collected from the site surface. Needless to say, this piece and others may belong to the post-reservation farming component. The glass is colorless. The curvature suggests that the bottle would have been rectangular in shape with rounded corners and 28 mm wide.

Group Two

Four pieces of glass comprise this group. Two were from the surface, and one each came from X211 and X230. The glass is very dark green. If not held directly in front of a light, the color is almost black, which points to a "black glass" classification (Jones and Sullivan 1958:14).

Group Three

Sixteen pieces of glass comprise this group. They were recorded from X122, X123, X139, X152, X153, X167, X196, X198, X211, X212, X218, X227, and X229.

The glass is olive green in color. Two pieces are 8-9 mm thick, while the rest are 2-4 mm thick. One sherd from the shoulder of a bottle suggests that the bottle had horizontal shoulders and a tapering body. A horizontal mold line is visible below the curvature of the shoulder. Air blisters and bubbles are visible in the glass. The surface just above the mold line is ruffled. This effect can be felt when touched and is visible in a reflective light (Jones and Sullivan 1985:99, 106).

Group Four

Two sherds from X123 and X227 make up this group. These specimens are rather nondescript pieces of light green glass. Both are 3 mm thick.

Group Five

Three pieces, collected from X93 and X120, comprise this group. The sherds are a clear glass but seem to reflect a light, bluish-green tinge of color. They are only 1 mm thick.

Group Six

A single sherd from X153 is in a category of its own. The glass is opaque and light blue in color. Two embossed parallel lines are 7 mm apart. Tangent to one line and within the lines is half an embossed circle, measuring 8 mm in diameter. The sherd thickness is 4 mm.

Group Seven

This classification contains only one example from X155. The glass is clear, but it exhibits cut facets. The overall design is not recognizable.

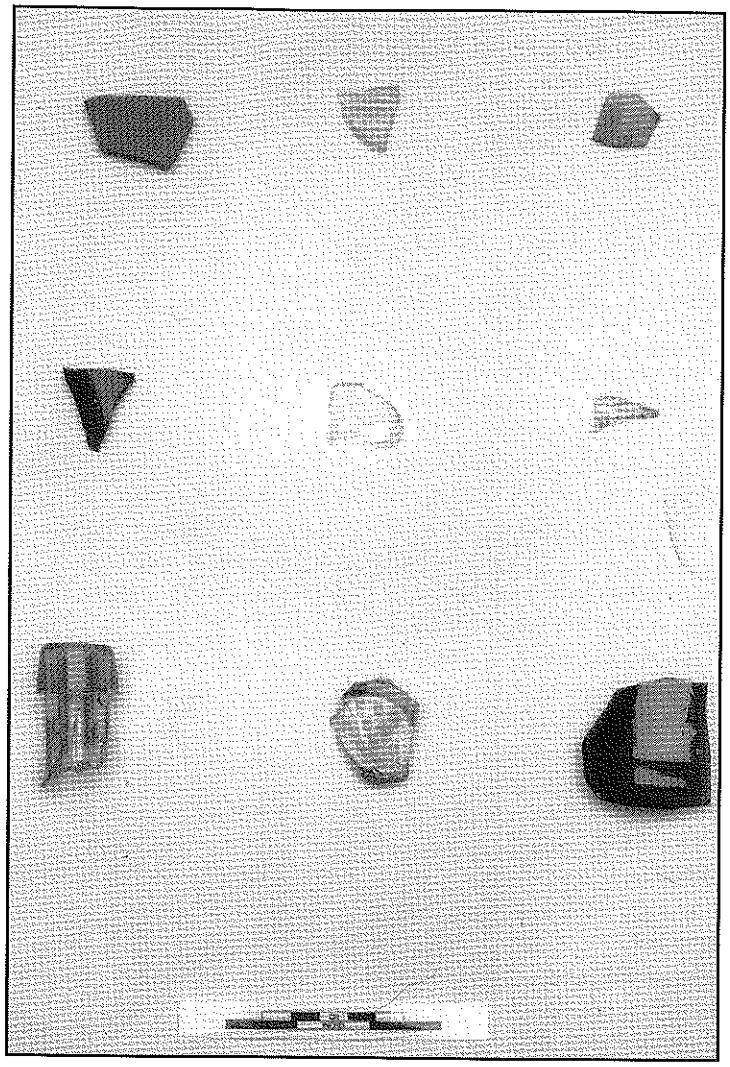

Figure 6. Pieces of glass and stoneware.

Group Eight

Three sherds are described as this group. Two from X61 and X77, fit together to form a portion of a bottle neck and collar. The third fragment is from X164. The color of the glass is aquamarine.

The rim on the neck and collar fragment is down-tooled; that is, the profile slope is outward and downward. The lip is rounded and was probably fire polished or finished with a finishing tool. A slight edge separates the lip from the collar (Jones and Sullivan 1985:40, 81). There is no indication of a mold line on the cylindrical neck.

The third sherd has embossed curved lines and six spheres or dots. The dots are arranged in three lines with one dot on the first line, two on the second, and three on the third. This motif is similar to designs found on embossed whiskey bottles that are decorated with clusters of grapes or stacks of cannonballs. The fragment is too small to relate the design to a particular bottle type. The sherd thickness is 9 mm.

Beads (Figure 7a)

This study utilizes a system of classifying glass beads that has been designed for archeologists by Kenneth E. and Martha Ann Kidd (1970:45-89). The six beads in this collection are of four types and five bead numbers.

Type IIIf. One bead is classed as type IIIf, number 2. It was recovered from X152 and was assigned its own feature number (F179). This medium-sized (5-mm-long) bead has six facets. The exterior is an opaque ultramarine. The core is translucent light aqua blue.

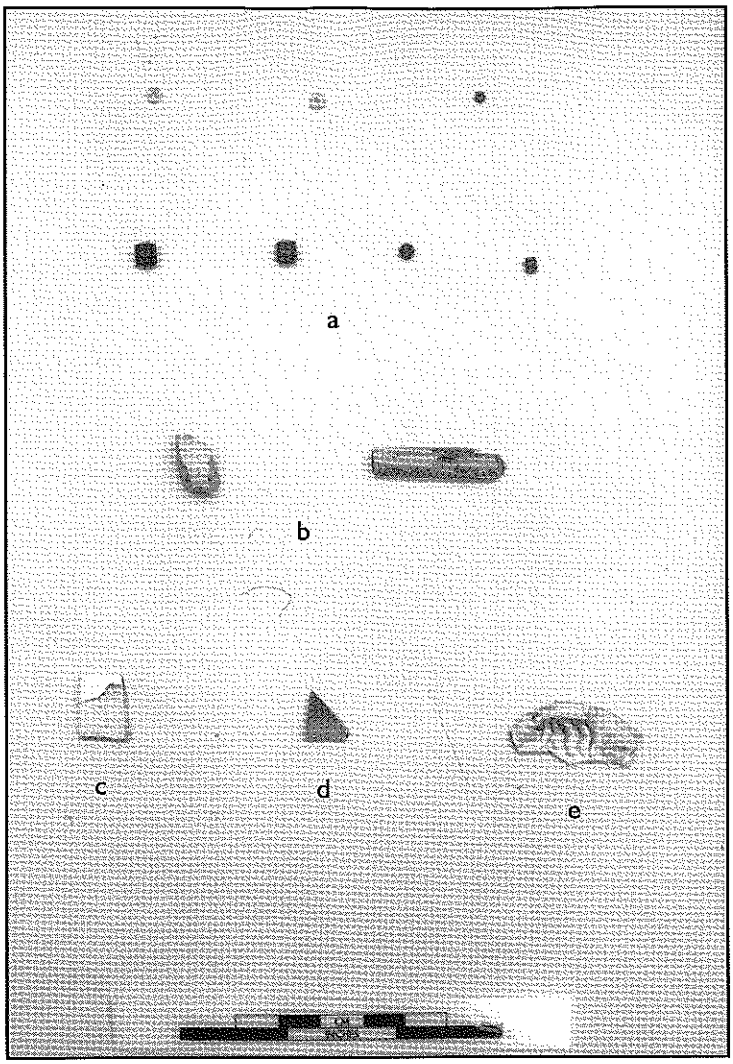

Figure 7. Glass beads, clay pipe fragments, and ceramic pieces:
a) examples of glass beads,
b) clay pipe fragments,
c) unidentifiable whiteware,
d) splattered decorated ware, and
e) shell-edged decorated whiteware.

Type If. This bead, recovered from X241, is an example of type If, number 3. The bead is 5 mm long, six-sided, opaque, and emerald in color.

Type Ia. Two beads are classed as type Ia, number 14. One was assigned its own feature number (F167 in X153). The other was from X74. These beads are small, only 3 mm long. They are opaque and bright navy in color.

Type IIa. Three beads are of type IIa, numbers 14 and 56. Two are number 14 beads from X123 and X232. The number 56 bead was recorded as Feature 184 in X227. These beads are circular and opaque. The number 14 specimens are white, while the number 56 is bright navy. The length of these small beads is 2 mm.

Ceramic Objects

Five fragments represent two ceramic wares: whiteware and stoneware. Two pipe fragments are also described.

Shell-Edged Decorated Whiteware (Figure 7e)

The provenience of this one sherd was not recorded. The fragment is large enough to show that the original piece was decorated with a scalloped-edge and an embossed scroll design that was colored green.

Splattered Decorated Whiteware (Figure 7d).

Two very small sherds fit into this category. One was recovered from X136 and the other from X148. These pieces appear to be examples of a decorative technique referred to as sponge decorated or splatter ware (Price 1982:19). Their color is blue.

Unidentifiable Whiteware (Figure 7c)

One small fragment was recovered from X231. This specimen is nondescript since most of the glaze is missing.

Unidentifiable Stoneware (Figure 6)

One stoneware sherd was found on the surface of the site. A gray body sherd is coated with a brown salt glaze. The gray portion is 4 mm thick, and the brown glaze is 2 mm thick.

White Clay Pipes (Figure 7b)

One clay pipe fragment, recovered from X228, was assigned its own feature number (F107). The second was from X225. One specimen is part of a stem with a diameter of 7 mm. The second piece is the junction of the stem and bowl.

Stone Objects

Gunflints (Figure 5c)

Two complete gunflints and one fragment of a flint were recovered from X118 and X119.

All of the pieces are a dark amber color. The two complete gunflints are 16 mm wide. The length of one flint is 19 mm and the other is 22 mm. These specimens are a platform type of gunflint (de Lotbinier 1980:57). Knots or demi-cones of percussion are plainly visible on the back of each flint (Hamilton and Emery 1988:11).

The three gunflints are apparently of English origin. English flintknappers lightly trimmed the sloping sides of a gunflint during its manufacture, thus leaving the demi-cones of percussion visible at the level of the platform. French knappers gave more attention to trimming the sloping sides of each gunflint with the result that the demi-cones of percussion were obliterated.

Drills (Figure 5h)

One complete specimen, two basal fragments, and a bit section are recorded from X21, X113, X179, and X240. These drills are items of native manufacture. The length of the whole specimen is 45 mm. The circular base is 18 mm in diameter. The bit has been carefully retouched into a lozenge shape.

Projectile Points (Figure 5h and 5k)

These specimens are also of native manufacture. A portion of a blade section was recovered from X138. An almost complete specimen came from X150.

The tip and the stem are missing from the blade fragment; still, the length of the piece is 35 mm and the width is 20 mm. The material is brown jasper. The complete specimen, a white chert, is a corner-notched, expanding-stemmed variety. The length is 17 mm, and the width at the shoulders is 10 mm.

Blade (Figure 5j)

This biface, another item of native manufacture, was recovered from X94. Mottled light and dark gray chert was shaped into an ovate form. The length is 54 mm, the width is 44 mm, and the thickness is 19 mm.

Pipe Blank (Figure 5i)

The pipe blank was found in association with pit F117. The specimen was assigned a feature number (F113). This elbow pipe was being made from an L-shaped block of light gray siltstone. The maker had begun to drill out the bowl, and he had incised a line near the termination of the stem section of the blank. The overall length and width of the piece are 77 mm and 35mm, respectively. The cross section of the blank is roughly square.

Catlinite (Figure 5g)

Two pieces of Catlinite or pipestone were recovered from X121 and X202. Both pieces have been modified. One specimen of rather amorphous form shows two deep parallel incisions. The other piece is 15 mm square and 8 mm thick and appears to have been cut from another worked piece.

Vermillion

A small piece of vermillion was recovered from X218. The piece measures 10 mm square and 4 mm in thickness.

Vermillion was used as a pigment to create a red hue paint or dye. The color was applied to the fringes of a scalp lock worn by men. Their heads were completely shaved except for the scalp lock. A deer tail that had been dyed red and an eagle feather were attached to the hair of the scalp lock (Wedel 1946:22-23). Men seemed to be quite vain about their appearance, whereas women were very plain.

Faunal Remains

The bone material represents several animals:

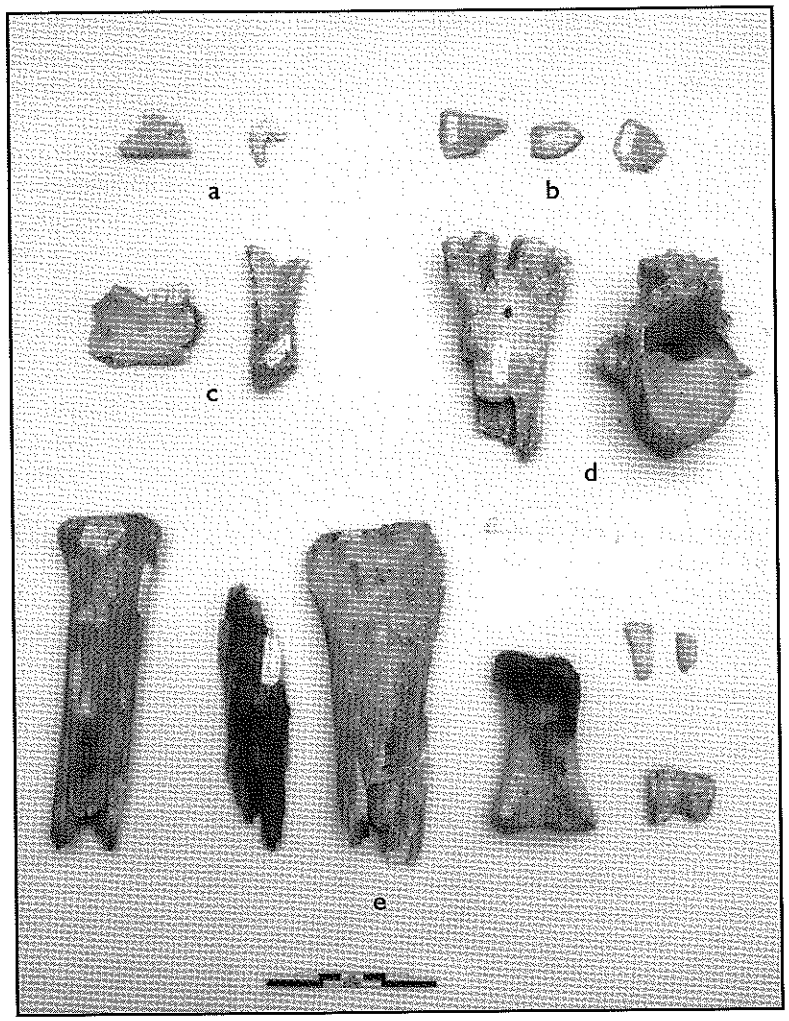

Figure 8. Faunal remains:
a) dog,
b) turtle,
c) deer,
d) bison, and
e) horse.

horse, deer, bison, and dog. Shell of turtle, mussel, and snail are also present.

Horse (*Equus caballus*) (Figure 8e)

A number of bones were affiliated with F214, which was a large pit. Two horse teeth came from X134 and X135.

Fragments of the proximal end of a metacarpal, the distal end of a radius, and a proximal end if a phalanx have all been partially burned (Getty and Hillman1975:283, 289, 292-293). One tooth is an incisor, while the other is apparently one of the other upper teeth (Sisson and St. Clair 1975:464-465).

Deer (*Odocoileus virginianus*) (Figure 8c)

A piece of scapula was recovered from X62. A partial jaw (horizontal ramus) with some teeth intact was recovered from X123.

Dog (*Canis*) (Figure 8a)

The specimens, all teeth, were excavated from X122, X139, and X167. They were assigned feature numbers or described as being associated with features F49, F183, and F186. Identifying these teeth as those of a dog must be tentative. They could be teeth of a coyote (*Canis latrans*).

Bison (*Bison bison*) (Figure 8d)

Four pieces of bone were recovered from three excavation units: X122, X139, and X230. These specimens were assigned feature numbers or were described as being associated with features F49, F111, and F175. Three vertebrae and a section of a metatarsal are identifiable as bison.

Turtle (*Terrapene*) (Figure 8b)

Three pieces of turtle carapace were collected from the surface of the site.

Mussel and Snail Shell

Four pieces of shell are recorded from X89, X228, X230, and X241. Three pieces are unidentifiable fragments of mussel shell. One specimen is a snail shell.

Vegetal Remains

Corn (*Zea mays*).

About 20 corncob fragments were found in F173, a pit associated with House 2. All of the cobs are charred. The specimens are split about half and half between an 8-row variety and a 10-row variety. One cob represents a 12-row variety. One each of the 8-row and 10-row cobs show partially spiraled rows. The small cobs are all less than 30 mm in length and range in diameter from 12 to 20 mm (Mary Adair, personal communication 1999).

Miscellaneous Materials

Scores of iron, lead, glass, ceramic, and stone fragments, ranging in size from small to minute, were dutifully collected and catalogued. Every excavation unit was included, and in some instances specimens were assigned feature numbers. Each fragment was examined. By the author's count there are some 40 pieces of iron, 5 pieces of lead, 1 piece of brass, 37 sherds of glass, and 2 sherds of whiteware.

Stone is the most abundant material, with over 800 pebbles and chips collected. The materials consist of limestone, sandstone, granite, quartz, and a variety of cherts. The cherts are of Permian, Pennsylvanian, and Mississippian origins (Tod Bevitt, personal communication 1999). Most of the collection is gravel.

After examining the total collection of miscellaneous material, only five artifacts are judged to be worthy of note. One iron fragment may be a projectile point tip. Two chert pieces are projectile point fragments, and one piece is a drill fragment. A chunk of sandstone with a worn surface may be an abrader or whetstone.

One hundred-fifty pieces of daub, most hardly more than a few millimeters in size, were catalogued. Also catalogued were 106 particles of burned material and charcoal that was distributed among most of the excavation units. Samples of burned earth were recovered from pits F117, F173, and F214.

Observations on Material Culture

The assemblage that was collected from excavating a portion of Hard Chief village contained objects that were acquired by trade or, more indirectly, by contact with the missionaries and others who were associated with the Kansa. The projectile points made of iron and brass are items of native manufacture that illustrate the Kansa adapting new materials to their own needs. The source of the metal might very well have been iron and brass kettles supplied by Chouteau.

Items of traditional native manufacture are the stone projectile points, biface, drills, unfinished siltstone pipe, modified Catlinite and vermillion pieces. Most of the stone implements were most probably associated with the Grasshopper Falls phase occupation. Archeologists harbor the suspicion that such artifacts were collected from earlier occupied sites and used as they were originally intended. The tradition of most of the tool types span great segments of time.

The Kansas State Historical Society has in its collections a few artifacts that were collected from the Blue Earth village. One of these items is a siltstone pipe that is in a more finished stage of manufacture than the 14SH301 pipe. This specimen leads to speculation that perhaps objects that had particular significance to the society, such as calumets, were still being made in the traditional way.

The faunal and vegetal remains reflect the dual subsistence pattern of the Kansa – hunting and gardening. However, bone tools have not yet been found on these late village sites.

Archeology and history demonstrate that the Kansa were fully adapted to the horse and gun culture. The bow and arrow were still more effective than the gun, particularly if the warriors were armed with only flintlock muskets. Historical evidence confirms that the gunflints were of English origin. Prince Paul Wilhelm, while visiting with American Chief (who was identified by his Indian name, Wa-Kan-Xe-Re, and by his French name, Le Chef Americain), learned that the Kansa did not have modern rifles. Fur traders had tried to introduce modern guns, but the Kansa preferred "poor rifles of English manufacture" (Wilhelm 1973:282).

The bows and arrows were used for hunting bison. Arrow shafts were tipped with metal points. Points that were cut forming an obtuse angle at the shoulder and the stem were hunting arrows. Points that were cut forming an acute angle were war arrows. Hunting points were easily extracted, while war arrows were meant to remain lodged in the wound. Some arrows were just fire-hardened pointed shafts (Wilhelm 1973:283).

Summary and Conclusions

Overlapping houses have emerged from the excavation at Hard Chief village. This would not be expected in a village that was occupied for such a short

period of time. One can always surmise that the house happened to be one that needed immediate repair, but now we are aware that there were two villages at the site, one built on top of the other.

Hard Chief abandoned the site after the devastating flood of 1844 and moved west to the Red Vermillion River. The site was then occupied by a band led by Broken Thigh. This event has been misinterpreted over the years. An explanation has been that the original village was on the valley floor and then was moved to the high ground after the flood. Construction of the railroad destroyed the original village. This sequence of events was noted by Henry J. Adams, the oldest son of Franklin Adams, and George H. Root, curator of archives at the Kansas State Historical Society. Apparently Henry Adams often visited the site as a boy, and when he was showing Root the village in the autumn of 1930, almost all visible remains had been obliterated by agricultural activity. Now we must conclude that the site had been occupied by two Kansa villages.

Hard Chief village had a population of 500 to 600 people, living in 50 to 60 lodges. One description has the lodges being arranged in four irregular rows. They were circular and dome-shaped structures with extended entryways. The excavated lodge measured 27 feet in diameter. Chouteau described the Kansa lodges as substantial earth lodges. Yet earth lodges may have been intermixed with bark-covered lodges. One village was apparently composed only of bark-covered lodges. This is how visiting missionaries described E-ya-no-sa village on Mill Creek. James M. Jameson remarked that the village consisted of about 25 lodges constructed of the bark of trees, but these were summer houses that had to be fixed differently for a winter residence (Johnson et al. 1925:264). Father DeSmet saw the lodges as being similar to stacks of wheat. He was probably saying that the general dome shape was similar to piled hay or wheat stalks. There is no evidence that DeSmet was implying that the lodges were grass covered.

One pit within House 2 contained charred corncobs and burned earth. Thies (1988a:102) has offered an explanation that, as it was with the Osage, the Kansa were using small fires of corncobs in their houses to smoke hides. The other pits, if not containing an actual artifact such as an ax blade, had at least fragments of metal relating them to the Kansa occupation rather than to the earlier Woodland culture.

The charred pieces of horse bone are interesting. These specimens seem to confirm the predicament of the Kansa as being as wretched as human beings can be. We can surmize that the Kansa were forced to eat their horses. There is a historical precedent for such an act. During the French and Indian war, Kansa warriors were taken east to fight at Fort Niagara against a British force led by General Edward Braddock. The French and Kansa partisans arrived too late for the battle, and then the Kansa warriors were abandoned to find their own way home. Their journey was an ordeal and, before it was over, the warriors were forced to eat their horses (Unrau 1971:69-70).

The limited excavations and the modest number of recovered artifacts does not allow conclusions to be carried too far. Most importantly the excavations demonstrated that Hard Chief village is at least partly intact. The staff archeologists, refreshingly ignoring false modesty, credited their experience and expertise in testing and interpreting archeological sites. Quite honestly, they also credited blind luck. Hard Chief village remains the only nineteenth-century village left in Kansas. Others have been destroyed or remain to be discovered (Thies 1988a:99).

Suggestions for Further Research

The list of villages awaiting discovery is increasing. Villages that have received some archeological attention are Blue Earth village, Hard Chief village, and Broken Thigh village. Yet to be discovered are American Chief village, Fool Chief village, E-ya-no-sa village, second villages of Hard Chief and American Chief, and another village that was destroyed by the Pawnee. The specific site of the mission building and the trading post are also unknown.

American Chief explained to Prince Paul that Kansa society was quite fluid and often partisan bands would break away from one village and establish their own. These bands would collect under a single authority when confronted with an outside danger or for a important event, such as a bison hunt. We can surmise that there are Kansa villages scattered along the length of the Kansas River.

Roscoe Wilmeth (1960:152-157) initiated an archeological survey and a study of documents that was concerned with the location of Kansa villages. Wilmeth reviewed Isaac McCoy's journal of his 1828 expedition and concluded by suggesting the general location of three or four previously unrecognized Kansa villages between Junction City and Manhattan. He was of the opinion that the McCoy journal had been overlooked or that researchers confused these villages with the villages on Mission Creek (Wilmeth 1960:156). Wilmeth pointed out that the identification of the remains of the villages that McCoy visited would raise considerably the number of Kansa villages. Now there are potentially 10 archeological sites upon which are 11 Kansa villages occupied in the first half of the nineteenth century.

This study has illuminated some of the personalities – French, American, and Indian – who were players in the drama. Not all have been accounted for. People of African descent were a part of the history, too. Two men, for example, can be identified as being Africans or free Negroes. Auguste Janisse was selected by Fremont to join his expedition, and Baptiste Dachurat was a friend and comrade of Frederick Chouteau. The evidence is clear that both the French and the Americans, including some missionaries, were slave holders. Just how slavery was reconciled, or if it was at all, among these people of such varied backgrounds and attitudes remains to be investigated.

The Kansa experience with the Americans continued after the Kansas River valley was abandoned and the villages were established in the Neosho River valley at Council Grove in Morris County, Kansas. Here they stayed until their final move out of Kansas and into Oklahoma, and here Hard Chief died sometime in the 1860s. He was a very old man (Moorehouse 1908:353).

The strong French presence in Kansa society is, of course, the result of the Kansa experience in French Louisiana that extends to the beginning of the eighteenth century. Kansa origin is a controversial and unresolved archeological problem that is beyond the scope of this study. Like so much of history, it awaits clarification.

Acknowledgments. The excavators at Hard Chief village were led by Thomas A. Witty, Jr., John D. Reynolds, and Randall M. Thies. I am indebted for the support extended by Virginia A. Wulfkuhle, Marsha K. King, and Christopher M. Schoen. Frederick W. Scott, Martin Stein, C. Tod Bevitt were always willing to answer the many requests for assistance. Dr. Mary J. Adair, a paleoethnobotantist associated with the University of Kansas, was generous with her own time to examine the vegetal remains recovered from the excavations. I thank all of you for welcoming me as a researcher in the archeology office of the Kansas State Historical Society.

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NOTES

The Aaron Block Pipe from Northeastern Kansas

Alfred E. Johnson
University of Kansas

The Kansas Anthropologist 21:91-93

A collection transferred from the Benedictine College Museum in Atchison, Kansas, to the Museum of Anthropology at the University of Kansas included a large sandstone effigy pipe. The pipe bears the name of a landowner in the vicinity of Kickapoo, Kansas, whose land includes sites of the Early Plains Village pattern. Similar pipes have been found in Steed-Kisker, Pomona, and Nebraska culture sites in northeastern Kansas, suggesting that the ritual activity represented by the pipe was widely shared. Similarities are also evident with Mississippian pipes found in sites to the east, especially sites affiliated with Cahokia and Spiro.

In 1994 the Benedictine College Museum in Atchison, Kansas, deaccessioned and donated to the Museum of Anthropology at the University of Kansas nearly 6,000 prehistoric and historic American Indian artifacts. The central figure in assembling this collection and preparing a catalogue was Father Felix Nolte, O.S.B. (1880-1975), curator from 1914 until 1971. In recognition of Father Nolte's contribution in preserving both the artifacts and associated provenience information, the collection is identified as the Father Felix Nolte Collection from the Benedictine College Museum.

Included in the collection is a large, animal-effigy pipe, sculpted from a rectangular block of sandstone into a form most resembling an abstract bison (Figure 1). Although a distinct head is not represented, the greatest height of the effigy (11.5 cm) is at the presumed head end, from which a rounded back slopes gradually to the tail end with a height of 7.5 cm. Overall the pipe is 13.7 cm in length. The pipe bowl, drilled into the back approximately one-third of the distance from the tail to the head, is a conical perforation 2.5 cm in diameter at the surface. The bowl connects with a second, horizontally oriented, conical perforation, 3.2 cm in diameter at the rear. This second perforation may have been for insertion of a pipe stem.

The underside of the animal is indicated by a concavity at the base of the stone, separated into sections that indicate feet or legs at the front. Although at present the surface over most of the effigy is irregular and the finely layered sandstone exposed, patches of smooth surface near the pipe bowl and on one side indicate the pipe was once finely finished and has suffered from erosion since its period of use ended. The smooth side of the effigy is a slight concavity, interrupted in two locations by U-shaped grooves possibly used for sharpening. Recent pecking at the center of this concavity is indicated by the light color of the indentations.

"L. A. Aaron, Kickapoo Ks." is written on the stone in ink at the head end of the pipe. This is in accord with Father Nolte's procedure of identifying the find spots of artifacts in the collection by the landowner's name. A 1978 map of Leavenworth County, Kansas, shows two plots of land owned by Mark Aaron, Jr., both within one mile of Kickapoo. The tract to the northwest is on the bluffs immediately adjoining the Missouri River trench, while the other to the southwest is along Plum Creek, a Missouri tributary.

Kansas archeological survey records list no sites on the Aaron land north of Kickapoo; however, a survey by professionals has yet to be conducted. Portions of the Aaron land along Plum Creek were surveyed between 1962 and 1966 by archeologists from the Kansas State Historical Society (Witty and Marshall 1968).

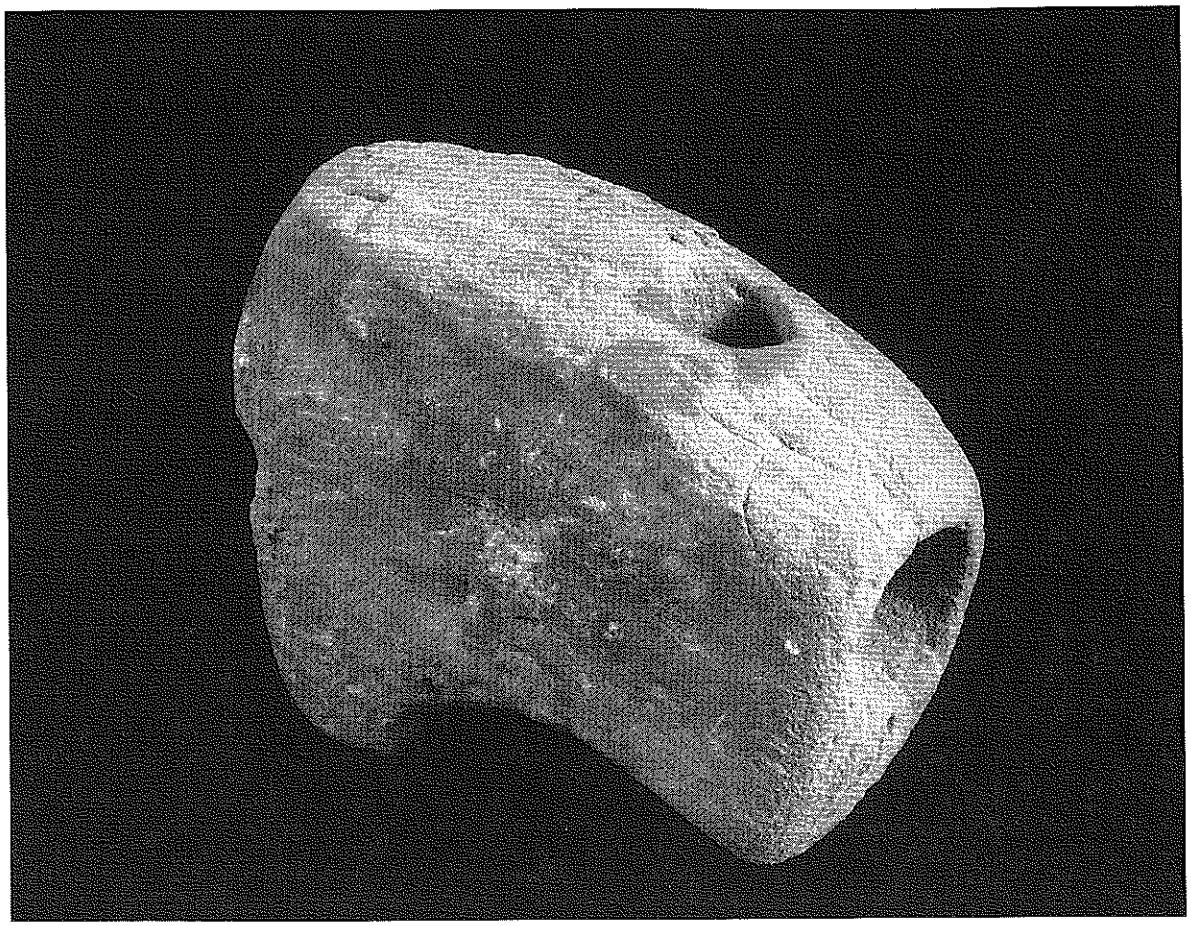

Figure 1. The Aaron block pipe from northeastern Kansas, measuring 13.7 cm in length and 11.5 cm in height.

This resulted in the discovery of two Early Plains Village (ca. A.D. 1000-1500) sites, 14LV311 and 14LV312, both with grass-impressed daub, suggesting the former presence of housing structures. Subsequently, an avocational archeologist reported a third site, 14LV333, on the same parcel of Aaron land. This is a multi-component site with Archaic, Middle Woodland, and Late Woodland components.

The presence of Early Plains Village sites along Plum Creek, and specifically on a parcel of land owned by an individual named Aaron, serves to narrow the likely cultural affiliation of the effigy pipe described herein. This is especially the case, as the three other similar artifacts so far known from northeastern Kansas and northwestern Missouri are all associated with Early Plains Village-related complexes. One, represented by only the head of an animal, pecked and ground from sandstone, is from 14MM1, a Pomona variant (ca. A.D. 950-1350) site, now inundated by Hillsdale Lake in Miami County, Kansas (Johnson 1994:188). Chapman (1980:Figure 5-19) illustrates a second from a private collection from a site north of St. Joseph, Missouri. A Doniphan phase (early Nebraska variant) affiliation is suggested. The third is a pipe excavated by avocational archeologists from a trash-filled storage pit at the Humphrey site (23PL322) in the Platte River valley north of Kansas City. Pottery sherds found with the pipe in the storage pit are, with one exception, identifiable as Platte Valley ware, diagnostic of the Steed-Kisker phase (A.D. 1000-1250). The cordmarked exception is similar to Nebraska variant pottery from farther north. Details of the pipe, including tobacco remains in the bowl, a red ochre-stained, concave grinding surface on one side, and sharpening grooves on the base point to an important ritual function. Such a function is further emphasized by the rare, large, animal-effigy form of the pipe itself.

Identification of the animal represented is questionable, with suggestions ranging from a bison to an owl (Johnson 1994). In combination the details sug-

gest that the pipe may have been a shaman's implement, representing an animal familiarity, used for smoking tobacco as a means to communicate with the spiritual world. Related functions may have included sharpening tools for tattooing or for use in curing and grinding hematite to produce red ochre for body paint or mortuary observances.

Similar pipes also are known from farther east, where they are found in Mississippian contexts, especially those connected with the major centers of Cahokia and Spiro. So-called "block" pipes, characterized by simplicity of presentation of either human or animal forms, are most similar to those discussed herein from Early Plains Village settings (Emerson 1982).

The Aaron animal-effigy block pipe is a fourth example of a rare artifact from an area that has been called a Plains Village frontier (Logan 1990). Based on evidences of contemporaneity, which include overlapping date brackets and cross finds of diagnostic artifacts, northeastern Kansas and northwestern Missouri seem to have been a shared territory of the peoples who left the material remains that archeologists have classified as the Steed-Kisker, Pomona, and Nebraska cultures. Assuming that our inferences as to the function of the effigy pipes are at least approximate then leads to the conclusion that there were similarities in the supernaturally sanctioned ritual behaviors of at least some participants in all three prehistoric cultures.

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NOTES

Book Reviews

Ants for Breakfast

Ants for Breakfast. JAMES SKIBO. University of Utah Press, Salt Lake City, 1999. 179 pp., illustrations. $14.95 (paper). ISBN 0-87480-620-8. *Reviewed by* Marlin F. Hawley.

Ethnoarchaeology is the study of the material culture of modern groups by anthropologically-trained archeologists, the information from which is then used to model past human behavior. Perhaps the most famous, and certainly among the most long-lived, of ethnoarchaeological projects is the Kalinga Enthnoarchaeological Project, operated by the University of Arizona.

The project was established in the early 1970s by a founding father of "the New Archeology," William Longacre, among the Kalinga, wet-rice agriculturalists living in the lush Philippine highlands of northern Luzon province. It has fielded a score of graduate students and others seeking to understand ceramic manufacture and use within a living cultural system. Eschewing jargon, *Ants for Breakfast* by James Skibo recounts in readable, non-technical terms four months spent among the Kalinga collecting data on use-wear patterns of ceramics, the subject of several of his technical works (e.g., Pottery Function).

Pottery is durable; it survives well in most archeological environments. Moreover, pottery technology and decoration, like the basic substance of its manufacture – clay – is extremely malleable. In the 1960s Longacre analyzed ceramic designs on vessels from the Carter Ranch Pueblo, concluding that the designs indicated a matrilocal residence pattern; that is, a couple lived near the groom's mother. In the course of this study, Longacre realized how little information there was in the anthropological literature about ceramic manufacture and decided to rectify the situation. Turning to a modern pottery-using group, the Kalinga Ethnoarchaeological Project was born.

Skibo, at Arizona studying ceramic use-wear patterns with the leading proponent of behavioral archeology, Michael Schiffer, situates the purpose of his participation in the project within the theoretical context of behavioral archeology – "the study of the relationships between human behavior and material culture (artifacts) at any time or any place" (p. 120). Behavioral archeology is one of many theoretical positions of what Skibo refers to as "the post-New Archeology era" of the early twenty-first century. Skibo's discussions of theoretical trends are brief, lucid, though perhaps overly simple, and refreshing for the degree of respect he accords other theoretical positions, except for the more extreme views of some post-processualists. His assertion that, while critical of the tenants of faith of the New Archeology, most archeologists are New Archeologists is endearing but probably misses the mark. More plausibly, most archeologists, whether they are employed in academia or in cultural resources management, practice a mix of New Archeology or processualism and culture history. This is not to understate the sheer diversity of theory and method in the archeology of the early twenty-first century, however.

All of this said, while the project and the collection of data pertinent to behavioral archeology grounds Skibo's book, it is an episodic account of life and death in the village of Guina-ang that forms the core of the narrative. Skibo recounts the vicissitudes of his trip to the Philippines and into the remote northern Luzon province, all the while comparing and contrasting Kalinga behaviors to those of Americans. He misses nothing, covering the basics of the preparation of meals, foods eaten (basically the Kalinga have few food "taboos" and eat everything from ants to seemingly any animal hapless enough to wander too close to the village), warfare (the Kalinga are known historically as fierce warriors and headhunters), politics, justice, funerals, the elimination of waste (a topic curiously ignored by many anthropologists), privacy (or lack thereof), and sex.

Comparison is a basic element of traditional anthropology, and the comparisons that Skibo offers are thought-provoking. However, I found especially interesting Skibo's discussions of the things that often are expunged from more formal reports and ethnographies, such as loneliness and depression in the field. The book is particularly strong in confronting the politics of fieldwork, whether at the village level or beyond.

The Kalinga, of course, are embedded in a larger political matrix, that of national and international politics (e.g., Philippine-American relations). Although the project and its activities were generally known to the villagers and Longacre respected for his ethical treatment of the Kalinga – he insists that participants give

back something, and all are given a crash-course in diagnosing simple ailments, for which they are allowed to dispense the appropriate medications; those patients with potentially serious illnesses are sent out of the valley to trained physicians – it was still necessary to explain in detail exactly the nature of the work. Even after securing permission to collect data – which the Kalinga regarded with skepticism – to assuage his loneliness and interact with men in his age-set, Skibo then had to overcome the fear that he was a potential suitor to any of the village women. Finally, intervillage conflict, tensions between the Kalinga and Philippine government – the Kalinga and other allied mountain groups managed to stave off a plan by the Marcos regime to flood the Chicos Valley where the Kalinga live – have over the duration of the project added yet another set of tensions, if not out and out danger. Indeed, the threat of physical violence has at times prompted the withdrawal of personnel altogether, as extortion by "holduppers" (highway bandits) did near the end of Skibo's stay.

Ants for Breakfast is illustrated with photographs and drawings. Well-written and cleanly edited – indeed generously edited, given the delicate nature of some of his subject matter – *Ants for Breakfast* is an entertaining, worthwhile book. If it has a weakness, it is that, while Skibo does discuss the nature of his research, he does not offer the reader a full accounting of what was gained during his four months among the Kalinga and why it matters.

What Bones Tell Us

What Bones Tell Us. JEFFREY H. SCHWARTZ. University of Arizona Press, Tucson, 1998. xii + 292 pp., epilogue, references, index. $17.95 (paper). ISBN 0-8165-1855-6. *Reviewed by* Jim D. Feagins.

What Bones Tell Us is a somewhat informal approach to learning how bone analysis is used in studies of archeology, human evolution, and modern crimes. Schwartz presents many examples of research, coupled with interesting personal anecdotes, to illustrate how bones can be used to increase our understanding of the human past and present.

This somewhat personal volume begins with the account of Schwartz's start in physical anthropology and other background information. His stories and experiences all have a purpose. Schwartz's writing is a painless learning experience for the reader – almost an education without realizing it.

Schwartz suggests that bone analysis is much like an archeologist analyzing pottery. He builds his case, citing a variety of case studies. A few examples include the paleoanthropology of the "first flower people," the Neanderthals; the explanation for the presence of pig bones in the excavation of an ancient Jewish synagogue; and the detective work demonstrating that ancient human bones were cleaned (burial preparation) as opposed to butchered (perhaps cannibalism). He discusses the formation of fossils in ancient environments and gives examples of his and others' studies of more recent taphonomy, especially how bones from various animals are modified by various means on and below the surface of the soil.

One of his major case studies involved detective work relating to ancient Carthage child burials. Carthage, located in northern Africa, was a Phoenician city established by about 800 B.C. Schwartz's research here illustrated some of the different kinds of general information that can be obtained from bones, how bones can be used to make various cultural interpretations, and how early assumptions may not always be correct. His meticulous Carthage study established that child sacrifice may not have been as prevalent as history and the number of burned child burials at first would suggest. In addition to the religious sacrifices, many were stillborn and others died of natural causes.

However, the most important lessons drawn from this case study are not the Carthaginian conclusions but the understanding of how the careful study of bones and their contexts can be used to answer many types of questions.

Schwartz is quite interested in the field of evolutionary biology and its history. He uses examples of work with Neanderthal and other fossil remains to illustrate how science works. His examples clearly show that the forms of data one chooses to use (or emphasize) are perhaps more important in determining which "results" are obtained than how data are interpreted to reach certain conclusions. Both the choice of data and how they are manipulated are tremendously important and worthy of considerable forethought. Schwartz states,

> . . . there is no room for intolerance of ideas that run counter to the received wisdom of the time and no justification for claiming to have a stranglehold on the truth. What seems real today may very well end up in the pile of discarded truths of tomorrow (p. 266).

What the Bones Tell Us is an introduction to the

various ways bones can be used to answer a variety of questions about the human past and present – from an evolutionary/archeological perspective to helping detectives solve modern murders. The volume also presents useful insights into the general way science works.

What the Bones Tell Us may be obtained from your local book distributor or from the University of Arizona Press, 1230 North Park Avenue, Suite 102, Tucson, Arizona 85719-4140.

Archaeology

Archaeology, A Very Short Introduction. PAUL BAHN. Oxford University Press, New York, 2000. 109 pp., illustrations. $8.95 (paper). ISBN 0-19-285379-1. *Reviewed by* Marlin F. Hawley.

Subtitled *A Very Short Introduction, Archaeology* by Paul Bahn is one of an ongoing series published by the Oxford University Press on various topics, including history, social anthropology, and archeology. The book is sharp, clear, witty, and as the title suggests, succinct. The book covers all the basics: disciplinary history, theory, technology, dating techniques (which affords the opportunity for some hackneyed relative dating jokes), subsistence, cognitive archeology, and so forth. The book is especially strong in its appraisals of the social milieu in which archeologists work and play and how this effects the questions asked and how they are answered. Other important topics, too often excluded from overviews, are ethics (especially of the excavation of human remains) and the presentation of results to the public.

Originally published in 1996, *Archaeology, A Very Short Introduction* has just been reissued. The author is a British archeologist who has written numerous papers and books, both popular and technical. He and Lord Colin Renfrew coauthored *Archaeology: Theories, Methods, and Practice* (Thames and Hudson, 3rd edition, 2000). Throughout the book Bahn offers pithy commentary on various aspects of archeology; I found myself marking pages throughout for future reference. Here is a sampling.

On amateurs:

> ... amateurs have made a huge contribution to archaeology over the years, and continue to do so, although the occupants of academia's ivory towers often patronize and sneer at them. In fact, many "amateurs" can be far more knowledgeable than the "professionals" and often far more dedicated than those who see archaeology as merely a career, or a way of earning a living rather than as something which fires their passions, and consumes their weekends and every scrap of spare time. Naturally, this can be taken too far, and there is nothing worse or more tedious than those – professionals or amateurs – for whom archaeology is an all-devouring obsession ... (p. 3)

On the personal side of the profession:

> ... [archaeology] is a subject in which one can thoroughly enjoy one's work, and meet or be in close touch with scores of friendly and like-minded people around the globe, particularly at conferences. Conversely, the degree of territoriality, bitchiness, backstabbing, and vicious infighting for some reason goes way beyond what is normally encountered in other disciplines. (p. 6)

On dating methods:

> ...[archaeologists] have a touching and often misplaced faith in the ability of the boffins, the "hard scientists," to take the samples of material provided and produce a suitable set of dates. One's confidence in the laboratories is not helped by the fact that, when submitting a sample for radiocarbon dating, one is usually asked to say, in advance, what kind of figure is expected! (p. 22)

On experimental archeology:

> Naturally, even if carried on for decades, ... experiments are still very ephemeral when compared to the accumulated knacks and wisdoms that were passed down for centuries and millennia during the remote past; and no observation made in the present can really prove anything for certain about the past. But the limited insights which they provide are none the less interesting and useful, and besides many of these experiments can be good fun. You can release all kinds of demons lurking inside you when you are allowed to burn down a house, or attack a colleague with a bronze sword, bash hell out of a piece of stone, or smear cowdung over a wall or kiln, and call it "Science." (p. 26-27)

On theory:

> Perhaps the most difficult questions that face the archaeologist are those of "why?" What

brought about the changes that can be seen in ancient societies, in the archaeological record? The plurality, the vast range of present-day archaeology, the splintering of approaches to the human past, are all now reflected in the diversity of contemporary archaeological theory, a diversity which can only be seen as a strength and which is likely to lead to new insights: All avenues need to be explored, even if many of them turn out to be dead-ends. (p. 64)

On the looting of antiquities:

> It has been said, quite accurately, that "collectors are the real looters." Many collectors try to justify their activities by claiming that, without them, all these beautiful *objets d'art* would not be preserved, and that museums do not have the resources to look after their collections properly. There is some truth in both these views, but it is outweighed by the ugly little fact that it is the market and the astronomical prices paid for objects to decorate Swiss apartments or Manhattan mantelpieces which ultimately feed the looting monster, and which cause tens of thousands of ancient tombs and other sites to be ransacked and annihilated every year. Even museums are being plundered now, with objects that are published (and could never be out on open sale) being stolen apparently to order – presumably for some sad, selfish, crackpot meglomaniac to gloat over in private, as he or she strokes a white cat and dreams of dominating the world, or perhaps of getting a life. (p. 100-101)

On the future of archeology:

> What we can say with some certainty is that the archaeology of the future will be more anonymous, continuing the trend away from big personalities and "characters" that we have already seen through this century. The navel-gazing will undoubtably continue, amid the growing awareness of the weakness of our basic assumptions, and of the fact that other groups of people also have claims on the remains of the past ... .
>
> Yet archaeology, as long as it can go on "delivering the goods" and hence earning public funding and support, will continue to flourish, because it remains the only subject that can study 99 per cent of the human past. Only archaeology can tell us about the really fundamental events in our past – when, where and how humankind arose in the first place; the development of art, of technology, of writing; the origins and spread of agriculture, of complex societies, of urbanization. These are just a few of the huge variety of topics being actively investigated by researchers all over the world, and much remains to be done in every domain, to fit more pieces into the vast jigsaw puzzle of the human record. With the uniquely long-term view archaeology is our only means of seeing the "big picture." If we want to know where we're going, we need to trace our trajectory, to see where we've come from. That is why archaeology is so important. (p. 102-103)

The book is illustrated with cartoons, photographs, and concludes with a brief list of suggested readings on selected topics.

The Prehistory of Colorado and Adjacent Areas

The Prehistory of Colorado and Adjacent Areas. TAMMY STONE. The University of Utah Press, Salt Lake City, 1999. x + 214 pp., figures, tables. $17.50 (paper). ISBN 0-87480-578-3. *Reviewed by* Donna C. Roper.

It cannot be easy to synthesize the prehistory of Colorado, for the modern political unit given this name is the meeting place of four major and highly contrastive physiographic provinces, a mosaic of biotic zones, and a complex medley of climatic regions. Mother Nature spent millions of years developing this landscape, and though fluctuations of climate and biota have occurred in the last twelve millennia, the basic design achieved its current form long before humans entered the land.

Humans have always recognized the sharply drawn contrasts and widely varying resource potential of this area, so just as major physiographic provinces converge in Colorado, so also do three of the major culture areas of North America: the Plains, the Southwest, and the Great Basin. Perhaps because of the physiographic barriers, there was little interaction among the peoples in these areas, and even the cultures of the people in the mountains are unique and compose a fourth culture area.

A would-be synthesizer of Colorado's prehistory, therefore, must be familiar with the archeology of a large part of North America to place the state's prehistoric remains in context. Indeed, there arguably is no real synthesis of *Colorado* archeology, only syntheses of the archeology of various parts of the state, gathered into a single volume.

Tammy Stone is not the first archeologist in recent years to present a book-length treatment of Colorado prehistory. Steve Cassells' (1983) earlier work quickly became a staple and now is in its second edition (Cassells 1997). Sally Crum (1996) also has summarized the Native American occupation, sketching both the archeology and ethnology and reviewing Native American history in Colorado. But whereas Cassells' book is heavily site-oriented and Crum emphasizes the historic peoples, Stone in her new book "concentrates on current archaeological theory regarding what prehistoric people did and why, and why they changed what they were doing at various times ... the emphasis here is explanatory rather than descriptive" (p. 1). As such, the book complements the other works.

Notice, too, that the book title includes the words "and adjacent areas." It is, if not difficult, certainly artificial using Stone's approach to exclude reference to developments beyond what is now Colorado. Therefore, part of Kansas is discussed in this volume.

The book is organized into seven chapters. The first overviews the natural environment, considering geology and geography, modern climate, plant and animal communities, and past environments. It is a very general review – almost too general to convey a sense of the environment to anyone who has never experienced Colorado. It is accompanied by 21 pages of appendices, listing the plants and animals of Colorado by environmental zone. Chapter 2 covers the Paleoindian period through the state, while Chapters 3 through 6 review the remainder of the prehistoric period in the Plains, Southwest (Four Corners area), Northwest, and Mountain parts of the state, respectively. A seventh chapter, an epilogue, discusses the major ethnographic groups. For this review, I will focus my remarks on Chapters 2 and 3.

The Paleoindian chapter covers, if ever so briefly, the Clovis, Folsom, and Late Paleoindian traditions, each of which is represented by important Colorado sites. Before reviewing these traditions, though, Stone considers the peopling of the New World, anchoring her discussion in the three-migration model, proposed in 1986 by the linguist Joseph Greenberg, dental anthropologist Christy Turner, and human geneticist Stephen Zegura (Greenberg et al. 1986). This model stipulates that the native peoples of North America are descendants of people who crossed the Bering Land Bridge during three separate migrations. The migrations are designated by Greenberg's names for major language families and include the Amerind, from which virtually all South American and many North American peoples descended; the Na-Dene, from whom speakers of Athapaskan and a few other languages descended; and the Eskimo-Aleut, the identity of whose descendants is obvious from the language family name. The dental and genetic data that Turner and Zegura contribute to the original article are consistent with Greenberg's linguistic groups. Archeological evidence, although not considered in the Greenberg et al. article, also could be consistent with them.

The Greenberg et al. model is very appealing, and it has generated much discussion, but it is by no means fully accepted. The problem begins with Greenberg's lumping of language families and his inferences of historical relations among the languages. This classification is so controversial that several other historical linguists virtually froth at the mouth in denouncing it. Without it the three-migration model is seriously jeopardized. Then, of course, there is the problem of new archeological data, from South America in particular, suggesting that people were in the Western Hemisphere earlier than Clovis times and earlier than the putative Amerind migration. The Monte Verde site in northern Chile, with its early dates and now with its tentative wide acceptance, poses a particular challenge. Technically the South American data are not incompatible with the three-migration model, for some early populations in the Americas might have left no descendants or been absorbed in Amerind populations or even could be accommodated by a slightly revised conception of Amerind. I would urge the reader, though, to not unhesitatingly accept this seductive model but rather to continue to question the evidence. Exciting times lie ahead of us in our pursuit of the first Americans.

The Plains chapter (Chapter 3) is of particular interest to us in Kansas. Before I comment on its substance, I must digress a little to analyze its construction. For a discussion of about 8,000 years of prehistory in an area covering eastern Colorado, western Kansas, part of western Nebraska, the Oklahoma and northern Texas panhandles, and extreme northeastern New Mexico, Stone uses 240 citations to a total of 46 references, exactly half of which (23) are cited only once apiece. One of the other references is cited 62 times (25.8 percent). Five others, cited 12 or more times apiece, account for another 83 citations (34.6 percent). In other words, 60.4 percent of the reference citations are to just six sources, all of them site- and data-oriented compilations. Thus, in a real sense, this chapter

synthesizes previous syntheses. Of course, Stone said right up front that she did not wish to repeat the efforts of her predecessors but to build on their work and go beyond it, and I can attest to the enormity of the task of going (again) to all the primary sources. The danger in doing so is that of perpetuating errors or misunderstanding the reason for omissions, and I would suggest that Stone sets foot into this trap. My copy of the book is liberally festooned with rebuttals, additional sources, and outright corrections to the text. *Caveat emptor.*

On the other hand, having delivered myself of this somewhat cranky comment, I will next confess a great appreciation for Stone's intentions and mode of operation here. For once we have a treatment of a part of the Plains that considers the evidence and explains change by reference to historic processes rather than relying on successive waves of migration, usually produced by drought, as the mechanism of material culture change. I have absolutely no doubt that *some* migrations onto the Central Plains did occur and have little difficulty with the idea of populations fluctuating and subsistence/settlement systems responding to climatic shifts. I have considerable difficulty, though, with the revolving-door conception of every new material culture trait expressed on the Plains being a product of the arrival of some new immigrant group – often, but not always, from farther east – and every climatic downturn resulting in resident populations packing up and moving to ... well, where are all these people supposed to have disappeared to? In contrast Stone's prehistory is built on an implicit (and occasionally explicit) acceptance of the notion of long-term population continuity in the Central Plains. While its facts are occasionally shaky, it begins to get at the essence of the dynamics of regional prehistory and is a welcome addition to the literature.

We ask three important questions of the archeological record: *what*? *how*? and *why*? *What* happened – what do the pots, projectile points, and dwellings look like? What did people eat? *How* did things happen – did the idea of using pottery appear everywhere at once? Did it come with the introduction of agriculture? Did people begin farming after they became sedentary? (An accurate chronology is very important at this level.) *Why* did it happen – did climate change or some new people arrive or did an enduring population adapt? A prehistory synthesis can be written from any of these three perspectives. Stone chose the *why* approach. So if you want to know what types of projectile points were found at, say, the Magic Mountain site, you still will need to consult Cassells' volume. But if you want a sense of the dynamics of the past in Colorado and part of Kansas, give Stone's book a try. It is not expensive, it is not too long and is eminently readable, and it is a nice example of what is possible if we seriously set about to understand the changes that occurred in the past.

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Marie Huhnke received her B.S. in marine transportation and third mate's license from the United States Merchant Marine Academy in 1987 after completing her apprenticeship sailing on container ships in the North Atlantic. Upon graduation, she took her first seagoing job as a deck hand on an ice-breaker working on the Alaskan North Slope. However, she soon returned to deep sea sailing with SeaRiver Maritime, Inc., a U.S.-flag oil tanker company, where she worked as a third and second mate. Although Marie passed much of her 10-year ocean career in the Alaskan North Slope crude oil trade, her different assignments took her to ports in Panama, the Mediterranean, the English Channel and the North Sea, Egypt and the Suez Canal, Saudi Arabia, Kuwait, and Malaysia.

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Alfred Johnson, a native Kansan from Ellsworth, was educated at the University of Kansas (B.A. 1957) and the University of Arizona (M.A. 1960, Ph.D. 1965). He joined the faculty of the KU Department of Anthropology in 1967. After 35 years at KU, he retired in December 2000. His research has centered on the

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James Marshall has participated in archeological projects in New York, New Mexico, Nebraska, and Kansas, where he was employed by the Kansas State Historical Society. Almost all of the Kansas projects were a part of the Missouri River Basin Archeological and Paleontological Surveys. Major publications are concerned with the historic and prehistoric cultures that have been found in Kansas. Jim holds a B.A. degree from St. Lawrence University and an M.A. degree from the University of Nebraska.

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PANKRATZ, DICK	6425 SW 6TH AVE	TOPEKA	KS	66615-1099
PARKER, SUE & DANIEL	501 E JEWELL	SALINA	KS	67401-6303
PARMENTER, C JOHN	1726 S PERTH RD	CALDWELL	KS	67022-8319
PARSCAL, MELVEN	207 E POINT	DERBY	KS	67037
PAUL, DENNIS	1118 OXFORD	EMPORIA	KS	66801
PEARMAN, DOROTHY	7220 SW ASBURY DR APT 107-W	TOPEKA	KS	66614-4718
PEARSON, GAIL	501 N WESTERN AVE	BELOIT	KS	67420-1849
PEARSON, GENEVA & DELMAR	RT 3 BOX 71	BELOIT	KS	67420
PETERSON, JOHN & FRAN	2756 CHIPPERFIELD RD	LAWRENCE	KS	66047-3183
PETERSON, MARLIN V	RR 1 SOUTH A ST	CLAY CENTER	KS	67432
PICOLET, KARLA	5033 SE 4TH TERR	TECUMSEH	KS	66542
POLSON, DAVID	15890 GARDNER PL	GARDNER	KS	66030
PORTER, BARBARA & KRISTIN	PO BOX 75	HANOVER	KS	66945-0075
PORTER, MAX	490 FISHER DR	PHILLIPSBURG	KS	67661-2809
PRIVAT, GARRY & MARILYNN	623 ELLINWOOD	OSAGE CITY	KS	66523-1225
PUBLIC LIBRARY	625 MINNESOTA AVE	KANSAS CITY	KS	66101-2899
QUINN, BARBARA	1712 MARION ST	LEAVENWORTH	KS	66048
RAMSEY, DANIEL	6244 PAULEN RD	BERRYTON	KS	66409-9547
REED, EVELYN	PO BOX 141	COLDWATER	KS	67029-0141

REED, HAROLD & MARGIE	3825 E STIMMEL RD	SALINA	KS	67401
REED, WENDELL	RT 4 BOX 58	PRATT	KS	67124
REICHART, MILTON	607 LINN ST	VALLEY FALLS	KS	66088
RES & COLLECT CENTER LIBRARY	1011 E ASH ST	SPRINGFIELD	IL	62703-3535
REXROAD, VIRGINIA	300 CRESCENT BLVD	HUTCHINSON	KS	67502-5512
ROECKERS, HENRY J	120 N WALNUT	GARNETT	KS	66032-1056
ROECKERS, RICHARD & SHIRLEY	19822 NW 1500 RD	WELDA	KS	66091
ROMINE, JOHN & PHYLLIS	37180 W 303RD ST	PAOLA	KS	66071-4613
ROPER, DONNA	1924 BLUEHILLS RD	MANHATTAN	KS	66502-4503
ROSS, EILEEN & LAWRENCE	6239 SE 2ND	TECUMSEH	KS	66542-9609
ROWLISON, DON	RT 1 BOX 57M	STUDLEY	KS	67759
ROYCE, CLARE H	RR BOX 93	LANGDON	KS	67549
RUBOW, JAMES	3401 SW OAKLEY	TOPEKA	KS	66614
RYAN, SHANNON	316 E BELOIT	SALINA	KS	67401
SAGE, SHARON	9130 SW 97TH	AUBURN	KS	66402-9610
SALLEE, KENT, KATY & AMY	BOX 490	INMAN	KS	67546-0490
SAVELY, CHARLES & S & D WESLEY	RT 1 BOX 8	GREENSBURG	KS	67054
SCHAAKE, DON	1608 E 1000 RD	LAWRENCE	KS	66049-4170
SCHINSTOCK, HAROLD & KAREN	1108 S BAY ST	GREENSBURG	KS	67054
SCHMIDT, REX & JANE	H-C 69 BOX 28	WILMORE	KS	67155
SCHOEN, CHRIS & ROXANNE GISSLER	276 NORTHVIEW PLACE NE	CEDAR RAPIDS	IA	52402-6208
SCHRATER, JUDY	8102 SUMMERS RD	HUTCHINSON	KS	67502-9103
SEARCH, JAMES J	1518 S 7TH	ATCHISON	KS	66002-3138
SHAW, JUNE	1407 WILTON LN	ST. LOUIS	MO	63122-6942
SHERRADEN, KEN	760 S BROADWAY	SALINA	KS	67401
SHIELDS JR, RICHARD	3799 BUTTERNUT DR	ST GEORGE	KS	66535
SHIVELY, BARON	823 NORTH ELM ST	MCPHERSON	KS	67460-2013
SHRINER, BERYL	2011 28TH ST	GREAT BEND	KS	67530-7329
SKAHAN, ROBERT	1780 E 1130 RD	LAWRENCE	KS	66049
SLOCUM, DUSTI	918 GARDEN WAY APT 3	MANHATTAN	KS	66502-1720
SLUBOWSKI, CHRIS	328 W KIRWIN	SALINA	KS	67401
SMITH III, WALTER J	350 E 181ST ST	SCRANTON	KS	66537
SMITH, JANICE & KARL	PO BOX 39	FREELAND	WA	98249-0039
SMITH, PAUL	617 WASHINGTON DR	WASHINGTON	KS	66968-1727
SMITH, RICHARD N	1618 DAKOTA	LEAVENWORTH	KS	66048-1110
SMITH, WAYNE	1635 2ND RD	RAYMOND	KS	67573-9624
SOLOMON, TERRY	2552 170TH AVE	ELLIS	KS	67637-9291
STAAB JR, WILLIAM	8240 E HEDBERG RD	GYPSUM	KS	67448-9708
STALLBAUMER, DANNY	103 S 7TH APT #1004	ATCHISON	KS	66002
STANLEY, ELLEN MAY	BOX 1057	DIGHTON	KS	67839-1057
STAUFFER, JIM F	521 N MAPLE	MCPHERSON	KS	67460
STEELE, TOM	1606 B ST	GARDEN CITY	KS	67846-4333
STEIN, MARTIN	6425 SW 6TH AVE	TOPEKA	KS	66615-1099
STEIN, PAT & KELSEY	4931 SW 53RD	TOPEKA	KS	66616
STITES, DEAN & VALORIE	405 W. BUFFALO	GIRARD	KS	66743
STOHS, JEREMY	509 S 14TH ST	MARYSVILLE	KS	66508
STONE, TERRI	807 PAUL #102	ELLSWORTH	KS	67439
STRICKLER, BRENDA	13001 STONEBRIDGE RD	ARGYLE	TX	76226
SUDBURY, BRYON	PO BOX 2282	PONCA CITY	OK	74601

TAYLOR, ANGELA	1531 S EVERGREEN ST	CHANUTE	KS	66720-3159
TAYLOR, JEAN	PO BOX 204	IUKA	KS	67066
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THIES, EVAN R	435 SW OAKLEY AVE	TOPEKA	KS	66606-1915
THIES, RANDALL M	6425 SW SIXTH AVE	TOPEKA	KS	66615-1099
THOMAS, MARCIA	25052 HWY 5	CENTERVILLE	IA	52544
THOMAS, WARREN & SHERRY	106 WILSHIRE	COFFEYVILLE	KS	67337-2545
THOMPSON, ROBERT & FREDA	817 COLLEGE	ATCHISON	KS	66002-3057
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TINDER, REBECCA D	2111 KASOLD DR	LAWRENCE	KS	66047
TODD, ARTHUR & HELEN	RT 1 BOX 112C	GREENSBURG	KS	67054
TOZZER LIBRARY	21 DIVINITY AVE	CAMBRIDGE	MA	02138
TRAINOR, EDWIN E	4012 NE 57TH PL	GLADSTONE	MO	64119-2253
TROTMAN, JEFF	912 N ARAPAHOE	ULYSSES	KS	67880-1864
TUCKER, VITA J AND KEITH	7015 W 133RD ST	BURLINGAME	KS	66413-8778
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VARGO, MEREDITH	504 S ILLINOIS	KANOPOLIS	KS	67454
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WALKER-ZELLER, WENDY	PO BOX 55	PAXICO	KS	66526-0055
WALLEN, ROSE MARIE, MIKE, A & M	116 MILL ST	LINDSBORG	KS	67456
WALTERS, CLEAT & VIRGINIA	2409 24TH ST	GREAT BEND	KS	67530-4448
WARD, ROGER	PO BOX 783	EL DORADO	KS	67042
WARREN, KIM	901 E ELLSWORTH	SALINA	KS	67401
WATKINS, KENNETH	327 W BURBANK	FREDERICKSBURG	TX	78624
WECKBAUGH, MARCIA	2742 SW JAMES ST	TOPEKA	KS	66614
WEDEL, VERNON	823 SPRUCE	HALSTEAD	KS	67056
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WESTHOFF, PAUL R	3312 W 132ND ST	LEAWOOD	KS	66209-4117
WESTON, TIM	6425 SW SIXTH AVE	TOPEKA	KS	66615-1099
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WHITE, ANNETTE	1423 HASKELL	LAWRENCE	KS	66044
WHITE, JOHN & REBECCA	1702 COUNTRYSIDE DR	PITTSBURG	KS	66762
WIDDOWS, BOB & ALICIA	619 BLAKE ST	ELLSWORTH	KS	67439-4236
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WILLIAMS, LEANN	1511 N 900 RD	BALDWIN CITY	KS	66006
WILLIAMS, PAT	724 N LINCOLN	BELOIT	KS	67420-2144
WILLITS, RAMONA J	923 N 2000 RD	LAWRENCE	KS	66049-9043
WITTY, THOMAS	3419 ARROWHEAD RD	TOPEKA	KS	66614
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YARMER, ROBERT E	PO BOX 158	ELLINWOOD	KS	67526-0158
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YOUNG, SUE ANN	1811 BRAHAM	DODGE CITY	KS	6780-2319
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The varied readership of the journal should be kept in mind when preparing papers. **Jargon should be avoided**. The style authority is *American Antiquity* (see Volume 57, Number 4, 1992). Professionals are expected to submit their manuscripts in this form; others who are not familiar with the *American Antiquity* style guide will receive editorial assistance.

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