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NOTES

T. R. OVERTON OF 12 MILE CREEK

MARLIN F. HAWLEY

Wisconsin Historical Society

Thomas Riley Overton was a co-excavator, with Handel T. Martin, of the 12 Mile Creek Paleoindian site in western Kansas in 1895, but he has remained a shadowy figure. This paper provides biographical information on Overton, revealing the circumstances that led him from the family farm in northwestern Kansas to become a paleontological field man and skilled museum preparator during the era of the Gilded Age Bone Wars.

In the annals of Great Plains archeology, the name of Thomas Riley Overton received the barest mention, yet he was involved in the excavation of what is generally regarded as the first systematically excavated Paleoindian site: the 12 Mile Creek site in western Kansas. Dug in 1895–1896, the site was formally reported by Samuel Wendell Williston (Figure 1) in 1902 (Williston 1902, 1905) and has for over a century figured in the sometimes vociferous debate over the peopling of the western hemisphere (Boule 1923; Boule and Vallois 1957; Figgins 1927, 1933; Hay 1914, 1918; Hill 1994, 1996, 2002, 2006; Hofman 2002; Lane 1948:50; McClung 1908; Mandel 2000:90–91; Meltzer 1991, 2006; Osborn 1910; Rogers and Martin 1984, 1985, 1986; Schultz and Eiseley 1935; Sellards 1940, 1947, 1952; Stewart 1897; Wedel 1959:88–89, 620; Williston 1897a, 1902, 1905; Wilson 1901). While the history of the site has been thoroughly and admirably documented by Hill (1994, 1996, 2002, 2006) and Rogers and Martin (1984) and much is known about the other two names associated with it, Samuel W. Williston (Shor 1971) and Handel T. Martin (Anonymous 1931; *Lawrence Journal-World* 1931; Martin 1994, 2005), Overton has long remained a shadowy figure.

Overton was a farm boy, but through an unlikely set of circumstances, he became an excavator of fossils and a skilled museum preparator, trained by some of the luminaries of the emerging discipline of paleontology. From the middle 1880s

until 1896, he exhumed the bones of extinct creatures while working alongside John Bell Hatcher, Samuel W. Williston, and others. At first he worked in the Long Island quarry, a rich Miocene-age fossil bonebed discovered on his family farm in 1882 by Charles Sternberg, and later at other sites in the western High Plains.

On an 1895 field trip to western Kansas, Overton and a freelance fossil collector named Handel T. Martin were directed to a bonebed that proved to be comprised of the skeletons of an extinct species of bison on 12 Mile Creek in Logan County. Although Overton apparently was not present the following year when a spearhead was found with a bison skeleton at the site (Hill 2006:143; *The Kansas City Star* 1906), he remains an important part of the history of the site. Thus, this paper offers a brief sketch of Overton's life and the events that would in time put him at 12 Mile Creek.

FAMILY BACKGROUND

Thomas Riley Overton was born in Monticello, Lewis County, Missouri, on May 31, 1862, and was the second of four children—two boys and two girls—born to James and Mary L. Overton. A farmer, the elder Overton moved his family to Dayton Township, Phillips County, Kansas, sometime in the 1870s, and settled near the hamlet of Long Island on Prairie Dog Creek. There the family once again took to the plow.

ANTEDILUVIAN BONES

Of Thomas Overton, aged 18, the 1880 U.S. Census said simply: “works on farm.”¹ He might well have remained on the farm but for the chance discovery in 1882 of a fossil-bearing locality on the family’s property. In the summer of that year, Charles Sternberg, a paleontological field collector, was scouting fossil localities in the area. After stopping for the evening, he happened upon mastodon bones in a nearby ravine and following the draw came across

... a quarry of rhinoceros bones, which were sticking out of the sand on either side, while the narrow ditch at the bottom was filled with toe bones, complete or in fragments, and broken skulls and teeth without number. I had collected fossil vertebrates and plants since I was seventeen years old, but this is the greatest deposit of fossils that I have ever discovered (Sternberg 1991:128).

The paleontologist had stumbled upon a major Miocene-age fossil-bearing locality. Famous for its rhinoceros bones, the site, variously known as the Sternberg, Marsh, or Long Island quarry, also yielded the bones of mastodon, giant tortoise, camel, various carnivore species, and numerous species of smaller fauna (Shor 1971:109). As Sternberg (1990:128) put it, “I took possession in the name of Science of the largest bone bed in Kansas. I did not stop to ask whether anyone else had any interest in the land, nor did I think it necessary.” Shortly this was to cause him problems, as

... one day, as I was working in the ravine, an old man, plowing corn, drove up to its eastern edge. When he made the turn, he chanced to look across and saw me, pick in hand, diligently uncovering the skull of a rhinoceros from the sandbank on the other side. He instantly shouted with all the strength of his lungs, “What are you doing?”

“Digging up antediluvian relics,” I shouted back. We both shouted as if we were a hundred yards apart.

“Well,” he called, “get out of there!”

“All right,” I answered in the same loud tones, and kept on working (Sternberg 1991:128).

Upon traveling into nearby Long Island for a meal, Sternberg found that the “old man” who



Figure 1. Dr. Samuel Wendell Williston. (Courtesy of Kansas Historical Society)

had accosted him was the landowner, James Overton. Overton, it turned out, had been so riled by Sternberg’s presence that he tried to have him arrested, though no justice of the peace in Long Island or anywhere else in the area was willing to intercede on Overton’s behalf, arguing that Sternberg was doing no one any harm. Sternberg (1990:128–129) continued to remove fossils from the locality over the next of couple of years, apparently mostly on his own.

In 1884 Sternberg was hired by O. C. Marsh of the Peabody Museum and placed on the payroll of the U.S. Geological Survey (USGS). As Marsh was the chief paleontologist for the USGS at that time, Sternberg now sent all of the fossils exhumed to Marsh at the Peabody at Yale University. To understand more of the context of Sternberg’s activities and of how the Overtons became directly involved in bone trade, a digression into the emerging discipline of paleontology is in order.

INTERLUDE: THE BONE WARS

The second half of the nineteenth century—largely coincident with the Gilded Age—was a tumultuous time for paleontology. Although the history of the science in the United States extends back to the 1730s (Gregory 1979; Mayor 2005; Simpson 1942), there was a resurgence of interest in the years immediately prior to and after the Civil War. Some of this attention was fueled by Darwin's theory of organic evolution, put forth in 1859 in his monumental treatise, *The Origin of Species*. A major episode of Gilded Age science was embodied in the Bone Wars, the protracted, public, and very bitter feud involving two of the ablest paleontologists of the mid- and late-nineteenth century, Othniel C. Marsh and Edward Drinker Cope (Colbert 1984; Jaffe 2000; Lanham 1991; Reingold 1985).

Marsh was the nephew of George Peabody, who financed the Peabody Museum at Yale University, with which Marsh was closely allied for the duration of his career. A skilled politician, Marsh was president of the National Academy of Sciences and maintained ties to key figures in the federal government, which led to his appointment as chief paleontologist of the USGS from 1879 to 1893. Although reluctant to take on the role, it did significantly enhance his access to fossils coming from various localities in the American West. In his lab at Yale, Marsh employed numerous assistants, including Samuel W. Williston, to prepare specimens, though it was Marsh and only Marsh who published the results in meticulously planned monographs and papers. Assistants were treated as hired men; few were permitted to study fossils or publish on their own. Indeed, Marsh was careful to restrict access to fossils, a fact that resulted in much bitterness toward him (see Schuchert and LeVene 1940; Shor 1971:109–111). Marsh was a committed Darwinian evolutionist. Among his notable achievements were his studies of extinct toothed birds and the evolution of the horse; the latter drew praise from Darwin himself (Gregory 1979).

Cope, a Quaker with roots in the Philadelphia area, was intemperate and brilliant. Possessed of an expansive interest in the natural world, he published a staggering number of papers—over 1,000—on “practically every branch of natural history” (Reingold 1985:237). A bold thinker, Cope was the

era's major biological theorist. Although a committed evolutionist, he favored a Lamarckian version of organic evolution (McCarren 1993). Initially, Cope was associated with the Academy of Natural Sciences of Philadelphia and the American Philosophical Society, but his connections with these organizations withered as his feud with Marsh intensified. For a time Cope studied fossils collected by the F. V. Hayden expeditions in the American West. After the early federal surveys were consolidated into the USGS, with Marsh as its paleontologist, Cope had to find other means to accrue fossils to study. This only added fuel to the mounting tensions, which in the late 1880s erupted, spilling into the Congress, the National Academy of Sciences, and, finally in 1890, the print media of the day (Reingold 1985:239). For his part Marsh fought back with a laundry list of Cope's foibles. Reingold (1985:236) has argued that the feud was “partly the result of the personalities of the two combatants, partly a consequence of the growing pains of their discipline.” Ultimately, although Marsh was forced from the USGS, the reputations of both men suffered greatly in the fray.

As divisive as it was, the era of the Bone Wars had a positive side, for during this period as many as 2,100 genera and species of vertebrates were revealed to science *and* an awestruck public for the first time (Carter 1971; Colbert 1984; Reingold 1985:239; Schuchert and LeVene 1940). Additionally, a great many of those involved in paleontological activities in the mid- and late-nineteenth century made signal contributions, both empirical and theoretical, which significantly advanced understanding of the deep past (Gregory 1979; Reingold 1985:236–239). Finally, it should be noted that many of these men, including Marsh and Cope, contributed in ways both large and small to the development of American archeology.

BACK AT THE QUARRY

When the 1884 season at the Long Island quarry began, the Overtons were not yet directly involved in the excavations. Soon, however, Sternberg, better financed than in the past, realized that he needed help in removing the thick packet of overburden to get at the fossils. Accordingly, he

. . . drove up to Mr. [James] Overton's door and offered him forty dollars a month to work for us with his team during the summer, with the understanding that I was to have all the fossils found. This offer he gladly accepted, and I found him a very careful worker. Not only did he do the rough work well, but when we got a floor laid bare above the bones, he proved to be a most careful collector (Sternberg 1990:129).

Perhaps uneasy with the independent Sternberg, Marsh also dispatched his protégé, John Bell Hatcher, to assist at the site (Schuchert 1905:132). Hatcher was a native of Iowa and at 23 years of age was fresh out of Yale; his fieldwork at the quarry for Marsh was his first professional assignment. Hatcher's arrival spelled trouble for Sternberg, as the neophyte paleontologist quickly came to regard the older man's field methods as coarse at best, something he apparently made no effort to hide (Lanham 1991:199). As Sternberg (1990:133) recalled, while he was on a provisioning run into town, Hatcher set up his own excavation. However, Williston was also at the site. According to his testimony, he sought to resolve the growing bitterness between Sternberg and Hatcher—especially as the tensions between the men threatened to spill over into the relationship with Overton—by proposing and then establishing separate excavations on opposite sides of the ravine (Shor 1971:108–109).

No matter how it came about, the new arrangement proved auspicious for young Tom Overton, because Hatcher turned to him for help in removing overburden and digging bones (Sternberg 1990:133). Hatcher remained at the quarry until November of that year, by which time Marsh had visited and managed (with Hatcher's help) to take over Sternberg's lease, forcing the site's discoverer from the scene (Jaffe 2000:277; Sternberg 1905, 1990:133). The following summer, Hatcher returned to the site (Schuchert 1905:132) and presumably hired Overton once again to help in the excavations.

THE CUTTING EDGE

Despite his youth and relative inexperience in the field, Hatcher soon proved his mettle. Before he was felled by typhus in 1904 at age 42, he came to

be known as “the most strenuous and skillful fossil hunter ever known” (Lanham 1991:198). His contemporary, W. B. Scott (1904:139), commented that “[h]e may be said to have fairly revolutionized the methods of collecting vertebrate fossils. . . .”

Free of Sternberg's oversight, Hatcher quickly established a grid of 5 x 5-foot squares and was soon digging out bones in large quantities with a degree of systematization unprecedented in the paleontology of the day (Lanham 1991:200; Schuchert 1905; Schuchert and LeVene 1940:209). In terms of field methods, Overton was exposed to the “cutting edge.”

A WHOLE NEW LIFE

The Long Island quarry attracted its share of other paleontologists and field collectors, including E. P. West, who ventured to the locality in 1891 to collect for the University of Kansas (KU) (Williston 1898). West was a retired Cass County, Missouri, judge and former U.S. District Attorney for New Mexico. Upon retiring from the bench, West, already well into his 60s, began to collect fossils for KU, amassing an outstanding collection through the mid- and late-1880s (Williston 1893, 1898). Judge West also gained some notoriety for his archeological research, conducted mostly along the Missouri River in and above Kansas City (e.g., West 1877, 1880, 1883).

At the quarry in 1891, West, with Overton's assistance, assembled “the extensive collection which led to the preparation of the skeleton [of *Teleoceras*] for the University under the direction of Professor Williston” (Osborn 1898:555). According to Williston (1898), Overton began collecting fossils for KU in 1891. As this coincided with Judge West's final collecting trip, it seems plausible that that trip also represented Overton's first work for the university. He had been acquainted with Williston since 1884, though, when Williston assisted in the excavations at the quarry, packing crates of fossils for Hatcher.

Quite possibly Overton accompanied Judge West back to Lawrence with the collected specimens. When West died unexpectedly in late January 1892, Williston hired Overton as an assistant (Shor 1971:145; Williston 1893, 1894a, 1894b). At KU's Natural History Museum his duties revolved

principally around fossil preparation. In fact, among his first tasks was assembling a rhinoceros skeleton from the assorted bones that he and Judge West had collected the previous summer on the Overton farm. No less a personage than Henry Fairfield Osborn (1898:556) of the American Museum of Natural History lavished praise on the finished restoration. Williston (1894a:290) was quick to declare that “the restoration is chiefly due to [Overton’s] skillful and careful labor.” Williston also credited his assistant with the restoration of *Platygonus* fossils found near Fort Wallace in western Kansas in 1894. He (Williston 1894b:23) enthusiastically noted: “[t]he bones were received at Lawrence mostly complete and by immersion in a dilute solution of glue have been made sufficiently strong to mount in the manner of recent skeletons. This has been done by my assistant, Mr. Overton. . . .” Williston’s praise for his assistant stands in contrast to the shabby way in which Marsh often treated him (Shor 1971:110–111). Additionally, Williston may have recognized that whatever his assistant lacked in formal education and training, he made up for in his contextual knowledge (see Barley and Bechky 1994) of fossils, gained both in the field and over time in museum settings.

Through the mid–1890s Overton participated in several field trips to western Kansas, the Dakota Badlands, and Wyoming (e.g., Anonymous 1894). Of particular interest is his discovery on an 1894 field trip to the Cheyenne River in South Dakota of a new species of mosasaur in the St. Pierre Formation, which Williston (1895:169, 1897b) promptly named in his honor: *Brachysaurus overtoni* (later *Prognathodon overtoni*) (Figure 2). (Case [1942] relates several anecdotes of this expedition, including

the hair-raising tale of a fierce hailstorm that struck the field camp one afternoon.) A photograph taken at evening mess on this expedition remains the only known image of Overton, poor as it is (Figure 3).

MARRIAGE

Besides his work for Williston, Lawrence held other attractions for Overton. He met, courted, and on Christmas Day 1892 married Jessie May Heydt, the daughter of Hector and Elizabeth (Lizzie) Heydt. Her family was then living in the city where her father worked as a ticket clerk for the railroad. Jessie, born in Lancaster County, Pennsylvania, on June 22, 1875, was then just 17 years old. Apparently the couple did not have any children or at least none that survived infancy.

12 MILE CREEK

Overton’s place in the history of Great Plains and Paleoindian archeology derives from his collaboration with Handel T. Martin in the excavation of the 12 Mile Creek bonebed, located in Logan County, in the summer of 1895. Martin was an Englishman who immigrated to the United States in 1886. Settling in western Kansas, he began to search for fossils on his own and sent, unsolicited, some of the bones he found to Marsh at Yale. Over the next decade he worked as a fossil collector and dealer, with most finds initially going to Marsh. Beginning in 1891, Martin began to collect freelance and now sold fossils to museums throughout the eastern U.S. and Europe. For short periods in 1894 and 1895, Martin was employed by KU to explore the

Figure 2. A skull of *Prognathodon overtoni* in the South Dakota School of Mines Geology Museum. (Courtesy of Michael Everhart, Fort Hays State College)

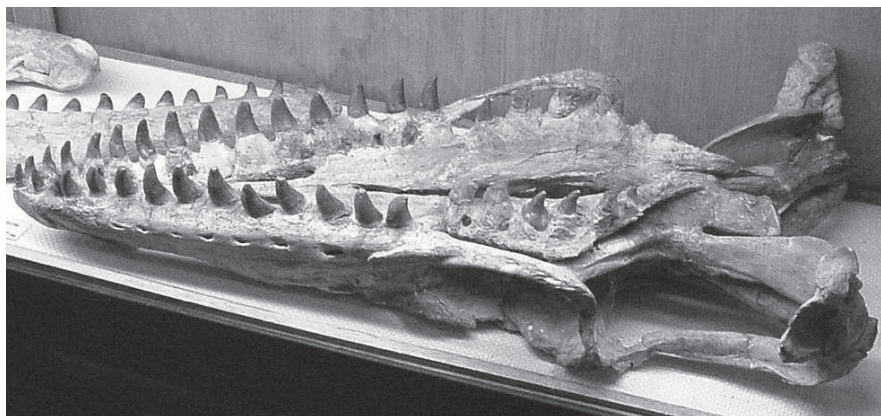




Figure 3. Eating at mess on 1894 KU expedition to the Dakota Badlands: (right to left) B. H. Hill, Thomas R. Overton, E. C. Case, Elmer Riggs, B. M. Dickinson, Barnum Brown, and unidentified teamster. (Courtesy of University Archives, Spencer Research Library, University of Kansas Libraries)

Cretaceous chalk beds of western Kansas (Martin 1994).

As the story goes, a farmer named Charles Wood approached the two men in their camp one evening and mentioned finding a tooth and large bones at a site in the area. After some discussion, Martin and Overton accompanied Wood to a local butcher's shop, where Wood had taken the tooth. According to Martin's testimony in a 1902 article in *The Kansas City Star* (1902:1),

After questioning the fellow, he [i.e., Wood] finally agreed to take us both to the bank where he had picked up the tooth. On our way up the river, however, we stopped at the meat shop and got the tooth, carelessly thrown into the meat box. I picked it up and said, "By Jupiter, Overton, we have found a rare one this trip!" We hurried on to the bank and on a vertical ledge about eight feet above the water, in a clay formation, in a wash wave in the chalk, there right before us, were clearly defined

bones and ribs of several different animals. We at once sent the tooth to Dr. Williston for examination and classification. The doctor wired us to get every bone in the deposit. We went to work and in three weeks had them all out in nice shape. It was rainy, I remember, and we had to wrap each bone in a covering of burlap and flour paste to harden them for shipping.

One day about noon and after Overton had gone to dinner, on raising carefully the shoulder blade of a large bull, I found a pretty and perfectly shaped little arrow head embedded in the clay and pressing into the bone. The flint was about one and a half inches long and three-quarters broad. There was not the slightest evidence of any disturbance in the clay or fossils. A bullet, arrow head, or anything would not have killed him at that point. I know because it had not entered the animal internally at all. There are no two ways about it, that bison had that arrow head in him when he died and who except a man could have put it there?

This account of work at the site forms the basis for remarks made by Williston (1902, 1905). Only recently has it become known that work at the site carried into the next year (Hill 2006:143), and thus this account appears to conflate two separate excavations at the site, the first in 1895 and the other in 1896. Martin himself discussed the second season in another newspaper story in *The Kansas City Star* in October 1906, which coincided with the opening of an exhibit in the KU Natural History Museum, featuring a mount of a composite bison skeleton. The mount was the first such in the United States (McClung 1908).

According to *The Kansas City Star* article, Martin, no longer employed by KU, was on a field trip in western Kansas and decided to revisit the site to see if anything else had been exposed by a round of heavy rains. A part of a bison skeleton was visible, which Martin excavated. In doing so, he found the projectile point associated with the bison skeleton (*The Kansas City Star* 1906). In 1926 in a letter to Jesse D. Figgins of the Denver Museum of Natural History, Martin reiterated this version of events and pointedly noted that he worked alone (Hill 2006:143). Soon afterward, he sold the bone and the stone spearhead he had recovered to Williston to be added to the other material from the site. Regardless of how it transpired, Overton remains an important figure in the site's history, whether or not he participated in the second season.

The 1895–1896 excavations exposed an estimated 40 m² and the remains of 13 animals, including a fetal calf (the bones of which have been lost), which were ultimately classified as *Bison occidentalis*, a newly recognized, extinct species (Lucas 1899; Williston 1902, 1905; also Hill 1994, 1996, 2002). Radiometric assays on bone indicate that the site dates to around 10,400 years ago (see Hill 1995, 2002 and Rogers and Martin 1984). For more than a century, the site has figured in the sometimes heated, inter- and intra-disciplinary debate concerning the peopling of the Americas.

“TO GO TO PREACHING”

In 1896 Overton quit his preparator job with the university “to go to preaching,” as Williston offhandedly put it (Shor 1971:145). Overton and his wife relocated to rural Timber Hill Township in

Bourbon County, Kansas, where he in fact made a living as a preacher.

As to why Overton, despite Williston's obvious faith in him, opted to abandon paleontology remains unknown. In keeping with “the spiritual crisis of the Gilded Age” (Carter 1971), perhaps Overton was unable to reconcile his religious views with the evolutionary implications of his work. The scientific community was itself still in turmoil. Some, such as Williston, were ardent supporters of Darwinian evolution; indeed, in 1874 Williston (1918:55) presented what he believed to be the first public lecture on Darwinian evolution in Kansas. Francis Snow, a professor of mathematics and natural science and later chancellor at KU, struggled with its acceptance, only gradually coming to appreciate the explanatory efficacy of organic evolution, after which he was a strong supporter (Hyder 1952:150–151; Shor 1971:189). Some, such as Sternberg (1905:71), took a pre-Darwinian approach, declaring “we should uncover our heads when we enter a paleontological museum, for we stand in the presence of the wonderful works of the creator. . . .”

It is conjecture that a conflict of Overton's religious views with his fossil work was the cause of his departure. It must be conceded that scientific and technical advances were only two of a host of factors in the many sweeping changes that roiled Gilded Age society. After all, the era witnessed major demographic shifts, from rural to urban settings, explosive immigration, rapid industrialization, and the related swing from a largely egalitarian society to an oligarchy (Cashman 1993), all of which contributed to the era's much-vaunted “spiritual crisis.” Thus, there are any number of reasons that might account for Overton's decision to leave the university and the city behind.

LATER YEARS

How long the Overtons resided in southeastern Kansas and exactly when they decided to head west is unknown. The 1900 federal census placed Jessie's parents in New Mexico, and possibly the couple followed them at a later time. Overton also had a sister Amanda in California. By 1914 the couple appeared on the voter rolls for Orange County, California, where they lived out the remainder of

their lives. (The Overtons' registration in Orange County was a transfer, indicating that they had lived elsewhere in California prior to moving to Santa Ana.) Overton worked as a carpenter, framing houses for his brother-in-law, Charles C. Cozad, a prominent Santa Ana builder (Armor 1921:646).

DEATH

Thomas Riley Overton died at age 73 at his home on September 2, 1935 (*The Santa Ana Register* 1935). Jessie outlived her husband by 20 years, passing away on January 30, 1955, at the age of 79 years. Both are interred in Fairhaven Cemetery in Santa Ana, California.

ENDNOTE

1. The absence of specific in-text citations indicates that some information, such as that of census, California voter rolls, marriage records, etc., used in this paper was derived from www.ancestry.com.

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ROCKSHELTER/PETROGLYPHS

ARCHEOLOGICAL FINDS AT 14LC622, A GREAT BEND ASPECT SITE IN LINCOLN COUNTY, KANSAS

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A once-inhabited but now collapsed rockshelter with associated petroglyphs is located in north-central Kansas and is designated as 14LC622. Artifacts found at the site are clearly protohistoric Great Bend aspect, ancestral to the modern-day Wichita tribe. Bison bones were part of a trash midden that included a bison scapula modified as a hoe, a sandstone abrader, and a chipped stone knife with a stemmed base and an alternately beveled blade.

In Kansas, ancient petroglyphs and once-inhabited rockshelters are occasionally found together, but it is not often that culturally identifiable artifacts are found with them. However, there is one such site, officially listed as 14LC622, in north-central Kansas along an unnamed tributary of Bullfoot Creek in southern Lincoln County. Archeological remains indicate that the site has a Great Bend aspect (GBa) cultural affiliation.

The Great Bend aspect is an archeologically defined cultural manifestation of the protohistoric time period. Considered to be ancestral to the modern-day Wichita tribe, the GBa cultural complex is found mainly in central and south-central Kansas, evidenced by village sites of the Little River focus in Rice and McPherson counties and the Lower Walnut focus near Arkansas City (Vehik 2002; Wedel 1959:571–589). GBa village sites have been documented in the Marion area (Lees et al. 1989; Rohn and Emerson 1984), and several large sites, presumably village sites, have been found as far southeast as the Fort Scott area along the Kansas-Missouri border (Jim Feagins, personal communication 2003). Much farther west in Larned, occupations by GBa peoples have been documented at the Lewis site (14PA307), although that site was interpreted as representing seasonally revisited hunting and gathering camps rather than a village site (Monger 1970).

My initial encounter with 14LC622 took place on June 27, 2001, when I carried out a field

inspection to investigate a report of “possibly human” bones eroding out of a cutbank. The investigation was carried out on behalf of the Kansas Historical Society (KSHS), as part of the KSHS’s legally mandated role in investigating reports of unmarked burial sites for the Kansas Unmarked Burial Sites Preservation Board, known more informally as the “UBS Board.” My inspection revealed that the bones were part of a protohistoric trash midden, consisting mostly of bison bones, along with a small femur that is apparently canid, a few flecks of charcoal, and two artifacts. One of the artifacts is a sandstone abrader. The other artifact (Figure 1) is a chipped stone knife with a stemmed base and an alternately beveled blade. This is a special kind of knife typically found only at GBa sites, which were concentrated in central and south-central Kansas during the several centuries that formed the Protohistoric or Late Ceramic time period. This was before, during, and after the arrival of the Spanish explorer Coronado in A.D. 1541.

On July 20, 2006, five years after my initial investigation, I returned to the site with State Archeologist Bob Hoard, and we finished the investigation by excavating all of the deposit that could safely be obtained. The materials recovered in this excavation included a bison scapula that had been modified for use as a hoe, numerous bison bones (some burned), two bird bones, part of a raccoon mandible, a few apparently canid bones, several



Figure 1. Chipped stone knife found at 14LC622.

other small but unidentifiable animal bones, and a few more bits of charcoal. Oddly, though, we found no artifacts other than the bone hoe—not even any chipped stone debitage. Other bones and artifacts may be present, deeper within the talus slope and rockshelter, but if so, they are covered by large boulders that prohibited us from finding and excavating them.

I first learned of the 14LC622 bone deposit in August 2000, when the site landowner telephoned the KSHS to ask if someone could come out and take a look at the feature. His request derived from the fact that someone recently had told him that the bones were “European bones,” which led him to think that the bones might be human. This was a rather jarring surprise, because an archeological research crew from Kansas State University had earlier told him that the feature was nothing more than a deposit of animal bones.

After pondering the matter, the landowner decided that the find should be given a second look, so he contacted the KSHS to request a field visit by a qualified expert who could identify human bones. The call was then directed to me because I had been inspecting human burials for many years as the officially designated case investigator for the UBS Board. Naturally, I agreed to examine the feature,

which fortunately was not in imminent danger of being destroyed.

The details provided in the phone call did not give much reason for supposing that a human burial might be present. As the landowner explained, the feature had been examined nearly 10 years earlier in 1991 by a Kansas State University archeological crew conducting a cultural resources survey of Lincoln County. The crew apparently had heard about petroglyphs being present along the creek and contacted the landowner for permission to visit the site and verify the existence of the petroglyphs. The landowner took them to the site, showed them the petroglyphs, and then directed their attention to the adjacent bone deposit, asking them about the meaning and antiquity of the bones. The researchers apparently attributed no archeological importance to the deposit, for they informed the landowner that the skeletal remains found in the deposit were “only animal bones.”

Later, one of the crewmembers formally recorded the area as an archeological site (14LC622) due to the presence of the petroglyphs. The site form described the petroglyphs but made no mention of the bone deposit, which was located only a few feet away. The survey also resulted in a written report (Ball et al. 1991:38). Like the site form, the

survey report mentions only the petroglyphs and does not describe the bone deposit.

ENVIRONMENTAL SETTING

In physiographic terms 14LC622 lies within the Dissected High Plains section of the Great Plains province of the Interior Plains division of North America (Schoewe 1949:280, 309–311). The Dissected High Plains section essentially constitutes the heavily dissected eastern front of the High Plains of western Kansas. As described by Wedel (1959:10), the area is characterized by “... a broken landscape of high plateau-like uplands, prominent and often sharply indented east-facing sandstone or limestone escarpments, conspicuous headlands, isolated buttes, hills, and rolling lowland plains.” Located north of the Arkansas River and covering most of north-central Kansas, the Dissected High Plains is made up of three distinct subdivisions or ranges of uplands that parallel each other in a northeast-southwest irregularly trending fashion. Bedrock is of Cretaceous age. The easternmost range (and sometimes the entire Dissected High Plains area) is commonly referred to as the Smoky Hills and is characterized by thick beds of Dakota sandstone, which is the rock formation that forms the setting for 14LC622. To the west are the middle and western ranges of the Dissected High Plains that are collectively referred to as the Blue Hills; the bedrock there consists mainly of limestone and shale.

The topography of the Dissected High Plains varies according to the hardness of the exposed bedrock. In locations where the surface is eroded into nonresistant shale, the topography is rolling. Surface erosion into the more resistant limestone formations creates flat plateau-like surfaces with steep, rocky escarpments. Isolated buttes are occasionally encountered.

The major rivers and streams of the area flow in an easterly or southeasterly direction through flat-bottomed valleys ranging up to two or three miles wide. Major river drainages of the region, from south to north, are the Smoky Hill, the Saline, the Solomon, and the Republican. Numerous spring-fed tributaries indent the valley margins; like the larger streams and rivers, their courses are commonly terrace lined. The bottomland soils are

usually deep, well drained, and fertile. 14LC622 is part of the Saline River drainage, being located on an unnamed tributary of Bullfoot Creek, which joins with Spring Creek to flow into the south bank of the Saline.

The vegetation of the region prior to modern encroachment and change apparently consisted of mixed prairie interpenetrated by narrow ribbons of riverine forest, with a few small patches of trees occupying sheltered locations on the prairie, mainly on steep escarpments and butte tops. According to Kuchler (1974), the potential natural vegetation of the area consists of mixed prairie dominated by bluestem and grama grasses, along with flood-plain forest or savanna vegetation consisting of tall, medium tall, and low broadleaf deciduous scattered trees and shrubs. Moving from east to west, the forests become narrower and lower, and often less dense. Dominant trees include hackberry, cottonwood, willow, and elm. A variety of fruit and berry-producing shrubs, such as chokecherry, wild currant, gooseberry, plum, and grape, are also present.

These vegetation conditions supported a variety of animals and birds, many of which were exploited directly by humans. Bison, elk, deer, and antelope were present in abundance, along with the Plains grizzly, black bear, wolf, coyote, cougar, wildcat, swift fox, black-footed ferret, badger, beaver, otter, porcupine, raccoon, prairie dog, tree squirrel, jack-rabbit, cottontail, and numerous smaller rodents. Quail, wild turkey, prairie chicken, and grouse were available throughout the year, along with ducks and geese in appropriate seasons and locations. According to Wedel (1959:12), the region could furnish “... an abundance of food ...” for peoples wholly or primarily dependent on a hunting and gathering economy. In comparing the area to the High Plains, Wedel (1959:13) pointed out that

... there is here [in the Dissected High Plains] an increased and surer yearly precipitation, averaging from 22 to 30 inches or more; and this, added to fertile valley bottoms, relatively plentiful wood for fuel and building, water, and convenient flood-free terraces well suited for village locations, made the region an attractive one for native, as for the later white, farming peoples.

The natural ecology of the region has been greatly altered by modern land-use practices. Today, most of the lands within Lincoln County and the rest of the region are used for ranching or agricultural purposes, primarily the pasturing of cattle and the cultivation of crops, such as wheat, corn, milo, and soybeans. The area around 14LC622 has never been plowed and serves as a cattle pasture. It is largely forested with scrub trees, such as Locust and Osage Orange, along with some larger trees and smaller shrubs, weeds, and grasses.

The setting of 14LC622 is especially scenic. The creek meanders to the north through a relatively flat and ordinary landscape. Then it hits the massive, vertical bluff of dark brown sandstone that rises from the creek valley, forcing the north-flowing stream to pass around it to the west before turning again to the north (Figure 2). Centuries of wind and water erosion have created a dramatic concave curve to the bluff, enhancing its aesthetic attraction. Standing in the bottomland along the

creek edge, one feels pleasantly enclosed by the sinuous sandstone bluff—especially in the summer when the creek and shade trees offer a cool and inviting ambiance.

ARCHEOLOGICAL FEATURES AT 14LC622

My initial investigation of the site in 2001 revealed two observable archeological features: a set of petroglyphs and a trash deposit consisting mostly of bison bone. Because of the features' proximity, the presence of a GBa artifact in the trash deposit, and the lack of any other culturally identifiable artifacts, one is forced to conclude that the two features are culturally associated, making them protohistoric in age, dating from the Late Ceramic time period.

The petroglyphs are located on the bluff face only a few meters above and to the east of the trash deposit (Figure 3). Accompanied by a variety of historic and/or modern graffiti scattered elsewhere



Figure 2. Scenic view of the 14LC622 area.



Figure 3. Scenic view of the trash deposit and the petroglyphs.

on the bluff, the petroglyphs (Figures 4 and 5) consist of two “turkey track” markings and a single angled line (interpreted by the 1991 researchers as a “partial” turkey track) located about 5 m above the creek bottom. The track-like glyphs are referred to as turkey tracks simply because they resemble a turkey track, although it is not known whether the ancient artists actually had turkey tracks in mind when they made the petroglyphs. It is important

to note, however, that turkey track petroglyphs are relatively common in Kansas, being found at almost half of the recorded petroglyph sites in the state (O’Neill 1981:10). Single lines are also quite common; according to O’Neill, a single straight line cut into the stone is the most basic design found at any of the petroglyph sites in Kansas. Seldom being longer than the length of an outstretched hand, many of these lines are tapered at each end in

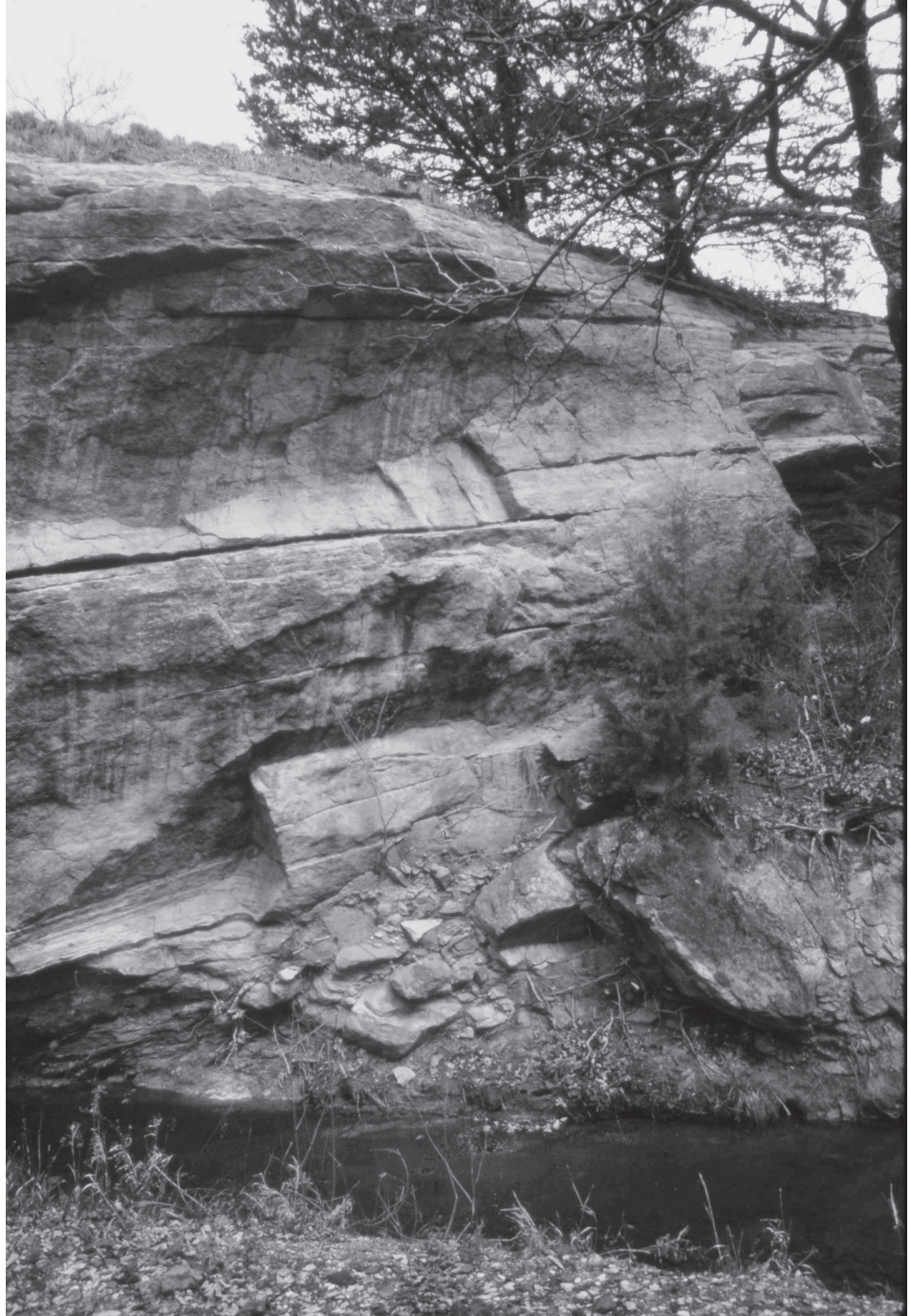


Figure 4. View of the petroglyphs at 14LC622.

width and depth, and they often occur in a parallel arrangement of two or more lines. The reason for their presence is uncertain; they may have resulted from sharpening instruments used in carving various glyphs (like the turkey tracks) or they may have some non-utilitarian explanation (O'Neill 1981:8).

The trash deposit (Figure 6) was located a short distance west of the petroglyphs, at a much lower

elevation, on a soil deposit that sits about a meter above the normal creek level. The soil deposit was not an actual soil but a conglomerate landform, comprised of alluvium and colluvium. Geomorphically, the landform is essentially a small alluvial fan, being formed mainly of talus rock and sand, derived through weathering and decomposition of the sandstone bluff, mixed with alluvium from the

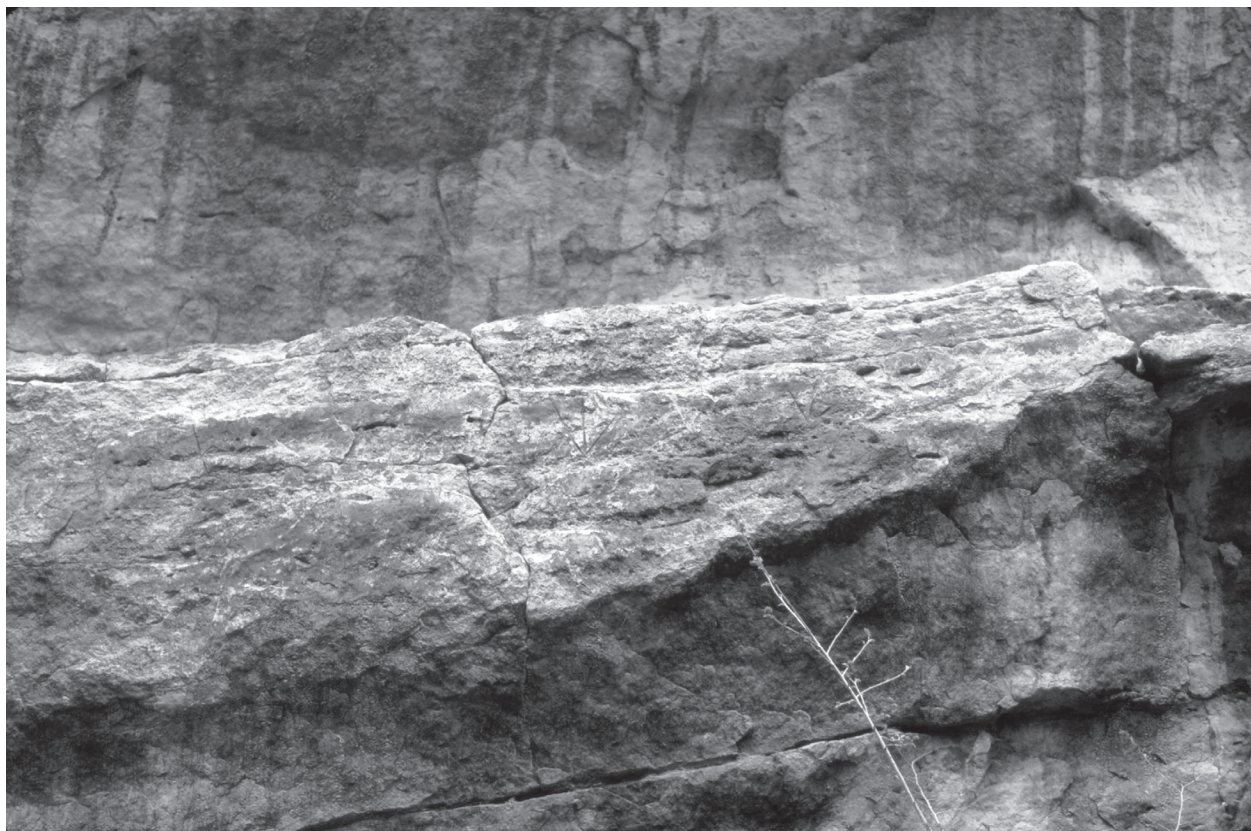


Figure 5. Closer view of the petroglyphs at 14LC622.

creek. The landform is relatively narrow, extending out from the wall of the bluff only a meter or so. It is covered by an aggregation of large sandstone slabs that obviously fell from above, including one particularly massive boulder-like slab that has nearly obscured the trash deposit and apparently sealed off the rockshelter that is assumed to be present underneath the boulder.

Due to the fortuitous falling of this slab, a portion of the trash deposit was covered and kept in place despite many years of being washed by floodwaters of the creek. Composed largely of bison bone, the trash deposit contained soil that was slightly darker than the soil beneath it. The feature appeared to be 15-20 cm thick, and although its full dimensions could not be known due to the slab's obscuring effect, it was about a meter in length. The horizontal depth of the feature was likewise uncertain, but as near as could be determined, the deposit probably did not extend back under the slab more than about 60 cm before terminating against the wall of the

bluff. More materials, of course, may be present in the rockshelter.

Over the 30-some years that the current landowners have lived on the property, their children collected from the trash deposit a variety of bones, most dislodged during flooding. The bones that they collected were brought back to the farmyard and placed in an old bucket outside a shed. Unfortunately, these bones were later discarded before I could return and obtain them for a more thorough analysis. A brief examination during the 2001 visit resulted in an assessment that the collection consisted entirely of bovid bones. Thinking prehistorically, I assumed the bones were probably bison, although it was equally possible that they were from a cow. The bones appeared to represent only a single individual, as I saw no duplicate elements. The bone collection contained no artifacts, and the landowners stated that they had never heard of anyone ever finding anything that was recognized as an artifact.



Figure 6. View of the trash deposit at 14LC622 on June 27, 2001.

After inspecting the landowners' bone collection, questioning them about past finds, and conducting a cursory visual inspection of the feature, it was quite clear that the deposit was not a human burial, and it seemed doubtful that the skeletal remains represented anything other than the natural death of a bison or cow. However, even after making these seemingly definite observations, I decided to carry out an exploratory excavation to confirm my conclusions. This work, carried out with a trowel and small brush, quickly revealed the feature to be far different than a natural death situation. Instead,

it proved to be a protohistoric habitational trash deposit, composed largely of bison bone but also containing stone tools, a fleck of charcoal, and skeletal remains of other animals and at least one bird.

My initial investigation of the feature was meant to be limited and non-intrusive, as I was not prepared for a major excavation and was uncertain if the landowners would be accepting of such an undertaking. Luckily, a full scale excavation was not necessary. By doing little more than lightly brushing loose dirt off the feature, I spotted the end of a sandstone abrader protruding from the deposit.

When I carefully troweled into the feature to obtain the abrader, I also found a small animal bone along with a chipped stone biface that is more accurately defined as a knife. The knife is uniquely shaped: stemmed with an alternately beveled blade, characteristics that are clearly indicative of a GBA cultural affiliation. I collected all three items along with portions of a bison metapodial that became dislodged during the excavation process. One fleck of charcoal was also observed in the feature fill, which was a mixture of sand and soil.

The feature was clearly definable as a protohistoric trash midden, a deposit of habitational debris. But why was it there, and what did it represent? Several explanations were considered. Could the debris have been dumped there from above, from an occupation on the bluff top? Examination of that rocky and irregularly sloping surface revealed no evidence of an occupation in that location, nor did it seem likely that anyone would have ever camped there. Could the debris be derived from people camping on the small alluvial fan-like landform jutting out from the sandstone bluff? This did not seem likely either, as the landform would have been almost impossibly narrow and oftentimes wet, seemingly far less inviting than the nearby land on the other side of the creek. Was the debris in secondary context, carried to that location and deposited by alluvial action? This also seemed unlikely, due to the density of the deposit and the mixture of things within it.

One other explanation seemed far more likely: that the feature was a trash midden created by people living just above it in a small rockshelter that later collapsed, with the overhang boulders fortuitously sealing the interior of the rockshelter and the trash midden. To get a second opinion that might confirm this inference, I contacted Dr. Rolfe Mandel, a University of Kansas geomorphologist who has long-time expertise in geoarcheology (for example, see Mandel 2000). I explained the situation and had him look at photographs of the site and provide his assessment. In a personal communication of March 18, 2003, he stated that the site is “definitely a collapsed rock shelter,” probably an overhang or a shallow cave. He pointed to several other small overhangs on the present-day bluff face as evidence of the likelihood of larger overhangs being present in the past.

Due to the enormous size of the fallen rocks, an investigation of the rockshelter itself will never be possible; it would be extremely difficult and cost-prohibitive to remove the rocks to permit a complete excavation. It was obvious, however, that the trash midden could and should be investigated further. The feature was exposed in the cutbank and clearly had good potential for yielding significant archeological information. Judging from the evidence at hand, the site had only a single component, and it was reasonable to infer that the trash deposit and the petroglyphs were associated. Of course, it is always possible that the deposit might represent an entirely different occupation and culture than the people who created the petroglyphs.

Various other commitments prevented a quick return to the site, but a little over five years later, on July 20, 2006, State Archeologist Bob Hoard and I revisited the site and excavated as much as possible of the midden with trowels and shovels (Figure 7). Designated Feature 5 (F5), it proved to be 115 cm long, 30 cm thick (vertically), and had a maximum depth varying from 10–70 cm, measuring in from the somewhat irregular cutbank surface. More of the feature was undoubtedly there, but it was under a huge boulder, and digging any deeper was unsafe. We removed all observable archeological materials, which consisted of a loose conglomerate of animal and bird bones along with some charcoal. Most of the bone was bison, and some bore evidence of burning. We found two bird bones and several other pieces of small animal bone, the most clearly identifiable of which was the chin end of a raccoon mandible.

Another small but previously unnoticed bone/charcoal deposit, subsequently designated Feature 7, was discovered and excavated. This feature had the same cutbank elevation as F5 but was approximately 4 m west of F5 on the other side of the enormous boulder; therefore, it was uncertain whether the two features were associated, although it seems very likely that they were. F7 was quite minimal, consisting of a very small cluster of charcoal adjacent to a modified bison scapula and a few other small unidentifiable bone fragments that were assumed to be bison also. Although only one cut mark is present on the blade of the scapula, its spine and axillary border had been purposely removed, presumably in an attempt to produce a hoe. No



Figure 7. Excavation in progress on July 20, 2006.

polish is present on the scapula, so apparently it was never used.

The soil matrix around and within F5 and F7 consisted of coarse dirt mixed with numerous small angular fragments and several larger pieces of sandstone, all of which must be talus from natural disintegration of the sandstone bluff. Rounded

pebbles of the sort seen in alluvially derived gravel bars were not observed. Much of the soil matrix was collected and later water screened, resulting in recovery of a few more pieces of small bone and sandstone. Surprisingly, however, no stone artifacts were found, despite the fact that the 2001 investigation had resulted in the immediate discovery of

an abrader and a chipped stone knife. The 2006 excavation of F5 and F7 produced no stone tools or even chipped stone debitage, even though waste flakes are usually the most common and plentiful kind of artifacts encountered at a habitation site.

ARTIFACTS AND OTHER ARCHEOLOGICAL MATERIALS

Fortunately, the materials recovered and observed in the initial investigation of 14LC622 proved to be especially useful in providing information about the site's former inhabitants. It was obvious at the time that an abundance of bison bone was present, but more importantly, the left femur of a much smaller animal was also found. Its epiphyses are completely fused, indicating that it was an adult or nearly adult individual at time of death. Comparison with similar elements in the KSHS osteological collection suggests that it may be a canid bone. Judging from its small size (89 mm long, about two thirds the size of the smallest coyote in the KSHS collection), it is almost certainly from a small dog rather than a wolf or coyote.

One of the two artifacts recovered from 14LC622 in 2001 is a small sandstone abrader made of dark brown Dakota sandstone, which is a locally available material. Measuring 58 mm long, 20 mm wide, and 21 mm thick, the abrader is a somewhat oblong specimen with one longitudinal groove. The groove is rounded but relatively narrow in cross section.

The other artifact is a chipped stone knife made of reddish brown jasper, a lithic material found in north-central and northwestern Kansas and known to be particularly abundant in Gove and Trego counties where several prehistoric quarries, collection stations, and workshops have been documented (Reynolds 1985). This variety of jasper is also known as Niobraraite (Wright 1985), and it was commonly used for the manufacture of chipped stone tools by prehistoric flintknappers throughout central and western Kansas. Jasper also formed a major part of the chipped stone used by the GBa inhabitants of Rice County (Reynolds 1985:97).

Overall, the knife is 71 mm long, 26 mm wide, and 7 mm thick. It is a distinctively configured artifact with a contracting, bifacially worked stem, and a short alternately beveled blade with slightly concave edges indicative of resharpening. It is the

type of knife that is considered representative of the Great Bend aspect (Peck 2003; Wedel 1959). For example, in his *Introduction to Kansas Archeology* Wedel (1959:Figures 51(a) and 53(b)) shows similar knives that were found at the Tobias site (14RC8). Knives of this type are rarely found anywhere but GBa sites. On this basis a GBa cultural identity, and consequently a Late Ceramic or Protohistoric temporal setting, can be inferred for the 14LC622 trash deposit. This inference was strengthened by the finding of the dog femur, as disarticulated dog bones are a somewhat common find at GBa sites, presumably indicating that dogs were a source of food (Thies 1993; Vehik 2002:37; Wedel 1959:233).

The return to the site in 2006 yielded one more artifact compatible with a GBa occupation—a bison scapula modified for use as a hoe—and also provided more evidence about animals procured by the site inhabitants. While bison bone comprised the majority of the skeletal remains recovered from F5, two bird bones and the remains of several small animals were also found. The latter include the chin section of a raccoon mandible, eight caudal bones and two phalanges that appear to be canid, and the remains of several smaller animals that could not be identified as to their specific species, including a left femur, a sacrum, four vertebrae, and five small unidentifiable bone fragments.

The bison bones may represent two individuals, one of them of adult age and the other a sub-adult, but the evidence is uncertain. There are no duplicated elements to clearly indicate two different bison, but there are two items, a proximal epiphysis of a femur ball and an unfused vertebral centrum, that clearly indicate a non-adult animal. All the rest of the bones appear to be completely fused and, therefore, of adult age, but many of them are broken and incomplete. Some of the bones have been burned, obviously indicating that the site's inhabitants placed them over a fire.

In addition to the bison metapodial found in 2001, the identifiable bison bones discovered in the 2006 excavation include a bison scapula that was modified for use as a hoe, along with numerous unmodified bones: a portion of a left mandible, 18 broken rib sections, a portion of a vertebra, 2 vertebral transverse process sections, an unfused vertebral centrum, 2 femur ball caps (one of them being

the unfused proximal epiphysis mentioned above, the other being broken) along with a portion of the distal section of a femur, a patella, the proximal section of a right ulna, the semilunar notch section of a left ulna, the distal section of a right tibia, a left calcaneus, a tarsal, the proximal end of a right metatarsal, and 2 proximal phalanx. In addition, approximately 130 fragmentary bison bones appear to be sections of long bones, with approximately 10 of them being charred, indicating that they were burned.

Before leaving this topic, it is important to consider the fragility of the trash deposit and realize how much of it may have been lost over the last few hundred years. Despite the fact that a seemingly sizable amount of the feature managed to survive, how much of it was destroyed by several centuries of flooding and by more recent depredations of artifact collectors and curious visitors? One cannot help but wonder how many more artifacts and bones might be present within the rockshelter, which is covered by a boulder much too large to remove.

NEARBY FEATURES

Across the creek from the sandstone bluff, on a low and occasionally flooded alluvial terrace, is another feature that the landowners wanted to have identified. The feature consists of a shallow depression about 2 m across and .5 m deep with a mound of dirt immediately to the north. The depression and mound are covered with grass, suggesting that the feature has been in place for some time, although that is not, of course, any guarantee of great antiquity. It is obvious that the feature is manmade, but beyond that the functional purpose and cultural origin of the feature are not evident. The landowners once had some members of the Lincoln County Intertribal Association out to view the petroglyphs and had them look at this feature as well. One of the Indian members reportedly said she experienced “feelings” from the feature, and because of those feelings, she thought that it was probably a Native American ceremonial site of some kind. Considering the matter from a scientific viewpoint, however, it is quite unlikely that a several-centuries-old feature of this sort would still be in evidence, as it surely would have been filled years ago by alluvial deposition associated with the flooding that occurs in this

area. It seems much more likely that the feature is of historic or modern origin.

A short distance south of that feature is a square or rectangular limestone foundation. We did not inspect it because it was obscured by thorny locust trees and located on another landowner’s property. It is obviously a historic Euroamerican creation, probably representing the remains of an outbuilding of some kind. Therefore, it seems reasonable to assume that the above-described depression derives from activities associated with the use of this historic structure.

OTHER GBA HUNTING SITES IN THE NORTH

Archeological research carried out in Lincoln County and surrounding portions of central Kansas has yielded evidence of prehistoric human occupation dating from around 11,000 years ago and extending up to the modern era. Sites in the region usually represent habitation areas, small workshops, or burials. Petroglyphs are also common due to the prevalence of sandstone in this part of the state, especially in southern Lincoln County and in Russell and Ellsworth counties that border Lincoln County on the west and south.

While the full extent of the area’s archeological resources has yet to be determined, it is clear that central Kansas contains materials from all of the major cultural periods thus far identified in Kansas, ranging from Paleoindian to Historic (Brown and Simmons 1987; Thies 1987). Of these various cultural periods, it is the Late Ceramic period (also known as the Protohistoric period) and particularly the cultural entity known as the Great Bend aspect that are of greatest relevance to the cultural significance of 14LC622. As noted in the artifact discussion above, the site produced one culturally diagnostic artifact from primary context within the trash deposit at the base of the rockshelter. This artifact, a distinctively shaped chipped stone knife with a stemmed base and an alternately beveled blade, is unique to the Great Bend aspect and provides a firm basis for inferring a GBA cultural affiliation for the site’s former occupants.

Further confirmation of the site’s cultural identity can be obtained through consideration of the site’s relatively close proximity to other GBA sites

and the function of those sites. From such an assessment, it is apparent that 14LC622 is part of the northern periphery of the area occupied and exploited by GBa groups and that this site is one of several small hunting camps used by those groups.

14LC622 is only some 30–40 miles northwest of the major village sites in Rice and McPherson counties that make up the core settlement area of the archeological entity known as the Little River focus of the Great Bend aspect. Ellsworth County occupies most of that intervening distance. According to the computerized database created as part of the Master Site File maintained by the KSHS, Ellsworth County contains four recorded sites that are identified as having GBa cultural affiliation. The Thompson Creek site (14EW6) offered the best evidence; two stratified levels of GBa occupational debris were found during a limited excavation carried out by University of Kansas archeologist Carlyle Smith. The two components were interpreted as marking the remains of periodic camps. According to Smith (1949:293-294), “. . . it is doubtful whether complete excavation would have furnished data comparable to those found in the large village sites” [of Rice and McPherson counties].

One of the other GBa sites in Ellsworth County, the Ward site (14EW17), is perhaps of special relevance to the present study as it contains numerous petroglyphs, including so-called turkey tracks, on the sandstone bluffs that overlook a substantial habitation area. That site, however, is primarily a Hopewellian (Early Ceramic) manifestation with only “an occasional sherd” to indicate a Great Bend occupation (Horr and Johnson 1957; Smith 1949:297-298).

Two other Ellsworth County sites (14EW454 and 14EW481) have been identified as having a GBa cultural affiliation, but they were reported by a local artifact collector who was not always accurate in his assessments of cultural affiliation. He supposedly found pottery sherds of GBa origin, but none of his artifacts were donated or made available for examination, so their identity remains uncertain. If the sites do have a GBa cultural affiliation, their locations and the relatively small number of artifacts suggest that they are short-term camps rather than villages.

Saline County, which is just east of Ellsworth County, contains only one recorded GBa site,

14SA453. The site is located on Gypsum Creek about 7 miles east of Salina. It was reported by a local artifact collector who was quite knowledgeable about GBa sites and recovered a sizable collection from the site, including GBa pottery sherds, small triangular points, beveled knives, and other chipped stone artifacts made from jasper and obsidian, as well as locally available Flint Hills chert. It is likely that this was a small village site or a heavily occupied hunting site, which is not surprising due to its relatively close proximity to McPherson County.

Looking elsewhere, the KSHS database lacks recorded GBa sites to the east or northeast of 14LC622. To the north the documented evidence for GBa occupation is limited to one small cluster of sites, described as six hunting sites and a sacred site, located along the Solomon River in the Waconda Lake area (Blakeslee 1999:17). According to Dr. Donald J. Blakeslee (personal communication 2003) of Wichita State University, the hunting sites contained small amounts of pottery that confirmed their cultural affiliation. The so-called sacred site is a supposed earthen intaglio, similar to the “serpent intaglio” in Rice County that is inferred to have been constructed by GBa peoples (Mallam 1984).

Dropping back down to the Saline River drainage and looking to the west of 14LC622, the KSHS database indicates that there are two recorded GBa sites in that area, although one of them is not definitively identified. The latter, 14RU519, is a campsite along the Saline River about 15 miles west of 14LC622. Although the site has been largely destroyed by roadwork, investigators found four sherds that were “reminiscent of Great Bend Aspect pottery,” resulting in a determination that the site was “perhaps of Great Bend Aspect affiliation” (Blakeslee et al. 1986:193).

Some 30–40 miles upstream of 14RU519 is the Hinger site (14RO416), which is the northwesternmost example of a firmly identified GBa site listed in the KSHS database. It is a multicomponent habitation site, located on a terrace adjacent to Paradise Creek, a north-bank tributary of the Saline River. I have viewed numerous artifacts gathered from the site by private collectors, with one such collection being donated to the KSHS. In addition to an abundance of pottery, indicating a substantial Central Plains tradition (CPT) occupation, the collections

include a smaller amount of GBa pottery and a stemmed, side-notched knife with an alternately beveled blade—exactly the type of knife commonly found at GBa sites. A hundred or more small, thin, plain or side-notched projectile points were also found. Although some of the points probably are associated with the CPt occupation, many of them are made of Alibates agatized dolomite, an “exotic” lithic material that usually is not present at CPt sites but is often found at Late Ceramic sites, especially GBa sites. Although no excavations have been carried out to determine stratigraphic relationships or obtain chronometric data, it seems likely that a GBa occupation, probably a small hunting camp or a series of such camps, took place during the Late Ceramic time period on top of an abandoned CPt village site that had been established earlier during the Middle Ceramic period.

While focusing on northern periphery GBa sites, it is worth noting that there are only two such sites recorded west of Ellsworth County in the Smoky Hill River drainage, which is the next major river drainage south of the Saline River. One of those sites, 14EL401, is only some 20 miles south and a little west of the Hinger Site. A relatively large but not densely inhabited campsite, 14EL401 is located on North Fork Big Creek, a north-bank tributary of the Smoky Hill River. In 1993 I carried out an intensive survey there, finding a GBa pottery sherd and a stemmed, side-notched knife with an alternately beveled blade—again, the same sort of knife that was found at the Hinger Site.

About 40 miles downstream to the east of 14EL401 on the north bank of the Smoky Hill River, a KSHS archeologist found the remains of a small camp during a brief survey (Williams 1984). Site 14RU325 was attributed to the Great Bend aspect on the basis of a GBa pottery sherd.

There are undoubtedly other GBa sites in the area that have yet to be recorded, but judging from the evidence so far encountered, it seems highly unlikely that any of them are large village sites of the sort found to the south and southeast. Clearly, this region functioned as one of several hunting grounds for GBa groups. However, the hunting camp at 14LC622 is distinctively different as it has petroglyphs that can reasonably be inferred to derive from a GBa occupation, inasmuch as no other cultures are represented at the site.

OTHER GREAT BEND PETROGLYPH SITES

14LC622 is unique in having petroglyphs of GBa cultural affiliation, identified through artifact association. Apparently there are only a few other petroglyph sites in Kansas that have been linked specifically to the Great Bend aspect, and that has been done through scholarly inference. Archeologist James Howard (1964) identified two southeast Kansas sites during his 1957 investigation of the Toronto Reservoir area. Both sites, 14WO222 and 14WO224, are small rockshelters containing GBa pottery along with artifacts attributable to other cultures and time periods. The characteristics that prompted Howard to link the petroglyphs at these sites with the Great Bend aspect included horses, indicative of an early historic time period, and human figures with lines on their faces and breasts, suggestive of the tattoos that were a conspicuous characteristic of the Wichita Indians, the historic tribal group believed to be descended from the protohistoric GBa groups. In addition, one figure had a distinctive design that was identical to a tattoo design historically documented for a group that was linguistically related to the Wichita. As an aside, it is interesting to note that one of the sites investigated by Howard had earlier been described as having a petroglyph resembling a “bird’s foot” (Andreas 1883:1190). Unfortunately, this design apparently had been destroyed by the time of Howard’s investigation, so we have no way of knowing for sure whether this design was similar to the turkey track petroglyphs found at 14LC622, although it seems likely that it was.

With regard to the concept of lines on the bodies of human figures being a dependable indicator of GBa origin for petroglyphs, it is worth noting that there are numerous other examples that would qualify. *Kansas Rock Art*, for instance, shows three such figures, two in Russell County and one in Ellsworth County (O’Neill 1981:12, 14), and other examples are shown in the illustrations provided by Horr and Johnson (1957) and Wedel (1959:482–494).

One other petroglyph site deserves mention here, even though the inferred association with the Great Bend aspect is not absolutely certain but seems quite likely. The W. B. Peverley Spring site (14RC10) is located amidst and near several

large GBa village sites in Rice County. It is not a habitation site and hence has yielded no diagnostic artifacts by which an assessment might be made of its cultural affiliation. The site does have numerous petroglyphs, however, including some turkey tracks and a rather unusual depiction of a human figure carrying a large shield and spear. Wedel's (1969) research prompted him to conclude that the shield/spear petroglyph might represent one of the non-horticultural Plains Indian groups, such as the Escanwaques, who were documented by the Spaniards in the early seventeenth century. Due to the inferred temporal placement for this petroglyph and its proximity to the prominent GBa village site, known as the Tobias site, Wedel (1969:125) concluded that the petroglyph was "... perhaps associated with it [the Tobias site] in time and origin." In other words, it appears likely that one (or more) of the Tobias site inhabitants created the shield/spear petroglyph and the turkey tracks, along with all the other petroglyphs at 14RC10. Based on those observations, and the presence of a GBa knife in the 14LC622 trash deposit, it seems safe to conclude that someone of GBa cultural affiliation created the turkey track petroglyphs at 14LC622.

CONCLUSIONS

14LC622 is clearly identifiable as a GBa habitation site. More notably, it is a unique site in that it has turkey track petroglyphs adjacent to a trash deposit that appears to be associated with a collapsed rockshelter. Due to the apparently small size of the rockshelter and its distance from the GBa village sites of central Kansas, 14LC622 is almost certainly a hunting site that was used periodically, probably during times of bad weather when a small confined rockshelter would have been a better alternative than camping out in the open.

Strangely, the 14LC622 trash deposit contained only three artifacts: a bison scapula that had been modified for use as a hoe, a sandstone abrader, and a chipped stone biface that was stemmed with an alternately beveled blade and thus clearly identifiable as a GBa knife. The lack of any other artifacts, especially chipped stone debitage, is quite surprising when considered against the fact that debitage is usually a key element of any protohistoric habitation site.

The remainder of the 14LC622 trash deposit provided good evidence as to the food resources that were utilized by the site's inhabitants. No floral remains were found, but several faunal elements were recovered, including at least one bison, one raccoon, one Canid sp. (probably dog), one or two birds, and several small unidentifiable animals. A few unfused bison epiphyses suggest the possibility of two (one young, one adult) bison individuals; however, it is equally likely that only one near-adult bison is present, especially since there are no duplicated skeletal elements to confirm the presence of two individuals.

Many more artifacts and faunal remains were probably once present in the trash deposit. Unfortunately, many years of flooding (and probably some artifact collecting) have undoubtedly greatly diminished the amount of archeological materials that accumulated over time. Nevertheless, it is indeed a fortunate occurrence that we were able to find a culturally diagnostic artifact in situ at the site.

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NO THREAD OF EVIDENCE— WHITE ROCK, WESTERN ONEOTA, AND THE KANSA:

COMMENTS ON “A RETURN TO GLEN ELDER” BY JAMES O. MARSHALL

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The Glen Elder site (14ML1), a White Rock phase (Oneota) occupation in north-central Kansas, was originally described by James O. Marshall in his 1969 Master's thesis. Marshall's (2008) recent reiteration in The Kansas Anthropologist facilitates wider distribution of the descriptive data for the 1963 excavation of that site (see also Blakeslee et al. 2001). In addition to descriptions of the excavations and the materials recovered, Marshall presented three primary interpretations. He argued that the Glen Elder and related White Rock phase sites are Protohistoric-early Historic in age and may reflect the activities of the ancestors of the Kansa Indians. He also claimed that mound building may be a cultural trait of Oneota in the Central Plains. We review these claims based on more than 15 years of study of White Rock sites and disagree with his interpretations. Multiple radiocarbon dates and their analysis show that the White Rock phase is older than claimed by Marshall and dates to the Late Prehistoric period (Logan 1995, 1998a, 2009, 2010; Logan and Banks 1994:70–75). There is no evidence that clearly ties White Rock to the historic Kansa. Likewise, although White Rock Oneota peoples may have carried out activities at or near artificial mounds, there is no solid evidence that they built them.

In a recent article in *The Kansas Anthropologist*, James O. Marshall (2008) stated that the “western-like Oneota cultural unit,” more commonly identified as the White Rock phase, is Protohistoric-early Historic and shares ancestral ties with the historic Kansa Indians. In his acknowledgments he noted that this article “will, I hope, generate controversy, criticism, and interest in pursuing the cultural history of the Kansa Indians” (Marshall 2008:92). This it has. Thus, we offer here a critical review of Marshall's recent interpretations. Our comments are based on more than 15 years of analysis and interpretation of this westernmost Oneota phase. Marshall's description of the 1963 excavations of the Glen Elder site is useful; however, the data do not provide clear support for his interpretations of age and affiliation of the White Rock phase.

BACKGROUND

In 1963 excavations were conducted at the Glen Elder site (14ML1) in north-central Kansas prior to construction of the Glen Elder Dam across the Solomon River to form Waconda Lake. The University of Nebraska conducted this project for the National Park Service (NPS) under the Inter-Agency Archeological Salvage Program. Marshall completed the analysis of the excavations and composed the final report for the NPS. This report also served as his Master's thesis at the University of Nebraska, Lincoln (Marshall 1969). Although not formally published, Marshall's report has been used by researchers in the Central Plains since its completion. Blakeslee et al. (2001) also analyzed this and another collection of materials from this site. Marshall's (2008) recent publication reiterated much of the descriptive data and interpretations of his

original thesis with minor modifications. Unfortunately, Marshall failed to understand the strength of the data, analyses, and interpretations of the White Rock phase developed over the past 15 years and offers interpretations not well supported by more recent studies (e.g., Blakeslee et al. 2001; Logan 1995, 1998a, 2006, 2009, 2010; Logan and Banks 1994; Ritterbush and Logan 2000).

At the end of the introduction to his recent article, Marshall identified the purpose of his publication by stating,

This review of the 1963 investigation of the Glen Elder site offers evidence that a Protohistoric-early Historic temporal position is not entirely wrong. The Protohistoric, western-like Oneota manifestation may be antecedent to the historic Kansa Indians. The reappraisal also offers evidence that mound building may be considered a tentative cultural trait of Oneota culture carriers onto the Central Plains (Marshall 2008:61).

From this, we understand that Marshall's primary points are:

- 1) the Glen Elder site (and, by extension, related White Rock phase) dates to the Protohistoric or early Historic period;
- 2) White Rock Oneota represents the remains of ancestors of the historic Kansa Indians; and
- 3) mound building is tentatively considered a cultural trait of Oneota in the Central Plains (White Rock Oneota).

We address these issues based on archeological research of the White Rock phase. This taxonomic term refers to the archeological remains from north-central Kansas and southern Nebraska that reflect the migration of Oneota peoples from the east to the heart of the Central Plains during the Late Prehistoric period (ca. A.D. 1000–1400/1500). Our interpretations are derived from review of data from multiple White Rock sites, including Glen Elder. We draw especially from the rich archeological record in the Lovewell (Reservoir) locality, situated north of Glen Elder and the Solomon River valley. Our analyses, summarized in various venues (e.g., Logan 1993, 1995, 1998a, 2006, 2009, 2010; Logan and Banks 1994; Ritterbush and Logan 2000;

Ritterbush 2002a, 2006), support the following conclusions:

- 1) The White Rock phase (White Rock Oneota, including the Glen Elder site) is not Protohistoric but has been consistently radiocarbon dated to the Late Prehistoric period.
- 2) There is no demonstrable ancestral connection between the White Rock phase and historic Kansa Indians.
- 3) There is no clear evidence that White Rock Oneota peoples constructed mounds.

The evidence for these conclusions is discussed below. Note that where Marshall (2008) used the term “western-like” Oneota, we use White Rock phase or White Rock Oneota. As reviewed elsewhere, including briefly in Marshall (2008:61), the taxonomic term “phase” refers to a set of similar archeological remains found within a region that date to a fairly narrow time period (Willey and Phillips 1958:22). Using this definition, Logan (1995, 1998a) identified the White Rock phase after careful review of archeological evidence from north-central Kansas and southern Nebraska that shared similar characteristics, including time, space, and archeological form. This designation distinguishes these remains from other regional archeological complexes. We also choose to apply the term White Rock phase (shortened to White Rock) instead of “western-like Oneota” employed by Marshall (2008) because the latter usage is erroneous. Although he cited his own 1969 report as the source of this term, we did not find that exact phrase; rather, he used “western Oneota-like.” These subtle differences in wording convey very different meanings. White Rock is not “western-like” nor is it “Oneota-like.” Rather, the White Rock phase is both “western” and “Oneota.”

SPATIAL DISTRIBUTION OF THE WHITE ROCK PHASE

Before addressing the issues of time, ancestral relationships, and mound building, we clarify the geographical distribution of White Rock sites. The White Rock phase represents some of the westernmost documented evidence of Oneota peoples. Archeological assemblages recognized as Oneota

are found over a wide area of the Midwest, including parts of Wisconsin, Illinois, southern Minnesota, Iowa, and Missouri (Henning 1998, 2007; Henning and Thiessen 2004a:385–387). Over the years archeologists have increasingly recognized that Oneota remains are also found in surrounding regions, including the Central Plains. As noted by Marshall (1969) and others, certain attributes of White Rock sites are not identical to Oneota in the Midwest. These researchers commonly focus on differences in temper and surface treatment of ceramic vessels. Sand temper is more common at White Rock sites than most (but not all) Oneota sites, and simple stamping gives subtle texture to the exterior surfaces of some White Rock ceramics. These distinctions are minor in comparison to many other similarities between White Rock and more eastern Oneota assemblages and are not surprising given the different natural and social setting in the Plains. This issue has been discussed elsewhere (e.g., Logan 1995, 1998a; Ritterbush 2001; Wininger and Logan 1995). Modern consensus is that White Rock remains represent activities of Oneota peoples in the heart of the Central Plains.

In his discussion of the geographic extent of the White Rock phase, Marshall (2008:61) stated that the “geographical limitation for the phase is noted to be quite arbitrary.” As in the case of all archeological units, which represent human activities, defining exact boundaries is difficult. A number of White Rock phase sites are known in north-central Kansas and southern Nebraska. Many of these were identified through federally funded projects associated with the construction of reservoirs (e.g., Lovewell and Waconda in Kansas and Harlan County in Nebraska). Fewer archeological surveys and investigations have occurred beyond these reservoirs. At present the densest concentration and largest known White Rock sites are in what is referred to as the White Rock “core area.” Additional sites with similar ceramics and other remains are known outside this area but have not been well studied. Thus, the geographic limits of the White Rock phase are not “arbitrary;” rather, they are simply not well defined due to lack of detailed systematic studies of many parts of the Central Plains.

Regarding the core area, defined by Logan as including the Blue, Republican, and Solomon river drainages in north-central Kansas and south-central

Nebraska, Marshall (2008:61) stated, “Future surveys within this area, it is projected, ‘should clarify a definite locality and sites that are peripheral to that locality’ (Logan 1995:93–94).” The wording attributed to Logan does not appear in the reference cited. Logan (1995:93) noted, “the White Rock phase is one of the few examples of a Central Plains complex that has a ‘core area’ as poorly known as its periphery.” Additional research has been conducted since that time in the Lovewell locality. We agree that additional studies certainly would be worthwhile to better refine details of the geographic extent of the White Rock phase. Remember, however, that human activities are rarely confined to clearly bounded spaces; rather, they reflect extensions of or interactions with people and cultures in contiguous areas. Defining clear boundaries or limits for archeological manifestations is not only difficult but can be misleading of the human behavior that these manifestations represent.

TIME – LATE PREHISTORIC ONEOTA IN THE CENTRAL PLAINS

Early studies of White Rock sites did not result in clear definition of the age of those remains. Typically they were thought to be Protohistoric based on limited data and a lack of appropriate materials for well developed absolute dating techniques (Marshall 1969; Neuman 1963; Rusco 1960; Wedel 1986:134–135). This temporal assignment has changed, based on reassessments of earlier studies and new data. Today it is clear that the White Rock phase dates to the Late Prehistoric, rather than to the Protohistoric period. Despite the overwhelming evidence presented by Logan (1994, 1995, 1998a) for the Late Prehistoric assignment of the White Rock phase, which includes the Glen Elder site, Marshall (2008:61) argued that Glen Elder “offers evidence that a Protohistoric-early Historic temporal position is not entirely wrong.” In his summary he (Marshall 2008:90) clarified by stating,

[the White Rock] sites were occupied throughout the Protohistoric period. The occupation may have preceded the sixteenth-century Pawnee villages and may bridge the Protohistoric-Historic transition or the time of European contact with identified native cultures.

Marshall (2008:61) claimed that this interpretation is based on the following evidence:

horse bones, European trade items, simple stamped pottery, a tentative dendrochronology-derived date, and ceramic cross finds with an early Pawnee village with probable components of the Dismal River aspect (Gunnerson 1960:207-208, 211, 227; Marshall 1969:73-75; Newman [sic] 1963:293; Rusco 1960:41-47, 70-71; Weakly 1962:42).

This argument and claimed evidence are weak. Logan and Banks (1994:70-75) discussed many of these points as early as 1994. Since that time even more chronological data have become available through radiocarbon analyses. Marshall (2008:61) is aware of these dates but stated that they were accepted by Logan “without reservation.” In actuality, these dates have been carefully analyzed (Logan 1995, 1998a, 2009, 2010; Logan and Banks 1994:70-75).

Temporal placement of the White Rock phase within the Late Prehistoric period is now based on seven radiocarbon assays on charcoal samples from five pit features at three White Rock phase sites at Lovewell Reservoir: five from the White Rock site (14JW1), one from 14JW24, and one from 14JW8 (Logan 2009). Citing Logan (1995), Marshall summarized four dates from the White Rock site and the one from 14JW24 (the latter excavated in 1993 rather than 1991 [compare Marshall 2008:90]) (Logan 1993:3, 30; Logan and Hedden 1992:46-52). The fifth date from White Rock was obtained from a cache pit excavated after Marshall’s recent article had been submitted for publication (Logan 2009, 2010). The date from 14JW8 was obtained from a roasting pit, excavated by the Kansas Archaeological Field School in 2003 (Logan 2006).

Marshall (2008:90) described the two pits (Features 4 and 8) at the White Rock site, which provided material for two radiocarbon dates, as “disturbed,” implying that the dates are suspect. This is not the case. Portions of each pit were scraped during surface grading of a drainage ditch along an access road, exposing the features and leading to their discovery. However, the earthmoving did not affect the excavated matrix. This is clearly visible in Figure 1, showing the limited impact of surface grading to one upper edge of Feature 4. The dated charcoal

samples were from undisturbed parts of these pits. If the excavated portions of the pits had been disturbed by modern activities, we might expect contamination with recent materials (e.g., charcoal from recent or historic fires). This would produce radiocarbon dates younger than anticipated, which was not the case. In addition to the dates obtained from Features 4 and 8 at White Rock, a comparable date was recently obtained from another pit feature at that site. The charcoal on which this date was determined was excavated from the base of a 1.25-m-deep pit. This pit was first discerned at the base of the plow zone and had not been impacted by other modern activity (Logan 2010). White Rock radiocarbon dates from these features and others consistently fall within the Late Prehistoric period (older, rather than younger, than anticipated). All dates are from carefully excavated materials and contexts. There is no reason to believe disturbance had any effect on the dated samples.

Logan (2009) presented an analysis of all seven dates that included calibration (Calib 5.0.2), statistical comparison of means and significant difference (which excluded two of the seven), and averaging of those not significantly different. This resulted in a calibrated two-sigma range of A.D. 1256-1293. This analysis not only confirms the White Rock phase at the Lovewell locality as Late Prehistoric, but also suggests Oneota immigration there occurred during the latter half of the thirteenth century A.D. Moreover, neither of the two dates that were found to differ significantly from the others is clearly Protohistoric. The two-sigma range of one is A.D. 1318-1450, within the span of A.D. 1300-1450 that was originally suggested for the White Rock phase (Logan 1995:101; 1998a); the other is A.D. 1433-1640. The latter has a one-sigma range of A.D. 1304-1415, within the suggested temporal span of the culture, with 66.5 percent of the probability curve falling A.D. 1304-1365. In short, there is no support from radiocarbon dates from sites in the Lovewell locality for Protohistoric or early Historic placement of the White Rock phase.

Although Marshall did not appear to acknowledge analysis of the multiple radiocarbon dates from the Lovewell locality, he willingly accepted a single dendrochronology date for the Green Plum site in Harlan County, Nebraska (Marshall 1969:75, 94). Harry E. Weakly studied “about 20”

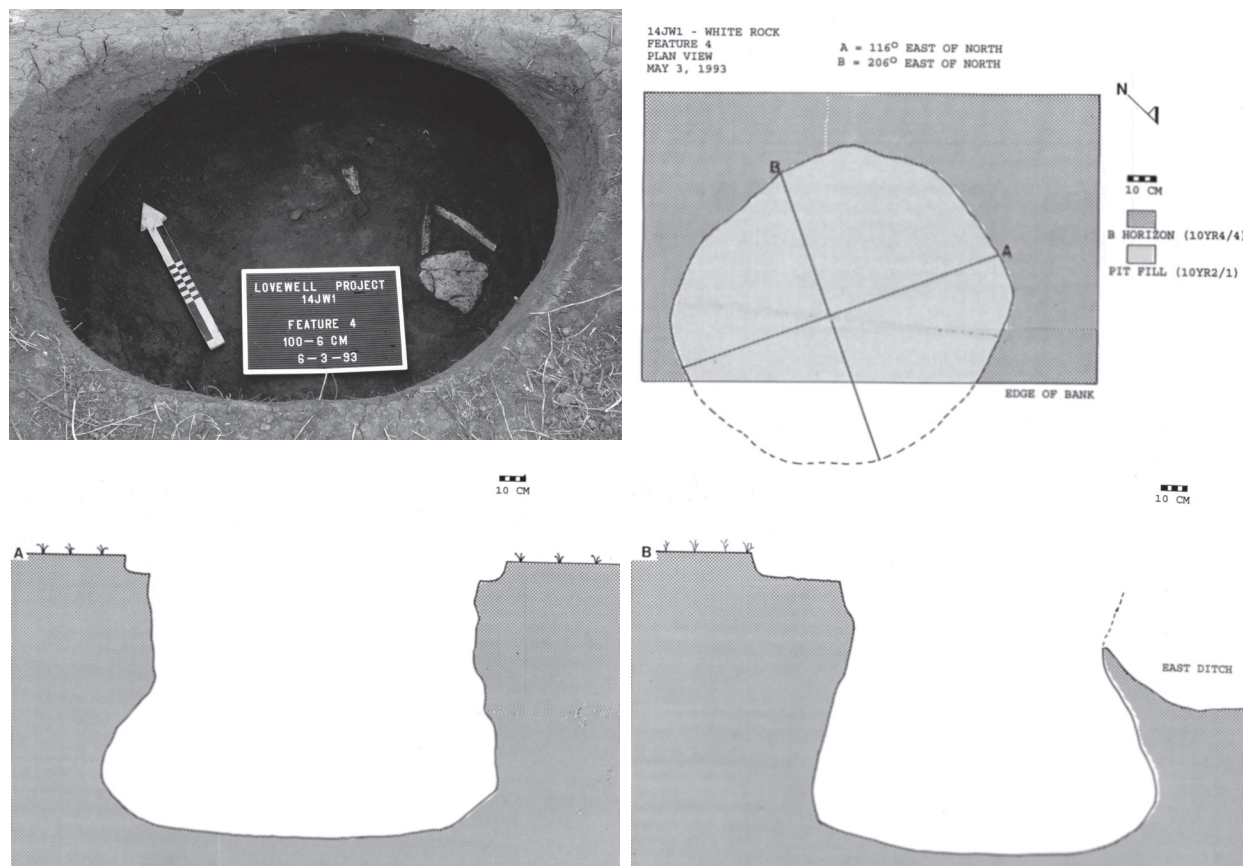


Figure 1. Above, left: Feature 4, 14JW1 at 100–106cm b.s. showing bison bones, including frontal portion of skull, scored rib, and scapula fragment, turtle bone, body sherd, and scraper. Edge of road ditch is at top of photo. Above, right: plan view of F4 (“Edge of Bank” is edge of ditch). Below: cross-sections of F4, showing minimal disturbance by drainage ditch construction. (From Logan and Banks 1994:22–24, 30)

“fragments of charred wood” from this site to construct a short tree-ring sequence that was compared to a master chart from nearby Frontier County. The Green Plum sequence reportedly matched “an outside date of 1614” (Weakly 1962:142). Marshall gave credence to this single date for materials from unknown provenience within the Green Plum site rather than the more numerous radiocarbon dates from documented contexts in multiple sites at Lovewell.

The validity of dendrochronological dates in the Plains has been challenged by Caldwell and Snyder (1983), Caldwell (1985), and others. These researchers noted several problems with early tree-ring studies in the Plains. One is the common use of eastern red cedar (juniper) for construction of tree-ring charts. This genus “is known to produce

double rings or conversely, negligible growth during single growth seasons,” resulting in aberrant ring sequences (Caldwell and Snyder 1983:34). Weakly (1962:138, 142) did not publish the type of wood recovered from the Green Plum site; however, he stated that the master chart used for that study was based entirely on red cedar. Thus, the master chart used to determine the age of the archeological remains from Green Plum is called into question. Another criticism of the early dendrochronological studies in the Plains is that the standard analytical procedure of cross-checking tree-ring sequences by other experts was not followed. Caldwell and Snyder (1983:38) summarized early dendrochronological attempts in the Plains as follows: “For all the hard work, genuine interest, (and possibly accurate dating), research based upon

less than rigorous, replicable methodology cannot be accepted.” Radiocarbon dates from White Rock sites at Lovewell and questions about the validity of dendrochronological studies in the Plains, including those by Harry Weakly, put the tree-ring date for Green Plum in doubt. A valuable study would be to radiocarbon date some of the charcoal fragments that Weakly used in order to test the accuracy of his dendrochronological sequence. Caldwell (1985:144) noted, however, that Weakly’s original data have been lost, so it cannot be directly checked. The tree-ring date from the Green Plum site should not be considered clear evidence of Protohistoric occupation at that or any other White Rock site.

Much of Marshall’s argument that Glen Elder is Protohistoric relies on cross dating of several anomalous sherds from this site with those from Burkett (25NC1), a Lower Loup occupation in Nance County, Nebraska, and Fanning (14DP1), a protohistoric Kansa site in Doniphan County, Kansas. Determination of age based on cross dating must be applied with much caution and serious consideration of the quality of the ceramic data from the study site, as well as the comparative site, context of the ceramics, validity of the dating at the comparative site, and other factors. In this case Marshall (2008:78–81) used typological identification of a small sample of sherds, some of small size, from the Glen Elder site and does not provide provenience data for these artifacts. If his identification of several of these as Protohistoric Lower Loup pottery is correct (see below), their presence at Glen Elder may not date the White Rock Oneota component but might be attributed to Lower Loup hunters who may have camped at this location long after its occupation by Oneota peoples. As discussed by Holen (1983, 1991), the hunting range of certain bands of the Protohistoric and Historic Pawnee extended as far as the Solomon River drainage of Kansas. Also, the Glen Elder site lies along the route of a trail used by the Pawnee during Historic and likely Protohistoric times (Donald Blakeslee, personal communication June 21, 2010). We should not be surprised then if Protohistoric Pawnee (i.e., Lower Loup) pottery were to be found in this area. There are other alternatives that also might explain the claimed atypical sherds at the Glen Elder site.

In the 2008 publication Marshall (2008:78–80) identified five rim sherds from the Glen Elder site

as Nance Flared Decorated, a ceramic type that is present in protohistoric Lower Loup assemblages from Nebraska. The exterior portion of at least two of these rims is decorated with parallel horizontal incised lines. Although this attribute occurs on Nance Decorated ware, it also occurs on other ceramic types in the Plains, including Grey Cloud Horizontal Incised ceramics from central South Dakota. The latter are associated with Late Prehistoric Initial Coalescent sites and are more comparable in age to White Rock and other Late Prehistoric sites in the region. Potentially similar grit-tempered rims with parallel horizontal lines also have been found at the Late Prehistoric Oneota Dixon site (13WD8) in western Iowa (Fishel 1999:68–69; Harvey 1979:105, 126). These anomalous sherds may be less indicative of protohistoric age of the Glen Elder site than clues to interaction between Late Prehistoric western Oneota and Middle Missouri populations, potentially related to other Central Plains populations (Ritterbush 2007:184).

Just as Marshall identified five rim sherds as Lower Loup ware, he identified five others as Fanning Plain, a type attributed to the Protohistoric Kansa (Marshall 2008:78, 80 [Figure 20]). (He also identified 13 body sherds as this type, although the criteria for this identification are not clear.) The sherds in question are smooth, shell-tempered, and decorated on the lip with tool impressions. These and the other attributes described by Marshall vary little or not at all from those described for Walnut Decorated Lip, the ceramic type used to define White Rock. In fact, the description of the strap handle found on the largest rim and shoulder, identified as Fanning Plain, appears identical (including measurements) to the description given for a handle claimed to be representative of the “Walnut Decorated Lip, Shell-Tempered Variety” (Marshall 2008:78). Illustrations of these sherds and attached handles (Marshall 2008:79 [Figure 17], 80 [Figure 20]) are of different vessels. Although it is impossible to be certain, given the quality of the photos and lack of scale on one, we believe that the description of one or both of these handles is in error. Careful inspection of Marshall’s (1969:48–49) earlier report suggests that the description of the Walnut Decorated Lip handle is in error and fails to find any sherds described as Fanning Plain. In sum, it is impossible from the descriptions in Marshall’s

(2008) article to determine why he defined these as Fanning Plain rather than the more common Walnut Decorated Lip.

Despite this fact, we compared his description and photo of the largest rim with strap handle to the type description of Fanning Plain (Wedel 1959:145–148). Marshall's (2008:78) comparison appears incorrect, especially in handle form. As Wedel (1959:146) stated, "Strap handles are highly characteristic" of Fanning Plain. They occur in two forms, most commonly tapered (not present at Glen Elder), but also of uniform widths between 15 and 40 mm. That from the Glen Elder site is presumably of generally uniform width at 44 mm.

More important is the placement of the handle. The upper end of Fanning Plain handles is attached 5–10 mm below the lip of the rim. ". . . in no case does the handle rise directly from the lip" (Wedel 1959:146). This trait occurs not only with Fanning Plain, but also other Oneota types post-dating A.D. 1450. On the other hand, handle attachment directly to the lip occurs on Oneota vessels throughout the Midwest prior to A.D. 1450 (Boszhardt 1998). The Glen Elder rim is clearly attached directly to the lip, even rising slightly from it (Marshall 2008:78, 80 [Figure 20]). The senior author's personal experience with Fanning ceramics, albeit not documented by measurements or systematic observations, adds confidence to the interpretation that Marshall was mistaken in identifying the Glen Elder ceramics as Fanning Plain. Instead they fall well within the range of White Rock Oneota ceramics. The interpretation based on these ceramics that the Glen Elder site is Protohistoric has no merit.

In addition to the poor ceramic arguments discussed above, Marshall attempted to support a Protohistoric age for Glen Elder by noting the presence of Walnut Decorated Lip pottery at the Burkett site. Grange (1968:66) attributed 45 rim sherds from 25NC1 to Walnut Decorated Lip. Reanalysis of these is needed to confirm this identification or determine whether they might be more representative of later Oneota or other wares. (No one disputes continuation of Oneota into Protohistoric and Historic times, but this has not been shown with any confidence for White Rock Oneota.) Indeed, Grange (1968:66) noted that the sample from Burkett displays greater variation than that from White Rock sites. He also identified shell-tempered ware

from the site as "Oneota" pottery and suggested a connection with the Leary site (25RH1) (Grange 1968:65, 122). If such a connection is represented, it would lend support for a Late Prehistoric component at Burkett, as the Leary site is Late Prehistoric, not Protohistoric (Ritterbush 2002b, 2006).

Marshall (2008:89) stated, "The cross-finds of Walnut Decorated Lip and Nance Flared Decorated pottery types between 14ML1 and 25NC1 are positive evidence that the Glen Elder site was occupied when the Pawnee resided at the Burkett village." Even if Grange's identification of Walnut Decorated Lip ceramics is correct, there is question of the actual age of the occupation or occupations of this site. Without detailed contextual data, it is impossible to rule out the possibility that different groups used this site at different times. A Late Prehistoric White Rock or other Oneota component prior to that site's use by Protohistoric Pawnee would not be unusual for this location. Grange (1968:122) dismissed a Late Prehistoric "Upper Republican-type rim sherd" from the Burkett site as intrusive and does not consider the possibility of multiple components (Late Prehistoric and Protohistoric). More extensive and precise analysis of the context of ceramic finds and associated dating of Burkett is needed.

Grange (1968) placed the Burkett site during the earliest stages of his seriation of 41 ceramic sets from Lower Loup sites. Lower Loup ceramics are definitely present; thus, these sites are accepted as having Protohistoric components. However, more specific ages for Lower Loup and for the 14NC1 in particular are lacking. Grange's interpretations were based largely on ceramic comparisons between sites. At that time few radiocarbon dates were available for his study and comparative sites, and those dates that existed in 1968 were often so imprecise to be meaningless. For example, the single radiocarbon assay from 14NC1 used by Grange is not helpful. Calibration (Calib 6.0) of the date of 630 ± 100 B.P. yields a two-sigma range of A.D. 1415–1952, with 83.5 percent of the probability distribution falling A.D. 1415–1696. As the higher probability range spans both the Late Prehistoric and Protohistoric periods, it could be used to support arguments in favor of occupation during either. In reality, it is so broad as to be of no use for dating not only the Burkett site, but also the Glen Elder

site by extension through ceramic comparisons. It also should be noted that the dated material from the 14NC1 came from a pit that extended into an underlying midden (Grange 1968:129), indicating that earlier deposits exist at the site. Given the vague temporal identification of the Burkett site, an argument of Protohistoric age for Glen Elder, based on the presence of White Rock ceramics at Burkett, is not well supported. The conclusion reached by Logan and Banks (1994:73) is still valid: “. . . a small sample of ceramics of unknown context from a single Lower Loup site that is poorly dated is weak support for an extension of the White Rock culture into the protohistoric period.”

Marshall (2008:89) also relied on simple stamping on White Rock ceramics as evidence of contact with protohistoric Pawnee:

The appearance of simple stamping as a surface finish on Walnut Decorated Lip pottery seems to be a result of contact between the Glen Elder site occupants and the Pawnee Indians. Simple stamping is the most common surface finish on Pawnee pottery.

Although simple stamping is common during the Protohistoric period, it is not confined solely to Protohistoric Pawnee ceramics. In analyzing the Glen Elder assemblage, Blakeslee et al. (2001:83) considered this a possible trait of the Coalescent tradition, which likely had a cultural connection with the Late Prehistoric peoples of the Central Plains. Simple-stamped ceramics are present at the Black Partizan and other Coalescent sites in South Dakota (Caldwell 1966). The occupation of this site has most recently been assigned to about A.D. 1400 and 1500 (Johnson 2007:178–180). This confirms that simple stamping was not confined to the Protohistoric period. The earliest appearance of this surface treatment may be associated with Oneota migrants in the Plains. Simple-stamped sherds (Figure 2) were recovered from a roasting pit at the White Rock phase site, 14JW8, which was radiocarbon dated at 580 ± 70 B.P. (A.D. 1284–1438, calibrated two-sigma range) (Logan 2006).

Marshall (2008:89) also tried to support a Protohistoric-early Historic age for the Glen Elder site through cross dating of a single micaceous sherd, mentioned by Blakeslee et al. (2001:82) in

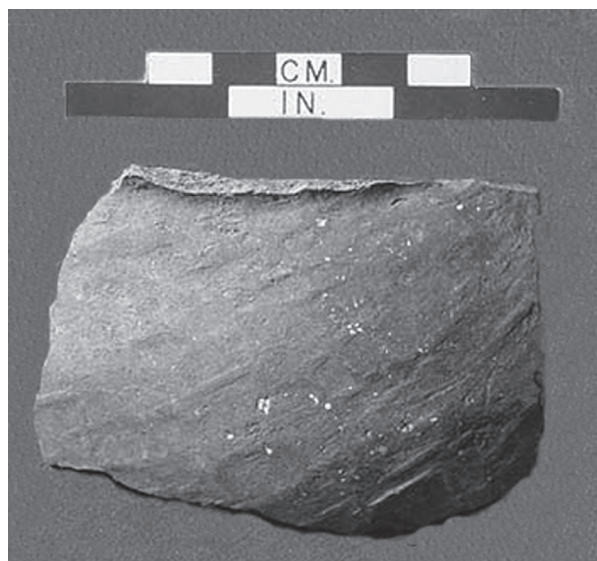


Figure 2. Simple stamped shoulder sherd from 14JW8, Feature 1.

that site’s assemblage. These researchers attribute the identification of this sherd to roughly the early eighteenth century (likely post-dating Dismal River or Protohistoric Apache) to a personal communication with James Gunnerson. They believe this and a small number of other late Historic period Euroamerican materials (e.g., pig bones and bottle glass, probably related to Euroamerican settlement of the adjacent town) are unrelated to the White Rock component, as are several projectile points from earlier periods.

As stated earlier, Marshall’s attempt to date the Glen Elder and other White Rock sites depended heavily on a single tree-ring date at the near exclusion of more widely accepted radiocarbon dates and on the ceramic “cross finds” critiqued above. He also mentioned European trade goods and horse bones as evidence of a Protohistoric occupation (Marshall 2008:61). The cautionary statements offered above regarding the importance of good contextual or provenience data when interpreting dated materials also applies to the interpretation of historic artifacts. Several historic Native American objects (five pieces of glass, one of which is reportedly retouched, and a copper bead) were reported by Neuman (1963) at the White Rock phase Intermill site (14JW202) at Lovewell. Although Marshall (1969:76) accepted these as evidence of a Protohistoric occupation, Neuman is more cautious.

He noted that the relationship of the worked glass to the “main occupation . . . is not certain.” Moreover, the site yielded “objects of iron . . . on the surface and within the plow zone” and “apparently all these pieces are associated with White settlement in the area” (Neuman 1963:291). Not only were the Pawnee active along White Rock Creek in the early nineteenth century (the Kansas Pawnee site is at the mouth of the valley), there were raids on American settlers in 1867 and 1869 in the valley near Intermill by groups identified variously as Pawnee, Oto, and Cheyenne (Logan and Hedden 1992:56–57; Winsor and Scarbrough 1878). Protohistoric and Historic Caddoan and Siouan groups, as well as Euroamerican settlers, were active throughout the Central Plains. For that reason we must be careful of our interpretation of the few Historic period artifacts at sites like Intermill.

Finally, Marshall (2008:61) makes passing mention of horse bones as evidence of a date “between A.D. 1500 and 1600 and perhaps somewhat later,” but he does not provide any additional discussion of such bones at any White Rock site. No horse bones are included among the faunal remains described for any White Rock site (Logan 1998b). Although Marshall cited Rusco (1960) and others in conjunction with his general statements regarding the age of White Rock, he apparently overlooked Rusco’s (1960:71) statement that “European trade material, horse bones or gear” are **absent** from White Rock sites.

NO THREAD FOR WHITE ROCK– KANSA CONNECTION

The second major point of Marshall’s 2008 article is that White Rock Oneota may represent the remains of ancestors of the historic Kansa Indians. This differs from Marshall’s (1969:91) earlier determination that White Rock “cannot be historically related to any known historical tribe.” Near the end of an addendum to his article that briefly discusses archeology of the Protohistoric-early Historic Kansa, Marshall (2008:91) stated,

In conclusion, the western-like Oneota cultural unit [White Rock phase] has been excavated more thoroughly than the sites that relate more closely to the cultural history of the Kansa Indians; however, a

thread of evidence does indicate that the two Oneota manifestations merged to become the historic Kansa.

The latter sites to which Marshall referred are the Fanning (14DP1), Doniphan (14DP2), and King Hill (23BN1) sites of northeastern Kansas and northwestern Missouri that have been linked to the Protohistoric Kansa (Kaw) Indians (Henning 1993; Marshall 2006:230–231; Raish 1979; Wedel 1946, 1959). Marshall (2008:91) suggested,

A comparative review of the pottery assemblages from 14ML1 [Glen Elder] and 14DP1 [Fanning] indicates an affiliation that bridges the Fanning site and the Protohistoric western-like Oneota manifestation.

Our earlier discussions refute the Protohistoric age of White Rock (Marshall’s “western-like”) Oneota. Likewise, our analysis of Marshall’s interpretation of ceramics from the Glen Elder site does not support a link between the Glen Elder and Fanning sites.

Presumably the statement quoted above by Marshall (2008:91) is based on his identification of a small group of sherds from the Glen Elder site as Fanning Plain. Although we agree that this type of pottery was likely made by the ancestors of the historic Kansa Indians, we do not agree that sherds from the Glen Elder site can be classified as Fanning Plain. Briefly we reiterate that the handle form does not match that typical for Fanning Plain. No other diagnostic attributes can be used to define these sherds as Fanning Plain, and no other ceramics typically found at the Fanning site, such as Fanning Trained (Wedel 1959:148–150), have been identified at the Glen Elder or any other White Rock site.

As stated in earlier summaries of Late Prehistoric Oneota in the Central Plains, no White Rock Oneota remains have been dated later than A.D. 1450 (Logan 1998a; Ritterbush 2006). It appears that Oneota occupation of these western sites ceased before the Protohistoric period. No clear evidence has been found to link the Late Prehistoric Oneota of the Central Plains with the Protohistoric Kansa sites in northeastern Kansas (Fanning and Doniphan) and northwestern Missouri (King Hill). We do not

at this time know what became of the White Rock Oneota. A conservative hypothesis, as yet untested, is that these bison hunters rejoined their relatives at Late Prehistoric western Oneota sites along the eastern edge of the Central Plains. Albeit limited, evidence from linguistics, oral traditions, ethnohistoric analysis, and archeological studies suggests that the Kansa Indians can trace their early Protohistoric and potentially Late Prehistoric ancestry to the east (Henning 1993; Ritterbush 2008; Unrau 1971:3-24; Wedel 1946). There is no clear evidence to link the Late Prehistoric White Rock phase of the Central Plains with the Kansa, who migrated from the east to the edge of the Central Plains during the Protohistoric period.

WHITE ROCK ONEOTA MOUND BUILDING?

The third major interpretation offered by Marshall (2008:61) is that mound building may be a cultural trait of the “Oneota culture carriers onto the Central Plains.” He noted that mounds are associated with some Oneota sites in Iowa and eastern South Dakota (Marshall 2008:72, citing Henning 1998:347). This statement refers primarily to the Blood Run (32LO2) and related sites in northwestern Iowa (Harvey 1979; Henning and Thiessen 2004a:385–386). Despite the large number of burial mounds at Blood Run and their presence at three related sites, Henning and Thiessen (2004b:593–594) noted, “Mound burial is not characteristic of most Oneota components;” rather, it reflects a post-contact shift in burial practices of the Ioway/Oto in northwestern Iowa (compare Betts 2003).

Marshall’s claim for Oneota mound building in the Central Plains must be evaluated using archeological data from White Rock sites. He claimed that “the best evidence for mound building” by the White Rock Oneota came from excavation of remnants of a low mound adjacent to the Glen Elder site (Marshall 2008:71). By reviewing evidence of mounds in other localities that contain White Rock sites, he seemed to imply that this was additional evidence. However, he (Marshall 2008:72) summarized his discussion by stating,

Other mounds found on [sic] [near] White Rock phase components have been constructed with rocks

[like the mound remnant at Glen Elder]. These rock-filled mounds may have been tampered with by the western-like Oneota people, but the structures were built by other occupants, such as earlier Woodland peoples.

We review these sites below to confirm that there is no clear evidence for mound building as a White Rock Oneota trait.

At least three mounds are known to have existed in the Glen Elder locality. One had been destroyed during early expansion of the modern town of Glen Elder so could not be analyzed, another was located about one-quarter mile north of the Glen Elder site, and a remnant of yet another was found within Area A of that site (Marshall 2008). All were located on the uplands north of the Solomon River valley. The latter remnant was excavated in 1963. Marshall attributed its construction to the White Rock Oneota, who occupied the adjacent Glen Elder site. All that remained of this mound in 1963 was part of an incomplete and generally circular arrangement of limestone pieces unevenly scattered over an area of about 60 x 55 feet (Marshall 1969:25, 2008:67). Plowing and other activities over the centuries disturbed part, if not most, of the original feature. Pits below the mound were sterile. Walnut Decorated Lip ceramics, including two rim sherds, were recovered from an “intermediate soil” along the south edge of the mound and below a thin layer of rocks (Marshall 2008:67). Marshall (2008:88) stated, “Such evidence forces the conclusion that Oneota villagers built the [mound] structure.” Although this is possible, he does not consider alternative interpretations. One possible alternative is that the rocks overlying these sherds were removed from the mound and placed on the adjacent surface after Oneota occupational debris had been deposited and well after the mound was built. This could have occurred during or after Oneota use of the surrounding area. Given the amount of disturbance to the original mound, lack of diagnostic artifacts from features clearly associated with the mound fill, and alternative explanations, it is difficult to accept Marshall’s interpretation as solid evidence that White Rock Oneota peoples constructed the mound.

Among the other mounds Marshall reviewed is that located north of the Glen Elder site. Marshall

(2008) referred to it as 14ML301; however, it is formally recorded in the Kansas Historical Society Site Inventory as 14ML307 and is commonly known as Range mound (Reynolds 1977). (14ML301 is the modern designation for a non-mound site elsewhere in Mitchell County.) Marshall (1969, 2008) noted that no diagnostic artifacts were recovered during the small-scale excavations conducted there in 1963. He did not review excavations conducted in 1977 by Reynolds, who provided additional data and interpretations for this mound. Reynolds (1977:5) noted that two potsherds, most likely Walnut Decorated Lip, were recovered from the western edge of the mound in sediments overlying the original feature. Although these are indicative of White Rock Oneota, they were deposited well after construction of the mound. Within the mound fill were scattered fragments of burned and unburned human bone, shell beads, and various stone tools. Among the latter were three dart points. The styles of these points do not match Late Prehistoric or Protohistoric forms; instead, they indicate Archaic or Woodland affiliation of this mound (Reynolds 1977).

In addition to the mounds noted in the Glen Elder locality, Marshall (2008) mentioned two at Lovewell. No excavations have been reported for 14JW204, so little is known of this mound on the uplands overlooking White Rock Creek to the north. Russell mound (14JW207) is located in a similar setting to the east. Neuman (1963:295–303) excavated there in 1956. He reported finding two rims from the same vessel and one body sherd that can be attributed to White Rock Oneota. They were shallowly buried outside the edge of the mound and, thus, cannot be positively associated with its construction. Two other rims and cordmarked body sherds were recovered from the central portion of the mound. If Neuman's early ceramic comparisons are accurate, these may represent Central Plains tradition. A Woodland age is also possible, given that cordmarking is common on Woodland ceramics, and buried Woodland cultural materials have now been documented in the Lovewell locality at the Montana Creek site (Ritterbush and Logan 2006, 2009). Unfortunately the association of these sherds with the original building of Russell mound cannot be ascertained with certainty because of historic disturbance to the center of the mound.

Neuman (1963:303) summarized his interpretation of the age of this mound: "In view of the small number of artifacts recovered from the mound, it may be premature to assign it to a definite archaeological horizon."

Finally, Marshall (2008:71) reviewed the Sweat Bee site (14PO14), one of many burial mounds located on bluffs overlooking stream valleys in the Manhattan and surrounding area (Cumming 1958; Eymann 1966; Ritterbush 2009). Sweat Bee is situated above the Big Blue River valley northeast of Manhattan and less than a half mile south of Spillway (14PO12), a probable White Rock site. By discussing this mound and noting the presence of the Spillway site some distance to the north, Marshall (2008:71) seems to imply that Sweat Bee may be an Oneota construction. Although few distinctive artifacts were recovered, Cumming (1958:48–56), who excavated the Sweat Bee, Spillway, and nearby Reany sites in 1953, dated construction of the Sweat Bee mound to the Woodland period. This interpretation fits with the majority, if not all, of the points and scrapers, as well as other artifacts, from the mound. There is no reason to believe that there is an association with White Rock Oneota.

Although some Oneota in the Midwest may have practiced mound building, the construction of these features by Late Prehistoric Oneota migrants in the Central Plains is not well supported. Mound building during the Woodland period is well known and may have greater ancestry in some areas. Peoples associated with the Central Plains tradition also may have constructed or reused earlier mounds. The White Rock Oneota found these burial mounds already present in the Central Plains when they arrived. It is not surprising that White Rock materials have been found near or around these features, because White Rock Oneota peoples often chose upland settings for their settlements or camps. Many earlier peoples used this same type of setting for burial of their dead.

CONCLUSIONS

Marshall's original Master's thesis (1969) and recent article (2008) on the Glen Elder site present useful descriptive information about the 1963 excavations at this important White Rock phase (Oneota) site. Publication in a regional venue facilitates

wider distribution of this descriptive information. While much of the raw data is valuable, several of the interpretations presented in the recent article are outdated, poorly reasoned, and unsupported. Importantly, the age of the White Rock phase had been revised well before publication of Marshall's 2008 article. As reviewed above and discussed in detail in earlier presentations by Logan (1995, 1998a; Logan and Banks 1994), radiocarbon assays clearly date the White Rock phase to the Late Prehistoric, not the Protohistoric-early Historic, period (compare Logan 2009). Radiocarbon dates provide solid evidence for a Late Prehistoric affiliation. Dendrochronology, ceramic cross-dating, and claimed associations with historic materials offered by Marshall do not withstand critical analysis. The Late Prehistoric age of the White Rock phase also precludes association with the Protohistoric Kansa, as represented at the Fanning and related sites. We see no ceramic or other evidence that links the White Rock phase to ancestors of the Kansa. As discussed elsewhere, the ancestors of the Kansa are best sought to the east, outside the Central Plains (Henning 1993; Ritterbush 2008; Unrau 1971:3-24; Wedel 1946). Finally, although a weak link exists at certain sites in the Glen Elder and Lovewell localities between mounds and White Rock ceramics, it is not clear that the White Rock Oneota built these features. Rather, earlier indigenous populations built these mounds.

In conclusion, although Marshall's published descriptive data for the now destroyed Glen Elder site have value, he does not provide a solid case for a Protohistoric or early Historic age for the White Rock phase or ancestral connections with the Kansa. Neither can mound building be considered a defining characteristic of these western Oneota peoples.

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ARCHEOLOGICAL SURVEY OF SCOTT STATE PARK: 2009 KANSAS ARCHEOLOGY TRAINING PROGRAM FIELD SCHOOL

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A pedestrian survey of nearly all accessible portions of Scott State Park and the Scott State Game Management Area in Scott County, Kansas, documented 24 previously unrecorded archeological sites and revisited several previously recorded sites. The survey also recorded 13 new sites from adjacent or nearby private land. Surveyors encountered material from the Paleoindian to Historic periods, including several sites in locations, such as steep slopes and broad uplands, which often are considered as having low odds of containing sites. Dismal River aspect sites are by far the most common pre-industrial component in the park, although they are not as common in the surrounding region, suggesting that the atypical geological setting of the park was an attraction for these people. Limited testing of a Dismal River aspect site, 14SC409, produced Olivella shell beads and ceramics from the southwestern Pueblos.

In May and June 2009 participants of the Kansas Archeology Training Program (KATP) field school completed an intensive archeological survey of accessible portions of Scott State Park and a concurrent survey of the park's built environment (Meives 2010). The archeological field school also included limited excavations at Lakeside campground and Barrel Spring, both tentatively proposed as cabin locations, and a portion of another campground, Elm Grove, which is slated to receive electrical hookups at campsites (Hoard 2009). Field school participants also conducted test excavations at 14SC409. This report documents the archeological investigations of the 2009 KATP field school.

ENVIRONMENTAL SETTING

Scott State Park is located within the High Plains section of the Great Plains province of the Interior Plains division of North America (Mandel 2006a:17–18; Schoewe 1949:280, 311–330). The High Plains section consists primarily of a featureless plain, covering most of the western third

of the Kansas with an extension into south-central Kansas as far as Kingman and Reno counties. While its eastern periphery is heavily desiccated, the remainder of the High Plains is essentially a plateau with broad reaches of flat uplands and poorly developed surface drainage; numerous playas range from several meters to several kilometers in diameter. The valleys of the major rivers—the Smoky Hill, Arkansas, and Cimarron—are broad and have gentle slopes that extend to relatively narrow flats. Minor stream valleys also are present, typically in the form of short, narrow canyons that lead into the larger river valleys.

The area encompassed by Scott State Park stands out as a deeply dissected spring-rich landscape that was an oasis in an otherwise barren landscape during prehistoric and early historic times. The section of Ladder Creek that flows through Scott State Park is part of a rare, 25-km-long north-south leg that eventually leads to the Smoky Hill River. The Ladder Creek valley surely was followed as a trail. Furthermore, just north of the park, Ladder Creek cuts through the surrounding high, flat country,

creating a prominent knick point as it enters the Smoky Hill River valley. This knick point is clearly visible for a significant distance from south (and possibly from the north, though this has not been observed by the author) and may have been a navigation point for nomadic groups.

The geological composition of the High Plains consists of a 2 to 10-m-thick layer of Pleistocene-aged loess overlying the sands and gravels of the Ogallala formation, a sheet of Miocene- and Pliocene-age fluvial sand and gravel deposits extending from the Rocky Mountains east to the Flint Hills. The much thicker Ogallala Formation has many layers of caliche and includes a caliche caprock in the upper surface of the formation that preserves the plateau topography of the region. The Ogallala also is a major aquifer, so springs are common in the deeply dissected High Plains stream valleys where the Ogallala is exposed, such as in the Scott State Park area (Mandel 2006a:17).

Lake Scott is filled with water from Ladder Creek (formerly Beaver Creek) and the many springs that emerge from the contact between the highly permeable Ogallala Formation and the relatively impermeable Niobrara Formation. When the dam was built across Ladder Creek in 1930 and again in 1933, it partially filled a canyon that Ladder Creek had carved into the Ogallala Formation mortarbeds (Buchanan and McCauley 1984:178–179). Still, before the lake was built, this area was undoubtedly attractive to people seeking relief from the seemingly endless flatlands. The steep canyons, level valley floors, and reliable springs, such as Big Spring at the south end of the park, provided varied and plentiful habitat for plant and animal communities, as well as rocks and minerals for human use (Figure 1).

Significantly, a finger of the Smoky Hills physiographic subprovince extends from the east through Trego, Gove, and Logan counties and intersects the northeast corner of Scott County near Scott State Park. This region contains sandstones and chert-bearing chalk, the source of Cretaceous-age Smoky Hill silicified chalk, widely used for tools in prehistoric times (Stein 2005, 2006:275–277).

The High Plains are dominated by short-grass prairie, particularly blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*), though the bluestem-grama complex of the mixed

grass prairie intrudes into Scott State Park in the Ladder Creek valley (Kuchler 1974; Mandel 2006a:20–21). River valleys are populated with hackberry, cottonwood, willow, and elm, but wild plum, elderberry, and chokecherry were also available (Kuchler 1974; Wedel 1959:10). All of these species would have been important to prehistoric residents for food, medicines, fiber, fuel, and structural materials. Notably, tree species and shrubs are not present in the many playas of the High Plains. This vegetation pattern may have replaced a Late Pleistocene mixed spruce-deciduous forest as early as 8500 BCE. Middle Holocene warming and drying reduced precipitation and limited broadleaf plants significantly between 7000 and 2000 BCE, literally making oases of Ladder Creek and other stream valleys with important sources of water and plant and animal resources. After 1 CE increasing mean annual precipitation became typical of modern times (Mandel 2006a:22–24).

The short-grass prairie and its more heavily vegetated stream valleys provided habitat for a broad range of terrestrial species, including numerous bison, deer, and pronghorn, as well as elk in lesser numbers, and smaller mammals, such as wolf, coyote, beaver, raccoon, jackrabbit, and cottontail, all important for their meat, their pelts, or both. A variety of birds, reptiles, and fish also thrive in the region and were used, albeit in lesser quantities than mammalian species, by human inhabitants. Low precipitation would have limited, but not precluded, horticulture (Wedel 1959:10).

Precipitation patterns varied through time between eastern and western Kansas. Eastern Kansas received greater precipitation, while the precipitation pattern established by 6000 BCE in western Kansas was characterized by infrequent but intensive rainfall that generated powerful floods, bearing high loads of sediment and interrupting landscape stability and soil development in floodplains. This has affected the sequence of multiple buried soils in smaller stream valleys, such as those seen in Buckner Creek valley (Mandel 2006b:40).

CULTURAL-HISTORICAL SETTING

The High Plains region of Kansas has yielded evidence of prehistoric human occupation dating from around 11,500 years ago to the modern era.



Figure 1. View of Scott State Park. (Courtesy of Kansas Sampler Foundation)

The generalized chronological sequence for Kansas, which also is representative of Scott County, is shown in Table 1.

There are several summaries of Kansas archeology available (Brown and Simmons 1987; Hoard and Banks 2006; Lees 1989; Thies 1987; Wedel 1959), so only a brief overview is presented here.

Entry Into the New World

Initial occupation of the New World is, maybe surprisingly, still a matter of debate. While it is clear that the fluted point tradition, characterized by distinctive lanceolate projectile points with large flake scars projecting from the base, is widespread throughout North and South America by around 9500 BCE, it seems impossible for the bearers of that tradition to have populated the North and South American continents within a few hundred years. Because of that situation, there is active research aimed at finding evidence of human activity that precedes the fluted point tradition

(Hofman and Graham 1998:89–93). In Kansas this includes work at the Kanorado locality in Sherman County (Holen and Newton 2008, Mandel 2008) and at Lovewell Reservoir in Jewell County (Holen 2005, 2007). At Kanorado researchers have found extinct Pleistocene fauna in proximity to artifacts in a soil layer underlying Clovis-age deposits. At Lovewell Reservoir Holen (2005, 2007) documents humanly modified mammoth bones that date between about 18,000 and 21,000 radiocarbon years before present (RCYBP).

Paleoindian and Archaic Periods

By 9500 BCE evidence of human occupation is found throughout the New World. The earliest well recognized manifestation of this occupation is the fluted projectile point; the most widely recognized fluted point types are Clovis and Folsom (Hofman and Graham 1998:93–101). Associated with these point types are scrapers with spurred ends. Both Clovis and Folsom points have been found in

Table 1. Generalized cultural sequence for Kansas. Most pertinent to this report is the High Plains physiographic province. (Adapted from Hoard and Banks [2006:4])

Cultural Period		Date	Physiographic Provinces					Subsistence Pattern
			Dissected Till Plains	Osage Cuestas	Flint Hills	Arkansas River Lowlands	High Plains	
Historic	Modern	1950 CE	Americans, including Indian Nations, and immigrants of many cultures					Service economy, light industry, mineral & petroleum exploitation, farming, ranching
		1900 CE	Industrialization, Mechanized Agriculture					
	Historic	1870 CE	Iowa, Sac & Fox, Kickapoo, Potawatomi, Delaware, Wyandotte, Shawnee	Shawnee, Sac & Fox of Mississippi, Ottawa, Peoria & Kaskaskia, Wea & Piankeshaw, Chippewa, Potawatomi, Miami	Osage, Kansa	Cherokee	Comanche, Cheyenne, Arapahoe, Kiowa, Kiowa-Apache, Sioux, Pawnee	Reservations, equestrian bison hunting; maize-based horticulture east; equestrian nomads west
		1800 CE	Immigrant Tribes					Equestrian bison hunting, equestrian nomadism throughout; maize-based horticulture & trapping east
Prehistoric	Late Ceramic	1700 CE	Oneota tradition	Neosho focus		Dismal River aspect	Dismal River aspect	Hunting, gathering throughout; maize horticulture east; some supplemental horticulture west
		1500 CE	White Rock, Nebraska & Steed Kisker phases, Pomona variant	Great Bend aspect Pomona variant	Great Bend aspect, White Rock phase, Smoky Hill phase, Pomona variant	Great Bend aspect Pratt complex, Bluff Creek complex	Great Bend aspect; White Rock, Upper Republican, Smoky Hill, & Odessa phases; Pratt complex	
	Early Ceramic	1000 CE	Grasshopper Falls phase, Valley variant, Kansas City Hopewell	Greenwood, Grasshopper Falls, & Cuesta phases	Grasshopper Falls, Greenwood, Schultz & Cuesta phases	No known Early Ceramic cultural manifestation	Keith phase	Hunting, gathering throughout; cultivation & domestication of native plants east
		1 CE			Walnut & El Dorado phases		Unclassified Archaic cultural manifestations	Hunting, gathering throughout; incipient cultivation of native plants east
	PaleoArchaic	500 BCE	Nebo Hill phase	Nebo Hill & El Dorado phases	Vermillion, Chelsea, & Munkers Creek phases		McKean complex	
		3000 BCE	Logan Creek phase	Stigenwalt complex	Logan Creek phase			Hunting, gathering
		5000 BCE	Dalton, Cody Complex, Allen, Fredrick					
		7500 BCE	Clovis, Folsom, Plainview					
		10,000 BCE	Pre-Clovis					

direct association with extinct Pleistocene fauna: mammoth and mastodon with Clovis and extinct forms of bison with Folsom (Hofman and Graham 1998:87–88). After 8000 BCE point bases no longer were fluted, and a variety of carefully flaked stemmed or lanceolate varieties were made. These are closely associated with bison and at various sites across the Plains are found with mass bison kills, caused by driving bison up draws, over cliffs, or into arroyos or boggy areas where they were more readily dispatched.

Because of frequent associations with large game, the people who made Paleoindian points often are characterized as wandering big game hunters. This notion is reinforced by disproportionate amounts of stone tools made of materials that come from sources far from the find spot and by the near total absence of evidence of substantial shelters. Both factors suggest that Paleoindians moved frequently and traveled far, following herds of large game (Hofman and Graham 1998:116–122). The Norton site (14SC6), located about 10 km south of Scott Park along Ladder Creek, has yielded evidence of at least eight bison and associated Cody/Allen-Frederick projectile points with a radiocarbon date of 9080 ± 60 (Hofman et al. 1995).

Blackmar and Hofman (2006) pointed out that the absence of evidence for the use of plant foods, shellfish, small mammals, birds, and fish, plant fibers for basketry and weaving, and resins for adhesives and waterproofing may be the result more of the lack of preservation than the lack of use. Instead, they emphasized viewing Paleoindians and the subsequent Archaic period groups as foragers whose technology and resource use varied through time and space. Unfortunately, progress in recovering data that represent these resources is slow, although the Claussen site (14WB322), with radiocarbon dates of 9225 ± 35 RCYBP, yielded the remains of deer, turkey, fox, rabbit, and shellfish (Mandel et al. 2007). This data indicates that Paleoindian people were not solely big game hunters.

During the Archaic period, beginning roughly 6000 BCE, there was more plant use and more varied economies. The Early Archaic Stigenwalt site (14LT351) produced plant and small animal remains along with the remains of deer, large burned rock features, and a variety of chipped and ground stone tools (Thies 1990). Farther west the

Early Archaic is known only by the occasional finds of diagnostic projectile points, such as Logan Creek points (Blackmar and Hofman 2006:49–50). During the Middle Archaic the numerous surface finds of Munkers Creek phase diagnostic tools is augmented by buried components in several locations in the Flint Hills (Witty 1982). The diverse chipped stone tool set from the Munkers Creek phase, 3400–3200 BCE (Banks and Wigand 2005), included several types of woodworking tools and knives that appear to have been used to cut grass, based on the silica sheen on many specimens. Other features of the phase include a dog burial and fired clay artifacts, including two pieces that are shaped to resemble human heads. No plant remains have been recovered, and the few faunal remains show use of a broad range of terrestrial species (Witty 1982:183). Farther west the Middle Archaic is represented by Duncan, Hanna, and, more commonly, McKean projectile points (Blackmar and Hofman 2006:50).

Late Archaic sites have been found in buried contexts in the eastern third of Kansas. Specific phases include El Dorado, Walnut, and Nebo Hill (Grosser 1973). Limited evidence of structures and use of plants, including seeds of plants that later would become domesticated, occur. Pottery has been recovered from Nebo Hill sites in western Missouri (Reid 1984). Walnut phase projectile points are corner notched. Notably, both large dart points and small points—presumably arrow points—were found in the Walnut phase component of the Snyder site (14BU9) in Butler County (Grosser 1973:232–233). Archaic period populations are poorly documented for the Kansas High Plains. Large and medium-sized stemmed or corner-notched projectile points are evidence of the Late Archaic in this region. This is an area in need of further research, and documentation of local artifact collections would be an excellent starting place for this work.

Pottery and Horticulture

Use of cultivated plants, such as cucurbits (probably gourd), for food and containers is evident in some eastern Kansas Late Archaic sites. Native seeds exhibit characteristics that indicate domestication by about 1 CE. Traits such as larger size and thinner

seed coats result from retention and planting by people who have started cultivating plants for food (Adair 2006). The earliest crops are native plants: goosefoot (*Chenopodium* sp.), maygrass (*Phalaris caroliniana*), marshelder (*Iva annua*), and other species. Infrequently remains of maize (*Zea mays*) are found in some sites. Also at this time the use of the bow and arrow became widespread, as indicated by the increased frequency of small arrow points, and pottery vessels also were common (Logan 2006). Pottery vessels placed on a fire were far superior to stone boiling when cooking seeds long enough to make them palatable.

The number of recorded sites increases significantly for the Early Ceramic period, 1–1000 CE. This suggests population increase, possibly related to the contribution of crops and more efficient cooking and storage of food. Evidence of structures becomes much more common, typically represented archeologically by small, round, hard-packed floors with sloping sides. Judging by the size of the post molds, the structures were covered by light pole frames, draped with skins or woven with branches and grass. As during the Archaic, settlements were small, possibly consisting of one or two extended families. This pattern extends well out into the western part of the state. Reynolds (1979:68–69, 81) documented houses for Early Ceramic Grasshopper Falls phase sites in the Delaware River valley of northeast Kansas, but he concluded that this population did not tend plants. However, in her analysis of floral remains from 14JN332, Adair (1991) demonstrated that marshelder (*Iva annua*), sunflower (*Helianthus annuus*), and corn (*Zea mays*) were cultivated during the Early Ceramic period in eastern Kansas. Early Ceramic domestic structures also are known from High Plains Keith phase sites in southwest and south-central Nebraska, including 25FT17, 25FT18, 25HK13, and 25RW28, taking the form of circular to oval basins with poorly defined hearths near the center (Grange 1980:108–112; Kivett 1949:282, 1952:19; Kivett and Metcalf 1997:14–19). In Kansas the Forrest site (14PA303) produced evidence of a similar house (14PA303 site file). However, Keith phase sites have yet to yield evidence of horticulture. These sites lack agricultural digging tools and storage pits; so far, no cultivated plant remains have been recovered (Bozell 2006; Bozell and Winfrey 1994). Burials from this time period are highly varied and appear

in settlements, ossuaries, and in isolated contexts (Hoard et al. 2005; Kivett 1949, 1952, 1953; Kivett and Metcalf 1997:14–19). Early Ceramic sites are common in Pawnee and Hodgeman counties and are documented in Lane and Scott counties. Immediately north of Scott State Park are the Young site (14SC2) (Wedel 1959:468–475) and a companion site, 14SC405. Both are Early Ceramic burial sites.

During the Middle Ceramic period, 1000–1500 CE, people built more substantial houses and storage pits and cultivated maize, along with beans (*Phaseolus vulgaris*), squash (*Cucurbita pepo*), and earlier native domesticates (Adair 2006; Roper 2006). Their pottery vessels were thinner walled, rounder, often included a collar around the rim, and occasionally were decorated. Sites often have many animal remains, primarily bison, and, accordingly, bone tools are plentiful. Most Middle Ceramic habitations were small, housing one or two families in earthlodges that could last as long as 10 years (Roper 2005). The Pottorff site (14LA1), located about 25 km east of Scott State Park in Lane County, is a Middle Ceramic site with an underlying Early Ceramic component (Wedel 1959).

Late Ceramic sites in Kansas include known descendants of the Wichita (Great Bend aspect) (Wedel 1959:571–589), the Pawnee, and the Apache (Dismal River aspect) (Gunnerson 1968, 1987; Scheiber 2006:141–148; Wedel 1959:589–599). Of relevance here is the Dismal River aspect, a late prehistoric and protohistoric manifestation in western Kansas and Nebraska and eastern Colorado and Wyoming between 1640 and 1725 CE (Gunnerson 1987:102–103; Scheiber 2006:141–148). Excavations conducted by Wedel in 1939 at 14SC1 revealed a significant Dismal River aspect occupation in the same area as the well-known pueblo, excavated by Williston and Martin in 1898–1899 (Wedel 1959:422–462). Gunnerson excavated Dismal River aspect houses at 14SC111/304 and 14SC106, both within the boundaries of Scott State Park. At 14SC111/304 Gunnerson recorded a hearth surrounded by five post molds in a circle with a diameter of about 3.5 m (Gunnerson's 1965 field notes, 14SC111 site file). This site is described in more detail below.

Gunnerson (1968, 1987:102–107) and Wedel (1959:589–599) described Dismal River aspect populations as being primarily bison hunters. Deer, beaver, turtle, and dog remains also are found in

faunal assemblages of Dismal River aspect sites. Birds and mollusks are rare. Fish are absent, possibly reflecting a taboo known from ethnographic records. Cultigens include maize and cucurbits. Villages were large, up to 185 hectares (ha) (Gunnerson 1987:104), with houses scattered in no apparent order and with no defensive structures. Houses consisted of a packed earthen floor and central hearth surrounded by four to six, but usually five, post molds that supported a small (3–4 m in diameter) circular frame structure. Small irregular trash pits have been found but not deep storage pits. Bell-shaped and cylindrical roasting pits, diagnostic of the Dismal River aspect in the Plains, also are common features of Apache, Navajo, and Pueblo sites in the Southwest. Dismal River aspect pottery is a diagnostic thin, hard, dark gray to black sand-tempered ware, which Wedel (1959:441–444, 592–593) named Scott Plain and Metcalf (1949) named Lovitt Plain, but now is referred to as Dismal River Gray Ware (Baugh and Eddy 1987:795–797; Beck and Trabert 2011). The normally gray surface occasionally is buff-colored but never polished, slipped, or painted. Vessels are small to medium in size, round with a constricted neck and outflaring rim. The lip is unmodified or sometimes flattened, rarely thickened and, if so, typically also decorated. Most vessels are plain, but some have simple stamping or other decorations. A minority of Dismal River aspect pottery has a micaceous temper, more commonly used in the Pueblos.

Wedel (1959:442–443, 593) made the argument that mica temper indicates Dismal River aspect association with Puebloan people, along with the roasting pits described above and the not infrequent finds of upper Rio Grande Puebloan pottery at these sites. Stone tools include triangular and occasionally side-notched arrow points, minimally shaped side and end scrapers, the latter sometimes having graters, double-bitted drills with two plain shafts joined by a series of lugs in the middle, shaft abraders, and small, thin milling slabs. Beck and Trabert (2011) note that some of these may be stones used to bake wafer bread. Bone artifacts consist of the ubiquitous awls, shaft straighteners, bison scapula hoes, and antler tine flakers. Also present are bison metapodial fleshers and bone projectile points, the latter having a square cross section with a basal tang for hafting. Other bone objects are tube beads, rasps, whistles, and arm bands. Obsidian, Puebloan

pottery, turquoise, and *Olivella* shell beads are trade items from the Southwest.

Contact with Old World Populations

Concurrent with the Dismal River aspect occupation of the Ladder Creek valley is the Scott County Pueblo (14SC1), the northern- and eastern-most pueblo known (Beck and Trabert 2011; Martin 1909; Wedel 1959; Williston 1899; Williston and Martin 1900; Witty 1971, 1983). Readers are referred to primary sources and summaries for detailed information about this controversial site. In short, in the mid-1600s refugees from the Taos pueblo of northern New Mexico came to what is now Scott County, escaping Spanish oppression in their homeland. The fleeing Puebloans chose to live with their allies, the Plains Apache, and built a seven-room pueblo along Ladder Creek: 14SC1. The Spaniards eventually took the Taos refugees back, but another group from Picuris pueblo came to reoccupy 14SC1, only to again be returned home by the Spaniards. The place where they settled was referred to as “Quartelejo” in early Spanish documents, which is variously translated as old barracks, old building, or far off post. While this scenario was seen as plausible by many (Martin 1909; Wedel 1959; Williston and Martin 1900; Witty 1971, 1983), Gunnerson (1987:106–107) argued for it being a later Spanish structure, an argument also made by Williston (1899:113). Beck and Trabert (2011) note that a small amount of the pottery at 14SC1 dates to the mid-1700s and may represent occupation at that time. Irrigation ditches also are evident at the site, but whether these were made by seventeenth-century Dismal River aspect or Puebloan people, eighteenth-century Spanish inhabitants, or the nineteenth-century American settlers (the Steeles, discussed below) is not clear.

Significant cultural change took place in North America after 1500 CE. Waves of introduced diseases from early Old World exploration of the New World almost certainly affected Kansas populations (Dobyns 1993), reducing their numbers and leading to changes such as group coalescence or animosity. In the seventeenth century Old World populations held stake in the New World and rapidly affected indigenous cultures. Imported manufactured goods quickly were adopted; metal objects, glass, including beads, and fabric were incorporated into the traditional toolset. As time went on kettles, hoes,

guns, knives, metal arrow points, and many items were actively sought, used, traded, and modified. Written accounts document the Wichita, Pawnee, Apache, and other groups in Kansas. With the introduction of the horse, American Indian groups became mobile, some abandoning their hunting and farming lifestyle and relying solely on hunting.

Settlement of the region by descendants of Old World immigrants was well underway in the region by the end of the nineteenth century. The new settlers forced American Indians from the land that they occupied and began farming and raising livestock.

History of Scott State Park

BY ROBERT J. HOARD AND CAITLIN MEIVES

In 1888 Herbert Steele, an early Scott County homesteader, purchased the property that became the nucleus of Scott State Park. Herbert married Eliza J. Landon, and the couple first built a dug-out and then a more permanent sandstone house (Kansas Historic Resources Inventory no. 171-0000-00001), which stands today (Hoard 2006). Additional structures included a stone chicken house and a barn (Callender ND:1), but neither remains today. A 1930s-era photograph documents the location of the barn (recorded as 14SC457 during the 2009 KATP field school), which was built into the hillside across the road from the house (Figure 2). The barn had a stone foundation and wooden upper story with a gable roof. A Kansas State Historical Society (KSHS) historic sites survey form dated August 8, 1955, notes the presence of the barn across the road; however, a 1971 KSHS survey does make note of any such structure.

The Steeles created an orchard, ran livestock, and grew crops on their property. In 1898 the Steeles invited University of Kansas paleontologists Samuel W. Williston and Handel T. Martin to excavate a mound on their property that was discovered to be the ruins of a pueblo, now a National Historic Landmark known as the Scott County Pueblo, El Cuartelejo, and 14SC1, discussed above (Williston 1899; Williston and Martin 1900).

On September 18, 1922, the Steeles transferred ownership of the two acres surrounding 14SC1 to the Kansas Society of the Daughters of the American Revolution (DAR) provided that they, “. . . erect a marker, fence the grounds and set out trees



Figure 2. A 1930s-era image of the Steele barn (14SC457) across the road to the west of the Steele home. This is a photograph of a framed photograph currently in the Steele House museum.

and keep the same in good repair . . .” (deed, filed September 18, 1922, Scott County, Kansas Court-house). In 1925 the DAR erected a marker that originally stood on the northwest corner of the pueblo ruins and was moved to its present location just west of the ruins in 1970.

In 1928 the Kansas Forestry, Fish, and Game Department (KFFGD) and later Commission (KFFGC), now the Kansas Department of Wildlife and Parks (KDWP), purchased 640 acres of Steele’s holdings in Sections 12 and 13. KFFGD also purchased 320 acres in Sections 1 and 12 from the Kansas City Life Insurance Company and 320 acres in Sections 2 and 11 from George Phillips, who was raising sheep on the land (KFFGD 1928:38–39; Lawson 1936:89). All of these properties were purchased at \$18 per acre. The purchase of the Steele’s property was contingent upon the couple being allowed to stay in their house (Figure 3) for the remainder their lives (KFFGD 1928:37–38). The resulting Scott State Park encompasses 1,280 acres,



Figure 3. The Steele house remains on park property and serves as a museum.

including the Steele homestead (KFFGC 1930:27; KFFGD 1928:39; Lawson 1936:89).

Prisoners built 10 miles of fence at the park in 1928, and two houses, a garage, water and sewer systems were built under contract in 1929 (KFFGC 1930:19, Kansas Historic Resources Inventory no. 171–67). A contract for the dam creating Lake McBride, now Lake Scott, was let in 1929, and the dam was completed by May 1930 (KFFGC 1930:19). The reservoir was named for Scott City druggist Grover E. McBride, a philanthropist and park supporter (Lawson 1936:90).

Scott County State Park, now Scott State Park, officially opened on June 12, 1930 (Lawson 1936:92). A catastrophic flood in the summer of 1933 destroyed a section of the dam and damaged park buildings. The Civilian Conservation Corps (CCC) erected a camp at the park (Camp McGinnis [14SC326], described below). Camp workers repaired the dam, created 12 campsites, built new roads, and carried out landscaping for a cost of \$15,000 (KFFGC 1934:46).

PAST AND CURRENT CULTURAL RESOURCES INVESTIGATIONS OF SCOTT STATE PARK

Numerous cultural resources surveys have taken place within the park's boundaries (Bauer 2004; Bevitt 2008; Hoard 2009; Meives 2010; Payette 2008; Reynolds and Thies 1986; Thies 2000, 2001a, 2001b, 2003; Witty 1973, 1982, 1985a, 1985b, 1986a, 1986b, 1987). Nearly all of these were conducted to satisfy stipulations of Section 106 of the National Historic Preservation Act of 1966 and associated regulations. Because of the rich history and prehistory of the park, the Kansas Anthropological Association (KAA) and Kansas Historical Society approached the KDWP to cooperate in conducting surveys of the built environment and for archeological sites. The project was considered beneficial for all parties because it provided a comprehensive survey of a large and interesting area, assisted the KDWP in planning, and provided an excellent setting for training members of the public

in archeological techniques. Concurrent with the archeological survey, KAA members joined KSHS Cultural Resources preservation staff in documenting the built environment; a summary of that work is presented by Meives (2010).

Many archeological sites already were recorded in Scott State Park, including the National Historic Landmark, Scott County Pueblo, also known as El Cuartelejo (14SC1) (Beck and Trabert 2011; Gunnerson 1968; Scheiber 2006; Wedel 1959; Williston 1899; Williston and Martin 1900; Witty 1971, 1983, 1987). Williston and Martin's excavation of 14SC1 was some of the earliest archeological work in the state (Figure 4). Their work was followed by that of Waldo R. Wedel (1959) in 1939 (Figure 5) and James H. Gunnerson (1968) in 1965. State Archeologist Thomas A. Witty, Jr. (1971, 1975, 1983) conducted excavations and reconstructed the pueblo ruins in 1971 and directed field schools with the KAA near the ruins in 1975 and 1976. He also carried out surveys associated with projects initiated by the KDWP or the Kansas Department of Transportation (Witty 1973, 1982, 1985a, 1985b, 1986a, 1986b, 1987).

In May and June 2009 participants in the KATP field school surveyed a large portion of Scott State Park and Game Management Area (Figure 6), hereinafter referred to as Scott State Park for the sake of brevity. That work is the primary subject of this report. At the time of the survey, there were 34 sites recorded within park boundaries and 3 in the game management area. The survey revisited many of these sites and recorded 17 new sites in the park and 7 in game management area, bringing the total number of sites to 61. In addition, 13 new sites were recorded on private property in or near the park and game management area, and 2 previously recorded sites were revisited.

2009 Survey Methods

KATP field participants ranged in age from 10 to 80+ years. Some had many years of experience looking for archeological sites; others had none. Because of this, all participants were required to attend a project orientation session before beginning work, and those with no experience also attended a training session on field and laboratory methods.



Figure 4 . Williston and Martin during their 1899 excavations at 14SC1. (Courtesy of Archaeological Research Center, University of Kansas)



Figure 5. Wedel's 1939 excavation. In 1970 the monument was moved from the location shown in this photograph. (Courtesy of Nebraska State Historical Society, identification number 14SC1-20)

Upon arrival in the field, the capabilities of the volunteers were assessed along with a number of factors, such as areas needing survey, relative remoteness and terrain of those areas, and weather, and then crews were established. Once in the field the standard procedure was to form a straight line with surveyors equidistant from each other. This distance could vary from 10 to 30 m, depending on the experience and ability of the group. The objective was for the line to move ahead as a group, with surveyors scanning the ground in front of them and making an effort to deviate from the line where needed to inspect an object of interest or a rodent backdirt pile, which might expose buried cultural material. Ground surface visibility was generally high, averaging somewhere around 60 percent. Areas of the park that were occupied by campers or covered with thick vegetation were not surveyed.

Because the terrain being surveyed was, more times than not, uneven, lines rarely stayed straight, and distances between surveyors varied considerably. Along the steep slopes the strategy shifted to covering the slope as well as possible while maintaining footing and paying special attention to level areas along the slope and to overhangs, as these were more likely places for people to stop and carry out activities in the past. As a result survey transects

often deviated from the model of a series of parallel lines. In some cases people were lost, or at least unaccounted for by the crew chief, for as long as a half hour, and other crew members were sent to find them. Still, because most of the surveyors understood that the objective was to cover all areas of the park that allowed suitable ground surface visibility, they watched each other and filled gaps to ensure that a thorough, if not entirely systematic, survey had been conducted (Figure 7).

It is important to note that a large portion of the survey area would be considered by many to have a low probability of containing archeological sites. Specifically, steep slopes are judged to be relatively inhospitable for human activity and thus are presumed to be avoided by people, who prefer instead to be on level ground near water. The probability of finding sites and the decisions made in conducting surveys became an important topic in the 1970s, when cultural resources management work increased significantly. Schiffer, Sullivan, and Klinger (1978) provided a good synopsis. Reviewing the literature on survey technique and high- versus low-site probability areas is beyond the goals of this report. However, it is worth noting that it is not productive to avoid all areas considered to have a low probability of having sites. Sites

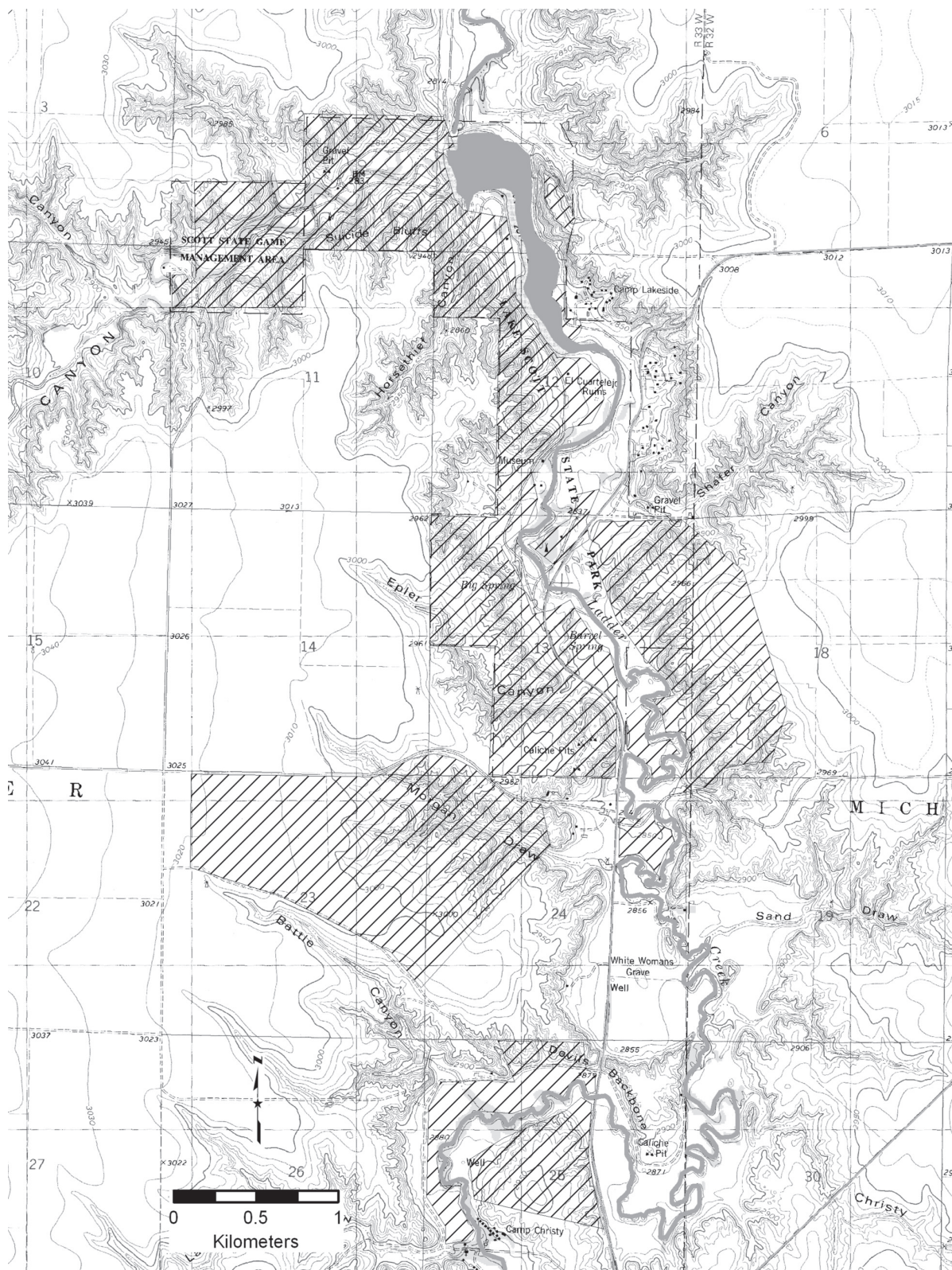


Figure 6. Areas surveyed in Scott County during the 2009 KATP field school. The survey area is primarily within the park, but nearby landowners also allowed survey on their properties near the park. Spot surveys northeast of the park are not shown on this figure.



Figure 7. Survey party at work. (Photograph by Dan Rowlinson)

can be found in low probability areas, such as steep slopes, especially where there is a level spot interrupting the slope (Hofman et al. 2009). For this reason the 2009 KATP survey of Scott State Park focused as intently on low probability areas as on high probability areas, and this resulted in locating a small number of sites where they normally are not expected. One of these, a human burial (14SC417), is arguably one of the most important sites found.

RESULTS OF THE 2009 CULTURAL RESOURCES SURVEY

Appendix 1 lists previously recorded sites, as well as the sites newly recorded by the 2009 KATP field school, in and near Scott State Park. Several of the previously recorded sites in the park were not revisited as the focus was on completing a survey of the park as a whole. In other words, unless there was a compelling reason to revisit a site, previously

surveyed areas were given low priority. This report section is a summary of work done on individual sites, listed in site number order.

The complete artifact collection is listed by site in Appendix 2, and chipped stone source materials commonly found in Scott State Park are listed in Appendix 3.

Scott County Pueblo (14SC1), Also Known as El Cuartelejo

Previously recorded site in Scott State Park,
revisited by 2009 KATP

This National Historic Landmark site has been discussed in previous sections of this report. The KATP survey expanded boundaries of the site westward to the park road. The survey collected 78 pieces of debitage of local or near local material, a modified flake, pieces of bone and shell, and 20 Dismal River aspect potsherds, including a body

sherd with micaceous temper and a single outflaring rim with a flattened lip. Appendix 2 provides a full listing of the artifacts from this site.

14SC5

Also Known as 14SC108 (Gunnerson) and 14SC302

Previously recorded site in Scott State Park,
revisited by 2009 KATP

Recorded in 1961 by Walter Fredericksen, this site was identified as having Upper Republican and Late Ceramic components. Extensive investigations by the 1975 KATP field school recovered concentrations of bison bone, a hearth, turquoise, cordmarked pottery, debitage, scrapers, triangular and several side-notched arrow points. The 2009 KATP surveyors collected 31 pieces of debitage, 2 of which are Alibates agatized dolomite; bone fragments and a non-human tooth; and 2 Dismal River Gray Ware body sherds. This is consistent with earlier finds at the site.

14SC104

Previously recorded site in Scott State Park,
revisited by 2009 KATP

Recorded in the state site files by E. Pesek-Shields in 1985, this site lies in a field east of the road in the grassy terrace above Ladder Creek. Bone was observed 1 m down in the cutbank, and a hearth was found about 2 m down. Collected artifacts included non-human bone, worked chert, and potsherds (Witty 1973). Gunnerson mapped and tested the site in 1965, but the location of his excavation records is unknown. His collection includes arrow points, pottery, scrapers, debitage, and an abrader. Witty determined it to be a Dismal River aspect component but also notes that there are unidentified buried components as well, exposed in the Ladder Creek cutbank at 1 and 2 m depths.

The 2009 KATP investigations recovered debitage, an arrow point midsection, an end scraper, a perforator, a large unfinished biface fragment, and eight Dismal River aspect body sherds from the surface and from the cutbank of Ladder Creek.

14SC301, 14SC304, 14SC319, and 14SC323, *Targets of KDWP Compliance Fieldwork*

As part of the KATP field school, participants conducted investigations of locations slated for

improvement by KDWP. These projects include the proposed installation of cabins in two locations: Barrel Spring and the Lakeside campground. Ancillary to the cabins would be access roads, sewage laterals, and potable water connections. KDWP also plans to build electrical supply outlets for selected campsites at the south end of Elm Grove campground.

Because Scott State Park is owned by the State of Kansas, the property falls under the Kansas Antiquities Commission (KAC) Act (Hoard 2005), which establishes a commission to protect and regulate the removal of antiquities from public lands. If archeological sites on lands under the act's jurisdiction are threatened, the KAC must convene to determine the needed course of action and issue permits for the conduct of that work. However, in this instance the KAC was not convened and no permit for fieldwork was issued because, as a KAC member, KSHS has *ipso facto* authority to conduct surveys to assess impacts to archeological sites. KSHS archeologists directed the KATP field school participants. A cultural resources report, containing recommendations for the specific KDWP project areas, was written and is on file with the State Historic Preservation Office (SHPO) and the KDWP (Hoard 2009). Portions of that report are reiterated here, as it was part of the work conducted by the 2009 KATP field school.

The investigation took place in consultation with Scott State Park Manager Rick Stevens. Earlier work, conducted by Bevitt (2008), consisted of surveys of four areas of the park for cabin locations, including one location also considered in this report: Barrel Spring. Bevitt recommended further work at this location to evaluate the impact of the proposed project, and that recommended work was carried out as part of the 2009 KATP field school.

14SC301,

*Also Known as 14SC102 and 14SC103
(Gunnerson)*

Previously recorded site in Scott State Park,
revisited by 2009 KATP

The Elm Grove campground is situated near the southern end of the park. James Gunnerson first reported 14SC301 as two sites, 14SC102 and 14SC103, in this campground on a terrace adja-

cent to the right or east side of Ladder Creek some 1,000 m south of the pueblo monument. The site is in a park camping area with shower and toilet facilities, as well as numerous crossroads, Highway K-95, picnic tables, and fireplaces. When highway damage was assessed in 1970, Witty found Gunnerson's sites to overlap and assigned 14SC301 as the number of record. Wedel, Gunnerson, and A. T. Hill excavated roasting pits, and Witty found a storage pit during construction of K-95. One burial was removed from a railroad cut by collectors (Gunnerson 1969; Witty 1973, 1985a). Other than the burial, these investigations were not well documented.

The site survey conducted by the 2009 KATP field school resulted in a significant expansion of the site's recorded area to the east side of K-95, and the site is now known to cover nearly 5 ha. Surveyors collected nearly 300 artifacts, including red-slipped and black-slipped pottery, a triangular point, a scraper, a spokeshave, bifaces, debitage, shell, and bone.

Highway K-95, a railroad cut, and campground development have disturbed much of 14SC301. More development is planned at the campground. Specifically, the southern two rows of campsites are slated to receive electrical outlets. A 2009 KATP crew shovel tested the proposed area of impact to see if significant deposits would be impacted by the proposed project. The original intent was to test on a staggered 10-m grid; however, large trees, graveled roads, and fire grates made this plan impractical. Instead, shovel tests were placed in three transects, oriented very roughly southeast to northwest, with tests placed in areas that appeared less disturbed, on intervals as close to 10 m as practical. In all the crew excavated 25 screened shovel tests to a minimum depth of 70 cm. (All depths given in this report are below ground surface unless designated otherwise.)

Only 2 of the 25 shovel tests produced cultural material. In the positive test nearest Ladder Creek, three flakes and a bone fragment were recovered at approximately 35 cm deep. The other positive test produced a single modified flake at approximately 35 cm. These two positive tests suggest that there may be a cultural level starting about 35 cm. However, given the low density of artifacts encountered and the small degree of impact that comes from placing narrow trenches for utilities, it is unlikely

that the proposed improvements to campsites on this part of the site will adversely affect significant historic resources.

*14SC304 and 14SC319,
Also Known as 14SC111 (Gunnerson)*

Previously recorded sites in Scott State Park,
revisited by 2009 KATP

The Lakeside campground lies in the northeast portion of Scott State Park near the privately owned Methodist Church Camp Lakeside, generally north of 14SC1. Sites 14SC304 and 14SC319 are located in this general area. As noted earlier, these sites have received varying archeological attention in the past and were seen as having potential to produce useful information. Because of this, several 2009 KATP field school participants under the general direction of Bob Hoard and Virginia Wulfkühle carried out an intensive site investigation.

HISTORY OF INVESTIGATIONS AT 14SC304,
ALSO KNOWN AS 14SC111 (GUNNERSON)

Gunnerson initially recorded this site as 14SC111, using his own site numbering system. He excavated the site in 1965 (Figures 8 and 9), along with the Coffin site (14SC106) and a portion of 14SC1. At 14SC304 Gunnerson's field notes described a typical five-post Dismal River aspect structure, measuring about 3.6 m in diameter, with a central hearth. Overall artifacts were scarce but included debitage, made primarily of Smoky Hill silicified chalk but also of moss agate. A single incomplete triangular point, unnotched with a slightly concave base, a single crude end scraper, and three side scrapers were recovered. Ground stone artifacts included fragments of sandstone grinding slabs, sandstone shaft smoothers, and a disc-shaped piece of trachyte that might have served as a hammerstone. Gunnerson's field notes indicated that 3 mica-tempered potsherds were found along with 77 red-slipped sherds and 813 gray-slipped sherds. He (Gunnerson 1998:50) created a new pottery type named Ledbetter Red, an imitation of Tewa Pueblo red ware that is found on Dismal River aspect sites. He described it as having a compact, slightly laminate paste, dark gray to black and sometimes light gray to buff, with moderate amounts of fine rounded sand temper. Sherd thickness was 4.6–7.6 mm with a typical range of 5–7 mm. All sherds



Figure 8. Gunnerson's 1965 Northern Illinois University field crew excavating a trench across 14SC111/304. View to east. (Photograph by James H. Gunnerson)

had a very thin, smooth, sometimes polished red to orange slip on one or both surfaces, sometimes overlaying a buff slip. He found the vessel shape difficult to determine, but one rim suggested a small, simple vertical-sided bowl. Gunnerson refired two sherds to 1500° F and characterized the resulting slip color as red and paste color as buff. Gunnerson stated that Ledbetter Red appeared identical in paste, temper, and thickness to the more abundant gray utility ware that made up 91 percent of the pottery at the site.

Witty revisited the site in 1985, carrying out compliance work in advance of KDWP construction of a fishing pier. He placed about 30 Oakfield coring tool probes in the site area, recovering only charcoal, although this was present in nearly every probe at a depth of 30–35 cm. He also excavated a 1- x .5-m test unit to a depth of 20 cm that pro-

duced some charcoal and a steel pin, presumably from Gunnerson's work. Witty noted that the circle drive over the site had become larger over the years since he began checking on the site in the 1970s and that, while at first he found cultural material in the road, this became less common through time. Witty (1985 field notes, 14SC304 site file) concluded that little, if anything, was left of the site. However, given the evidence that the site was buried 30 cm deep, it seems more likely that a portion of the site could still exist.

HISTORY OF INVESTIGATIONS AT 14SC319

In 1984 Witty recorded 14SC319 as a buried component on the east side of Ladder Creek in a picnic camping loop. Using an Oakfield coring tool, he identified the site on the basis of a single sand-tempered simple-stamped sherd from the shoulder/



Figure 9. A Dismal River aspect five-pole structure exposed by Gunnerson's field crew, 1965. View to west.
(Photograph by James H. Gunnerson)

neck area found at 55 cm. No records detail the extent of Witty's probing at the site.

2009 INVESTIGATION OF 14SC304 AND 14SC319

Pedestrian survey initiated the 2009 KATP investigation of the proposed cabin locations. At the time of the survey, 14SC304 and 14SC319 were plotted as very small areas. The crew proceeded with the understanding that their survey likely would expand the site boundaries. This turned out to be correct for 14SC304 but not for 14SC319.

Ground cover was dense; open areas were inspected for cultural remains. Due to the ground cover density, a bucket auger-testing program was implemented within the general area being considered for cabin footings and associated sewage lateral lines. Investigators laid out a grid on north-south transects minimally at 10-m intervals. Auger test locations obscured by heavy brush or interrupted by roads were skipped. The testing was

accomplished with a Seymour adjustable bucket auger, allowing for an excavation approximately 15 cm in diameter, extending to a maximum depth of approximately 1 m, when not obstructed by roots or rock. Fill from the auger excavations was sifted through 1/4-inch mesh hardware cloth. Additional auger tests were excavated in the four cardinal directions 5 m from most, but not all, positive auger tests. Also, in the southern part of the site, additional auger tests were placed between existing transects at staggered 10-m intervals to ensure high-density coverage of the area.

In the vicinity of the recorded boundaries of 14SC304, 123 auger tests were excavated, resulting in an expansion of the site boundaries. Twenty-three of the auger tests were positive, yielding typically a single flake, though some tests yielded multiple items. Six artifacts, including bone and charcoal, were recovered at depths of 0–20 cm, 12 from 20–40 cm, 10 from 40–60 cm, and 1 from

60–80 cm, suggesting that the site lies generally at a depth of 20–60 cm. Bone fragments noted in the auger tests were neither burned nor identifiable. No features were encountered. In all, excavators recovered 15 pieces of debitage, a scraper, bone, and charcoal.

Site 14SC304 apparently had seen a series of recent impacts. The point of land protruding into the lake was extended as a fishing pier, a bathroom was built about where Gunnerson excavated a structure, and road construction and installation of barbecues and fire pits have affected the integrity of the site. Therefore, while artifacts were present in the vicinity of 14SC304 as recorded and while some areas had a moderate density of artifacts, it appears that much of the remaining portion of the site consists of a low-density scatter of lithic debris, tools, and tool fragments.

In the vicinity of 14SC319, investigators excavated 69 auger tests. Many tests reached the water table at approximately 50 cm and were terminated at that depth. Auger testing in the area where Witty probed and recovered a sherd at about 55 cm yielded nothing to add to the single artifact that led to the site being recorded. None of the auger tests yielded stone artifacts, ceramic artifacts, or bone, and only one 0–20 cm test produced a small amount of charcoal, which easily could have originated from a campfire in the modern-day campground.

Neither 14SC304 nor 14SC319 were considered eligible for the National Register of Historic Places in Hoard's 2009 report, although he recommended avoidance of artifact concentrations at 14SC304.

14SC323

Previously recorded site in Scott State Park,
revisited by 2009 KATP

State Archeologist Tom Witty recorded this site in 1987 as a light scatter of cultural debris (flakes, burned rock, isolated weathered bone fragments)



Considering what was known of nearby sites, 14SC323 was tentatively associated with the widespread Dismal River aspect occupation of the area, ca. AD 1600–1750. Parts of the site probably were capped by dredging deposition from an adjacent trout pond. At the time of the 2009 investigation, low mounds of concrete fragments and

soil, the remains of pond dredging, were present on the north end of the site, which is a small wooded area. Most of the site lies in native short grass and yucca. Presumably Witty's coring took place in the northern portion of the site. As a result of the 2009 KATP survey, the site area was expanded from Witty's original site plotting and now extends farther south and east.

The proposed Barrel Spring cabin location lies east of Barrel Spring. Bevitt's (2008) survey in the area of the proposed improvements documented evidence of the previously recorded site 14SC323. He observed a low-density scatter of cultural material, including chipped stone debitage, occasional burned and fire-cracked rock, and isolated weathered bone fragments, some burned, in an area roughly encompassing the land east of the pond and south to the termination of the open pond surface. Chipped stone raw material types included Alibates agatized dolomite, Smoky Hill silicified chalk, Ogallala quartzite, Florence A chert, and at least three other unidentified materials.

The KATP field school crew excavated 51 auger tests on 10-m transects in the same manner as described for sites 14SC304 and 14SC319 above and also excavated and screened nine 1-m² test units (Figure 10). The test units were excavated to depths ranging between 20 and 50 cm, with most excavated to 30 or 40 cm. Because this was a field school exercise, the depths of the units varied based on the skill and speed of the excavators.

Artifacts were recovered from the ground surface east of the auger tests, and these surface finds were incorporated in the site boundaries. The auger tests and test units recovered both historic and prehistoric period artifacts, as presented in Tables 2 and 3.

Most of the prehistoric artifacts were recovered at depths above 30 cm; only 18 (17 percent) of the 107 pieces of debitage were recovered from greater depths, as were a projectile point, a biface, and a core (17 percent of the tools). No pottery was collected from the site. The only diagnostic prehistoric artifact is the base of a projectile point made of Smoky Hill silicified chalk with a slightly expanding stem and slightly concave base that is moderately thick in cross section (Figure 11). It is consistent with Late Archaic stemmed points and was found at a depth of 80–100 cm. Two flakes were



Figure 10. Testing at 14SC323 by the 2009 KATP Basic Archeological Excavation class, led by Tim Weston. (Photograph by Tim Weston)

Table 2. Artifacts recovered from auger tests (AT) and test units (TU) at 14SC323.

Prehistoric	Historic
1 point stem, AT E3, 80–100 cm	95.5 g coal, TU 2, 0–20 cm
1 knife midsection, surface	1 9d common wire nail, TU 2, 0–10 cm
2 scrapers, surface	1 white four-hole button, TU 1, 10–20 cm
7 bifaces, all surface except 1 in TU 4, 30–40 cm	1 liquor bottle fragment, post 1934, surface
1 graver, TU 4, 10–20 cm	
1 core, AT D2, 40–60 cm	
5 modified flakes, all surface except 1 in TU5, 10–20 cm	
107 pieces of debitage, 35 surface (see Table 3)	

recovered from similar depths within 50 m of the point. Across the site, only three flakes were found between 50 and 80 cm, indicating a break in artifact density below a depth of 30–50 cm. The point base and flakes picked up in a relatively small portion of the site may represent a buried Late Archaic component. Intact, buried Archaic components are not

common in the park, so this portion of 14SC323 should be protected.

Hoard (2009) recommended, and the SHPO concurred, that site 14SC323 is significant and eligible for listing on the National Register of Historic Places and that direct impact to the site should be avoided. However, testing just north of the site did

Table 3. Debitage from survey and testing at 14SC323.

Provenience	Count	Weight	Material
Surface	4	32.5	Trachyte
Surface	2	16.3	Quartzite
Surface	19	41.5	Smoky Hill silicified chalk
Surface	10	12.6	Unknown
TU ?*, 20–30 cmbs	8	12.4	Smoky Hill silicified chalk
TU ?*, 20–30 cmbs	2	0.8	Trachyte
AT D3, 10–20 cmbs	1	1	Smoky Hill silicified chalk
AT D7, 20–40 cmbs	1	0.5	Smoky Hill silicified chalk
AT D7, 60–80 cmbs	1	0.2	Trachyte
AT D7, 80–100 cmbs	1	0.3	Trachyte
AT E5, 80–100 cmbs	1	0.4	Chalcedony
AT E9, 5 cmbs	1	7.3	Smoky Hill silicified chalk
AT F4, 60–80 cmbs	1	11.6	Smoky Hill silicified chalk
AT F7, 40–60 cmbs	1	0.9	Florence A, heated
TU 1, 10–20 cmbs	3	0.4	Smoky Hill silicified chalk
TU 1, 20–30 cmbs	8	6.3	Smoky Hill silicified chalk
TU 1, 30–40 cmbs	2	2.8	Smoky Hill silicified chalk
TU 2, 0–10 cmbs	1	0.1	Quartzite
TU 2, 10–20 cmbs	2	1.3	Smoky Hill silicified chalk
TU 2, 10–20 cmbs	2	1.6	Unknown
TU 2, 10–20 cmbs	8	0.8	Smoky Hill silicified chalk
TU 2, 20–30 cmbs	3	2.6	Unknown
TU 3, 30–40 cmbs	1	0.6	Smoky Hill silicified chalk
TU 4, 0–10 cmbs	1	0.8	Smoky Hill silicified chalk
TU 4, 10–20 cmbs	1	1.6	Smoky Hill silicified chalk
TU 4, 30–40 cmbs	1	1	Unknown
TU 4, 40–50 cmbs	3	20.5	Smoky Hill silicified chalk
TU 4, 40–50 cmbs	2	1.2	Unknown
TU 5, 10–20 cmbs	2	0.8	Smoky Hill silicified chalk
TU 5, 10–20 cmbs	2	14	Unknown
TU 5, 20–30 cmbs	2	0.4	Smoky Hill silicified chalk
TU 5, 30–40 cmbs	2	0.5	Smoky Hill silicified chalk
TU 6, 20–30 cmbs	2	7.6	Smoky Hill silicified chalk
TU 6, 20–40 cmbs	1	0.3	Smoky Hill silicified chalk
TU 7, 0–10 cmbs	1	0.3	Unknown
TU 7, 10–20 cmbs	1	0.1	Smoky Hill silicified chalk
TU 8, 20–30 cmbs	1	0.2	Smoky Hill silicified chalk
TU 9, 10–20 cmbs	2	1.7	Smoky Hill silicified chalk

* Test unit number was not recorded

not yield artifacts. Hoard suggested that this area could be used for a cabin location, as long as associated structures (water lines, septic systems, etc.) are kept out of 14SC323 boundaries.

*Camp McGinnis (14SC326),
Also Known as CCC Camp SE-210*

BY ROBERT J. HOARD AND C. TOD BEVITT
Previously recorded site in Scott State Park,
revisited by 2009 KATP

Congress created the Civilian Conservation Corps (CCC) by passing legislation in 1933 with the intent of putting unemployed people to work in



Figure 11. Archaic point base found during testing at 14SC323 (bottom center), as well as Archaic period projectile point fragments from 14SC407 (left) and 14SC450 (top center and right).

projects that conserved natural resources. The workers lived on site, at first in permanent buildings. But in 1934 they began building Army-designed portable buildings for barracks, officer's quarters, and mess halls (Pfaff 2010:5–11). CCC companies were employed at eight of the fledgling Kansas state parks in the early 1930s as part of the program's mandate to employ workers on projects for the public good. The KFFGC took advantage of this labor while also providing supporting funds (KFFGC 1934:35–48).

Bevitt (2008) compiled newspaper accounts from the *Scott City News Chronicle* between 10 August 1933 and 31 May 1934 (see Appendix 2; Bevitt 2008) that documented the origins of Camp SE-210, better known as Camp McGinnis and recorded as archeological site 14SC326. A summary of this work, with minor additions, is presented here.

HISTORY OF CAMP MCGINNIS

On August 6, 1933, a significant flood washed out part of the Lake McBride dam (KFFGC 1934:46). Governor Alf Landon proposed that the dam could be rebuilt as a public works project. Ultimately it was decided that a CCC company would rebuild the dam. Construction on a permanent camp began in early October by members of Company 731 from

Oregon, a company that was established in May 1933 at Fort Leavenworth, Kansas. New recruits from the Hays and Dodge City vicinities arrived in late October. The company was housed in army tents in Horsethief Canyon during construction of the main camp.

Once built, Camp McGinnis consisted of nine structures, including four barracks, a recreation building, a mess hall, officer's quarters, an infirmary, and a bathhouse (Figures 12 and 13). Construction methods varied; both frame buildings and adobe structures were present. A reservoir and



Figure 12. Camp photo, view to east. (Courtesy of Larry Hoeme and the Scott County Historical Society)

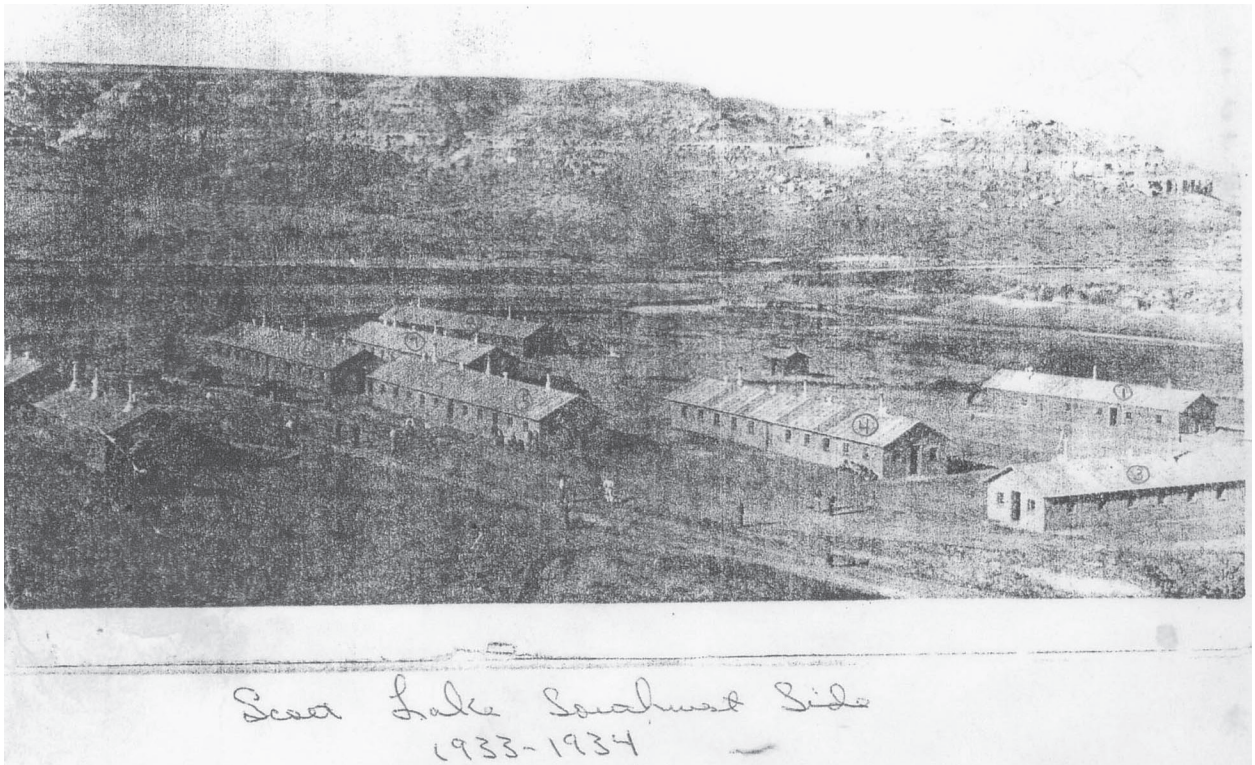


Figure 13. Camp photo, view to northeast. (Courtesy of Larry Hoeme and the Scott County Historical Society)

stone pump house were built overlooking the camp to the west. The company moved into permanent quarters in November 1933, and in December 1933 an electrical generator was put into service.

The task of rebuilding the dam began in November 1933, and by January 1934 the first major concrete pours were underway (Figure 14). Upon completion of the main concrete work on the dam in March 1934, mule teams, scrapers, and slips were brought in to begin earthwork, which continued through early May. Occupational training classes on a wide variety of subjects were part of the CCC program. Recreational opportunities included seasonal sports, often involving local town teams as opponents, as well as dances and a library.

The fifth KFFGC biennial report stated that besides rebuilding the dam, the company replanted trees, rebuilt destroyed structures, created 12 camping sites, improved the landscape, and constructed roads. This work was supported by \$15,000 from the KFFGC.

CCC workers were employed at several other parks across the state (KFFGC 1934:35–48). As work was being completed on the Lake McBride dam, the company began the move to its next location near Atwood, Kansas. While the camp's frame buildings were to be moved to Atwood, the remaining structures were to remain. However, severe storms on June 12, 1934, apparently destroyed what remained of Camp McGinnis (Bevitt 2008:7–9).

2009 INVESTIGATION OF CAMP MCGINNIS

The 2009 KATP fieldwork at 14SC326 consisted primarily of mapping the extant, visible remains of the site. These remains included the water source and pump on the hill above the camp and concrete foundations of buildings. All of these features were visible on the surface or readily detectable by probing the soil in areas where foundations were expected.

Mapping was carried out using a Topcon total station and a TDS Recon data collector. Inves-



Figure 14. View of the dam under construction and the camp, view toward the west. (Courtesy of Larry Hoeme and the Scott County Historical Society)

tigators established three instrument stations to accommodate line of sight to all points of interest. Emphasis was placed on recording the locations of building foundations in relation to park features, such as roads and campsites. Before mapping began, efforts were made to expose foundations enough to find the building corners and thus allow accurately mapping of their locations. In four instances building foundations were partially destroyed by park roads or campsite utility construction. Still, most building foundations were well expressed and matched photographs of the camp (Figures 12 and 13). A metal detector survey, carried out prior to the mapping, discovered a rectangular arrangement of nails near one of the building foundations. On the photograph (Figure 12) this appears to be a canvas lean-to attached to the building. The nails likely secured the canvas to a wooden sill.

All nine of the large rectangular buildings known from records and photographs were located and are shown in Figure 15, although the two small square ones (privies?) were not. The easternmost building appears to be the shower house, as it has a concrete floor and drain tile in several locations (Figures 16 and 17). It also is the building lowest in elevation and closest to the reservoir. No substantial evidence of a building superstructure was

observed. While the occasional nail suggested frame buildings, there are no remains of stone or adobe construction, though these were noted in articles in the *Scott City News Chronicle* (Bevitt 2008:8).

Although development of roads and camping sites had an impact on a large portion of the site, the southern portion of Camp McGinnis is relatively intact. Limited artifact collection recovered nails, window glass, bottle fragments, whiteware, coal, and clinkers (Appendix 2). These items are



Figure 15. Map of 14SC236.



Figure 16. Bathhouse foundation.



Figure 17. Detail of bathhouse floor.

not informative about the camp's inhabitants. Further exploration of written records might provide more detail, and intact deposits at the southern end in particular, which might supply more information about daily life at the camp, should be protected.

The 2009 KATP crew recovered artifacts representative of the early 1930s (Table 4). While none of these point clearly to the CCC occupation, they are wholly consistent with what is known about the camp. In contrast material from the dump (14CW338) at CCC Camp Farlington in Crawford County produced ceramic dinnerware with maker's marks of U.S.Q.M.C. (United States Quartermaster Corps), dishes that were issued by the federal government for use in CCC camps.

14SC402

Previously recorded site in Scott State Park,
revisited by 2009 KATP

This upland site consists of a debitage scatter [REDACTED]

[REDACTED] Clearly, the presence of the upland spring attracted people to this particular location. Witty, who recorded the site in 1987, reported finding a little debitage. When the site was revisited during the 2009 KATP field school, a surface collection from a 20 x 30-m area included a biface fragment and debitage of Smoky Hill silicified chalk, trachyte, and quartzite.

14SC403

Previously recorded site in Scott State Park,
revisited by 2009 KATP

Marilyn and Joe Bailey recorded this site in 1975 as an old railroad cutbank [REDACTED]

[REDACTED] The site produced chert flakes of assorted colors and sizes and pottery fragments. Reinvestigation by Tom Witty using an Oakfield probe produced a sparse scatter of flakes but no features.

The 2009 KATP survey party found the site badly disturbed by sand dredging and construction of a retention pond. Due to low surface visibility, artifacts recovered by investigators primarily were from rodent burrow backdirt or the exposed edges

of a sand borrow area. Three shovel tests yielded recent historic period artifacts and two micaceous sherds at depths above 50 cm. Investigators documented one section of the borrow cutbank to a depth of 82 cm: the top 20 cm is sand, underlain by 10–15 cm of sand with calcium carbonate deposits; below this is 20–23 cm of sand with clay deposits, underlain by laminated deposits. Bottle glass was observed at depths to 30 cm, below which mollusk shell, bison bone, and one quartzite flake were recovered. In other exposed areas of the cutbank, a piece of scrap metal and strands of barbed wire came from depths of 100–120 cm. Burrowing animals could have transported these materials, but the situation indicates that even the areas not disturbed by sand dredging and pond construction have compromised integrity. In addition to the artifacts already named, seven pieces of debitage, one modified, were collected, along with more unburned bone and mollusk shell.

14SC407

Previously recorded site in Scott State Park,
revisited by 2009 KATP

The site lies [REDACTED]

When they recorded the site in 1975, Marilyn and Joe Bailey reported a projectile point, four chert flakes, and a chert nodule. The point is medium-sized (5.9 cm long and 2.8 cm wide) and made of Smoky Hill silicified chalk. The base is broken off, but it appears to have been a stemmed or corner-notched point, suggesting either a Late Archaic or Early Ceramic occupation (Figure 11). The 2009 KATP surveyors recovered three pieces of debitage of Smoky Hill silicified chalk and trachyte and a Smoky Hill silicified chalk core. No notes were taken on the site; the bag of artifacts is the only indication of the revisit.

14SC409

Previously recorded site in Scott State Park,
revisited by 2009 KATP

Terry Howell originally recorded this site in 1976 as a 9,400-m² site, consisting of two cordmarked sherds, flakes, and bone, much of which was concentrated in a specific area. Survey crews relocated

Table 4. Artifacts from 14SC326.

Provenience	Speciman Number	Count	Weight in g	Functional Class	Material	Function	Type	Subtype	Portion	Color, Decoration
Surface	0	2	6.9	Window glass	Glass	Window glass	Window		Fragment	Aqua
Surface	0	1	1.7	Containers	Glass	Bottle	Beverage or medicinal	Beer or bitters	Body	Brown
Surface	0	1	2.4	Containers	Glass	Bottle/jar			Body	Clear
Surface	0	1	0.7	Containers	Glass	Bottle	Beverage?	Soda?	Body	Green
Surface	0	1	15.4	Containers	Glass	Bottle/jar				Clear
Surface	0	2	2.3	Containers	Ferrous	Can			Body	
Surface	0	1	0.1	Containers	Rubber	Closure	Liner	Canning jar	Fragment	Red
Surface	0	1	2.2	Furniture & appliances	Glass	Furniture	Flat glass			Aqua
Surface	0	2	8.8	Hardware, fasteners	Ferrous	Nail	Wire	8d common	Complete	
Surface	0	1	6.3	Hardware, fasteners	Ferrous	Nail	Wire	10d common	Complete	
Surface	0	2	3.6	Hardware, fasteners	Ferrous	Nail	Wire	Roofing	Complete	
Surface	0	1	18.1	Unidentified	Ferrous	Unknown				
Surface	1	1	9.6	Tableware	White-ware	Table setting	Plate	Dinner	Rim	White/white
Surface	2	1	6.7	Tableware	Whiteware	Set/serve			Base	White/white
Surface	3	1	6.9	Prehistoric artifact	Lithic	Tool	Scraper	End and side	Complete	
Surface	4	1	143.9	Containers	Glass	Bottle	Medical or pharmaceutical		Complete	Clear, maker's mark, upside down chalice & "404"
HBS2, building 2	0	5	13.9	Byproducts	Coal	Fuel	Clinker		Fragment	
HBS2, building 2	0	4	5.2	Byproducts	Coal	Fuel	Coal		Fragment	
HBS7, west wall	0	23	51.4	Window glass	Glass	Window glass	Window		Fragment	Aqua
HBS7, west wall	0	4	1.9	Byproducts	Coal	Fuel	Coal		Fragment	
HBS7, west wall	0	1	5.1	Hardware, fasteners	Ferrous	Nail	Wire	9d common	Complete	

14SC409 in 2009 and found it to be much larger than previously recorded. The previous site boundaries encompassed an area in the southeastern portion of the site near Ladder Creek that had a relatively high density of cultural material on the

surface, including red-slipped pottery. The new boundaries extend the site much farther north and west on the first terrace on which it lies, across the road to the south, and a short distance up the toe of a bluff slope.

Because 14SC409 is large (3.6 ha) and exhibited an area of high artifact density that included what appears to be exotic artifacts, specifically red-slipped sherds, test excavations were initiated to better document the site. Virginia Wulfkuhle directed the excavations. A full testing report is underway, but a cursory analysis is presented here.

Investigators established a 20-m square grid and initiated test excavations within the artifact concentration (Figures 18 and 19). They also ex-

cavated units at the grid corners to compare artifact densities with the visible surface concentration; the grid corner units had significantly fewer artifacts. Excavation units near the concentration yielded a broad range of artifact classes, described in more detail below. The excavation also revealed that the vertical artifact concentration lies at 17–22 cm and that few artifacts were found below the 25-cm depth. Workers documented a scatter of limestone rocks as a feature in units 1036 N 1030 E and 1036

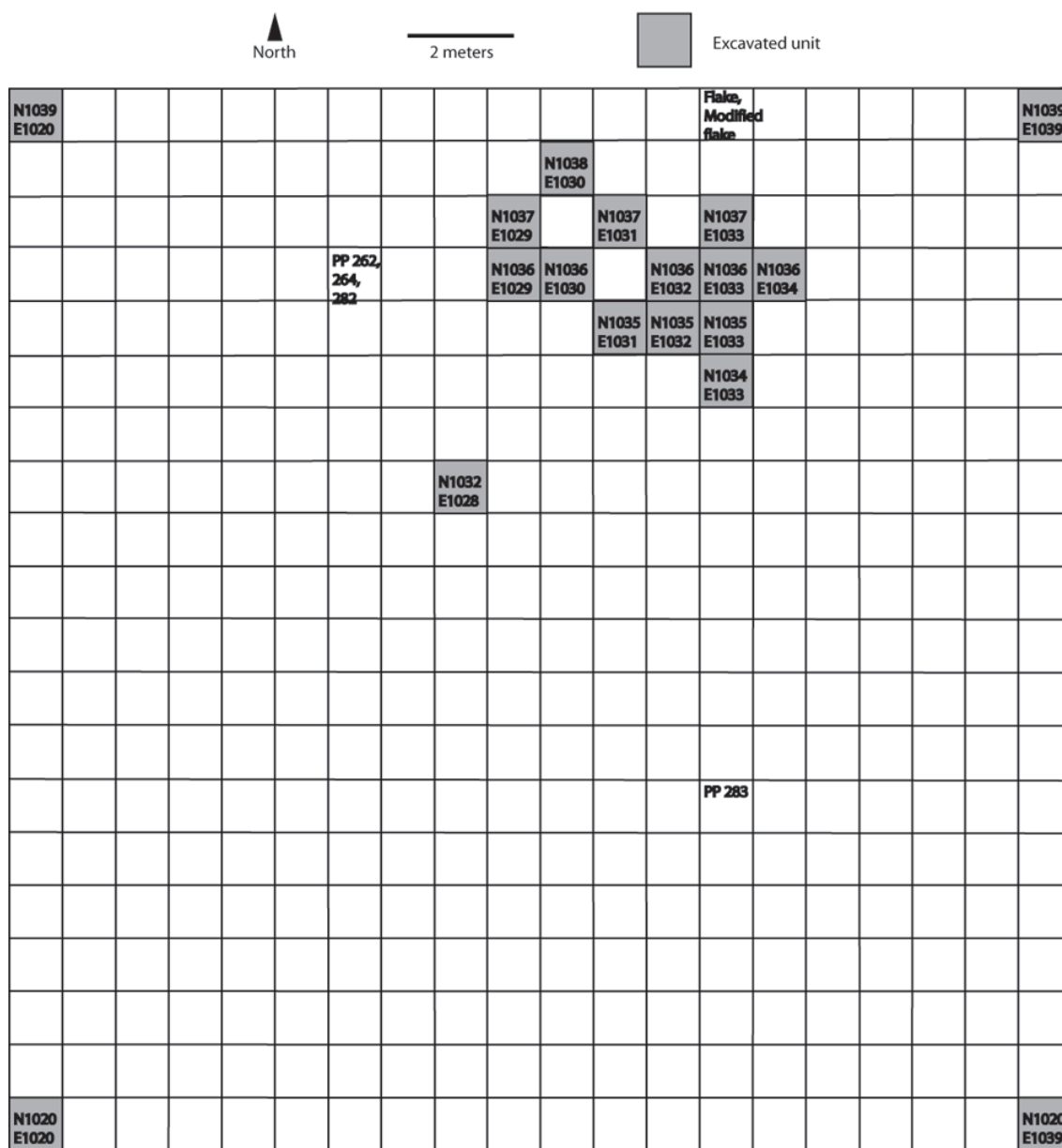


Figure 18. Locations of excavated test units, as well as recorded surface finds, within the 20-m square grid. PP signifies an artifact collected with point provenience information.



Figure 19. Test excavations at 14SC409. (Photograph by Tricia Waggoner)

N 1029 E, although there is little evidence that this is of cultural origin. After the rock was removed at the end of excavations, bone was found at a depth of 50–60 cm in an Oakfield probe. Time constraints prevented further investigation.

SUMMARY OF ARTIFACT CLASSES FROM TESTING AT 14SC409

STONE TOOLS

Of the chipped stone artifacts, only 3 percent by count and 16 percent by weight are formal tools, which consist of a side-notched triangular arrow point fragment, a drill, a spokeshave, 4 biface fragments, and 13 scrapers (Table 5). Also present are a core and 16 modified flakes. Cortex is present on about 15 percent of the flakes, indicating that the initial stages of stone tool manufacture took place at the site.

The sole projectile point is consistent with a Late Ceramic occupation. Nearly all of the tools

are of Smoky Hill silicified chalk; only the drill and a biface fragment are of Permian chert. Other stone tool source materials include Alibates agatized dolomite, chalcedony, quartzite, and trachyte. Ground and battered tools are rare, consisting only of a mano fragment and two faceted pieces of sandstone. The large proportion of scrapers is common to Dismal River aspect sites and suggests an emphasis on hide working (Scheiber 2006:146–147).

BONE AND SHELL

Test excavations recovered nearly a kilogram of bone. Dominant species are bison and deer, with turtle and small mammals also represented. Even though some of the bone is burned and much is broken, it does not appear to be intensively processed.

Three beads were recovered during excavations. One was made from the shaft of a medium-sized animal bone (Figure 20), and the other two are *Olivella* shell (Figure 21). *Olivella* beads are of marine origin, so clearly they are exotic trade items

Table 5. Percentages of artifact classes by count and weight.

Artifact Class	Percentage by Count	Percentage by Weight
Flakable stone types		
Smoky Hill silicified chalk	94	90
Quartzite	2	6
Trachyte	2	2
Chalcedony	1	<1
Alibates agatized dolomite	<1	<1
Permian	<1	1
Chipped stone artifacts		
Debitage	97	84
Chipped stone tools	3	16
Pottery types		
Dismal River	74	59
Red-slipped	26	42

in a Kansas archeological site. Wedel (1959:461) identified *Olivella* beads at 14SC1 as *Olivella dama* from the Pacific coast, which are common in southwestern pueblos. At Pecos Pueblo, a major southwestern trading post about 700 km southwest of 14SC409, over 90 percent of the *Olivella* shells are from the Pacific, despite the fact that the nearby Pecos River flows into the Gulf of Mexico, which is another source for *Olivella* shells, though a different species, *Olivella nivea* (Kozuch 2002:698). Blakeslee (1997:7) noted that other artifacts from the Southwest (e.g., pottery, obsidian, and turquoise) often are found in Dismal River aspect sites, so he finds it plausible that the beads came to these sites either by direct transport or trade. Spielmann (1983:268) argued for evidence of Pueblo-Plains trade at 1250 CE and noted that it accelerated around 1450 CE.

One could reasonably assume that the *Olivella* shell beads from 14SC409 originated along the Pacific coast and then made their way to Kansas via the Southwestern pueblos, where Pacific *Olivella* shells are commonly found. The red-slipped pottery that is common at 14SC409 clearly links the site to the Southwest, which could explain the presence of the *Olivella* shell beads. But the site also is just 50 km north of the Arkansas River, a direct conduit to the Gulf of Mexico. Because the *Olivella* shell beads from 14SC409 could plausibly be from two very different source areas, the artifacts were



Figure 20. Artifacts recovered from 14SC409. Red-slipped pottery, Dismal River Gray Ware, a bone bead, an arrow point, ceramic pipe fragments, and a French gunflint.

sent to Dr. Henry W. Chaney, Director of Collections and Research at the Santa Barbara Museum of Natural History. He identified both specimens as *Olivella dama*, whose habitat ranges from Western Mexico to Peru (Hoard and Chaney 2010). Fresh shells can be quite colorful with purple details and would have been an attractive accessory. This finding is wholly consistent with the Dismal River

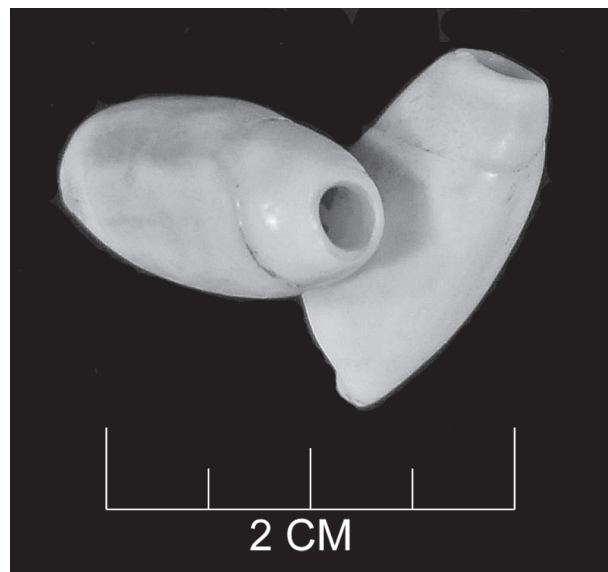


Figure 21. *Olivella dama* shell beads from 14SC409. This species is from the Pacific coast. They likely came to Kansas as trade items from the Southwest.

aspect component at the site and the site's artifact assemblage.

Kozuch (2002) briefly summarized the prehistoric use of *Olivella* shell in North America and then focused on its use in the Great Plains, including Kansas. The occurrence of *Olivella* shells in Kansas archeological sites is summarized in Table 6. Clearly most of the specimens are *Olivella dama*, so finding this species at 14SC409 is consistent with most of the data from Kansas and the Plains at large.

CERAMIC ARTIFACTS

There are 322 identifiable sherds in the site assemblage, consisting of either Dismal River Gray Ware (Baugh and Eddy 1978:795–797; see also Scott Plain, as described by Wedel 1959:441–444) or a red-slipped ware. Dismal River Gray Ware is 74 percent of the collection by number and 58 percent by weight. Most often it is dark gray, but about 15 percent of the sherds are oxidized—interior, exterior, or both—to buff. They are unvaryingly sand-tempered, but a 2-mol concentration of hydrochloric acid causes many to effervesce, indicating some calcium carbonate, either from the clay, the temper, or post-depositional processes. The average sherd thickness is about 6 mm, rarely exceeding 8 mm but sometimes as little as 3 mm. Often the surfaces seem to be polished or burnished, but Wedel (1959:441) argued that, while these sherds may have a sooty or greasy look or feel, they were never polished, slipped, or painted. The paste is hard, fine, and compact. Sherds typically are small, so vessel shapes cannot be determined. The few rims appear

to be direct or slightly outflaring. A small minority of the sherds (3 of 239 or a little more than 1 percent) has mica temper, and one is simple stamped. Wedel reported that 5 percent of the 14SC1 Dismal River aspect pottery has mica temper. He (Wedel 1959:593) noted that this percentage is closer to 1 percent for Dismal River aspect sites in Nebraska, postulating a Southwestern origin for this paste and explaining its increasing scarcity at increasing distance from its source. Earlier discussion as to whether some or all mica-tempered Dismal River aspect ware was made in the Pueblos, on the Plains, or possibly both has not been fully resolved (Baugh and Eddy 1987:795; Beck and Trabert 2011). The descriptive types used for the micaceous pottery in Dismal River aspect sites—Lovitt Micaceous and Scott Micaceous (Gunnerson 1960; Wedel 1959)—are no longer used. More recent authors refer to Apachean micaceous wares as Peñasco Micaceous or Ocate Micaceous (Baugh and Eddy 1987:795; Beck and Trabert 2011; Eislet 2005:15–16, 19). Regardless, the small percentage of mica-tempered pottery at 14SC409 provides an interesting contrast with 14SC1 and should stimulate comparisons with other Dismal River aspect sites.

The sole simple stamped sherd comprises well less than 1 percent of the assemblage, the same as at 14SC1 as reported by Wedel (1959:592), who goes on to point out that simple stamping comprises 30–50 percent of the sherds in Nebraska Dismal River aspect sites, specifically 25CH1, 25HN37, and 25HO21. Again further investigation into the relative prevalence of simple stamped ware in a larger sample of sites might shed light on whether

Table 6. Species identification of *Olivella* shell from archeological sites in Kansas.

Site	Occupation	Pacific <i>Olivella dama</i>	Gulf of Mexico <i>Olivella nivea</i>	Citation
14PH4, Woodruff ossuary	Early Ceramic	—	21	Kivett 1953:126
14RH301, Seusser	Middle Ceramic	2	—	Bevitt 1996, Hoard and Chaney 2010
14MD306, Lundeen	Middle Ceramic	11	—	Bevitt 1999:157, Hoard and Chaney 2010
14PA307, Lewis	Middle & Late Ceramic	?	?	Ranney 1994
14RC8, Tobias	Late Ceramic	1	—	Wedel 1959:291
14RC410, Little River	Late Ceramic	3	—	Roper 2008:257, 261–262, Hoard and Chaney 2010
14CO385, Radio Lane	Late Ceramic	1	—	Hawley 2000:246
14SC1, Scott County Pueblo	Late Ceramic	3	—	Wedel 1959:461
14SC409	Late Ceramic	2	—	Hoard and Chaney 2010

the distribution of this trait is regionally diagnostic or declines as a function of the distance from its source.

Red-slipped sherds represent 26 percent of the collection by number and 42 percent by weight (Figure 20). They are thin (about 6 mm), compact, and sand-tempered. Some effervesce when hydrochloric acid is applied. Sometimes the slip is fire clouded and ranges into the brown or black ranges, but usually it is a bright red on a well-smoothed or polished surface. Small sherds limit the ability to determine vessel shape, but rims appear to be fairly erect and lips are rounded or more often flat. As indicated by the differences in the percentages for count and weight of Dismal River Gray Ware and the red-slipped pottery, the red-slipped sherds tend to be significantly larger. This is not surprising given their hard, compact paste.

Margaret Beck and Sarah Trabert of the University of Iowa compared the 14SC409 red-slipped sherds to northern Rio Grande ceramic specimens in the collections of the Taos campus of Southern Methodist University. The red-slipped sherds closely match the pastes of Tewa red ware and Tewa Polychrome. Another piece was identified as Tewa Black Ware (Margaret Beck, personal communication July 27, 2010). Trabert currently is conducting further analysis on the 14SC409 ceramic assemblage.

Investigators recovered fragments of a ceramic pipe from 1037 N 1029 E, 20–30 cm, in the artifact concentration (Figure 20). The pipe is not complete, but the fragments show that the pipe stem has a 17-mm-wide flat base and flat sides that angle out from the base. The hollow portion of the stem was not drilled but instead was molded around an object that was about 3 mm in diameter. Based on the curvature, the bowl was small and had a thin, rounded lip. The pipe was formed from the same sand-tempered clay as the Dismal River aspect pottery found at the site. At 14SC1 six clay pipe fragments also were made of a paste similar to Dismal River Gray Ware, but many more were found that had a compact paste and were well fired, presumably of Puebloan origin (Wedel 1959:445).

HISTORIC PERIOD ARTIFACTS

The few pieces of coal from 14SC409 almost certainly resulted from the proximity of the test

excavations to the railroad tracks directly east. Other relatively recent historic artifacts include a .22 caliber bullet and a piece of glazed tableware. A French, professionally made, unused gunflint (James O. Marshall, personal communication March 2010) was found at 20–30 cm (Figure 20). French gunflints are fashioned from a distinctive fine-grained, translucent, blond or honey-colored chert. They were made as early as 1675 CE and were the most common type used until 1800 CE (Kenmotsu 1990:96). After that time British gunflints, which are dark gray to black, became more prevalent. Few Old World artifacts have been found in Dismal River aspect sites. The coal, tableware, and bullet at 14SC409 occurred above the 20-cm depth, most above 10 cm, and likely were not related to the Dismal River aspect occupation. However, the gunflint could be related to the Dismal River aspect component, as it was found within the Dismal River aspect artifact concentration and because gunflints have been found in other Dismal River aspect components (Scheiber 2006:147).

SUMMARY OF 14SC409 INVESTIGATIONS

Testing of site 14SC409 revealed artifacts consistent with the Dismal River aspect, specifically diagnostic Dismal River aspect pottery, as well as Puebloan artifacts (e.g., pottery and *Olivella* beads) that are typical of other Dismal River aspect sites in Kansas, including 14SC1. No houses hearths, or roasting pits were encountered during excavation, and there was little charcoal or burned earth, so the site cannot be considered a habitation based on this investigation. Further testing might reveal these kinds of features. The disproportionate number of scrapers—13 of the 20 formal chipped stone tools—and the absence of features that would indicate a longer stay suggests that the site was a short-term occupation, possibly for butchering a few animals. The presence of bone supports this interpretation.

Then again, the site is large, and that raises additional questions. The focal point of 14SC409, which was tested, appeared in rodent burrow back-dirt as a high concentration of interesting artifacts. The rest of the site is a low-density surface scatter of varying visibility; no diagnostic artifacts were recovered from the larger site area, which casts a doubt about the nature of the site as a whole. Is it an extensive occupation only partially exposed, or

is there a small Dismal River aspect occupation of an area that saw brief, repeated use over thousands of years? A similar question can be posed for 14SC301, which has had much more excavation as well as disturbance. The multiple roasting pits at 14SC301 suggest an intensive Dismal River aspect occupation. Could the same be true for 14SC409? Five test units excavated outside of the main surface concentration of artifacts had significantly lower densities of artifacts, suggesting, but not proving, that the surface concentration reflects the subsurface artifact density. Controlled shovel testing, possibly coupled with geophysical survey, could more clearly define this site. The site should be left undisturbed in the meantime.

14SC413

Previously recorded site in Scott State Park,
revisited by 2009 KATP

Nadine Cheney recorded this site during the 1976 KATP dig. It lies in open parkland north of Timber Creek near the steep bluff commonly known as Suicide Bluff. Cheney collected debris and fragments of bone and teeth. The 2009 KATP investigation recovered two scrapers, one of trachyte and the other of Smoky Hill silicified chalk, along with eight Smoky Hill silicified chalk flakes and part of a stoneware ink bottle with the following lettering: SON, /EES/PTTERU, /DERBY/, ARNOLD, /LONDON.

14SC417

Newly recorded site by 2009 KATP in Scott State Park

Located in a rockshelter in a small canyon, this site is a human burial in a dry-laid rock cairn. The cairn contains the complete or partial remains of at least two individuals and associated bison bone (a phalanx and a metatarsal). Human remains observed included a fragmented immature right tibia, a burned adult scapula fragment, and a burned femur fragment. A flake and fragment of mussel shell also were noted. No collection was taken from the site.

Burial sites in Kansas are protected by state law, the Unmarked Burial Sites Preservation Act, KSA 75-2741 to 75-2754 (Hoard 2001). The statute is available at <http://www.kshs.org/p/unmarked-burial-sites-regulations/14679>. In brief the statute

makes it illegal to knowingly disturb an unmarked burial and also mandates that persons knowing of unmarked burials inform local law enforcement officials of their presence. If law officers determine that the unmarked burial is not the scene of a crime, the unmarked burial sites preservation board is notified so that they can make a decision as to what should be done. Preservation in place is considered the most desirable option, but sometimes removal of human remains and associated materials is the recommended course. Park authorities and staff of the Scott County Sheriff's office were taken to 14SC417 so that they could monitor and protect the site.

14SC418

Newly recorded site by 2009 KATP in Scott State Park

On a terrace above Ladder Creek is a historic period dump. It contains a tricycle, Scott County State Park and Lake signs, a grinder, a toolbox, barbed wire, a threaded pipe, a garage door track, a sickle blade, and a shovel. It dates to the mid-twentieth century.

14SC419

Newly recorded site by 2009 KATP in Scott State Park

This site is located at the mouth of a shallow arroyo that empties onto a flat terrace at the toe of a ridge. The site was a concentrated circle of artifacts approximately 15.5 m in diameter. Artifacts include a possible bridle rosette, a sled frame, a tricycle, three tin boxes, a toolbox, three shovel heads (two scoop shovels and one spade), a posthole digger (clam shell type), three sickle bars, five door tracks, two hand scythes, wire mesh used to stabilize concrete, metal, glass, burned bone, and charcoal. The construction debris dates to the mid-twentieth century. The household debris and presence of children's toys suggest that this was the location of a domestic storage building.

14SC420

Newly recorded site by 2009 KATP in Scott State Park

Investigators recorded a small scatter of chipped stone tool fragments and debris on a steep slope in and near a trail below an overlook shelter. They collected the base of an arrow point of Smoky Hill silicified chalk, a modified flake tool fragment,

flakes, and shatter. The arrow point indicates that at least part of the site was formed after 1 CE.

14SC421

Newly recorded site by 2009 KATP in Scott State Park
Seven pieces of debitage, six of Smoky Hill silicified chalk and one of Alibates agatized dolomite, were found on the second terrace above Ladder Creek, west of 14SC1.

14SC422

Newly recorded site by 2009 KATP in Scott State Park
On and just below a ridge top overlooking a short tributary canyon leading to Ladder Creek, investigators found a scatter of 13 flakes, a biface, and a chopping tool. Materials include trachyte, Smoky Hill silicified chalk, and quartzite. Most flakes are large (up to 5 x 5 cm). Three pieces of debitage have cortex, which indicates that they were flaked from a cobble; one of these may be Smoky Hill silicified chalk, the other two are not familiar stone types but probably are Ogallala gravels. The portion of the site below the ridge top faces south. Charcoal was noted at the base of the ridge rock in a good sheltered area that would allow a person to sit out of the wind and flintknapping next to a small fire, all the while being warmed by the sun and having a good view to the south.

14SC423

Newly recorded site by 2009 KATP in Scott State Park

This site consists of a scatter of flakes [REDACTED]
[REDACTED] Artifacts, including primarily flakes, an end scraper of Smoky Hill silicified chalk, bone, and burned earth, are exposed in animal burrow backdirt. Where backdirt is not present, artifacts are not present. Subsurface testing probably would reveal more archeological material.

14SC425

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

This site is the ruin of a sod house, with only the outline of the foundation remaining. Parts of a bro-

ken cast-metal stove lie in what would have been the house's interior. Other associated artifacts include cast iron, whiteware, bottle glass, window glass, slate, nails, and coal. No artifacts were collected. The site probably dates to the late 1800s.

14SC426

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

A cast concrete house with wood plank roof partially covered with galvanized metal is the primary feature of 14SC426 (Figure 22). This structure also is recorded on the Kansas Historic Resources inventory as inventory number 171-114. It has a wooden doorframe and six wood frame windows, although no glass panes are intact. A wooden chimney support and concrete chimney are located near center of the house. Dugouts lie south (dugout number 1) and southwest (dugout number 2) of the house (Figures 23-26). Ten meters southeast of dugout number 1 are two 3 m² depressions side by side, which may be rock harvesting or borrow areas. Two stone platforms, one of which may be a privy, and a depression are west of house (Figure 26). Scatters of artifacts, some in concentrations, occur south and east of house, and near the dugouts is a dump with a high concentration of material. Artifact collection focused on acquiring a representative sample of material and artifacts that might establish a period of occupation. Collected and observed artifacts include painted and plain whiteware, whiteware with a maker's mark, red enamel ware, a salt shaker, a can with raised dome in the center of the lid, an intact small brown bottle with lid, brown and amethyst glass, flat glass, a tractor seat, a 1936 Kansas license plate, number 96-511, galvanized metal, angle iron, flat iron, thin gauge wire, tin cans, coal, rubber tire fragments, a shell casing, a belt buckle, and a snap.

The Western Publishing Company published the earliest plat map for Scott County in 1910. On that plat the landowner is "US," and no structure is shown. A deed search, conducted by the Scott County Clerk, showed that a homestead application from James Clyde McCay of Brownwell, Kansas, was accepted in 1934 and that the property passed into his ownership in 1939, the year that he died. His wife Nena A. Arnett and daughter Nadean Ada



Figure 22. Cast concrete house, view to southwest.

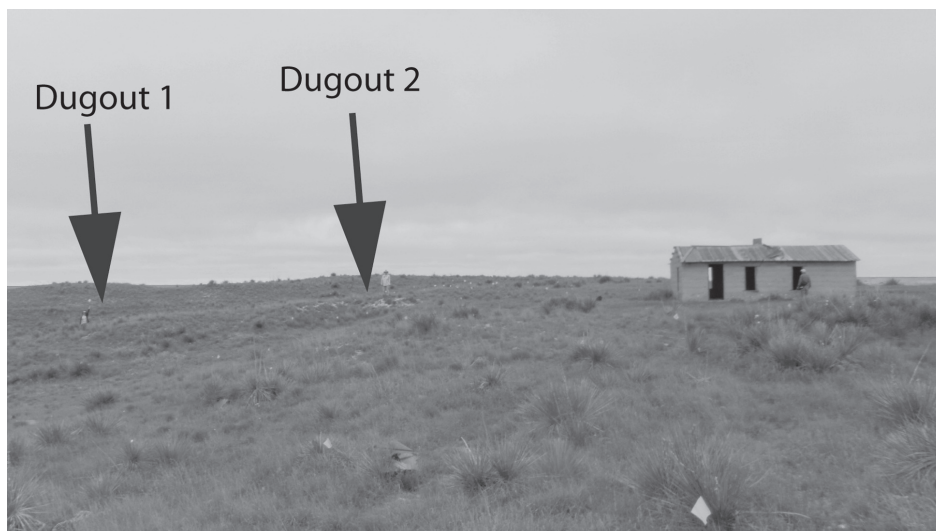


Figure 23. House and dugouts, view to west.

Shafer inherited the land jointly in 1941; they sold it in 1942 to R. B. Christy, who had large landholdings in the area. Most likely McCay built the structure as part of his homestead claim, which was successful. Temporally diagnostic artifacts all appear to be from the early to mid-twentieth century, consistent with the probable 1930s construction. Even though there is little information on the dates of occupation for the dugouts, they undoubtedly predate the concrete house and are not associated with it.

14SC427

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Site 14SC427 is a large surface scatter of flakes and stone tools covering about 0.65 ha in a plowed field

on the terrace and valley floor on the north side of Ladder Creek. Artifacts include a core, end scrapers, a biface, a chopping tool, modified and unmodified flakes, a Dismal River aspect body sherd, bone, tooth, and a horseshoe. Chipped stone types include Smoky Hill silicified chalk, trachyte, Permian chert, Alibates agatized dolomite, chalcedony, and a local stream cobble.

14SC428

Newly recorded site by 2009 KATP in Scott State Park

Located on the valley floor of Ladder Creek, this site consists of two modified flakes, one unmodified flake, and burned bone exposed in rodent burrow backdirt piles.



Figure 24. Dugout number 1, view to north.



Figure 25. Dugout number 2, view to west.

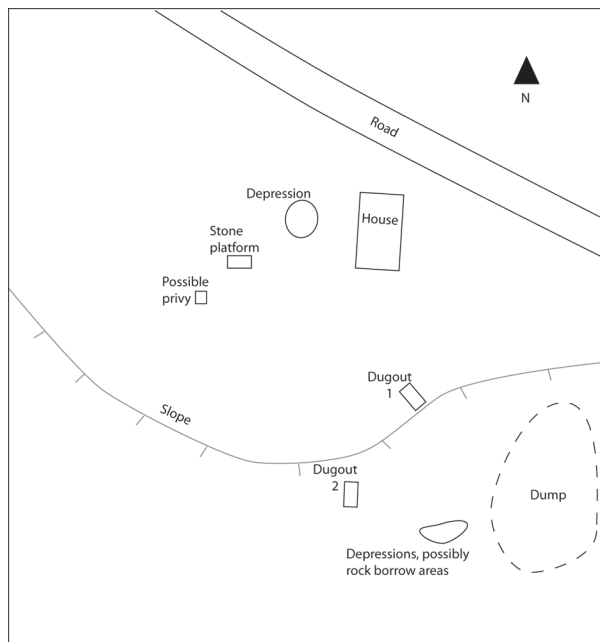


Figure 26. Plan view of 14SC426, not to scale.

14SC429

Newly recorded site by 2009 KATP in Scott State Park
Five pieces of debitage—three Smoky Hill silicified chalk, one quartzite, and one trachyte—along with a core of unknown material, were found in the cutbank on the west side of Highway K-95 at the south end of the park.

14SC431

Newly recorded site by 2009 KATP in Scott State Park
This site is a diffuse scatter of debitage on ridge top and slope just above a pond in a former channel of Ladder Creek. Artifacts at the site are made of a variety of materials, including chalcedony, Permian chert, trachyte, Smoky Hill silicified chalk, and quartzite. A thumbnail scraper from the site was made of Ogallala gravel. Some bone fragments were noted. Mussel shell was observed in the field but not collected.

14SC432

Newly recorded site by 2009 KATP in Scott State Park
This site is a light lithic scatter on a southwest-facing ridge toe below a bluff. Artifacts observed and collected include opalite, Smoky Hill silicified chalk, and trachyte flakes, and one end scraper fragment of Smoky Hill silicified chalk.

14SC433

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Site 14SC433 is a moderate density debitage and tool scatter and bison bone concentration on a grassland hilltop with 360-degree view. It is large, covering 4.8 ha. Most of the artifacts and bone came from the east side of the site, which has been plowed at sometime in the past. Another nearby bison bone concentration to the south appears to be recent. Artifacts include debitage of Smoky Hill silicified chalk, trachyte, quartzite, Permian chert, Alibates agatized dolomite, and Ogallala gravel cobbles; a biface fragment, two end scrapers, and modified flakes. Richard Duff, who runs bison on the property, has a large blank of Smoky Hill silicified chalk from this site. Furthermore, Duff reports that the site is associated with a trail that leads to the Scott County Pueblo (14SC1).

14SC434

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Site 14SC434 lies in a grassy area and the cutbank in a sharp curve of Ladder Creek. Surface artifacts include a rim sherd, Smoky Hill silicified chalk and Permian chert flakes, bone, and a core made on an Ogallala cobble. Pottery body sherds were found at 70 cm and at 2.75 m in the cutbank, although the latter may have been in cutbank slump. The pottery from this site is not easily identified. One sherd is thin, dark, and hard like Dismal River Gray Ware but is cordmarked. Wedel (1959:442–443) noted this for some sherds at 14SC1. Another sherd is oxidized to a tan color, thin, hard, and sand-tempered but is an incurving rim sherd, not typical of the Dismal River aspect (but see Beck and Trabert 2011). Finally, Richard Duff collected a Middle Archaic McKean point from the cutbank at this site (Blackmar and Hofman 2006:50), and that dart point is currently at the University of Kansas. Site 14SC434 represents one of the few stratified multi-component sites in the area.

14SC435

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

This site consists solely of two adjoining fragments of an incomplete Paleoindian projectile point, found at the confluence of two small branches of Morgan Draw in an upland setting. A seep is present at the find spot. The partial projectile point is made of a red chert of unknown origin (Figure 27). Although this material is similar to Alibates agatized dolomite, a distinct brown streak suggests a different source. The point's minimum length is

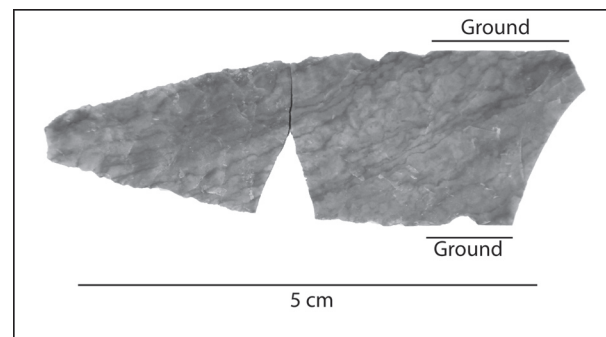


Figure 27. Paleoindian point fragment, an isolated find.

59.9 mm, its maximum width is 19.8 mm, and its maximum thickness is 5.4 mm. It has even, parallel, oblique flaking and a thin cross section, and the remaining portion of the base is well ground. Most of the base is absent, but general shape, size, and flaking technique suggests a Jimmy Allen point, a type that dates from 5500 to 7000 BCE (Blackmar and Hofman 2006:50).

14SC436

Newly recorded site by 2009 KATP in Scott State Park

This site is a historic period dump in a short draw. Collected artifacts include wheel rims, plow parts, ceramic vessels, bottle fragments, enamelware, buckets, and cans. See Appendix 2 for a complete listing. Many more artifacts, including iron rings, crockery, decorated whiteware, the wick shield from a kerosene lamp, and coal were seen but not collected. Artifact ages suggest an early- to mid-twentieth-century period of use. The Scott County 1910–1911 plat map (Western Publishing Company 1910) shows that this property was owned either by Fred Sumpton or E. J. Stoele.

14SC437

Newly recorded site by 2009 KATP in Scott State Park

Two scatters of Smoky Hill silicified chalk flakes are 30 m apart. These were exposed on a steep upward slope along the horse and foot trail on the west side of the lake road above the Ladder Creek valley. No collection was made at the site.

14SC438

Newly recorded site by 2009 KATP in Scott State Park

Several of the flakes from this site are large (having one dimension over 5 cm), thin, and retain some cortex. These artifacts dominate the small assemblage (Figure 28), which appears to represent a brief occupation during which a large tabular piece or a blank of Smoky Hill silicified chalk was reduced. One of the three artifacts that is not a Smoky Hill silicified chalk flake is a cobble that exhibits battering, indicating its use as a hammerstone.

Blanks are pieces of raw tool stone that have been reduced, making them more portable. In the process of their creation, they were shown to be

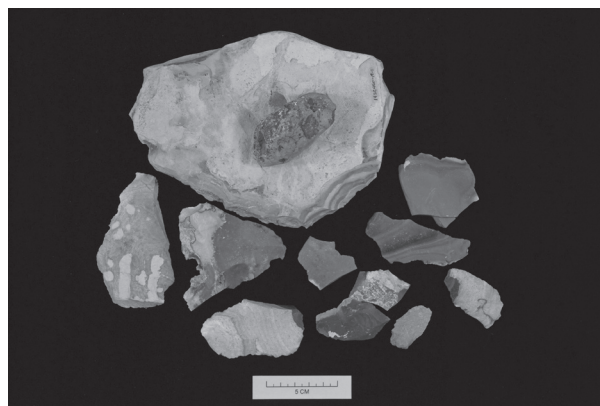


Figure 28. Large flakes and a hammerstone recovered from 14SC438. Also included in this image is a large tabular piece of Smoky Hill silicified chalk from 14SC450. Presumably a blank or a large tabular piece of raw material like this was reduced at 14SC438.

workable material that was relatively free of flaws. Caches of blanks are found throughout the Plains. In Kansas, caches of Permian chert or Smoky Hill silicified chalk blanks are not uncommon. Randall Thies recorded six large Smoky Hill silicified chalk bifaces, found in a group at 14DP431 in Doniphan County. The Hetzell biface from an unknown location in Shawnee County was donated to the Kansas State Historical Society in 1886. The Busse cache (14SN1) has 13 large Smoky Hill silicified chalk blanks, some with streaks of ochre, associated with Paleoindian artifacts (Hofman 1995, 1997). In Gove County 14GO402 had several large broken Smoky Hill silicified chalk blanks. Site 14SD1302 had eight large Smoky Hill silicified chalk bifaces, and 14KW316 had 23 jasper bifaces buried 60 cm deep on the crest of a high ridge above the headwaters of a creek.

Site 14SC438 represents the intended use of these large bifaces: to be reduced to one, or probably in most cases, several tools at some distance from the material source. It is not unique in this area; at 14SC450 surveyors recovered a large tabular piece of raw Smoky Hill silicified chalk with flaking around the edges (Figure 28), and the former landowner found another large well-finished Smoky Hill silicified chalk blank on 14SC433. While it may have been a large tabular piece of material rather than a blank that was reduced at 14SC438, the intent was the same as it would have been for a large biface.

14SC439

Newly recorded site by 2009 KATP in Scott State Park
This site is a light lithic scatter of 30 small tertiary flakes of Smoky Hill silicified chalk, Permian chert, Alibates agatized dolomite, and unidentified material. It is located on a terrace overlooking the new park headquarters to the east.

14SC440

Newly recorded site by 2009 KATP in Scott State Park
Site 14SC440 consists of chipped stone debris exposed around the margin of an alluvial fan at the edge of Ladder Creek valley and also visible in the roadcut on the west side along Highway K-95. The roadway is on or very close to the natural eastern edge of the site. Artifacts collected include a scraper, a trachyte flake and biface, a possible adze, flakes, and broken bone. While most of the artifacts are made of Smoky Hill silicified chalk, other materials such as quartzite, trachyte, chalcedony, and possibly Tecovas jasper are present.

14SC441

Newly recorded site by 2009 KATP in Scott State Park
This site is represented by concrete foundations and historic artifacts on an alluvial fan and slope on the edge of Timber Creek valley, a tributary of Ladder Creek. No artifacts were collected, but 1930s pottery, shortening and evaporated milk cans, other cans, wire, and other materials were observed. The 1910–11 Scott County plat map (Western Publishing Company 1910) lists May E. Epler as the property owner.

14SC442

Newly recorded site by 2009 KATP in Scott State Park
Another twentieth-century domestic dump on a terrace of Timber Creek valley was designated 14SC422. It contained a beer sign, a washtub, cans, pottery, crockery, a bottle fragment (PAT. 1925), a bottle bottom (CALIFIG), and a whole bottle. May E. Epler is listed as the property owner in the Scott County 1910–11 plat map (Western Publishing Company 1910).

14SC444

Newly recorded site by 2009 KATP in Scott State Park
This site is a possible dugout, [REDACTED]

[REDACTED] It measured 15 m in diameter and 3 m deep, with a 50-cm lip surrounding depression. Its entrance points to the north-northwest on the downhill side. Artifacts recovered through a metal detector survey include a hinge screw, field points, and shell casings. The Scott County plat map of 1910–11 (Western Publishing Company 1910) shows the owner of this parcel as May E. Epler.

14SC445

Newly recorded site by 2009 KATP in Scott State Park
This site is a lithic debris scatter on a ridge toe and slope above Timber Creek. A highly concentrated lithic scatter is eroding out of the west and, to a lesser degree, the east side of the ridge toe. Artifacts collected include a high proportion of cobble cores of trachyte and quartzite and flakes of trachyte, Smoky Hill silicified chalk, quartzite, and agate. Some of the trachyte and Smoky Hill silicified chalk flakes are large and have cortex, indicating that this was a lithic reduction area. Other artifacts include an end scraper, a biface fragment, a broken triangular side-notched arrow point of trachyte, a possible hammerstone, a bullet, and a burned bone fragment.

14SC446

Newly recorded site by 2009 KATP in Scott State Park
Site 14SC446 is in a heavily wooded area on the north side of Juniper Road. Various structures are present, including a concrete cistern that contains a spring, a cobblestone structure, dugouts, a cellar, and concrete foundations, some with wood attached. The complex, known as the old fish hatchery, is immediately west of the Epler Homestead. Artifacts include modern ceramics, metal cans, nails, milled lumber, and lath and plaster. The fish hatchery was built sometime after 1930, as it is not listed in the Forestry, Fish, and Game Commission report of that year (KFFGC 1930:26). It does appear in the 1936 USGS Lake McBride 7.5 minute quad-

range map, so it was built before that date. Its date of abandonment is unknown.

14SC447

Newly recorded site by 2009 KATP in Scott State Park
A dry-laid stone structure defines 14SC447. It is a rectangle, 1 x 1.5 m, and 30 cm tall in a south-facing rockshelter overlooking Timber Creek Canyon. The period of construction and purpose are unknown. The enclosure could have been used as a windbreak prehistorically or a storage area in later times. It resembles the stone structure found in association with the burial at site 14SC417, but no human remains or funerary objects were found.

14SC448

Newly recorded site by 2009 KATP in Scott State Park
Site 14SC448 consists solely of two dry-laid rock walls in the valley floor of Timber Creek Canyon, possibly associated with the fish hatchery.

14SC450

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Located on a terrace and valley floor of Ladder Creek and surrounded by bluffs, this site is a large lithic scatter in a cultivated field with two debitage concentrations and three bone concentrations. Debitage is fairly evenly scattered throughout the field. Source materials include a variety of cherts, Smoky Hill silicified chalk, trachyte, one large spall of opalite, quartz, Alibates agatized dolomite, Tahl-equah (?), and White River Group silicates (probably from Flattop quarry in eastern Colorado). Surveyors collected one small piece of turquoise and several Dismal River Gray Ware sherds. Micaceous pottery was found in another field, 300–400 m to the north.

Many of the utilized flakes were sharpened uniaxially on two or three edges and probably were used as scrapers. There are relatively few formal scrapers. A small piece of ground stone—possibly a grinding slab fragment—and a hammerstone were recovered. A small side-notched expanding-stemmed point of Permian chert with a slightly concave base probably dates to the Late Archaic

(Figure 11 top center and right and Figure 29). It is 3.36 mm long (missing the very tip) and has a neck width of 0.97 cm, so it probably was an arrow point. Another Smoky Hill silicified chalk biface appears to be a point midsection and part of the base. The broken point seems to be notched in a fashion similar to the more complete point, but it would have been larger than an arrow point. A tabular piece of Smoky Hill silicified chalk, measuring 18 x 13 x 2 cm, has cortex on the top and bottom and flaking around about half of its perimeter. It could have served as a source of raw material for many tools and indicates that bedrock sources of Smoky Hill silicified chalk are not distant from the site (see Figure 28).

14SC451

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Site 14SC451 is located on a stream terrace along the south/right bank of Ladder Creek, 20–50 cm deep in the exposed cutbank. Artifacts observed include approximately 60 spalls and flakes of Smoky Hill silicified chalk, as well as turtle carapace and mussel shell fragments.

14SC454

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

This site is a historic period dump on a hilltop and in an unnamed draw leading to Ladder Creek. Observed artifacts included whole and partial bottles, whiteware, porcelain, tin cans, ferrous metal, barbed wire, farm equipment, license plates (KS 96–877, 1942; KS 96–442, 1936), concrete, a chalkboard fragment, and a roller skate. No artifacts were collected.

14SC455

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Site 14SC455 is a light lithic scatter on the first terrace of the south side of Ladder Creek. Much of the site is believed to have been lost to streambank erosion, leaving only the current remnant. The small rise was covered with tall grass, so the site's artifacts



Figure 29. Archaic period point from 14SC450.

were visible only in rodent burrow backdirt piles. Artifacts observed included fewer than 10 flakes of Smoky Hill silicified chalk and trachyte, and a small charcoal piece. One flake was seen 40 m south of others in an alfalfa field.

14SC456

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

This site slope is a small, low-density lithic debris scatter on a bench that overlooks Ladder Creek and the Griffith Farmstead to the north/northwest, as well as two other sites recorded during this survey, 14SC422 and 14SC450. Artifacts include flakes of gray chert, trachyte, and Smoky Hill silicified chalk.

14SC457

Newly recorded site by 2009 KATP in Scott State Park
Site 14SC457 consists of the structural remnants of a barn owned by Herbert and Eliza Steele, including stone alignments, a probable borrow area, and

a possible dugout area, located on a slope and high terrace above Ladder Creek. Figure 2 is a photograph of the barn. Artifacts observed included clay roof tiles and asbestos shingles, wooden structural support pieces, a sliding door rail, barbed wire, chicken wire, braided copper wire with housings for lightening rods, and farm equipment parts.

14LO301

Previously recorded site on private land in the vicinity of Scott State Park, revisited by 2009 KATP

Originally recorded by Witty in 1974, this site is a cave carved into the sandstone wall of a small canyon. It measures approximately 3.8 m deep, 1.9 m wide, and 2.5 m deep (Figures 30–32). Associated artifacts include coffee cans, glass sherds of fruit jars, a condiment jar with a cloudy liquid still in it, bottle and flat glass, panel bottle glass, amethyst glass, whiteware, leather and wood, possible coal, and non-human bone. The origin and function of this excavation are unknown, but vents suggest that it was meant for occupation rather than just storage. Its discrete location has led some to believe it may have housed a still.

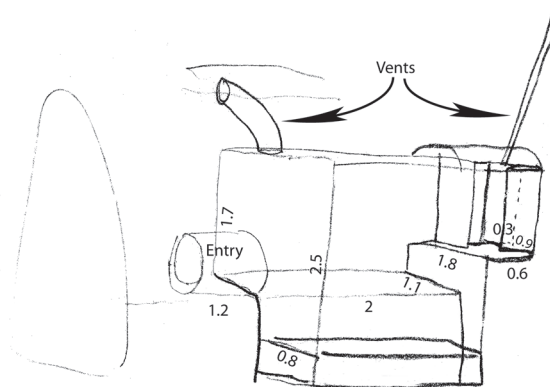


Figure 30. Diagram of hand-excavated cave, 14LO301 with dimensions in meters. (Adapted from a sketch by Thomas A. Witty, no date, but probably 1974)

14LO406

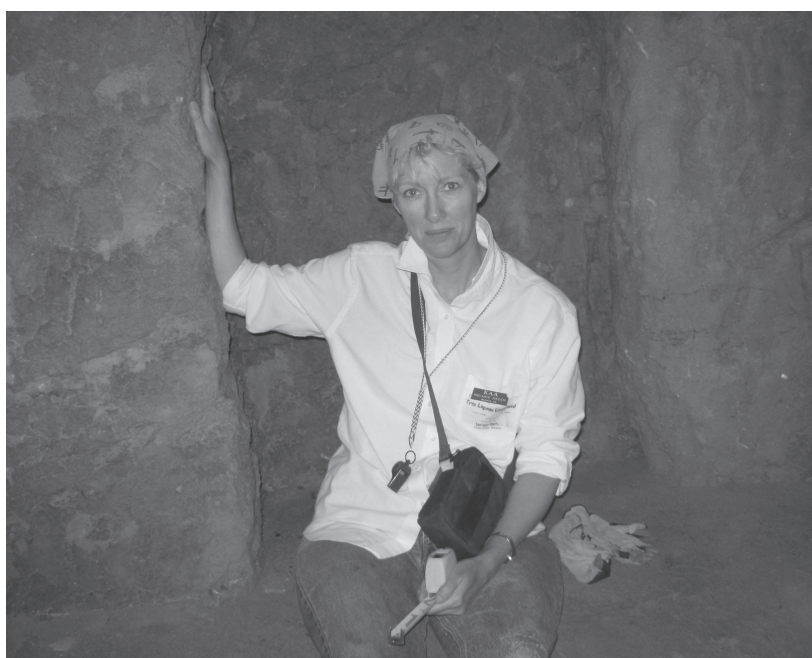
Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

This site is a light lithic scatter that runs for about 50 m along the east side of a bluff top along Hell Canyon. Artifacts include a possible broken ham-



Figure 31. Entrance to 14LO301. (Photograph by Melanie Naden)

Figure 32. Interior of 14LO301.
(Photograph provided by Melanie Naden)



merstone, unmodified quartz, a trachyte core, three Smoky Hill silicified chalk flakes, and associated shatter.

14LO407

Newly recorded site by 2009 KATP on private land in the vicinity of Scott State Park

Three possible dugouts on the south rim of a drainage, reportedly the remains of a line camp, were recorded as 14LO407. Artifacts, observed but not collected, included sheet metal, a tin can, and three Smoky Hill silicified chalk flakes found on the north side within 10 m of one of the dugouts. This site may date to the late 1800s.

SUMMARY

The 2009 KATP survey added 24 sites to the 37 known sites in the Scott State Park and Game Management Area and 13 new sites from adjacent or nearby private land. Intensive survey techniques covering all landforms, including steep slopes, reduced some of the bias that can come from selective or stratified surveys. Not all of Scott State Park was surveyed; areas occupied by campers were avoided in some cases, and no effort was made to survey areas covered with thick vegetation. Still, the intensity of this survey is enviable and provides a better understanding of the occupation of the Ladder Creek valley. The survey documented evidence of occupation from the late Paleoindian period to the present.

Chipped Stone Sources

Prehistoric people living in what is now Scott State Park used several types of stone to make chipped stone tools. Locally available materials

include Smoky Hill silicified chalk (Stein 2005, 2006), quartzite (Holen 1991:400–401; Stein 2005, 2006:275–277), and a variety of mineralogically distinct stone types from the Ogallala gravels (Ray 2010) that may include trachyte (a material similar to basalt; Blasing 1990), chalcedony, opalite, agate, and quartz. Non-local materials, all described in more detail in Appendix 3, include Flint Hills Permian-age cherts (Haury 1984; Stein 2006), Alibates agatized dolomite (Schaffer 1958), Tecovis jasper (Holliday 1997:245–249), and White River Group silicates, often referred to as Flattop chalcedony (Greiser 1983; Hoard et al. 1992, 1993).

Table 7 shows that by count and weight Smoky Hill silicified chalk is by far the most commonly used source material for chipped stone artifacts found in prehistoric sites in Scott State Park. Quartzite and trachyte are the next most common materials, with quartzite being available in bedrock nearby and trachyte presumably available in local gravels. The category of “Other” includes unidentified materials, which are most likely from the local Ogallala gravels: agate, opalite and quartz, as well as exotic materials like Tecovis, Tahlequah, and White River Group silicates. The identifiable rocks in the “Other” class are represented only by one to three specimens.

As can be seen in Table 7, flakes of quartzite, trachyte, and Permian chert tend to be much heavier, and thus presumably much larger, than those of Smoky Hill silicified chalk. This probably is because trachyte and quartzite are coarse-grained materials and do not flake as well as chert. It is not clear why the near-local Permian chert flakes also are heavy and large, as they presumably would have come into the region as blanks or finished tools from which relatively small flakes would be

Table 7. Representation of source materials for chipped stone artifacts from all collections from the 2009 KATP survey.

Material	Total		Tools			
	Count	Weight in g	Count	Weight in g	Count	Weight in g
Smoky Hill silicified chalk	1179	3747.0	56	1739.4	1123	1991.8
Quartzite	66	1202.8	5	462.1	61	266.7
Trachyte	130	1156.4	8	744.3	122	412.1
Permian	25	197.3	6	49.2	19	148.1
Chalcedony	42	94.7	4	44.3	38	50.4
Alibates agatized dolomite	26	48.6	1	16.6	25	32
Other	35	209.3	5	48.6	30	160.7
Total	1468	6446.8				

removed. The weight of Permian chert flakes in Table 7 is skewed, however, by a large (83.2 g) spall.

Table 7 contains cumulative data from all sites in the survey from which materials were collected. This muddles distinctions, such as type of site or time of use. Many of the collections come from sites of unknown temporal affiliation or from sites with multiple components. Because most are surface scatters, the stone type data cannot be parsed by time period. An exception is 14SC409. The excavated context of materials from this site gives greater confidence that the assemblage is, in fact, a single Dismal River aspect component. The chipped stone assemblage from this site is strongly dominated by Smoky Hill silicified chalk (Table 5), and a scan of the entire artifact catalog of the survey in Appendix 2 confirms that local materials, especially Smoky Hill silicified chalk, dominates all site collections.

Permian chert and Alibates agatized dolomite represent exotic resources. These two resources are about equidistant from the survey area at a distance of approximately 300 km, and each comprises less than 2 percent of the collected chipped stone. Other exotic chipped stone materials include White River Group silicates, Tecovis jasper, and some possible Tahlequah chert, all of which are represented by only one or two specimens. These exotic resources suggest direct acquisition from or trade with people to the south, in the case of Alibates agatized dolomite, or to the east, in the case of Permian chert. White River Group silicates come from northwest of the park. Completely absent is obsidian, which is rather unexpected as obsidian is not uncommon in western Kansas sites (Hoard et al. 2008; Stein 2006) and has been recovered from 14SC1. Most obsidian found in Kansas is from the Jemez Mountains of northeast New Mexico (Hoard et al. 2008). Turquoise from the Southwest and pottery from the Jemez Mountains area also has been found at several sites in the park, as well as *Olivella dama* beads, which presumably were traded into the Plains from Puebloan groups in the Southwest (Hoard and Chaney 2010).

Summary by Time Periods

In this section site numbers in bold type were found during the 2009 KATP survey. An asterisk indicates uncertainty regarding temporal affiliation.

PALEOINDIAN SITES

Components = 1, 14SC435

The Paleoindian period is represented solely at 14SC435 by two refitting pieces of an incomplete late Paleoindian point made from an unidentified stone. The site is in an upland setting in an arroyo about 1 km west of Ladder Creek. While an isolated point does not give us a great deal of information, it does provide evidence of people of this time period within the park. It would have been missed in a survey that concentrated on high probability areas, a problem noted by Hofman et al. (2009).

A review of Paleoindian sites recorded in the surrounding counties reveals that six of nine are in upland settings, as is 14SC435, and the remaining three are on or buried in the first terrace or buried in the valley floor of permanent streams (Table 8). This data suggests that the High Plains open uplands, often considered areas unlikely to contain sites, may actually have a significantly higher probability of having Paleoindian period sites. Specifically, the highest spots in open uplands should be investigated. The concept of site probability starts to become a little more complex. In this instance it appears that temporal period is a variable that needs to be considered when predicting site density.

ARCHAIC SITES

Components = 5* (14SC316, 14SC323, 14SC407*, **14SC434**, **14SC450**)

Evidence of Archaic sites is found in both buried and surface contexts. The 2009 KATP survey recorded two Archaic points, one nearly complete and the other a base and lateral fragment (Figure 11), on the first terrace surface of Ladder Creek at site 14SC450. At previously recorded site 14SC407 surveyors collected a medium-sized stemmed or corner-notched point, either Late Archaic or Early Ceramic, from the surface of a high upland bench. A point similar to the Logan Creek type is in a collection from the disturbed and now inundated site 14SC316. A McKean point was found buried in a cutbank in the Ladder Creek valley floor at 14SC434 during previous investigations, and at 14SC323 an Archaic point base was found in what appears to be a buried component at 80–100 cm.

In surrounding counties Archaic period artifacts are found at sites 14KY1, 14LA323, 14LO5,

Table 8. Locations of Paleoindian sites in Scott County and surrounding counties.

Site Number & Name	Description
14LO1	Cody knife fragment on a bluff directly overlooking the Smoky Hill River
14LO21	Agate Basin basal fragment on a ridge toe overlooking the Smoky Hill River
14LO30	Eden projectile point midsection found on bluff top overlooking south fork of Smoky Hill River
14FY303/407	Clovis point found with camel remains in gravel from quarry pit in valley floor of Arkansas River
14KY102 (Simshauser)	Single flake found among late Pleistocene bison bone (possibly <i>Bison antiquus</i> or <i>Bison occidentalis</i>) in alluvium predating 10,000 BP, based on its position below paleosol dated to 10,170±70 BP (Mandel 2006b:33)
14KY305	Isolated find of undescribed Paleoindian point located on upland ridge area about 1 km north of Arkansas River
14SC6 (Norton)	At least 8 bison and associated Cody/Allen-Frederick projectile points with radiocarbon date of 9080±60 (Hofman et al. 1995) found about 10 km south of Scott Park buried in high terrace above Ladder Creek
14WT312	Dart tip, presumed to be Paleoindian in age, found on T1 terrace of Ladder Creek
14WT313	Upland site in plowed field about 1 km west of Ladder Creek, consisting of Clovis point and other undescribed material

14LO21, 14GO313, and 14GO402 in settings such as playa beds, ridge toes, and terraces. At the Zerr site (14GO313) diagnostic Archaic points were found buried in the first terrace of Hackberry Creek by the landowner while excavating the basement of his house and digging fence posts.

Archaic period artifacts in Scott Park are recorded in buried ($n = 2$) and surface ($n = 4$) contexts. Given very active depositional environment of the park from alluvium and colluvium, the Archaic occupation of the area is undoubtedly under-represented. Both of the buried Archaic period components recorded during the 2009 KATP survey are in the Ladder Creek valley. Surface finds are from the valley floor of Ladder Creek and the first terrace of a tributary of Ladder Creek; none are in the uplands. It also seems likely that Archaic period sites are buried in alluvial fans or in colluvium at the bases of bluffs. In most instances the 2009 KATP survey did not use techniques, such as auger tests, to search for buried paleosols and buried cultural deposits. However, given the presence of buried components, both with and without diagnostic artifacts, at 14SC104, 14SC323, 14SC409, 14SC434, and 14SC450, a program of deep testing has the potential to provide useful information about the Archaic.

EARLY CERAMIC SITES

Components = 2* (14SC316, 14SC407*)

No Early Ceramic components were encountered during the 2009 KATP survey. Only one previously

recorded site with a clear Early Ceramic component lies within the park boundaries: 14SC316, now inundated by Lake Scott. The collection from this multicomponent site includes Early Ceramic projectile points and Harlan cord-roughened pottery, diagnostic of the Keith phase. A projectile point fragment from 14SC407 could be either Archaic or Early Ceramic.

On the other hand, 14SC2 and 14SC405 lie immediately north of the park boundary. These two sites almost certainly are a single site, excavated at different times. A minimum of six human burials came from the site, accompanied by a variety of artifacts, including diagnostic Early Ceramic projectile points and pottery, as well as shell and bone beads, whole mussel shells, turtle carapaces, canid bones, and stone tools (Feagins 2005; Wedel 1959:424–468). The site is attributed to the Keith phase, the geographic range of which includes Scott State Park (Bozell 2006). However, only 14SC3, 14SC316, and 14SC2/405 are recorded as Keith phase sites in Scott County. The Pottorf site, also investigated by Wedel (1959:379–412), has an Early Ceramic component, though the two Middle Ceramic houses at this site are better known. Recent investigations found two more buried Early Ceramic components, 14LA328 and 14LA330, within 1 km of Pottorf. Clearly, Early Ceramic sites in the region can be buried beneath overbank deposits, offering one explanation for the poor representation of this time period during the 2009 KATP survey. Some of the buried components of

sites in Scott State Park might yield diagnostic Early Ceramic artifacts.

MIDDLE CERAMIC SITES

Components = 5* (14SC5, 14SC316*, **14SC420***, **14SC423***, **14SC445***)

The Middle Ceramic period is not well represented within the park boundaries either, with only five components reported. Four of those—14SC316, 14SC420, 14SC423, and 14SC445—have only small sherds or a projectile point to represent the period. Only 14SC5 has clear evidence of a Middle Ceramic occupation in the form of diagnostic pottery and arrow points consistent with the Upper Republican phase. Clearly this is not a region of intensive occupation in Middle Ceramic times. The Central Plains tradition (CPT), on the whole, is characterized by large, substantial earthlodges and intensive horticulture. The latter might be problematic in Scott County, given low levels of precipitation (Wedel 1953:503). Roper (2006:106, Figure 7.1) puts Scott State Park outside of the range of the CPT Upper Republican. Scheiber (2006:134, Figure 8.1) places it on the southeast fringe of High Plains Upper Republican, and this group of sites has a diminished character: no large lodges and no evidence of horticulture.

Site 14SC112 was recorded as a Middle Ceramic bison kill, based on a single diagnostic arrow point and a radiocarbon date of 795 ± 35 RCYBP. This site was encountered during pipeline construction at a depth of 1.25–1.35 m. Only two sites with CPT components are nearby: Coal Oil Canyon (14LO1, 14LO401) and Pottorf, both fairly unusual representatives of the tradition. Coal Oil Canyon (Bowman 1960) is a multicomponent site that includes sherds and vessels that reflect Upper Republican CPT affiliation. Using neutron activation analysis, Roper et al. (2007) determined that most, but not all, of the Coal Oil Canyon pottery that appears to be Upper Republican is compositionally distinct from samples from other Upper Republican sites. Some of it is from CPT Upper Republican sites, some comes from High Plains Upper Republican sites, and some is from unknown sources. This suggests that Coal Oil Canyon, about 50 km northwest of Scott State Park, was occupied by Middle Ceramic populations that also were in contact with other

Middle Ceramic people whose foci were significant distances from the site.

About 30 km west of Scott State Park, the Pottorf site has two overlapping Middle Ceramic houses, though these are round instead of the more typical square houses associated with the Central Plains tradition (Wedel 1959:381–412).

The scant remains of CPT or High Plains Upper Republican sites in the survey area likely reflect materials left by people passing through the Ladder Creek valley in transit between large populations areas or in search of special resources but not necessarily living there for any substantial amount of time. The bison kill site suggests that Middle Ceramic populations may have considered this area more of a hunting territory. Gilmore (2004, 2008) argued that unfavorable climatic conditions in the High Plains during the Middle Ceramic period might explain the low population densities at that time.

LATE CERAMIC—DISMAL RIVER ASPECT SITES

Components = 21* (14SC1, 14SC5 (302), 14SC104, 14SC105, 14SC106, 14SC107, 14SC301, 14SC304, 14SC305, 14SC316, 14SC317, 14SC319, 14SC320, 14SC325, 14SC403, 14SC409, **14SC420***, **14SC427**, **14SC434**, **14SC445***, **14SC450**)

Dismal River aspect components are by far the most common of sites represented by pre-industrial artifacts within the survey area. Tom Witty and James Gunnerson recorded many of these years before the 2009 KATP survey. Excavations by Gunnerson, Wedel, and Witty recovered diagnostic roasting pits (14SC1, 14SC301, 14SC325) or lodges (14SC106, 14SC304); 14SC301 also contained a burial (Gunnerson 1969; Witty 1973, 1983:105; 1985). Thus, there is ample evidence at Scott State Park of short- to long-term occupation of this population. Also noteworthy is evidence of connections to the Puebloan southwest, including the close association of the pueblo structure at 14SC1 with Dismal River aspect features, as well as artifacts from the southwest: Puebloan pottery, obsidian, and *Olivella* shells.

Why isn't evidence of earlier populations found as frequently at Scott State Park? The Ladder Creek valley at this location can be seen as an oasis of

sorts, and geographically or biologically distinct areas have been shown to be important in attracting people in prehistoric times for various reasons: economic, logistical, and ideological, among others (Kornfeld and Osborn 2003). The relative frequency of Dismal River aspect occupations is not necessarily a function of being more recent and thus more visible, as many of the Dismal River aspect components are buried (albeit shallowly) and were shown to be Dismal River only after some subsurface investigation, ranging from Oakfield probe tests to test excavations.

The Dismal River aspect represents an influx of proto-Apache Athapaskan language-speaking populations that were moving out of the Rocky Mountains (Gunnerson 1968). Gilmore (2004, 2008) argues that this migration was due in part to population pressure from the expansion of Numic-speaking populations from the west. The proto-Apacheans moved southward through areas of the High Plains along the Rocky Mountain foothills that, because of undesirable climatic conditions, had a low population density and thus little resistance from other groups. The proto-Apacheans eventually came into contact with Puebloan groups of the Southwest around 1400–1500 CE and, taking advantage of improving climatic conditions after 1500 CE, moved out onto the Central Plains where they led a semi-sedentary life and maintained contact with Southwestern populations. These people eventually were referred to as the Dismal River aspect and may represent an influx of people bringing a new adaptive strategy—a balance of horticulture and hunting—into a relatively depopulated area. If Gilmore is correct that the Rocky Mountain foothills and, by extension, the High Plains were sparsely populated preceding the arrival of the Dismal River aspect people, this may at least partially explain the dominance of Dismal River aspect sites within the park.

Only five Dismal River aspect components are recorded in the adjacent counties. This further suggests that the unique geological features of what is now Scott State Park were especially attractive to Dismal River aspect populations and that they used the area disproportionately when compared to the surrounding region. This may be a result of their ties with Puebloan people and the similarity

between the landscape of Scott State Park with the Southwestern Puebloan homeland.

UNKNOWN PREHISTORIC AMERICAN INDIAN SITES

Components = 27 (14SC307, 14SC322, 14SC402, 14SC404, 14SC406, 14SC408, 14SC410, 14SC411, 14SC412, 14SC413, 14SC414, **14SC417, 14SC421, 14SC422, 14SC428, 14SC429, 14SC431, 14SC432, 14SC433, 14SC438, 14SC439, 14SC440, 14SC445, 14SC451, 14SC455, 14SC456, 14LO406**)

These sites are primarily surface scatters and may be represented by a single non-diagnostic tool or by debitage with or without associated non-diagnostic tools or bone. Some sites consist solely of exposed material in animal burrow backdirt, in roadcuts, or in creek cutbanks. In some instances subsurface testing might allow identification of one or more components; however, it is likely that the surface exposure is the entirety of the site in many cases, representing a short flintknapping episode. Two locations containing only bison bones were recorded as sites prior to the survey.

Of the sites newly recorded by the 2009 KATP survey, seven are in upland settings and consist of isolated tools, scatters of debitage, or debitage and tools. One of these sites, 14SC433, has two large concentrations of bison bone, one of which is clearly modern; the other shows no evidence of burning or butcher marks, so it is uncertain if it is the result of cultural activity. This site is anomalous, as 42 chipped stone artifacts were collected and another 182 left in the field—many more artifacts than the typical tool and debitage scatter. Finally, former landowner Richard Duff collected a large biface of Smoky Hill silicified chalk, presumably a blank, from the site. Probably this spot was a frequently used knapping station and, because it offers an expansive view of the Ladder Creek valley, probably served as a lookout, too.

Six other sites are in lowland settings: the floodplain or first terrace of Ladder Creek or its tributaries. These sites are low-density scatters of debitage and may include either tools or bone.

At least parts of nine sites in the park are on slopes, with some extending across landforms. Six sites are on high slopes leading to the uplands and

are represented by an isolated tool, debitage, or a debitage and tool scatter, as well as the burial at 14SC417. Three other sites were found in lower, less steep slopes, often between the first and second terraces of Ladder Creek. Three of these are debitage or tool and debitage scatters; the other two are 14SC307, which is only bison bone, and 14SC438, a secondary lithic reduction area.

Of the previously recorded sites in the park, five were in valley floor or first terrace settings, and six were in open upland or ridge settings; of these two extended onto a slope. The difference between the previously recorded sites of this class—typically small non-diagnostic scatters—is that many more sites found during the 2009 KATP survey are on slopes. This is almost certainly a result of paying more attention to slopes than is normally done during a survey because slopes are considered low site probability areas. Again, some of these sites have good potential to contain buried components. A program of auger testing or test excavations would be beneficial.

EURO-AMERICAN 1861–1900 SITES

Components—6* (14SC425, 14SC426, 14SC444*, 14SC446, 14SC457, 14LO407*)

There are few settlement-era components in the survey area. All are the remains of structures: dugouts, a sod house, and a barn. The low density of these sites reflects the relatively sparse occupation of the region at this time. Also, people had fewer possessions then, and the remains of structures, such as dugouts and sod houses, are much less visible than later stone or frame houses. These early structures would not appear on standard maps of the region.

EURO-AMERICAN 1900–1954 SITES

Components = 15* (14SC326, 14SC413, 14SC418, 14SC419, 14SC426, 14SC427, 14SC436, 14SC441, 14SC442, 14SC444*, 14SC446, 14SC448, 14SC454, 14SC457, 14LO407*)

Euro-American occupation of the survey area increased significantly after the turn of the twentieth century, and this is reflected in the number of recorded sites. Six of the sites represent domestic or agrarian structures: concrete foundations, a barn, and, in the case of 14SC326, a series of buildings

that are the remnants of a CCC camp. Six of the sites are dumps; two are either a single artifact (i.e., an ink bottle) or a scatter of recent debris associated with a more robust prehistoric component. Finally, one site is a fish hatchery associated with the park, and another is a rock wall that probably was part of the fish hatchery. Not listed as a site is the Steele homestead, a substantial turn-of-the-century stone house. The remains of the associated barn are recorded as 14SC457. Also unlisted, but more fully described in the historic resources survey of the park (Meives 2010), are park-associated structures, such as an amphitheater, picnic shelters, and monuments.

EURO-AMERICAN, UNKNOWN TIME PERIOD

Components = 3 (14SC324, 14SC447, 14LO301)
Three sites are presumed to be the result of undertakings of Euro-American populations but with no diagnostic traits that indicate when the activities took place. Site 14SC324 is a ditch running south of Barrel Spring. Site 14SC447 is a 1 x 1.5-m rectangular dry-laid stone structure, 30 cm tall, in a south-facing rockshelter overlooking Timber Creek canyon. The purpose of this structure is unknown. Finally, 14LO301 is a room cut into a sandstone bluff; again, its purpose is unknown.

Comments and Recommendations

The 2009 KATP survey not only increased the number of recorded sites in Scott State Park and the surrounding vicinity, but also changed the perspective about certain classes of sites and the location of sites. On the whole before the 2009 KATP survey, historic-period sites were under-recorded in the park. The 2009 survey recorded many dumps that probably were not within the research interest of previous investigators or in some cases had materials that were less than 50 years old when archaeological investigators were in the area. Still, these more recent sites, especially the dumps that do not appear on maps or in other records, need to be documented for researchers interested in mid-twentieth century consumption and discard patterns.

More thorough historical research might help recover the earliest Euro-American occupants' settlements, such as dugouts and sod houses. Again,

these are not likely to be recorded on maps, but their locations might be noted in deeds, diaries, newspaper articles, or other sources. A more thorough investigation of such sources might find other early settlement period habitation sites. Because historical records for early Euro-American sites may be scarce, archeological investigations promise to be productive.

The location of the single Paleoindian site is consistent with many of the sites in the region in that it is in an upland location. With the majority of prehistoric sites located quite close to water, it is instructive to note that the Paleoindian pattern differs. Also possible is that more Paleoindian sites exist in terrace and valley settings but are buried and thus not recorded. Geomorphological investigation of the Ladder Creek valley, focusing on the potential for buried sites, would be useful in determining the probability of finding sites in the valley floor, in terraces, under alluvial fans, and under alluvial-colluvial aprons at the bases of bluffs. These studies could be followed by targeted sub-surface survey techniques, such as auger testing. While a few buried Paleoindian components are known in western Kansas, there are far fewer intact buried Archaic components, and none have had intensive investigations. Scott State Park seems to have high potential for this type of site, so sub-surface testing is in order.

Many sites, both historic and prehistoric, were found on steep slopes. Because the 2009 KATP survey made an effort to survey these areas as intensively as possible, a larger proportion of sites was recorded in an area typically de-emphasized for its lack of potential. Many of the sites found on steep slopes are not particularly informative, either historic-period dumps or very light scatters of non-diagnostic prehistoric material. In contrast, one site, a prehistoric burial, was a significant find. Park managers must not only protect this particular site, but also be aware of the potential for other sites in similar settings on park lands.

Finally, this survey has provided KDWP land managers with better information on site locations, enabling them to plan around existing recorded sites, and will assist archeologists who survey potential impact areas in understanding the potential for sites.

ACKNOWLEDGMENTS

Members of the Kansas Anthropological Association carried out these investigations as part of the 2009 Kansas Archeology Training Program field school. Without their work a survey of this scale would not have been possible. Staff and administration of the Kansas Department of Wildlife and Parks offered access and assistance during a very busy time of year. Scott State Park Manager Rick Stevens was particularly helpful, and his knowledge of the park and its resources greatly improved the effort. Margaret Beck and Sarah Trabert provided useful comments about artifacts from 14SC409 and are continuing research on that site. B. Sunday Eiselt graciously gave permission to cite her unpublished article on Southwestern pottery types, and Dr. Henry Chaney kindly identified the *Olivella* shells from 14SC409. Chris Garst and Mary Conrad, assisted by volunteers during and after the field school, washed and cataloged the collected artifacts.

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APPENDIX 1.

2009 KATP FIELD SCHOOL SITES IN SCOTT STATE PARK

Site Number & Name	Landscape Setting	Component(s)	Site Type	Revisited, Recorded
Previously recorded sites in Scott State Park				
14SC1 (Scott County Pueblo, El Cuartelejo)	Low terrace of Ladder Creek	Late Ceramic, Dismal River, Puebloan	Long-term habitation	Revisited, updates recorded by Deb Aaron & Bob Hoard
14SC5	Low terrace of Ladder Creek	Middle Ceramic, Upper Republican; Late Ceramic	Short-term occupation	Revisited, updates recorded by Alice Kreissler
14SC104	Valley floor, cutbank of Ladder Creek	Late Ceramic, Dismal River	Short-term occupation	Revisited, updates recorded by Sheila Campas & Melanie Naden
14SC105	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Lithic tool & debris scatter	Not revisited
14SC106 (Coffin site)	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Long-term habitation	Not revisited
14SC107	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Lithic reduction workshop	Not revisited
14SC301	Slope, low terrace of Ladder Creek	Late Ceramic, Dismal River	Long-term habitation, burial	Revisited, updates recorded by Bob Hoard
14SC303	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Lithic tool & debris scatter	Not revisited
14SC304	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Long-term habitation, lithic tool & debris scatter	Revisited, updates recorded by Evelyn Reed, Mike Wallen, Nancy Arendt, & Virginia Wulfkuhle
14SC305	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Habitation (?), lithic tool & debris scatter	Not revisited
14SC307	Bench on slope above Ladder Creek	Prehistoric American Indian, Unknown	Single bone (may not be a site)	Not revisited
14SC316 (Hill Village site)	Low terrace of Ladder Creek	Early Archaic, Logan Creek (?); Early Ceramic (?); Middle Ceramic, Upper Republican (?); Late Ceramic, Dismal River	Pottery, lithic tool, & debris scatter	Not revisited, inundated
14SC317	Low terrace of Timber creek just above Ladder Creek	Late Ceramic, Dismal River	Uncertain, buried deposits, not sufficiently investigated	Not revisited
14SC318	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Uncertain, buried deposits, not sufficiently investigated	Not revisited
14SC319	Low terrace of Ladder Creek	Late Ceramic, Dismal River	Isolated find of single buried sherd	Revisited, updates recorded by Evelyn Reed, Mike Wallen, & Nancy Arendt
14SC320	Low terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic reduction workshop (?)	Not revisited
14SC322	Valley floor of Ladder Creek	Prehistoric American Indian, Unknown	Kill/ butchering site (?)	Not revisited

Site Number & Name	Landscape Setting	Component(s)	Site Type	Revisited, Recorded
14SC323	Valley floor of Ladder Creek	Late Archaic; possibly more recent component above Late Archaic level	Lithic tool & debris scatter on surface, also buried components	Revisited, updates recorded by Bob Hoard
14SC324	Valley floor of Ladder Creek	Late Prehistoric; Euro-American (?)	Ditch	Not revisited
14SC325	Valley floor, cutbank of Ladder Creek	Late Ceramic, Dismal River, Kiowa Apache	Long-term habitation (?)	Not revisited
14SC326 (Camp McGinnis, CCC Camp SE-210)	Slope, high terrace of Ladder Creek	Euro-American 1900–1954	Short-term habitation: CCC Camp	Revisited, updates recorded by Lou Madden, Vita Tucker, & Bob Hoard
14SC401	High terrace of Ladder Creek	Not a site	Not a site	Not revisited
14SC402	Ridge top, upland, slope above Epler Canyon	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Revisited, updates recorded by Rose Marie Wallen
14SC403	Low terrace of Ladder Creek	Prehistoric American Indian, Late Ceramic	Pottery & lithic debris scatter	Revisited, updates recorded by Melanie Naden, assisted by Kent Sallee & Dusti Slocum
14SC404	Hill top, upland above Ladder Creek	Prehistoric American Indian, Unknown		Not revisited
14SC406	High terrace of Ladder Creek	Prehistoric American Indian, Unknown		Not revisited
14SC407	High terrace above Timber Canyon & Ladder Creek	Prehistoric American Indian, Archaic or Early Ceramic		Revisited, artifacts collected by Alice Kreissler
14SC408	High terrace above Timber Canyon	Prehistoric American Indian, Unknown		Not revisited
14SC409	Valley floor, low terrace of Ladder Creek	Prehistoric American Indian, Dismal River with Puebloan artifacts	Short-term occupation	Revisited, tested, report in progress
14SC410	Low terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Not revisited
14SC411	Ridge, slope over Timber Creek	Prehistoric American Indian, Unknown	Isolated find	Not revisited
14SC412	Low terrace of Timber Creek tributary	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Not revisited
14SC413	Low terrace of Timber Creek	Prehistoric American Indian, Unknown; Euro-American 1900–1954	Lithic tool & debris scatter	Revisited, updates recorded by Alice Kreissler
14SC414	Ridgetop, upland above Ladder Creek	Prehistoric American Indian, Unknown	Bone & lithic tool scatter	Not revisited
Newly recorded sites in Scott State Park				
14SC417	Steep slope above Timber Canyon	Prehistoric American Indian, Unknown	Burial	Recorded by Roger Ward & Tricia Waggoner
14SC418	Low terrace of Ladder Creek	Euro-American 1900–1954	Dump	Recorded by Rose Marie Wallen, Mike Wallen, Kate Ruoff, & Nancy Arendt

(continued)

Appendix 1. (*continued*)

Site Number & Name	Landscape Setting	Component(s)	Site Type	Revisited, Recorded
14SC419	Upland slope above Ladder Creek	Euro-American 1900–1954	Dump	Recorded by Anita Frank, assisted by Mike Wallen, Kate Ruoff, & Nancy Arendt
14SC420	Steep slope leading to Ladder Creek valley	Prehistoric American Indian, Middle or Late Ceramic	Lithic tool & debris scatter	Recorded by Rose Marie Wallen.
14SC421	Second terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic debris scatter	Recorded by Rose Marie Wallen
14SC422	Slope, small level spot below ridge caprock above short Ladder Creek tributary	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Nancy Ruoff & Alice Kreissler
14SC423	Low terrace of Ladder Creek	Prehistoric American Indian, Middle or Late Ceramic	Pottery, lithic tool & debris scatter	Recorded by Rose Marie Wallen & Mitch Murphy
14SC428	Valley floor of Ladder Creek	Prehistoric American Indian, Unknown	Bone, lithic tool & debris scatter	Recorded by Tricia Waggoner & Nancy Arendt
14SC429	Steep slope leading to Ladder Creek valley	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Rose Marie Wallen
14SC431	Upland, ridge top, slope above Ladder Creek	Prehistoric American Indian, Unknown	Bone, lithic tool & debris scatter	Recorded by Jennifer McGowan
14SC432	Upland, slope, on level area below bluff	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Roger Ward
14SC436	Second terrace, slope above Ladder Creek	Euro-American 1900–1954	Dump	Recorded by Alice Kreissler, assisted by Nancy Arendt, Mike Wallen, & Cleve Mulder
14SC437	Slope between uplands & second terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic debris scatter	Recorded by Alice Kreissler
14SC438	Slope between second & first terraces of Ladder Creek	Prehistoric American Indian, Unknown	Lithic reduction workshop	Recorded by Alice Kreissler
14SC439	Slope between upland & second terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic debris scatter	Recorded by Roger Ward
14SC440	Alluvial fan onto second terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Alice Kreissler
14SC441	Alluvial fan & slope on first terrace above Timber Creek	Euro-American 1900–1954	Habitation	Recorded by Alice Kreissler
14SC442	Alluvial fan, slope on first terrace above Timber Creek	Euro-American 1900–1954	Dump	Recorded by Roger Ward & Don Rowlison
14SC444	Toe of slope above first terrace of Timber Creek	Euro-American 1861–1900, 1900–1954 (?)	Habitation (?)	Recorded by Roger Ward & Don Rowlison

Site Number & Name	Landscape Setting	Component(s)	Site Type	Revisited, Recorded
14SC445	Toe of slope above first terrace of Timber Creek	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Alice Kreissler
14SC446	Slope above first terrace of Timber Creek	Euro-American 1900–1954	Fish hatchery	Recorded by Alice Kreissler & Martin Stein
14SC447	Upland, rockshelter, slope just below ridgetop above Timber Creek	Euro-American, Unknown time period	Rockshelter, storage structure, or burial	Recorded by Roger Ward
14SC448	Valley floor of Ladder Creek	Euro-American 1900–1954	Rock walls	Recorded by Roger Ward
14SC457	Slope, second terrace above Ladder Creek	Euro-American 1861–1900, 1900–1954	Barn	Recorded by Alice Kreissler & Melanie Naden

Previously recorded sites on private land near Scott State Park

14SC306 (Cheyenne Breakout)	Upland, arroyo, slope above Battle Canyon	Historic American Indian 1875–1954; Euro-American 1861–1900	Battle site	Visited, not updated
14LO301	Upland, scarp just below ridgetop & above Hell's Canyon	Euro-American, Unknown time period	Shelter, storage, or habitation	Revisited, updates recorded by Nancy Arendt

Newly recorded sites on private land near Scott State Park

14LO406	Upland, slope between ridgetop & tributary to Hell's Canyon	Prehistoric American Indian, Unknown	Lithic tool & debris scatter	Recorded by Melanie Naden
14LO407	Upland, slope above tributary to Hell's Canyon	Euro-American, 1861–1900, 1900–1954 (?)	Habitation	Recorded by Nancy Arendt & Jerry Finke
14SC425	Upland	Euro-American, 1861–1900	Habitation	Recorded by Vita Tucker, Bob Hoard, Nancy Arendt, Julie Stippich, & Jennifer McGowan
14SC426	Upland ridgetop above Morgan Draw	Euro-American 1861–1900, 1900–1954	Habitation	Recorded by Nancy Arendt
14SC427	Low terrace, valley floor of Ladder Creek	Prehistoric American Indian, Late Ceramic; Euro-American 1900–1954	Short-term occupation	Recorded by Nancy Arendt
14SC433	Upland, hilltop above Ladder Creek	Prehistoric American Indian, Unknown	Short-term occupation, possible bison-butcher location	Recorded by Deb Aaron
14SC434	Valley floor, cutbank, Ladder Creek	Prehistoric American Indian, Middle Archaic, Late Ceramic	Pottery, bone, lithic tool, & debris scatter	Recorded by Deb Aaron
14SC435	Upland arroyo head above Ladder Creek	Prehistoric American Indian, Paleoindian	Isolated find	Recorded by Bob Hoard
14SC450	Low terrace, valley floor of Ladder Creek	Prehistoric American Indian, Archaic, Late Ceramic	Habitation site	Recorded by Jennifer McGowan & Nancy Arendt

(continued)

Appendix 1. (*continued*)

Site Number & Name	Landscape Setting	Component(s)	Site Type	Revisited, Recorded
14SC451	Low terrace, cutbank, valley floor of Ladder Creek	Prehistoric American Indian, Unknown	Bone & debitage scatter	Recorded by Jerry Finke
14SC454	Upland slope, head of arroyo just below ridgetop above Ladder Creek	Euro-American 1900– 1954	Dump	Recorded by Naomi Menefee
14SC455	Low terrace of Ladder Creek	Prehistoric American Indian, Unknown	Lithic debris scatter	Recorded by Melanie Naden & Roger Ward
14SC456	Upland, ridgetop above Ladder Creek	Prehistoric American Indian, Unknown	Lithic debris scatter	Recorded by Nancy Arendt

APPENDIX 2A.

ARTIFACT CATALOG FOR PREHISTORIC SITES

14SC1							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	3	5.1	Bone		No	
0	0	2	0.6	Bone	Burned	No	
0	0	0	0.4	Shell	Mussel?	No	
0	0	1	0.7	Debitage		No	Florence?
0	0	1	26	Debitage		No	Quartzite
0	0	2	2.2	Debitage		No	Chalcedony
0	0	74	51.5	Debitage	Primary, secondary, & tertiary flakes	No	Smoky Hill
0	0	19	20.5	Body sherd	Dismal River, 1 with micaceous temper	No	
0	1	1	7.1	Rim sherd	Dismal River, flared out slightly, flat lip, 6 mm, hard	No	
0	2	1	5.2	Modified flake		No	Smoky Hill
14SC5							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	1.2	Body sherd	Dismal River Gray Ware	No	
0	0	1	0.9	Body sherd	Sand & mica temper, 2 impressed lines	No	
0	0	3	54.1	Tooth	Elk?	No	
0	0	5	8.1	Bone	Large mammal, fragments	No	
0	0	3	1.1	Debitage		No	Trachyte
0	0	1	0.6	Debitage		No	Gray quartzite
0	0	6	3.5	Debitage		No	
0	0	25	17.6	Debitage		No	Smoky Hill
0	0	2	2.3	Debitage		No	Alibates
0	0	1	1.1	Rock		No	
0	0	1	0.4	Historic	Brown bottle sherd	No	Glass
14SC104							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	1	1	8.2	Scraper	End scraper	Yes	Florence
2	1	1	0.3	Projectile point	Arrowhead, midsection	No	Smoky Hill
3	1	1	14.5	Biface	Unfinished, large stepped area	No	Smoky Hill
3	0	1	0.9	Debitage		No	Smoky Hill
4	1	1	3.4	Perforator		No	Smoky Hill
5	0	1	0.5	Body sherd	Buff slip interior & exterior, thin, dark core	No	
5	0	1	16.4	Debitage	Modified, tabular piece, bifacial retouch	No	Smoky Hill
5	0	0	1.9	Bone	Large animal, fragments	No	
5	0	2	44.6	Rock		Yes	
5	0	3	10.2	Debitage	1 gray, 2 brown	No	Quartzite

(continued)

Appendix 2a. (continued)

14SC104							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
5	0	2	5.4	Debitage		No	Trachyte
5	0	5	5.2	Debitage		No	Unknown
5	0	15	44.8	Debitage		No	Smoky Hill
5	0	7	5.8	Body sherd	Smooth, grit & sand temper, gray	No	
14SC301							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	0.6	Projectile point	Triangular, unnotched, tip missing	Yes	Smoky Hill
0	2	1	5.4	Biface	Midsection	No	Smoky Hill
0	3	1	8	Biface	Shatter from cobble	No	
0	4	1	1.3	Spokeshave		No	Smoky Hill
0	5	1	22.9	Biface		Yes	Trachyte
0	6	1	1.7	Rock	Broken cobble	No	
0	0	1	0.9	Unknown		No	
0	0	4	1.9	Rock	With road tar	No	
0	0	1	0.6	Body sherd	Red slipped ware	No	
0	0	1	0.8	Body sherd	Buff slipped exterior	No	
0	0	1	2.7	Body sherd	Black slip on one surface?	No	
0	0	2	0.6	Shell	Mussel	No	
0	0	2	0.7	Unknown		No	
0	0	159	223.9	Debitage		No	Smoky Hill
0	0	6	34.1	Debitage		No	Quartzite
0	0	23	26.1	Debitage		No	Trachyte
0	0	10	4.2	Debitage		No	Chalcedony
0	0	4	3.2	Debitage		No	Alibates
0	0	55	37.1	Debitage		No	
0	0	1	16.4	Debitage	Tabular piece, limited bifacial flaking	No	Smoky Hill
1	0	0	6.3	Bone	Fragment	No	
1	0	3	0.6	Debitage		No	Smoky Hill
1	0	2	19.7	Debitage		No	Smoky Hill
2	1	1	3.7	Modified flake		Yes	Smoky Hill
2	0	1	0.9	Historic	Clear bottle sherd	No	Glass
3	0	7	42.6	Debitage		No	Smoky Hill
3	0	2	1.1	Debitage		No	Chalcedony
3	0	1	2	Debitage		No	
3	1	1	18.2	Scraper	End	Yes	Smoky Hill
14SC304							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	0	1	1.9	Debitage		No	Smoky Hill
2	0	1	2	Bone	Shaft splinter, medium to large animal	No	
3	0	1	9.5	Scraper	End scraper, side utilized, cortex	No	Smoky Hill

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
4	0	1	4.4	Debitage		No	Smoky Hill
5	0	6	10.3	Bone		No	
6	0	1	0.9	Debitage	Cobble cortex	No	Trachyte
6	0	1	2.2	Debitage		No	Unknown
7	0	2	1	Debitage		No	Smoky Hill
9	0	0	16.8	Charcoal		No	
10	0	1	0.5	Unknown		No	
11	0	1	0.9	Rock	Pebble	No	
12	0	1	0.1	Bone		No	
12	0	1	1.8	Rock		No	Local agate
13	0	1	1.2	Debitage		No	Smoky Hill
13	0	1	0.5	Unknown		No	
14	0	1	0.5	Debitage		No	Smoky Hill
15	0	1	2.8	Debitage	Cobble fragment	No	Unknown
16	0	1	0.1	Debitage		No	Unknown
17	0	1	0.1	Debitage		No	Smoky Hill
19	0	3	0.7	Bone	Burned, fragments	No	
20	0	1	0.4	Rock	Pebble	No	
23	0	1	0.1	Charcoal		No	
24	0	1	0.4	Debitage		No	Smoky Hill
25	0	0	30.2	Bone	Large mammal	No	
26	0	1	0.2	Rock		No	Limestone
27	0	1	0.9	Rock	Pebble	No	
28	0	1	0.3	Debitage		No	Smoky Hill
29	0	1	0.9	Debitage		No	Smoky Hill
30	0	1	1.9	Debitage		No	Chalcedony
31	0	1	21.4	Rock		No	

14SC319

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	0	0	0.6	Charcoal		No	

14SC323

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	4.4	Debitage	Cortex	No	Trachyte
0	0	2	1.9	Debitage		No	Unknown
0	0	1	2.8	Debitage		No	Florence
0	0	6	11.2	Debitage	3 with cortex	No	Smoky Hill
0	1	1	22.2	Perforator		Yes	
0	2	1	3.2	Scraper		No	Smoky Hill
0	3	1	11.1	Modified flake		No	Smoky Hill
0	4	1	3.2	Modified flake	Cortex	No	Smoky Hill
0	5	1	1.1	Biface	Lateral fragment	No	
0	0	2	28	Rock		No	
0	0	2	5	Bone	Rib? Large mammal?	No	
0	0	5	9.4	Debitage		No	Smoky Hill
0	0	1	0.6	Debitage		No	Quartzite

(continued)

Appendix 2a. (continued)

14SC323							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	3	1.8	Debitage		No	Smoky Hill
0	6	1	3.3	Modified flake		No	
0	0	3	9.8	Debitage		No	Smoky Hill
0	7	1	5.8	Biface	Midsection	No	Smoky Hill
0	0	2	27.9	Debitage		No	Trachyte
0	0	0	0.1	Shell		No	
0	0	2	3.5	Debitage		No	Quartzite
1	1	1	2.1	Projectile point	Contracting stem, slightly concave base, Archaic	No	Smoky Hill
1	0	1	0.4	Debitage		No	Agate
2	0	1	7.3	Debitage		No	Smoky Hill
3	1	1	21.8	Core	Cortex	No	Smoky Hill
4	0	1	1	Debitage		No	Smoky Hill
5	0	0	2.1	Charcoal		No	
6	0	9	2.2	Rock		No	Caliche
7	0	1	0.5	Debitage		No	Smoky Hill
8	0	1	0.2	Debitage		No	Trachyte
9	0	1	0.3	Debitage		No	Trachyte
10	0	1	0.2	Shell	Mussel	No	
11	0	1	11.6	Debitage	Cortex	No	Smoky Hill
12	0	1	0.9	Debitage	Heated	No	Florence A
13	0	1	5.2	Debitage	Cortex	No	Smoky Hill
14	1	1	1.5	Debitage		No	Smoky Hill
15	0	8	1.6	Bone	Shaft fragment, large mammal	No	
16	0	1	3.9	Debitage	Utilized, cortex	No	Smoky Hill
17	0	1	0.5	Debitage		No	Smoky Hill
18	1	1	0.6	Debitage		No	Smoky Hill
19	1	1	400	Historic	Liquor bottle, 4/5 qt brown cork top, post-1934	Yes	Glass
20	0	1	2.9	Debitage	Cortex	No	Smoky Hill
21	0	1	0.1	Debitage		No	Smoky Hill
22	1	1	9.5	Biface		No	Unknown
23	0	1	15.7	Debitage	Cobble, tested	No	Quartz
23	0	1	6	Debitage	Cortex	No	Smoky Hill
24	0	1	0.1	Debitage		No	Smoky Hill
25	0	1	0.2	Debitage		No	Trachyte
26	1	1	9.6	Debitage		No	Unknown
27	1	1	28.9	Biface		No	Smoky Hill
29	1	1	2.3	Debitage		Yes	Unknown
29	0	1	0.8	Debitage		No	Smoky Hill
30	0	1	1.6	Debitage	Cortex	No	Quartzite
32	0	2	0.1	Charcoal		No	
33	0	3	3.2	Rock		No	
35	1	1	4	Modified flake		No	Smoky Hill
36	1	1	0.4	Historic	Button, 4-hole, white	Yes	Glass

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
36	0	3	0.4	Debitage		No	Smoky Hill
37	0	0	80	Historic	Coal	No	
37	0	1	5	Historic	Nail, wire, 9d common	Yes	
37	0	8	8.1	Rock		No	
37	0	1	0.1	Debitage		No	Quartzite
38	0	0	0.1	Charcoal		No	
40	1	1	20.8	Debitage	Cobble, cortex	No	
40	0	1	1	Debitage		No	Quartzite
41	1	1	1.3	Modified flake		No	Smoky Hill
41	0	3	14.8	Debitage		No	Smoky Hill
41	0	1	0.1	Rock		No	
42	0	2	0.4	Debitage		No	Smoky Hill
42	0	1	0.2	Rock		No	
43	0	1	0.1	Charcoal		No	
44	0	1	0.9	Rock		No	
45	0	1	7.5	Historic	Coal	No	
45	0	2	1.3	Debitage		No	Smoky Hill
45	1	1	1.6	Debitage		No	
45	0	1	0.3	Debitage		No	Alibates
45	0	1	0.5	Rock		No	
46	0	7	0.5	Debitage		No	Smoky Hill
47	0	1	19.4	Debitage	Cortex, spall	No	Smoky Hill
47	0	1	1	Debitage		No	
47	0	2	1.3	Rock		No	
47	0	1	1	Rock		No	Conglomerate
48	0	2	0.5	Debitage		No	Smoky Hill
49	0	2	7.6	Debitage	Cortex	No	Smoky Hill
50	0	5	6.5	Debitage		No	Smoky Hill
50	0	1	0.2	Debitage		No	Trachyte
50	0	1	2.1	Debitage	Cobble fragment	No	Chalcedony
50	0	1	3.5	Debitage	Cobble fragment	No	Quartzite
50	0	1	0.1	Bone	Shaft midsection, small animal	No	
51	0	6	4.8	Debitage		No	Smoky Hill
51	0	1	1.4	Debitage	Modified	No	Smoky Hill
52	0	2	2.8	Debitage		No	Smoky Hill
53	0	3	8	Historic	Coal	No	
53	0	4	3.4	Rock		No	
54	0	1	0.6	Debitage		No	Smoky Hill
55	0	1	0.3	Debitage		No	Chalcedony
56	0	1	0.1	Debitage		No	Smoky Hill
56	0	1	0.3	Rock	Limonite?	No	Limestone
58	0	1	0.2	Debitage		No	Smoky Hill
58	0	1	1.4	Shell	Mussel	No	
59	0	2	1.7	Debitage		No	Smoky Hill
59	0	1	1.1	Rock		No	Quartz

(continued)

Appendix 2a. (continued)

14SC402

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	3	1	6	Biface	Cortex	No	Smoky Hill
0	0	1	0.1	Bone		No	
0	0	1	2.8	Bone	Deer, middle phalange, recent?	Yes	
0	2	1	0.7	Debitage	Rejuvenation flake	No	Smoky Hill
0	0	1	1	Debitage		No	Chalcedony
0	0	1	1.6	Debitage		No	Quartzite
0	0	2	1.7	Debitage		No	
0	0	1	20.8	Debitage	Cobble, tested	No	Unknown
0	0	6	7.4	Debitage		No	Smoky Hill
0	0	10	30	Debitage		No	Trachyte
0	1	1	3.5	Modified flake		No	Quartzite
0	0	1	7.3	Rock	Spall	No	Limestone

14SC403

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	1.9	Debitage		No	
0	0	1	2.9	Debitage		No	Trachyte
0	0	2	9.6	Debitage		No	Smoky Hill
1	0	1	37.2	Historic	Ferrous scrap	No	
1	0	1	1	Historic	Clear bottle fragment	No	Glass
1	0	1	3.1	Historic	Green bottle fragment	No	Glass
1	0	1	0.7	Debitage		No	Smoky Hill
1	0	1	11.7	Tooth	Large herbivore	No	
1	0	6	237.4	Bone	Large mammal	No	
2	0	3	44.1	Historic	3 barbed wire strands	No	
3	0	4	8.7	Historic	Scrap metal	No	Ferrous
4	0	1	6.2	Bone	Large mammal, probably bison	No	
5	0	1	16.1	Historic	Brown bottle neck	No	Glass
5	0	1	5.8	Historic	12 ga shot shell base, "Pointer C.C.CO"	No	
6	0	2	7.8	Body sherd	Micaceous	No	
7	1	1	16.9	Modified flake		No	Smoky Hill
8	0	1	32.7	Bone	Medial phalanx, bison	No	
9	0	1	0.3	Debitage		No	Unknown
10	0	1	1.4	Bone		No	
10	0	1	0.1	Organic	Wood	No	
11	0	1	157.4	Shell	Mussel	Yes	
12	0	1	76.1	Bone	Scapula, proximal, bison	No	
13	0	1	32.2	Shell	Mussel	Yes	
14	0	1	3.1	Debitage		No	Quartzite
15	0	1	7.2	Shell	Mussel	No	
16	0	1	15.1	Bone	Large mammal?	No	
17	0	1	8.1	Rock		No	
18	0	4	18.3	Shell	Mussel	No	

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
19	0	1	1.8	Shell	Mussel	No	
20	0	1	10.7	Shell	Mussel	No	
14SC407							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	0.7	Debitage		No	Trachyte
0	0	2	0.7	Debitage		No	Smoky Hill
0	1	1	60.8	Core		No	Smoky Hill
14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	3	0.1	Charcoal		No	
0	0	1	0.1	Debitage		No	Alibates
0	0	3	0.1	Bone		No	
0	0	1	0.2	Debitage		No	Chalcedony
0	1	1	2.1	Debitage	End, white	Yes	Unknown
0	0	1	8.8	Debitage		No	Quartzite
0	0	9	27.3	Debitage		No	
0	0	1	7.1	Rock		No	Quartz
0	2	1	2.6	Debitage		No	Trachyte
0	0	1	0.4	Debitage		No	Trachyte
0	0	1	0.7	Debitage		No	Unknown
0	0	1	3.2	Body sherd	Dismal River Gray Ware, carbonaceous	No	
0	0	95	132.3	Debitage		No	Smoky Hill
0	0	1	0.1	Debitage	White	No	
0	3	1	3.1	Modified flake		No	Smoky Hill
0	4	1	1.7	Modified flake		No	Smoky Hill
0	5	1	3.2	Debitage		No	Smoky Hill
0	6	1	2.6	Debitage		No	Smoky Hill
0	7	1	4.6	Spokeshave		No	Smoky Hill
0	8	1	4.9	Modified flake		No	Smoky Hill
0	0	5	7.1	Body sherd	Dismal River Gray Ware, carbonaceous	No	
0	0	2	1.6	Body sherd	Dismal River Gray Ware	No	
0	0	3	7.3	Historic	Coal	No	
0	0	1	0.6	Historic	Tableware, white	No	Glazed
0	0	12	4.6	Debitage		No	
0	0	10	32.2	Debitage		No	Smoky Hill
0	9	1	2.1	Biface	Base	No	Smoky Hill
0	10	1	4.1	Biface	Heated	No	Florence A
0	11	1	22.4	Debitage	Core rejuvenation flake	No	Smoky Hill
0	12	1	23.1	Rock	Tabular, engraved lines	No	Smoky Hill
1	1	1	1.3	Modified flake		No	Smoky Hill
2	1	1	3.7	Rim sherd	Dismal River Gray Ware	No	
2	2	1	0.8	Rim sherd	Dismal River Gray Ware	No	
2	0	1	0.8	Body sherd	Dismal River Gray Ware	No	
2	0	1	2.9	Body sherd	Red slipped ware	No	
2	0	2	3.3	Debitage		No	Smoky Hill

(continued)

Appendix 2a. (continued)

14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
2	0	1	0.1	Debitage		No	
2	0	1	0.2	Bone	Fragment	No	
3	0	1	0.1	Historic	Coal	No	
3	0	3	5.5	Body sherd	Dismal River Gray Ware	No	
3	0	1	0.8	Body sherd	Dismal River Gray Ware	No	
3	0	5	5.3	Debitage		No	Smoky Hill
4	0	1	2	Body sherd	Dismal River Gray Ware	No	
4	0	1	1.8	Body sherd	Red slipped ware	No	
4	0	1	1.2	Debitage		No	Trachyte
4	0	1	0.5	Debitage		No	Smoky Hill
4	0	1	0.7	Bone	Fragments, large mammal	No	
5	0	2	1.1	Body sherd	Dismal River Gray Ware	No	
5	0	2	0.8	Debitage		No	Smoky Hill
6	0	3	0.1	Debitage		No	Smoky Hill
6	0	3	1.6	Debitage		No	
6	0	1	0.5	Debitage		No	Trachyte
6	0	0	0.4	Bone		No	
6	0	0	0.1	Bone	Burned	No	
6	0	1	1.2	Rock		No	Limestone
6	0	2	1.2	Body sherd	Dismal River Gray Ware	No	
6	0	3	2.1	Body sherd	Dismal River Gray Ware	No	
6	0	1	0.4	Body sherd	Cordmarked, 3.3 mm	No	
6	0	8	13.1	Body sherd	Red slipped ware	No	
6	1	1	3	Rim sherd	Red slipped ware, flat lip	No	
6	2	1	0.6	Rim sherd	Red slipped ware, flat lip	No	
6	3	1	1.1	Modified flake		No	Quartzite
6	4	1	3.1	Modified flake		No	Smoky Hill
7	0	1	0.2	Debitage		No	Unknown
8	0	1	0.6	Debitage		No	Chalcedony
8	0	2	0.3	Debitage		No	
8	0	2	0.3	Debitage		No	Smoky Hill
9	0	1	2	Debitage		No	Quartzite
9	0	0	7.6	Bone	Fragments, large mammal	No	
9	0	11	14.7	Debitage		No	Smoky Hill
9	0	1	0.1	Debitage		No	Permian
9	0	11	19.9	Body sherd	Dismal River Gray Ware	No	
9	0	1	1.2	Debitage		No	Trachyte
10	0	3	2.1	Debitage		No	Smoky Hill
10	0	4	3.9	Rock		No	Caliche
10	0	0	0.3	Bone		No	
10	0	2	1.6	Body sherd	Dismal River Gray Ware	No	
10	0	1	0.4	Rock		No	
10	0	2	2.8	Body sherd	Red slipped ware	No	
11	0	1	0.5	Body sherd	Dismal River Gray Ware, fabric impressed	No	
11	0	1	0.5	Body sherd	Dismal River Gray Ware	No	

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
11	0	0	1.2	Bone		No	
11	0	1	0.1	Debitage		No	
11	0	3	0.9	Debitage		No	Smoky Hill
11	1	1	2	Rim sherd	Dismal River Gray Ware, fabric impressed	No	
12	1	1	9.6	Rim sherd	Dismal River Gray Ware, outflaring, <4 mm	No	
13	1	1	20.9	Debitage	Primary flake, failed attempts to remove cortex	Yes	Quartzite, gray
14	0	4	14.8	Body sherd	Micaceous temper, 6 mm	No	
15	0	24	18.4	Bone		No	
15	0	0	0.1	Charcoal		No	
15	0	2	1	Rock		No	
15	0	21	20.6	Debitage	Cortex on 6	No	Smoky Hill
15	0	1	4.1	Debitage		No	
15	0	1	0.3	Debitage		No	Quartzite
15	0	1	0.2	Burned earth		No	
15	0	6	12.3	Body sherd	Dismal River Gray Ware, 1 has carbon deposits	No	
15	0	1	1.1	Rim	Dismal River Gray Ware	Yes	
15	1	1	33.5	Core	Cobble, tested	No	
15	2	1	1.5	Rim sherd	Dismal River Gray Ware, round lip	No	
16	1	1	8.3	Modified flake		No	
16	0	1	5.5	Debitage		No	Smoky Hill
17	0	1	48	Bone	Rib, bison	No	
18	0	0	69.6	Bone	Large mammal	No	
18	0	0	1.9	Bone	Burned	No	
18	0	0	1.7	Charcoal		No	
18	0	0	3.2	Historic	Coal	No	
18	0	5	1.6	Rock		No	Caliche
18	0	2	42.5	Rock		No	
18	0	23	17.4	Body sherd	Dismal River Gray Ware	No	
18	0	5	1.5	Body sherd	Red slipped ware	No	
18	0	7	8	Debitage		No	
18	0	2	0.2	Debitage		No	Trachyte
18	0	33	22.6	Debitage		No	Smoky Hill
18	1	1	7.5	Scraper	End	No	Smoky Hill
18	2	1	11.6	Modified flake		No	Smoky Hill
19	1	1	0.3	Bead		Yes	Bone
20	0	12	1.3	Bone		No	
20	0	1	0.1	Bone	Shaft midsection, small animal	Yes	
21	1	1	1.3	Rim sherd	Dismal River Gray Ware, rounded lip	No	
22	0	1	3.3	Body sherd	Dismal River Gray Ware	No	
22	1	1	0.9	Rim sherd		No	
22	2	1	1.1	Rim sherd		No	
23	0	1	1.4	Body sherd	Red slipped ware	No	

(continued)

Appendix 2a. (continued)

14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
24	1	1	14.7	Scraper	Side-end	Yes	Smoky Hill
25	1	1	11.3	Scraper	End	Yes	Smoky Hill
26	0	1	0.7	Bone		No	
26	0	0	0.2	Charcoal		No	
26	0	4	0.1	Debitage		No	Smoky Hill
26	0	1	0.1	Debitage		No	
27	0	3	0.5	Debitage		No	Smoky Hill
27	0	4	0.9	Bone		No	
28	0	206	118.7	Bone	Large animal	No	
28	0	1	0.3	Bone	Burned	No	
28	0	3	3	Rock		No	Limestone
28	0	2	4.2	Debitage		No	Quartzite
28	0	4	1.9	Debitage		No	Smoky Hill
28	0	1	0.3	Debitage		No	Chalcedony
28	0	1	0.6	Rock		No	
28	0	1	0.2	Body sherd	Dismal River Gray Ware	No	
28	0	1	0.8	Body sherd	Red slipped ware	No	
28	0	1	1.1	Body sherd	Dismal River Gray Ware	No	
28	1	1	4.2	Historic	Gunflint, French, unused	Yes	
28	2	1	9.1	Scraper	End	Yes	Smoky Hill
28	0	1	0.1	Shell	Gastropod	Yes	
28	0	1	0.1	Shell	Mussel	No	
28	0	39	13.9	Bone		No	
28	0	1	2	Rock		No	
28	0	1	0.3	Debitage		No	
28	0	0	0.1	Charcoal		No	
28	0	1	0.2	Debitage	Heated, burned	No	Smoky Hill
29	0	2	0.2	Debitage		No	Smoky Hill
30	0	67	23.6	Bone		No	
30	1	1	6.7	Utilized flake	Lateral edge used	Yes	Smoky Hill
30	2	1	14.9	Utilized flake	Lateral edge used	No	Smoky Hill
30	3	1	6.5	Modified flake		No	Trachyte
30	0	46	24.7	Debitage		No	Smoky Hill
30	0	13	15.7	Body sherd	Dismal River Gray Ware	No	Smoky Hill
30	0	4	0.9	Body sherd	Dismal River Gray Ware	No	
30	0	7	1.9	Pigment	Red semisoft pigment	No	
31	1	1	3.4	Drill	Heated	No	Permian
32	0	1	0.8	Body sherd	Dismal River Gray Ware	No	
32	0	1	0.1	Debitage		No	Smoky Hill
32	0	1	2.6	Bone	Large mammal	No	
33	0	3	0.7	Bone		No	
33	0	3	1.3	Body sherd	Dismal River Gray Ware	No	
33	0	1	1	Body sherd	Micaceous	No	
33	0	10	2.4	Debitage		No	Smoky Hill
33	0	1	0.2	Debitage		No	Chalcedony

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
33	0	1	0.6	Debitage		No	
33	0	1	1.8	Historic	.22 cal short	No	Lead
34	0	1	4.6	Body sherd	Red slipped ware	No	
35	1	1	0.9	Rim sherd	Dismal River Gray Ware	No	
36	1	1	0.8	Rim sherd	Dismal River Gray Ware	No	
37	0	1	1.9	Body sherd	Red slipped ware	No	
38	1	1	5.1	Rim sherd	Red slipped ware	No	
39	0	1	2.9	Body sherd	Red slipped ware	No	
40	0	1	2.1	Body sherd	Red slipped ware	No	
41	0	1	2.3	Body sherd	Red slipped ware	No	
42	0	1	3.7	Body sherd	Red slipped ware	No	
43	0	1	2.4	Body sherd	Red slipped ware	No	
44	0	1	3.8	Body sherd	Red slipped ware	No	
45	0	0	0.1	Charcoal		No	
45	0	0	16.4	Bone		No	
45	0	0	1.9	Bone	Carapace, turtle	No	
45	0	2	0.8	Rock		No	
45	0	2	1.5	Body sherd	Red slipped ware	No	
45	0	13	20.4	Body sherd	Dismal River Gray Ware	No	
45	0	8	27.7	Debitage		No	Smoky Hill
45	1	1	1.5	Rim sherd	Dismal River Gray Ware, smooth lip	No	
45	2	1	0.4	Rim sherd	Dismal River Gray Ware, smooth lip	No	
45	0	2	0.8	Rock	Pebbles	No	
45	3	1	9.4	Scraper	End	Yes	Smoky Hill
45	4	15	26.8	Rock	Cobble, heat-shattered	No	
46	0	86	103.8	Bone		No	
46	0	1	2.9	Rock	Burned	No	Limestone
46	0	1	0.4	Debitage		No	Smoky Hill
46	0	11	20.1	Body sherd	Red slipped ware	No	
46	0	1	2.2	Body sherd	Red slipped ware	No	
46	0	1	8.9	Body sherd	Red slipped ware	No	
46	1	1	6.6	Rim sherd	Dismal River Gray Ware, carbon deposits, rounded lip	No	
46	2	1	4.1	Rim sherd	Red slipped ware	No	
46	3	1	8.6	Rim sherd	Red slipped ware	No	
46	4	1	17.7	Scraper	End	No	Smoky Hill
46	5	1	1.7	Rim sherd	Red slipped ware	No	
46	0	1	1.4	Debitage		No	Quartzite
47	0	0	12.4	Bone		No	
47	0	1	0.1	Charcoal		No	
47	0	1	2.8	Rock		No	
47	0	5	5.9	Body sherd	Dismal River Gray Ware	No	
47	0	1	0.2	Debitage		No	
47	0	1	0.4	Debitage		No	Trachyte
47	0	7	7.6	Debitage		No	Smoky Hill
47	0	1	0.6	Projectile point	Arrow, side-notched, concave base	No	Smoky Hill

(continued)

Appendix 2a. (continued)

14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
48	0	1	1.5	Body sherd	Dismal River Gray Ware	No	
48	0	1	0.1	Hematite		No	
49	0	4	3.3	Debitage		No	Smoky Hill
50	1	1	6	Ground stone tool	Possible, some faceted surfaces	No	Sandstone
50	2	1	4.8	Ground stone tool	Possible, some faceted surfaces	No	Sandstone
51	0	1	0.1	Debitage		No	Smoky Hill
51	0	2	2	Bone		No	
51	0	0	44	Bone		No	
51	0	7	2.2	Bone	Burned	No	
51	0	8	1.3	Burned earth		No	
51	0	9	8.7	Body sherd	Dismal River Gray Ware	No	
51	0	1	2.3	Body sherd	Red slipped ware	No	
51	0	2	0.1	Charcoal		No	
51	1	1	3.5	Modified flake		No	Smoky Hill
51	0	1	0.1	Organic	Seed	No	
51	0	5	4.5	Rock		No	
51	0	1	0.5	Debitage		No	Chalcedony
51	0	1	0.6	Debitage		No	Alibates
51	0	2	1.4	Debitage		No	
51	0	8	3	Debitage		No	Smoky Hill
52	0	5	2.3	Bone		No	
52	0	1	0.4	Body sherd	Dismal River Gray Ware	No	
52	0	1	0.1	Bone	Carapace, turtle, burned	No	
52	0	3	3	Debitage		No	Smoky Hill
52	0	1	1	Debitage		No	
53	0	202	74.9	Bone		No	
53	0	1	2.5	Bone	Phalange, deer	Yes	
53	0	3	0.1	Charcoal		No	
53	0	5	2.8	Body sherd	Dismal River Gray Ware	No	
53	0	3	2.1	Body sherd	Dismal River Gray Ware	No	
53	0	1	0.1	Rock		No	Limestone
53	0	2	1.5	Rock		No	Sandstone
53	0	1	0.6	Debitage		No	Trachyte
53	0	0	0.2	Debitage		No	Chalcedony
53	0	19	35.2	Debitage		No	Smoky Hill
53	0	1	0.1	Bone	Burned	No	Smoky Hill
53	2	1	63.7	Mano		No	Granite
54	1	1	5.6	Scraper	Side scraper, refits with 55-1	No	Smoky Hill
55	1	1	1.8	Scraper	Side scraper, refits with 54-1	No	Smoky Hill
56	1	1	10	Scraper	Side scraper	Yes	Smoky Hill
57	1	1	0.3	Bead		Yes	<i>Olivella dama</i> shell

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
58	1	1	4.1	Rim sherd	Red slipped ware, refits with 58-2, flat lip	No	
58	2	1	0.9	Rim sherd	Red slipped ware, refits with 58-1, flat lip	No	
59	1	1	3.9	Rim sherd	Dismal River Gray Ware, carbonized material on exterior	No	
60	0	2	3.3	Body sherd	Dismal River Gray Ware	No	
60	0	1	0.1	Bone	Burned	No	
60	0	1	0.1	Bone		No	
60	0	1	0.1	Debitage		No	Chalcedony
60	0	10	1.3	Debitage		No	Smoky Hill
60	0	1	0.4	Body sherd	Dismal River Gray Ware	No	
60	0	2	0.1	Shell	Mussel	No	
61	0	17	21.7	Body sherd	Dismal River Gray Ware	No	
61	0	1	0.1	Hematite		No	
61	0	7	3.7	Debitage		No	Smoky Hill
61	0	0	9.9	Bone	Long bone fragment	No	
62	0	0	11.2	Bone		No	
62	0	1	0.3	Bone	Burned	No	
62	0	31	7.2	Debitage		No	Smoky Hill
62	0	2	0.4	Rock		No	Chalcedony
62	0	6	0.1	Hematite		No	
62	0	2	0.1	Debitage		No	
62	0	3	0.1	Shell	Mussel	No	
62	0	5	6	Body sherd	Red slipped ware	No	
62	0	2	2.4	Body sherd	Dismal River Gray Ware	No	
62	0	3	0.5	Rock		No	Caliche
62	1	1	1.2	Debitage		Yes	Smoky Hill
62	2	1	0.3	Bead		Yes	<i>Olivella dama</i> shell
63	0	3	4.2	Body sherd	Dismal River Gray Ware	No	
63	0	1	0.1	Body sherd	Red slipped ware	No	
63	0	3	0.5	Bone		No	
63	0	2	0.3	Debitage		No	Smoky Hill
64	0	0	47.1	Bone	Long bone fragments, large mammal	No	
64	0	3	0.1	Debitage		No	
65	0	1	0.4	Debitage		No	Alibates
65	0	0	4.6	Bone		No	
65	0	1	0.1	Shell	Mussel	No	
65	0	8	0.6	Hematite		No	
65	0	1	0.2	Debitage		No	Chalcedony
65	0	1	0.8	Rock		No	
65	0	16	8	Debitage		No	
65	0	1	0.3	Debitage		No	
65	0	1	2	Body sherd	Red slipped ware	No	
65	0	1	0.1	Rock		No	Caliche

(continued)

Appendix 2a. (continued)

14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
65	1	1	0.8	Pipe	Pipe bowl fragment, black	No	
65	0	2	1.5	Body sherd	From pipe?, black	No	
65	0	1	0.4	Limonite		No	
65	2	1	12.9	Modified flake		No	Smoky Hill
65	3	1	1.2	Debitage		No	Smoky Hill
66	1	1	1	Rim sherd	Rounded lip	No	
67	1	1	6.3	Pipe	Stem	No	Ceramic
68	1	1	5.5	Modified flake	Unusual, like a split dowel with worked edges	No	Alibates
69	1	1	2.1	Modified flake		No	Smoky Hill
69	2	1	4.6	Modified flake	Scraper?	No	Smoky Hill
69	3	1	3.3	Scraper	End	Yes	Smoky Hill
70	1	1	4.6	Rim sherd	Dismal River Gray Ware	No	
71	1	1	7	Scraper	Side-end	No	Smoky Hill
72	0	1	3.7	Body sherd	Red slipped ware	No	
73	0	1	0.4	Body sherd	Dismal River Gray Ware	No	
73	0	15	4.6	Debitage		No	Smoky Hill
74	0	5	0.5	Debitage		No	Smoky Hill
74	1	1	5.8	Biface	Thick fragment	No	Smoky Hill
74	2	1	1.6	Biface	Lateral fragment, heated	No	Smoky Hill
74	0	1	0.8	Body sherd	Dismal River Gray Ware, micaceous temper	No	
74	0	0	0.6	Bone	Burned	No	
75	0	1	0.4	Historic	Coal	No	
75	0	21	4.9	Debitage		No	Smoky Hill
75	0	1	1	Debitage		No	Silicified sandstone
75	0	1	7.6	Debitage	Cobble, tested	No	
76	0	0	10.6	Bone		No	
76	0	4	2	Debitage		No	Smoky Hill
76	0	1	4.3	Body sherd	Red slipped ware	No	
77	0	2	1.9	Body sherd	Dismal River Gray Ware	No	
78	0	0	5.3	Bone		No	
78	0	5	3.4	Debitage		No	Smoky Hill
78	0	2	1.2	Debitage		No	
78	0	1	1.5	Body sherd	Dismal River Gray Ware	No	
78	0	4	7.7	Body sherd	Red slipped ware	No	
79	0	1	0.1	Debitage		No	Smoky Hill
79	0	2	0.6	Debitage		No	
80	0	1	0.2	Debitage		No	Smoky Hill
80	0	1	2.1	Debitage		No	Quartzite
80	0	3	1.1	Debitage		No	
81	0	6	3.9	Bone		No	
81	0	2	0.8	Debitage		No	Smoky Hill
82	1	1	2.5	Debitage	Modified unifacially	No	Smoky Hill
82	0	3	0.2	Debitage		No	Smoky Hill

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
82	0	2	2.2	Debitage		No	Quartzite, red
82	0	1	1	Debitage		No	Unknown, metamorphic?
82	0	2	2.5	Body sherd	Dismal River Gray Ware	No	
82	0	0	0.9	Bone		No	
83	0	1	0.4	Body sherd	Dismal River Gray Ware	No	
83	0	1	0.5	Debitage		No	Smoky Hill
84	0	0	8.3	Bone		No	
84	0	0	3.3	Rock		No	
84	0	8	18.1	Rock		No	
84	0	2	1.5	Body sherd	Red slipped ware	No	
84	0	31	34.1	Body sherd	Dismal River Gray Ware	No	
84	1	1	2.8	Rim sherd	Dismal River Gray Ware? Brushed? Vessicular-sintered?	No	
84	2	1	0.4	Rim sherd	Dismal River Gray Ware, smooth lip, cordmarked interior & exterior, incised line	No	
84	3	1	0.6	Rim sherd	Dismal River Gray Ware	No	
84	4	1	1.1	Rim sherd	Dismal River Gray Ware	No	
84	5	1	0.6	Rim sherd	Dismal River Gray Ware	No	
84	6	1	0.2	Rim sherd	Dismal River Gray Ware	No	
84	0	1	0.3	Rock		No	Sandstone
84	0	15	11.9	Debitage		No	Smoky Hill
84	0	14	7.4	Debitage		No	
84	0	2	0.2	Shell	Mussel fragments	No	
85	1	1	2.7	Rim sherd	Dismal River Gray Ware	No	
86	0	0	2.4	Bone		No	
86	0	1	0.4	Debitage		No	Alibates
86	0	5	9.6	Debitage		No	
86	0	12	4.8	Debitage		No	Smoky Hill
86	0	2	5.1	Rock		No	
86	0	3	6.6	Body sherd	Dismal River Gray Ware	No	
86	1	1	1.1	Rim sherd	Dismal River Gray Ware	No	
86	0	1	0.3	Rock		No	Sandstone
87	0	3	1.7	Debitage		No	Smoky Hill
87	0	1	0.1	Debitage		No	
88	0	5	29.3	Rock		No	
89	1	1	3.2	Scraper		No	Smoky Hill
90	0	2	4.8	Body sherd	Red slipped ware	No	
90	1	1	2	Body sherd	Red slipped ware, refits 2-6	No	
90	2	1	27.3	Body sherd	Red slipped ware, refits 1, 3-6	No	
90	3	1	7.3	Body sherd	Red slipped ware refits 1, 2, 4-6	No	
90	4	1	9.5	Body sherd	Red slipped ware, refits 1-3, 5-6	No	
90	5	1	5.1	Body sherd	Red slipped ware, refits 1-4, 6	No	

(continued)

Appendix 2a. (continued)

14SC409							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
90	6	1	4.3	Body sherd	Red slipped ware, refits 1–5	No	Smoky Hill
91	0	1	51.1	Bone	Long bone, large mammal	No	
92	1	1	1.7	Rim sherd		No	
93	1	1	6.3	Scraper		No	
94	0	1	3.9	Body sherd	Red slipped ware	No	
94	0	1	2.1	Body sherd	Red slipped ware	No	
95	0	1	44.9	Bone	Long bone, large mammal	No	
96	0	1	13.2	Body sherd	Micaceous, residue on outside	No	
97	0	2	20.8	Bone	Rib, large mammal	No	Smoky Hill
98	0	3	8.3	Body sherd	Red slipped ware	No	
99	0	1	0.3	Bone		No	
99	0	1	0.5	Rock		No	
99	0	1	0.1	Debitage		No	
100	0	1	0.4	Body sherd		No	
100	0	1	0.1	Debitage		No	
100	0	1	0.3	Bone		No	
101	0	1	0.7	Bone	Burned	No	Smoky Hill
101	0	2	0.1	Rock		No	
101	0	2	0.1	Debitage		No	
101	0	8	6.2	Debitage		No	
102	0	2	0.4	Burned earth		No	
102	0	0	15.2	Bone		No	
102	0	0	1.5	Bone	Burned	No	
102	0	1	0.5	Rock		No	
102	0	1	0.3	Debitage		No	Smoky Hill
102	0	2	2.9	Debitage	Refit	No	
102	0	1	0.6	Debitage		No	Smoky Hill
102	0	0	0.5	Tooth	Small mammal	No	Smoky Hill
103	0	1	10.1	Debitage		No	
104	0	2	1.1	Body sherd		No	Smoky Hill
105	0	1	17.8	Bone	Long bone, medium to large mammal	No	
106	0	0	92.2	Bone		No	
106	0	0	3.8	Bone	Burned	No	
106	0	0	0.1	Charcoal		No	
106	0	4	1.5	Rock		No	
106	0	1	0.1	Hematite		No	
106	0	1	0.2	Burned earth		No	
106	0	5	4.4	Debitage		No	Smoky Hill
106	0	6	4.2	Body sherd	Dismal River Gray Ware	No	
106	0	2	2.5	Body sherd	Red slipped ware	No	
106	1	1	0.9	Rim sherd	Pink clay body, shale clay? sand temper, smooth lip	No	
108	0	0	3.3	Bone	Burned	No	Smoky Hill
108	0	0	0.4	Bone		No	

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
108	0	2	0.7	Debitage		No	
108	0	5	2.8	Debitage		No	Smoky Hill
108	0	11	3.5	Body sherd	Dismal River Gray Ware	No	
109	0	0	3.7	Bone		No	
109	0	2	2.5	Body sherd	Dismal River Gray Ware	No	
110	0	1	24.9	Bone	Long bone, large mammal	No	
110	0	1	0.2	Debitage		No	
111	0	3	1.5	Bone		No	

14SC413

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	0	6	9.1	Debitage		No	Smoky Hill
1	1	1	50.9	Historic	Bottle: "SON, /EES/PTTERU, /DERBY/, ARNOLD, /LONDON."	No	Stoneware
1	2	1	3.3	Scraper	End	Yes	Smoky Hill
1	0	2	2.3	Debitage		No	Smoky Hill
2	1	1	40.2	Scraper		Yes	Trachyte
2	0	1	0.3	Debitage		No	Smoky Hill

14SC420

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	2	10.2	Debitage		No	Smoky Hill
0	0	1	1.7	Modified Flake		No	Smoky Hill
0	0	1	0.5	Projectile Point	Triangular, unnotched, tip missing	No	Smoky Hill

14SC421

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	3	14.5	Debitage		No	Smoky Hill
0	0	1	0.3	Debitage		No	Alibates
0	1	2	1.8	Debitage	Tertiary flake	No	Smoky Hill
0	2	1	4.4	Modified Flake		No	Smoky Hill

14SC422

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	18.9	Debitage		No	Quartzite
0	0	4	16.5	Debitage		No	Smoky Hill
0	0	1	0.5	Debitage		No	Chalcedony
0	0	1	0.2	Debitage		No	
0	1	1	66.8	Chopper		No	Smoky Hill
0	2	1	7.1	Modified flake		No	Smoky Hill
0	3	1	7.7	Modified flake		No	Smoky Hill
0	4	1	15.2	Modified Flake	From a cobble	Yes	Unknown
0	5	1	8.6	Modified Flake	End & side	Yes	Trachyte
1	1	1	10.1	Biface	On a flake from cobble	Yes	Smoky Hill?
2	1	1	16.3	Modified flake	From cobble	No	
3	1	1	6.7	Modified flake		Yes	Smoky Hill

14SC423

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	1.4	Bone	Carapace, turtle	No	
0	0	1	5.2	Bone		No	

(continued)

Appendix 2a. (continued)

14SC423							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	2	0.3	Rock		No	
0	0	1	0.3	Historic	Asphalt	No	
0	0	1	2.4	Burned earth		No	
0	1	1	35.1	Scraper	End-side	Yes	Smoky Hill
0	0	2	207.5	Rock		No	
0	0	6	15.5	Debitage		No	
0	0	3	2.8	Debitage		No	Trachyte
0	0	1	0.4	Debitage		No	Florence
0	0	1	0.6	Debitage		No	Chalcedony
0	0	14	22.4	Debitage		No	Smoky Hill
14SC427							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	351.7	Historic	Horseshoe	Yes	Ferrous
0	0	1	22.9	Bone	Left metacarpal, bison? deer?	No	
0	0	1	4.2	Tooth	Herbivore, bison? deer?	No	
0	0	1	36.9	Debitage	Cobble, tested, utilized	No	
0	0	3	3.9	Body sherd	Dismal River Gray Ware	No	
0	0	1	1.3	Debitage		No	Trachyte
0	0	5	2.5	Debitage		No	
0	0	22	56.7	Debitage		No	Smoky Hill
0	0	1	3.4	Debitage		No	Chalcedony
0	2	1	84.4	Chopper		No	Smoky Hill
0	3	1	61	Core		No	Smoky Hill
0	4	1	28.1	Biface		No	Smoky Hill
0	5	1	4.8	Modified flake		No	Alibates
0	6	1	1.7	Modified flake		No	
0	7	1	10.8	Modified flake		No	Florence
0	8	1	4.3	Debitage	Biface thinning flake	No	Trachyte
0	9	1	22.3	Modified flake		No	Trachyte
0	10	1	7.6	Modified flake		No	Smoky Hill
0	11	1	15.7	Debitage		No	Smoky Hill
0	12	1	0.8	Modified flake		No	Smoky Hill
0	13	1	9.4	Scraper	End-side	Yes	Smoky Hill
1	1	1	16.6	Scraper	End-side	Yes	Alibates
14SC428							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	0.4	Debitage		No	Smoky Hill
0	0	1	4.1	Debitage	Modified/utilized	No	Smoky Hill
0	1	1	6.6	Debitage	Modified/utilized	No	Smoky Hill
0	0	1	0.1	Bone	Burned	No	
14SC429							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	10.8	Core		No	
0	0	1	20.6	Debitage		No	Quartzite
0	0	1	0.7	Debitage		No	Trachyte

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	3	19.6	Debitage		No	Smoky Hill
0	0	1	1.2	Historic	Road tar?	No	
14SC431							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	1	1.5	Rock		No	Limestone
0	0	2	1.6	Debitage		No	
0	0	4	18.1	Debitage		No	Quartzite
0	0	2	2.3	Debitage		No	Trachyte
0	0	1	2.9	Debitage		No	Florence
0	0	13	26.8	Debitage		No	Smoky Hill
0	0	1	6.8	Scraper	Cobble fragment	No	Chalcedony
14SC432							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	24.8	Scraper		Yes	Smoky Hill
0	0	1	0.5	Debitage		No	Opalite
0	0	1	7.3	Rock		No	
0	0	2	16.3	Debitage		No	Smoky Hill
0	0	2	4.7	Debitage		No	Trachyte
14SC433							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	2	10.7	Modified Flake		No	Smoky Hill
0	0	1	0.1	Bone		No	
0	0	9	2.3	Tooth	Fragments, ungulate	No	
0	0	11	6.7	Debitage		No	
0	0	4	9.6	Debitage		No	Smoky Hill
0	0	4	2.9	Debitage		No	Alibates
0	0	3	6.7	Debitage		No	Florence?
0	0	8	40.2	Debitage		No	Quartzite
0	0	1	1.6	Debitage		No	Trachyte
0	1	1	15.9	Modified flake		Yes	Trachyte
0	2	1	11.7	Modified flake	Side & end, cobble spall	No	
0	3	1	4.9	Scraper	End-side	Yes	Smoky Hill
0	4	1	35.8	Scraper	End-side	Yes	Smoky Hill
0	5	1	9.7	Debitage		No	
0	6	1	4.9	Modified flake		No	Smoky Hill
0	7	1	3.2	Modified flake		No	
0	8	1	3.9	Biface		No	
0	9	1	1.9	Modified flake		No	Smoky Hill
14SC436							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	0	1	0.8	Body sherd	Thin, cordmarked, but Dismal River Gray Ware?	No	
1	0	1	1.2	Rock		No	
2	1	1	73	Core	From cobble	No	
2	2	1	7.8	Debitage		No	Smoky Hill
2	0	6	2.4	Debitage		No	Smoky Hill
2	0	2	0.7	Debitage		No	Florence

(continued)

Appendix 2a. (continued)

14SC436							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
2	0	2	0.4	Debitage		No	
2	0	1	1	Historic	Bottle cap rim, white	No	Plastic
2	0	1	0.6	Bone		No	
3	0	2	2.6	Body sherd		No	
3	0	5	1.9	Debitage		No	Smoky Hill
3	0	3	37.7	Bone	Long bone, medium to large mammal	No	
4	1	1	4.2	Rim sherd	Sand temper, tan, incurved, round lip, Dismal River Gray Ware?	No	
14SC437							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	2.2	Projectile point	Tip, Paleoindian, fine parallel flaking, refits with 1-2	No	Red & brown unknown
0	1	2	4.5	Projectile point	Midsection, Paleoindian, fine parallel flaking, refits with 1-1	No	Red & brown unknown
14SC438							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	7	57.4	Debitage	All but 1 with cortex, most large	No	Smoky Hill
0	0	1	0.6	Debitage		No	Florence
0	0	1	89.3	Hammer stone	Cobble	Yes	Unk
0	1	1	24.3	Modified flake	Cortex	No	Smoky Hill
0	2	1	35.3	Flake	Cortex	No	Smoky Hill
0	3	1	32.5	Flake	Cortex	No	Smoky Hill
0	4	1	16.8	Debitage	Cobble fragment	No	Unknown
14SC439							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	19	5.5	Debitage		No	Smoky Hill
0	0	2	1.2	Debitage		No	Alibates
0	0	1	0.1	Debitage	Heated	No	Florence A
0	0	1	0.7	Debitage		No	Quartz
0	0	7	3.5	Debitage		No	
14SC440							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	1	1	3.5	Debitage	Spall	No	Smoky Hill
0	0	1	0.8	Debitage		No	Tecovas?
0	0	6	5.7	Debitage		No	Trachyte
0	0	27	74.8	Debitage		No	Smoky Hill
0	0	5	4.5	Debitage		No	Chalcedony
0	0	4	5.2	Debitage		No	Quartzite
0	0	0	23.9	Bone	Bleached	No	
1	1	1	4.6	Modified flake		Yes	Smoky Hill
2	1	1	15.8	Biface	Adze?	Yes	Trachyte
3	1	1	13	Preform		Yes	Quartzite

14SC445								
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material	
0	0	0	0.3	Bone	Fragment	No		
0	0	1	9.8	Historic	Bullet, .40 caliber?	No	Lead	
0	0	1	83.2	Debitage	Spall with flake scars	No	Florence	
0	0	6	11	Debitage		No	Quartzite	
0	0	20	58.6	Debitage		No	Smoky Hill	
0	0	1	16.2	Debitage		No	Chalcedony	
0	0	6	6.2	Debitage		No		
0	0	14	34.4	Debitage	Some large with cobble cortex	No	Trachyte	
0	1	1	0.8	Projectile point	Side or corner notched, tip and base broken	No	Trachyte	
0	2	1	11.7	Scraper	End	No	Quartzite	
0	3	1	214.3	Core	With cobble cortex	No	Trachyte	
0	4	1	393.5	Core	With cobble cortex	No	Trachyte	
0	5	1	123.1	Core	With cobble cortex	No	Quartzite	
0	6	1	310	Core	With cobble cortex	No	Quartzite	
1	1	1	5.4	Modified flake		Yes	WRGS	
2	1	1	11.6	Biface	Base knife or preform	No	Smoky Hill	
3	1	1	113.8	Hammer stone		No	Quartz	

14SC450								
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material	
0	0	1	49.5	Debitage		No	Opalite	
0	0	1	2.6	Debitage		No	Quartz	
0	0	2	2.7	Debitage		No	Quartzite	
0	0	2	2.5	Debitage		No	Alibates	
0	0	11	30.1	Debitage		No		
0	0	1	3.2	Modified flake	Tool fragment?	No	Chalcedony	
0	1	1	0.1	Turquoise		No		
0	0	1	0.7	Shell	Mussel?	No		
0	0	1	25.1	Bone	Long bone fragment, large animal	No		
0	0	2	3	Body sherd	Dismal River Gray Ware	No		
0	0	12	31.5	Debitage		No	Trachyte	
0	0	28	97.1	Debitage		No	Smoky Hill	
0	2	1	15	Rock	Several flat surfaces	No	Sandstone	
0	3	1	32.2	Core	Cobble cortex	No	Chalcedony	
0	4	1	33.1	Core		No	Trachyte	
0	5	1	20.1	Modified flake	End-side	Yes	Smoky Hill	
0	6	1	11.3	Scraper	End-side	Yes	Smoky Hill	
0	7	1	28.4	Modified flake	End-side	Yes	Trachyte	
0	8	1	9.4	Scraper	End-side	Yes	Florence?	
0	9	1	16.8	Modified flake	End-side, probably part of 0-10	No	Florence?	
0	10	1	10.8	Modified flake	End-side, probably part of 0-9	No	Florence?	
0	11	1	4.1	Modified flake	End-side	No		
0	12	1	3.8	Scraper	End-side	Yes	Alibates	

(continued)

Appendix 2a. (continued)

14SC450							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	13	1	6	Modified flake		No	Smoky Hill
0	14	1	4.3	Biface	Knife point?	No	Quartzite
0	15	1	67.7	Ground stone tool	Metate fragment?	No	
0	16	1	42.2	Modified flake		No	Smoky Hill
0	17	1	11	Debitage		No	Smoky Hill
0	18	1	2.6	Modified flake		No	Trachyte
0	19	1	3.7	Modified flake		No	Trachyte
0	20	1	2.4	Biface		No	Chalcedony
0	21	1	1.2	Modified flake	Heated, potlid	No	Smoky Hill
0	22	1	1.7	Debitage		No	Alibates
0	23	1	2	Modified flake		No	Alibates
0	24	1	7.7	Modified flake		No	
0	25	1	12.3	Modified flake		No	Quartzite
0	0	3	16.4	Debitage		No	Trachyte
0	0	1	2.3	Debitage	Heated	No	Florence A
0	0	6	9.3	Debitage		No	Smoky Hill
0	0	1	25.5	Debitage		No	
0	26	1	5	Modified flake	Cortex, cobble rind	No	Chalcedony
1	1	1	11.9	Scraper	End-side	Yes	Smoky Hill
2	1	1	474	Hammer stone		Yes	Quartzite
3	1	1	8.3	Modified flake		No	Florence
4	1	1	2.7	Projectile point	Side-notched, expanding stem, slightly concave base, 3.37 cm long, neck width 9.7 mm, Archaic	Yes	Florence
5	1	1	21.4	Scraper	End-side	Yes	Florence
6	1	1	10.7	Modified flake		No	Trachyte
7	1	1	1180	Hammer stone		Yes	
8	1	1	5.5	Projectile point	Midsection, dart point	No	Smoky Hill
9	0	0	43.1	Bone	Vertabrae, deer	No	
10	1	1	21.7	Scraper	End-side	No	Smoky Hill
11	1	1	8.6	Biface	Bifacially modified flake	No	
12	1	1	23.7	Biface	Core? Chopper?	No	Trachyte
13	1	1	5.3	Biface	Knife section?	No	
14	1	1	2.9	Scraper	Distal end	No	Chalcedony?
15	0	1	0.2	Tooth	Large herbivore fragment	No	
15	0	2	109.6	Bone	Large mammal	No	
15	0	1	17.7	Bone	Right proximal phalange, bison	No	
15	0	1	1.4	Body sherd	Dismal River Gray Ware	No	
15	0	2	4.4	Debitage		No	Smoky Hill
15	0	1	0.2	Debitage		No	Quartzite
15	1	1	92.9	Scraper	End-side	Yes	Smoky Hill
16	0	2	12.1	Bone	Rib, deer	No	

Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
16	0	0	29	Bone	Fragment	No	
16	0	0	48	Bone	Long bone, deer?	No	
16	0	1	39.4	Bone	Left humerus, mule deer	No	
16	0	1	6.7	Bone	Right medial proximate phalanx, deer	No	
16	0	1	5.3	Bone	Right metatarsal, deer	No	
17	0	1	59.9	Bone	Right astragalus, bison	No	
17	1	1	10.2	Scraper	Side-end	Yes	Smoky Hill
18	1	1	862	Blank	Tabular piece with cortex on top & bottom, flaking about halfway around sides	No	Smoky Hill
18	0	1	2.7	Tooth	Herbivore, deer?	No	
18	0	1	19	Bone	Astragalus, deer	No	
18	0	1	26.4	Bone	Metacarpal, right	No	
18	0	0	61.1	Bone	Fragment	No	
18	0	4	39.6	Bone	Vertabrae, deer	No	
18	0	1	31.8	Bone	Right femur, deer	No	
18	0	1	8.6	Bone	Radius, deer	No	
18	0	0	9.1	Bone	Rib, deer	No	
18	0	3	1.6	Bone	Epiphysial disc, deer	No	
19	0	2	9.3	Bone	Fragment	No	
19	0	9	10.5	Debitage		No	Smoky Hill
19	0	5	21.1	Debitage		No	Trachyte
19	0	1	5.1	Debitage		No	Quartzite
19	0	2	1.9	Debitage		No	Chalcedony
19	0	2	26.7	Debitage		No	
20	1	1	23.8	Knife	Tip missing, rounded base	No	Tahlequah?
21	1	1	5.9	Rim sherd	Dismal River Gray Ware, vertical, round lip	No	
22	1	1	7.7	Modified flake		No	Trachyte
23	1	1	52.2	Modified flake	Cobble spall, edges worked	Yes	Trachyte
24	1	1	8.6	Scraper		Yes	WRGS
14SC451							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
1	0	1	0.6	Bone	Carapace, turtle	No	
1	0	1	0.1	Shell	Mussel	No	
1	0	9	34.7	Debitage	Blocky, cortical	No	Smoky Hill
14SC456							
Prov	Spec #	Count	Weight in g	Artifact	Description	Complete	Material
0	0	4	19.3	Debitage		No	Trachyte
0	0	1	4.8	Debitage		No	Smoky Hill
0	0	1	2.9	Debitage		No	Unknown

APPENDIX 2B. ARTIFACT CATALOG FOR HISTORIC SITES

14SC304												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	1	1	42.1	CT	Glass	Bottle	Beverage		Neck & cap	Clear		W/1 bucket 0-5
0	0	1	11.5	CT	Glass	Bottle	Beverage		Body	Clear		W/1 bucket 0-5
0	2	1	400	CT	Stoneware	Jug	Syrup		Complete	Brown		Weight > 400, w/1 bucket 0-5
0	3	1	32.2	TW	Stoneware	Serving	Pitcher		Spout	Red/brown		W/1 bucket 0-5
0	4	1	0.4	CL	Glass	Clothing fastener	Button	4-hole	Complete	White	Incised lines	W/1 bucket 0-5
0	0	1	4	CL	Ferrous	Footwear	Boot	Galoshes	Buckle			W/1 bucket 0-5
0	0	1	0.1	BP	Coal	Fuel	Coal		Fragment			W/1 bucket 0-5
0	0	14	8.7	CM	Brick	Structural	Brick	Common	Fragment	Red		W/1 bucket 0-5
0	0	1	0.7	HM	Ferrous	Miscellaneous	Strap metal		Fragment			W/1 bucket 0-5
0	0	1	41.9	UN	Ferrous	Unknown			Fragment			W/1 bucket 0-5
0	0	2	23.7	HF	Ferrous	Nail	Wire	16d common	Complete			W/1 bucket 0-5
0	0	1	13.1	HF	Ferrous	Nail	Wire	20d common	Complete			W/1 bucket 0-5
0	0	9	23.3	HF	Ferrous	Nail	Wire	6d common	Complete			W/1 bucket 0-5
0	0	3	10.8	HF	Ferrous	Nail	Wire	8d common	Complete			W/1 bucket 0-5
0	0	22	30.2	HF	Ferrous	Nail	Wire	Common	Fragment			W/1 bucket 0-5
0	0	1	31.1	HS	Ferrous	Harness			Clip fragment			W/1 bucket 0-5
0	0	1	7.7	OR	Bone	Food-fauna			Rib			W/1 bucket 0-5
0	0	1	102	CT	Bone	Can	Beverage	Cocoa?	Body			W/1 bucket 0-5
0	5	1	400	TW	Enamelware	Utilitarian	Bucket		Complete body			W/1 bucket 0-5
8	0	2	0.7	WG	Glass	Window glass					Frosted	
9	0	1	2.6	HM	Ferrous	Wire						
18	0	5	0.5	CM	Concrete	Concrete						
21	0	2	1.1	CM	Concrete	Concrete						
22	0	1	0.4	CM	Concrete	Concrete						
14SC326												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	0	2	6.9	WG	Glass	Window glass	Window		Fragment	Aqua		
0	0	1	1.7	CT	Glass	Bottle	Beverage or medicinal	Beer or bitters	Body	Brown		

145C418											
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Comment
1	0	5	13.9	BP	Coal	Fuel	Clinker		Fragment		
1	0	4	5.2	BP	Coal	Fuel	Coal		Fragment		
2	0	23	51.4	WG	Glass	Window glass	Window		Fragment	Aqua	
2	0	4	1.9	BP	Coal	Fuel	Coal		Fragment		
2	0	1	5.1	HF	Ferrous	Nail	Wire	9d common	Complete		
145C419											
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Comment
0	0	4	47.8	BP	Coal	Fuel	Coal		Fragment		
0	0	10	30.6	BP	Coal	Fuel	Cinder		Fragment		
0	1	1	69.7	CT	Glass	Bottle	Barbed wire		Base	Blue	
0	0	2	8.9	CT	Glass	Bottle			Body	Clear	

Appendix 3. (continued)

14SC419												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	2	1	8.8	CT	Milk glass	Closure	Liner		Rim	White		
0	3	1	6	CT	Milk glass	Closure	Liner		Rim	White		
0	0	1	6.5	WG	Glass	Window glass	Window		Fragment	Clear		
0	0	1	11.7	UN	Cuprous	Unidentified			Complete			
0	0	1	7.6	OR	Bone	Food-fauna	Venison	Mule deer	Phalange			
0	0	1	74	FM	Ferrous	Farm machinery	Plow		Share			
14SC426												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	0	1	289.7	CT	Ferrous	Can		Hole in top	Body		Covered C domed cap	1810–1920
0	0	1	2.6	WG	Glass	Window glass	Window		Fragment	Aqua		
0	0	1	8.9	FN	Glass	Furniture			Topper fragment	Aqua		
0	1	1	4	CT	Glass	Bottle	Toiletry		Base	Clear		
0	0	4	11.2	CT	Glass	Bottle			Body	Clear		
0	2	1	69.8	TW	Glass	Serving	Shaker	Pepper	Complete	Clear		
0	3	1	55.7	TW	Whiteware	Table setting	Mug	Mug	Base	White		
0	4	1	9	TW	Whiteware	Table setting	Mug	Mug	Rim	White	Red/green design	
0	5	1	3.1	TW	Whiteware	Table setting	Plate		Base	White		
0	6	1	26.2	CT	Milk Glass	Jar			Rim	White		
0	7	1	1.7	TW	Whiteware	Table setting	Plate		Rim	White		
0	8	1	6	TW	Whiteware	Set/serve			Body	White/white		
0	9	1	6	TW	Porcelain	Set/serve	Plate		Base	White/white	"Shennang/New C"	
0	0	1	4.6	CT	Milk glass	Jar			Body	White/white		
0	0	1	3	BP	Coal	Fuel	Clinker		Fragment			
0	0	1	4.6	HF	Ferrous	Nail	Out	Duplex, 16d	Complete			
0	0	1	3.2	HF	Cuprous	Washer	Machined	Flat	Complete			
0	0	2	12.2	UT	Cuprous	Electrical						
0	0	1	0	UT	Lead	Electrical	Battery		Core			
0	0	1	15.6	MM	Ferrous	Pack	Knapsack	Strap fastener	Complete			

0	2	1	68.2	CT	Glass	Bottle	Beverage	Beer	Base	Brown	(1929-1954) Owen's Illibini's Glass Co. Toledo, Ohio, "7" IS Plant in Alton IL; Toulouse PP 403
0	3	1	99.1	CT	Glass	Bottle	Beverage	Beer	Base	Brown	(1917-1956) k Knox Glass Bottle Co. 1917-1956, then Knox Glass Co. Inc. 1956, "-50" Toulouse PP 293
0	4	1	33.1	CT	Glass	Bottle	Beverage	Beer	Base	Clear	(1920-1964) Hazel Atlas maker's mark "BJ / 4653" Toulouse PP 239
1	1	1	136.6	CT	Ferrous	Can		Sanitary	Complete		(1901) "14" in circle on bottom of can indicates Heekin Can Co. that started in Cincinnati, Ohio, in 1901
1	0	1	4.6	HF	Ferrous	Nail	Out	Duplex, 16d	Complete		(1929-1954) Owen's Illibini's Glass Co. Toledo, Ohio 1929-1954. "7" IS Plant in Alton IL; Toulouse PP 403
1	0	1	3.2	HF	Cuprous	Washer	Machined	Flat	Complete		
1	0	2	12.2	UT	Cuprous	Electrical	Battery		Core		
1	0	1	0	UT	Lead	Electrical	Knapsack	Strap fastener	Complete		
1	0	1	15.6	MM	Ferrous	Pack	Beverage	Beer	Base	Brown	
1	2	1	68.2	CT	Glass	Bottle					
1	3	1	99.1	CT	Glass	Bottle	Beverage		Base	Brown	

(continued)

Appendix 3. (continued)

14SC426												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
1	4	1	33.1	CT	Glass	Bottle			Base	Clear		(1920–1964) Hazel Atlas maker's mark "BJ/4653"; Toulouse PP 239
1	5	1	13.9	CT	Glass	Bottle			Base	Clear		(1929) Foster-Forbes Glass Co. Marion, IND since 1929 "1483"
1	6	1	20.5	CT	Glass	Bottle			Base	Clear		
1	7	1	22.6	CT	Glass	Bottle		Screw top	Rim	Clear		(1930) Owen's Illinois Glass Co. Plant Bridgeton, N.J. "14–2/1"
1	8	1	44.4	CT	Glass, Cuprous	Bottle	Cap	Screw-on	Complete	Brown		
1	9	1	4.7	CT	Cuprous	Closure	Cap	Screw-on	Complete			(1983) Anchor Hocking Glass Corp., Lancaster, Ohio "13 1/4257" stippled
1	10	1	294.2	CT	Glass	Jar			Base	Clear		
1	11	1	20.4	CT	Glass	Jar			Base	Clear		(1929–2954) Owen's Illinois Glass Co. "4" embossed linear design
1	12	1	13.8	CT	Glass	Jar	Canning		Rim	Clear		Bail attachment
1	13	1	4.8	CT	Glass	Closure	Lid/liner		Rim	Clear		
1	0	1	15.1	CT	Ferrous	Can			Bottom			
1	0	1	67.3	CT	Ferrous	Can			Body, Base			
1	0	1	10.2	WG	Glass	Window glass	Window			Clear		
1	0	1	149.5	CW	Enamelware	Cooking	Pot	Coffee	Body	Red		Small holes in bottom, midsection of coffee pot
1	14	1	10.6	TW	Whiteware	Table setting	Bowl		Base	White	Transfer holly design	
1	15	1	8.7	TW	Glass	Table setting	Bowl		Base	Green	Ridged sides & base	

1	16	1	2.7	TW	Glass	Table setting	Bowl	Base	Green	Ridged sides & base		
1	17	1	2.4	TW	Glass	Table setting	Bowl	Base	Green	Ridged sides		
1	18	1	12.5	TW	Milk glass	Table setting	Bowl	Base	White			
1	19	1	6.2	TW	Milk glass	Table setting	Bowl	Rim	White			
1	20	1	1	TW	Milk glass	Table setting	Bowl	Rim	White			
1	21	1	32	TW	White ware	Serving	Bowl	Mixing	White, blue	Annular		
1	22	1	8.6	TW	Glass	Serving	Bowl	Rim	Clear			
1	23	1	35	TW	Glass	Serving	Pitcher	Pitcher	Amethyst			
1	0	1	5	HF	Ferrous	Staple	Wire	Electrical conduit	Complete			
1	0	1	22.7	HM	Ferrous	Miscellaneous	Wire	Bailing	Fragment			
1	0	1	3.4	CT	Ferrous	Can			Lid			
1	0	1	4.2	HM	Ferrous	Miscellaneous	Spring		Fragment			
1	0	1	2	CT	Unknown	Closure	Lid		Complete			
1	0	1	17.2	HS	Ferrous	Harness			Buckle			
14SC436												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	1	1	157.1	CT	Glass	Bottle	Beverage	Pop	Body	Aqua		"Coca-Cola Bottling Co." refits #2
0	2	1	223.3	CT	Glass	Bottle	Beverage	Pop	Base	Aqua		"Property of / Coca-Cola Bottling Co. Wichita Falls TEX." refits #1; on the bottom "Mc"
0	3	1	376.1	CT	Glass	Bottle	Beverage	Pop	Base	Aqua		On one side top of bottle: "Whistle / Registered / 6 1/2 FL Ozs"; other side: "Whistled / Registered"; around bottom: "Whistle Bottling Co. Wichita KANS."
1	1	1	400	TW	Stoneware	Utilitarian	Jug	Molasses	Rim	Brown/brown		
2	0	4	0.4	OR	Plant	Other flora	Yucca		Seed			
3	1	1	106.7	CT	Ferrous	Can			Complete			

(continued)

Appendix 3. (continued)

14SC436												
Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
3	2	1	229.2	CT	Glass	Jar			Complete			"3 o 8", Owens Bottle Co., 1911-29,
4	1	1	56	CT	Ferrous	Can	Toiletry	Powder	Complete			
5	1	1	372.9	CT	Glass	Bottle	Beverage	Pop?	Base	Aqua		"Mennen" / Powder / TED" ?
												"Buffys / -O- / Frankfort / Kansas / 702.Capacity"; on bottom: "D"
6	1	1	30	FW	Silver	Flatware	Knife	Butter	Complete			"Wm Rogers & Son AA", engraved "M"
7	1	1	18.8	TW	Porcelain	Serving	Bowl	Serving	Base	White, blue, red, gold	White, blue, & red floral, gold line at base	
8	1	1	18.6	TW	Whiteware	Serving	Bowl	Serving	Rim	White, blue	Blue rim	Refits #2
8	2	1	43.9	TW	Whiteware	Serving	Bowl	Serving	Rim	White, green	Green floral	Refits #1
8	3	1	13.4	TW	Whiteware	Serving	Bowl	Serving	Base	White		Refits #4
8	4	1	10.2	TW	Whiteware	Serving	Bowl	Serving	Base	White		Refits #3
8	5	1	6.3	TW	Whiteware	Serving	Plate?	Serving	Rim	White		Refits #6
8	6	1	4.7	TW	Whiteware	Serving	Plate?	Serving	Rim	White		Refits #5
8	7	1	24.7	TW	Whiteware	Serving	Plate?	Serving	Rim/base	White		
8	8	1	39.6	TW	Porcelain	Serving	Saucer?	Serving	Rim/base	White		Refits #9
8	9	1	19.3	TW	Porcelain	Serving	Saucer?	Serving	Rim/base	White		Refits #8
8	10	1	29.6	TW	Porcelain	Serving	Saucer?	Serving	Rim/base	White, gold	Gold design around rim	
8	11	1	14.9	TW	Porcelain	Serving	Saucer?	Serving	Rim/base	White, gold	Gold design around rim	
8	12	1	32.2	TW	Porcelain	Serving	Saucer?	Serving	Rim/base	White		
8	13	1	5.7	TW	Porcelain	Serving	Saucer?	Serving	Base	White		Refits #14
8	14	1	2.7	TW	Porcelain	Serving	Saucer?	Serving	Base	White, pink	Pink floral	Refits #13
8	0	1	13.4	TW	Porcelain	Serving	Bowl?	Serving	Body	White		
8	15	1	2.9	TW	Porcelain	Serving	Vase?	Serving	Body	Green, blue, white, pink/white		

9	0	1	186.8	TW	Ferrous	Toy	Riding	Wagon	Wheel	Red paint remnants	
9	0	1	53	TW	Ferrous	Toy	Riding	Wagon	Axle		
10	1	1	52.2	CT	Ferrous	Can	Tobacco		Complete	Red, yellow	"Prince Albert / Crimp Cut / Pipe and Cigarette" (and other faint lettering)
10	0	1	0.1	CT	Glass	Bottle			Body	Clear	Glass fragment found inside tobacco tin, 14SC436-10-1
11	0	1	44.8	UT	Ferrous	Lighting	Lamp		Airplate		
12	1	1	70	TW	Stoneware	Serving	Bowl	Mixing	Base	Tan/tan	"Wester"
13	1	1	59.2	CT	Glass	Jar			Base	Clear	"304 / 2"
13	2	1	22.1	TW	Glass	Beverage glass	Tumbler		Rim	Clear	Vertical line design
13	5	1	65.2	TW	Glass	Set/serve	Plate		Base	Peach	Tiny etched line design below rim
13	6	1	15.5	TW	Glass	Set/serve	Plate		Rim	Peach	Embossed floral design
13	3	1	8.2	TW	Glass	Set/serve	Plate		Rim	Peach	Embossed floral design
13	4	1	2.4	TW	Glass	Set/serve	Plate		Rim	Peach	Embossed floral design
15	0	10	5.8	OR	Bone	Food-fauna	Pork		Fragment		Part of same plate as 1,2,3
16	1	1	377.8	CT	Glass	Bottle	Beverage	Pop?	Complete	Aqua	Faint cut marks "Great Bend/ Bottling / Works / Great Bend// KANS // D"
17	0	1	177.1	HM	Ferrous	Fence	Barbed wire		Wire holder		
18	0	1	7.3	BP	Coal	Fuel	Coal				
19	1	1	129.1	CT	Multiple	Jar	Lid & liner	Canning jar	Rim, lid & liner		

(continued)

Appendix 3. (continued)

145C436

Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
20	1	1	34.1	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #2, 4, 5
20	2	1	34.1	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #1, 4
20	3	1	11.1	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #4, 6
20	4	1	6.5	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #1, 4, 5
20	5	1	8.3	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #6
20	6	1	10.7	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	Refits #3, 4, 5
20	7	1	5	TW	Porcelain	Utilitarian	Vase?		Body	Green, white, gold/white	Gold strip	Refits #8
20	8	1	1.9	TW	Porcelain	Utilitarian	Vase?		Body	Green, white, gold/white	Gold strip	Refits #7
20	9	1	16.7	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	
20	10	1	3.5	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	
20	11	1	1.7	TW	Porcelain	Utilitarian	Vase?		Body	Green, blue, white, pink/white	Floral design	

14SC442

Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	1	1	201.6	CC	Ferrous	Printed	Advertisement	Plaque	Complete			"Kingsbury/Aristocrat of Beer", date range 1933-1974
0	2	1	29.5	CT	Glass	Bottle	Condiment	Syrup	Body	Clear		"Fornia "Fig Sypu/ Califig/Ing Produc/ success"
0	3	1	291.9	CT	Glass	Bottle	Medicinal/ pharmaceut- ical		Complete	Clear		Hazel-Atlas mark "5202"
0	4	1	152.4	CT	Glass	Bottle	Beverage	Pop	Base	Clear		"Columbus, GA / Nehi / Design / PATD / Mar.3 25"
0	0	1	25.5	CT	Glass	Bottle			Body	Clear		

14SC444

Prov	Spec #	Count	Weight in g	Database Code	Material	Function	Type	Subtype	Portion	Color	Decoration	Comment
0	0	1	19.2	HF	Ferrous	Bolt	Machined	Hinge	Complete w/ washer			
1	1	11	70.4	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
2	1	1	6.4	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
3	1	13	83.4	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
4	1	5	31.9	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
5	1	1	6.4	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
6	1	1	6.4	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	
7	0	2	16.2	FA	Ferrous	Edged weapon	Field point		Complete			
8	1	7	44.9	AM	Brass	Cartridge	.223	Centerfire	Complete		"LC 1 8"	

APPENDIX 3: STONE RAW MATERIAL SOURCES

LOCAL SOURCES

Smoky Hill Silicified Chalk

The nearest bedrock sources to Scott State Park are in the Cretaceous system, a source of Smoky Hill silicified chalk and quartzite (Stein 2005, 2006:275–277). Smoky Hill silicified chalk typically is pumpkin orange to brown, though it also has white, gray, green, and red variants. It has a medium-grain texture and a chalky white cortex. It is a very common toolstone in western Kansas.

Ogallala Formation Silicified Sediment (Quartzite)

In the same general area as Smoky Hill silicified chalk is a green to green-gray silicified sand in the lower part of the Ogallala formation. This is Ogallala Formation silicified sediment, a coarse-grained material used primarily for large cutting and chopping tools (Holen 1991:400–401).

Trachyte (Basalt)

A black, grainy stone is frequently a minority component of tools and debitage in western Kansas sites. In most cases this material is trachyte, although it often is called basalt on Kansas site forms. Trachyte is a fine-grained effusive igneous rock composed primarily of alkali feldspars and subordinate minerals (Blasing 1990; Blasing uses the spelling trachite). Blasing notes that it is found as secondary deposits in stream terraces. Its primary source and the distribution of the secondary deposits is unknown, but it most likely originates in the Ogallala gravels. Both Bevitt and Bauer (2003:31–33) and Ray (2010:52–53) recovered this material as toolstone at 14HO308 in Hodgeman County, and Hoard has seen it as a minority component of several Keith phase assemblages in Pawnee County.

Opalite

Opal is common in the Ogallala Formation in Clark, Ellis, Logan, Ness, and Rawlins counties (Buchanan

1984:84, 94–95). This opal is distinct from precious opal, which is softer and does not occur in Kansas. Kansas opal has a white calcareous cortex, is predominantly white or gray, and has conchoidal fracture and a hardness of 5–6. Moss opal, also known as moss agate, has dark, branching manganese oxide impurities and occurs in Trego, Gove, and Wallace counties (Buchanan 1984:84). Ray (2010:48–50) provided a comprehensive summary of what he referred to as Ogallala opalite. He distinguished opalite from the common opal, and X-ray diffraction (XRD) analysis of two samples from 14HO308 showed that the opalite has chert-like qualities, specifically, it has a crystalline structure similar to chert rather than the more amorphous structure of opal. Citing Bayne and O'Connor (1968:59) and Franks and Swineford (1959:186), Ray noted that opalite (called hard or massive opal by Franks and Swineford [1959:195]) is known to occur in the Kimball member of the Ogallala Formation in Scott County. Ogallala opalite comprises nearly half of the debitage at 14HO308, by far the dominant material at the site. However, it is far less common as a material for finished tools (Ray 2010:79–82), leading Ray to conclude that it is a marginal local resource at 14HO308.

Unidentified Cobble Resources

All Tertiary rocks in Kansas are in the Pliocene series, in a single formation, i.e., the Ogallala, with three members: Valentine, Ash Hollow, and Kimball (Bayne and O'Connor 1968). The Ogallala formation is comprised of secondary deposits of igneous rock from the Rocky Mountains and sedimentary rocks from eastern Colorado and western Kansas. These deposits are common in western Kansas, and deposits can be as thick as 350 feet. They often are exposed by fluvial erosion and end up as streambed deposits (Stein 2006:277–278). Despite being secondary deposits, the Ogallala gravels, which in fact include cobble-sized stones, are commonly used in the region. For example, the majority of chipped stone tools and debris at 14HO308, an initial Middle Ceramic site in Hodgeman County, are from local Tertiary gravel deposits, presumably the Ogallala formation (Bevitt 2002:37; Bevitt and Bauer 2003:31–33; Ray 2010:50). Ray (2010:46–50) named the various chippable stone types of the

Ogallala formation: Ogallala chert, Ogallala quartz, Ogallala quartzite, Ogallala rhyolite, Ogallala petrified wood, and Ogallala opalite. This reflects the great diversity of stone types available as cobbles in western Kansas. Unfortunately, it cannot always be demonstrated that lithic materials that do not match local bedrock sources or well-documented exotics are, by default, secondary Ogallala formation materials; therefore, Ray's specific terminology is not adopted here. However, note is taken of materials that have a battered, rounded cortex indicative of testing or use of a stream-rolled cobble. Even though these materials are listed as unidentified, it is quite likely that they are Ogallala formation materials.

NON-LOCAL STONE RESOURCES

Permian Chert

The next closest bedrock source to Scott State Park is the Permian system of the Flint Hills of central Kansas (Stein 2006:270–275). Often called Florence chert, Permian cherts are variable and have been broken into several categories, including Florence A, B, C, and D, Foraker, Wreford A, B, and C and others (Haury 1984). While most deposits of Permian chert are in the eastern third of the state, some chert-bearing deposits are known as far west as Clark County, about 150 km southwest of Scott County. Clark County Permian cherts are of the Day Creek variety. Day Creek dolomite is not well defined in the archeological or geological literature, and it is not certain whether this stone was brought to the survey location in prehistoric times.

Alibates Agatized Dolomite

A well-known and widely distributed material from the Canadian River valley in the Texas pan-

handle, Alibates agatized dolomite, or Alibates (Banks 1990:91–92, 127–129, 143–144; Holliday 1997:245–247), often makes up a small percentage of the debitage and tools in larger assemblages in Western Kansas. This material is predominantly red with gray or white streaking (to some resembling bacon) or mottling but also can be gray, purple, blue, or white to yellowish white.

White River Group Silicates

Bedrock sources of White River Group silicates (WRGS) are known in west-central North Dakota, southwestern South Dakota, and eastern Wyoming and Colorado (Greiser 1983; Hoard et al. 1992, 1993; Huckell et al. 2011). The most commonly known and used source is Flattop Butte in Eastern Colorado (Greiser 1983), and in fact WRGS most frequently is referred to as Flattop chalcedony. This material is most often lavender gray with hazy white rounded inclusions but can vary from clear to milky white, gray, or honey brown; the latter can be mistaken for Knife River flint in some cases.

Tecovis Jasper

Tecovis can easily be mistaken for some varieties of Alibates agatized dolomite (Banks 1990:92–94, 129–131, 145), but it typically occurs only in much smaller pieces. It is a variegated jasper that has a broader distribution than Alibates. Tecovis jasper is found along the eastern edge of the Llano Estacado, overlapping the range of Alibates, and is common in archeological sites in the region. Typical colors include reds and browns with gray and white mottles. Tecovis is not banded (whereas Alibates often is), is quite opaque, and tends to have tiny quartz vugs or cavities (Holliday 1997:247–249).

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The Cottonwood by Marie Fletcher

On the Smoky Hill River
An aged Cottonwood stands.
Autumn haze drifts in around it,
spreading to the sea of grass.

As golden leaves whisper,
telling secrets I cannot fathom,
I study the diameter
of the gargantuan trunk.

“How many years do you go back, old tree?
Ah, that you could tell
all that passed your way.

“Did Indian children splash
in water at your feet,
and catch sand lizards
on the shore?

“Was it always this peaceful here,
or were there times the water ran red
from conflict between Indian and Indian,
or Indian and White?

“Have bones rested in your branches
and in the soil beneath them?

“Were you here when traders and trappers
marked the trail west,
while the Red Man watched apprehensively
from yonder bluff?

“I’m sure the rattle of freight wagons,
shouts of teamsters, and lowing of oxen
disturbed your reverie.

“Did immigrants come past here
with hope of what they would find
in a new land,
not realizing what might await them
over the hill?

“Dear Grandfather Cottonwood,
will you still be here
when another comes searching,
and I, too, have become
a part of history?”

BOOK REVIEWS

Battles of the Red River War: Archeological Perspectives on the Indian Campaign of 1874.

J. BRETT CRUSE (with contributions by MARTHA DOTY FREEMAN and DOUGLAS D. SCOTT; foreword by ROBERT M. UTLEY).

Texas A&M University Press, College Station, 2008. xix + 250 pp., including 182 figures, 38 tables, appendices, notes, bibliography, index. \$29.95 (hardcover). ISBN 978-1-60344-027-1.

Reviewed by Jim D. Feagins, St. Joseph Museum.

Battles of the Red River War: Archeological Perspectives on the Indian Campaign of 1874 weaves history and archeology into a rich tapestry of knowledge about a significant period in the Plains Indian wars. Covering the major battles of the Red River War (officially designated The Indian Campaign of 1874 by the federal government), the volume is a well-written account showing how historical research and historical archeology can be conducted to complement each other.

Western historian Robert M. Utley's foreword provides a brief overall perspective on the war and the accomplishments of the case study. He acknowledges Martha Doty Freeman's archival research and the archeological research and analysis of Brett Cruse and Doug Scott.

The 25 years following the Civil War saw intermittent warfare between the U.S. Army and many of the western Indian tribes. America's renewed westward expansion—roads, railroads, farms, ranches, and towns—brought about increased conflict with indigenous tribes. Cheyenne, Southern Arapaho, Comanche, Kiowa, and others considered the land and its resources as gifts to them from the Great Spirit.

In the Medicine Lodge Treaty of 1867 and other agreements, the U. S. government made many promises that it failed to keep. Violated treaties, loss of land, dismally poor conditions on the reservations in Indian Territory (Oklahoma), and decimation of the bison herds (the tribes' major food source) by white hide hunters precipitated Indian raids, including northward attacks on Kansas ranchers, travelers, surveyors, and hide hunters in the Texas panhandle (most notably at Adobe Walls). Both sides committed atrocities, peace commis-

sions came and went, attitudes hardened, and the wars went on. A series of raids, skirmishes, and battles in 1874, known as the Red River War, was fought in Texas, Oklahoma, and, to a lesser extent, Kansas. This war led to the defeat of tribes in the Southern and Central Plains and their confinement on reservations in Oklahoma. It is a sad but significant part of the overall story of western expansion.

As this volume focuses on the major action in Texas, only a very brief and passing mention is made of the September 11, 1874, massacre of the John German family and capture of four of his daughters near the North Fork of the Smoky Hill River in what became Logan County, Kansas. This raid and the capture of the young girls by a group of Cheyenne warriors, led by Medicine Water, attracted wide newspaper coverage and much public outrage (Jauken 1998; Meredith 2004). Considerable political pressure was placed on the U.S. Army to rescue the girls and punish the perpetrators. The tremendous public criticism of the military, as well as the considerable empathy for the girls by the military leaders themselves, gave an added incentive for the army to doggedly and relentlessly pursue the tribes southward as the Red River War continued. Hitherto, the plains of northwest Texas had been considered by the tribes to be somewhat of a safe haven; however, the Red River campaign, under the overall direction of Colonel Ranald S. Mackenzie, put an end to that delusion.

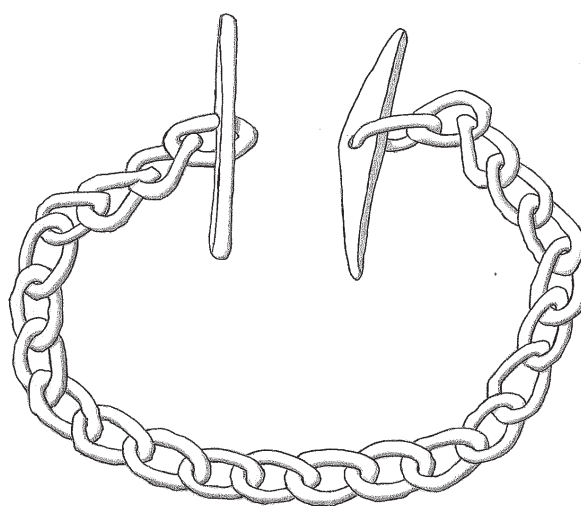


Figure 1. Hand-forged breast chain from mule harness found at the Battle of Lyman's Wagon Train site. During the battle 22 army mules were killed.

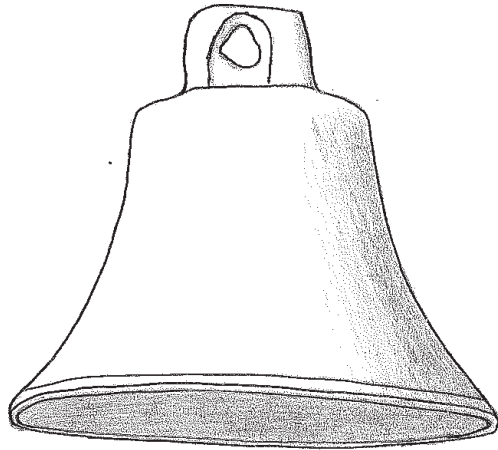


Figure 2. Brass round bells were common trade items. This one was found at the Battle of Red River.

This volume is an outgrowth of an archeological research program called “The Red River War Battle Sites Project,” conducted by the Texas Historical Commission. Focusing only on the major Red River War battle sites and two associated village locations, this research was centered in the greater Red River drainage of the Texas panhandle and was conducted between 1998 and 2003. The research concentrated on: 1) Colonel Miles’ battle on the Red River site and information from the related Indian village, 41BI544, 2) the Battle of Lyman’s Wagon Train site, 3) the fight at the Buffalo Wallow site, 4) Major Price’s battle at the Sweetwater Creek site, 5) the site of Colonel Mackenzie’s battle in Palo Duro Canyon, and 6) Lieutenant Farnsworth’s engagement on the Round Timber Creek site and information from Grey Beard’s village site. Of the major battle sites in this war, only Lieutenant Baldwin’s battle on McClellan Creek was unavailable for field investigation during this project. There are other sites associated with this war, including smaller battle and skirmish sites, army supply and base camps, and Indian villages, which also were not investigated.

The archeological work conducted at the individual Red River War sites had several research objectives: 1) locate (or reaffirm) the major battle location and establish the chronology of events, 2) determine the army and Indian military tactics as reflected in the archeological record, 3) determine the armaments and weapon types used, and 4) de-

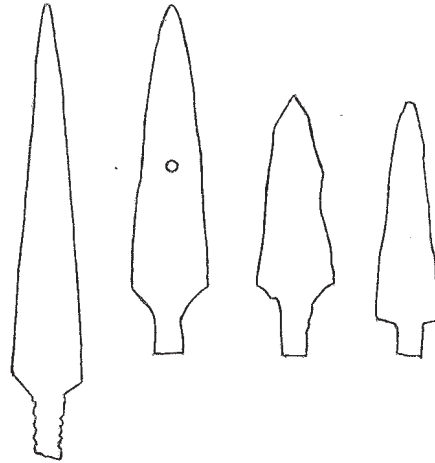


Figure 3. Selected iron arrowpoints from Battle of the Red River site. Three on the right are Indian made. The left point is probably commercially made.

termine the accuracy and degree of bias of the army records. Historical documents are often incomplete and inaccurate for various reasons. Archeology can and often does furnish additional or corrective information.

For example, it is common for military leaders to try to make themselves and their troops look better by overstating the number of enemy combatants and/or overstating the number and quality of Indian weaponry.

It is especially difficult to write an evenhanded account of battles between the U.S. military and indigenous tribes. The spin on history usually belongs to the victorious, especially when the losing side must depend almost solely on oral accounts. The U.S. military, as victor, supplied battlefield reports and a vast array of other documents from which historians draw to produce popular accounts. (It is rare to have well researched volumes, such as those produced by Father Peter John Powell, which present American Indian perspectives of their histories, including their accounts of these Red River conflicts [Powell 1981:867–891]). *Battles of the Red River War: Archeological Perspectives on the Indian Campaign of 1874* has made an effort (generally successful) toward a more balanced account. The study is greatly aided by the archeological results, as data from archeological research is no respecter of victors or losers. This field and laboratory information does not skew history as historical documents often do.

The Texas team used current standard battle site archeological field methods. Once battle-related artifacts were located with metal detectors and flagged, they were piece-plotted using either a total station (electronic transit) or a global positioning system (GPS). Not surprisingly, the majority of battle-related artifacts recovered were weaponry: bullets, cartridges, and cartridge cases. These were analyzed using police agency (Crime Scene Investigation laboratory) techniques for firearm identification. By subtracting the kinds of weapons known to have been used by the U.S. military at different battle sites, the researchers could determine the variety and number of weapons used by the tribes in those engagements. Often archeologists were able to trace the movement of individual weapons during a battle by carefully examining the marks left on cartridge cases and bullets.

Strategies, tactics, and weapons are discussed battle by battle. Two significant details indicated by the archeological research emerge: 1) In general, Indian rifles were not as numerous or as modern as original army reports suggested, and 2) the Indians were still relying heavily on the bow and arrow as late as 1874.

The outstanding contribution of the volume toward increased understanding of the Red River War and Plains history is derived from the archeological research. The proveniences and the types of recovered artifacts are the heart of the new information, and the material culture descriptions in Appendices D-H make up more than one-quarter of the volume. Perhaps incorporation of artifact descriptions in each battle chapter, rather than as appendices, would eliminate the need to flip pages back and forth. In fact, had this reviewer written the volume, some of the appendices would have become chapters or parts of chapters, and one chapter (Historiography and Archival Research) would have been presented as an appendix. These minor criticisms aside, for archeologists working with trade materials, the appendices will be the most useful and frequently referenced part of the book.

Investigation of two village sites broadened the range of material culture beyond expected battle site artifacts (cartridges, bullets, shrapnel, rifle and pistol parts, metal arrowpoints, horse tack, etc.). Personal items, such as eating utensils, buttons, spurs, tin cans, scissors, thimble, etc., offer an in-

creased awareness of the human element beyond soldiers and warriors in battle.

The volume's abundant photographs, drawings, and maps are generally excellent. The relatively detailed artifact information, combined with an extensive (better than average) index, makes this volume a useful reference. This reviewer worries that the volume might stimulate a few unscrupulous individuals to attempt unauthorized trespass or to loot Red River War battle or associated military and village sites for personal gain. On the other hand, the Red River War Battle Sites Project demonstrates positive ethical behavior and the value of careful archeological research in accomplishing its objectives.

This well written and edited volume presents information for archeologists, historians, museum curators, other scholars, and general readers interested in American Indians and U.S. military engagements. Reasonably priced, *Battles of the Red River War: Archeological Perspectives on the Indian Campaign of 1874* provides unique information and demonstrates the importance of collaboration between historical and archeological research.

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Editor's note: For an illustrated exhibit about the Red River War Battle Sites Project, visit <http://www.texasbeyondhistory.net/redriver>.

Jamestown: The Buried Truth. WILLIAM M. KELSO. University of Virginia Press, Charlottesville, 2006. xiv + 238 pp., 12 maps, 31 drawings/paintings, 86 color and 20 black and white photos, notes, and index. \$29.95 (hardcover). ISBN 978-0-8139-2563-9. *Reviewed by* Jim D. Feagins, St. Joseph Museum.

More than 400 years ago a fledgling settlement called Jamestown was established on an island beside the James River. This Virginia Company's 1607 settlement, for all its ill management and human suffering, succeeded in leading the way for England's sustained colonization of the New World and was an important step toward the eventual birth of our nation. The archival records relating to the earliest settlement are relatively few in number, sometimes ambiguous, and often supplemented with unreliable stories and legends. Perhaps the best known of the latter category is the relationship of John Smith with the Indian maiden, Pocahontas. While the archeology at Jamestown has not increased understanding of that relationship, it has greatly amplified knowledge of what took place at this important site. More than just a supplement to history; it is an independent record, another avenue of research into the lives of those settlers as they struggled to survive. Not only is the historical story itself compelling, but also the account of the search for the information buried in the soil is of considerable fascination.

William Kelso, the volume's author and the lead archeologist for the Jamestown project, does a fine job of describing the years of archeological investigation with an exciting, "detective-like," problem-solving approach. As the pieces of the puzzle are assembled, the reader learns about the methods and capabilities of field and laboratory techniques used to solve archeological and historical problems.

Although local legend and the vast majority of researchers said that James Fort, built by the first settlers, had washed away, Kelso was not convinced. He was committed to reexamining the archival records and renewing the archeological search for the fort. His dogged determination led first to the discovery of a row of dark soil stains made by decaying circular and split timbers that had formed the southern palisade wall. Other palisade lines, a buried ditch (moat), barracks, quarter

(possibly married family residence), factory, row houses, and a variety of other archeological features from the fort, as well as period military and civilian artifacts, were found.

Of special interest was the discovery and excavation of the brick-lined well near the fort. Could this have been the well that some say led to so much sickness and disease in the settlement? After the well was abandoned, it became a convenient place to throw garbage and trash, including many outstanding early military artifacts. Excellent illustrations depict the manner in which the 18-foot deep well was constructed in the unstable sandy soil.

As one might expect, a number of burials of the first Jamestownians were discovered. Kelso leads the reader through the evidence from the features, artifacts, and skeletal remains, coupled with the historic records and forensic techniques used to analyze a number of remains from the burial grounds located just outside the town. As an example, one burial was that of a European male in his late teens to early 20s. He was of good social standing, buried in a hexagonal coffin placed parallel to the fort's wall undoubtedly during the early years of the settlement. A .60-caliber lead ball and fragments of lead shot were embedded in a severed lower leg. No healing had taken place, as the individual probably bled-out in a relatively short time. Ballistics, a stable carbon isotope study, facial reconstruction, and other "crime scene" methods, coupled with a search of the historic records, produced good leads as to the individual's identity and possible scenarios that might have led to his death. Another especially interesting burial was that of a teenage boy with a stone arrowpoint imbedded in his left femur—a not so subtle affirmation of the conflicts between the settlers and the local native inhabitants. Yet another was one thought to be Captain Bartholomew Gosnold, one of Jamestown's early leaders.

In addition to the fort and the cemetery areas, much archeological work was conducted in other portions of the town site. Some of these concerned structures built after Jamestown became a part of the 29 settlements managed by the Crown. After a massacre by the Tsenacomacan Indians in 1622, the Virginia Company was dissolved, and Jamestown became the capital of a Royal Colony from 1624 to 1698.

In addition to the architectural remains, over 500,000 objects were discovered at Jamestown. Of course, some American Indian artifacts were found on the site due to the interactions of the settlers with the indigenous inhabitants and the latter's use of the land prior to the arrival of the Europeans. More than 200 lithic projectile points and knives were recovered from the excavations at the fort site alone. The recovered arrowpoints were unnotched and triangular in shape, containing either straight or concave bases.

The importance of archeological research at this site and its contribution to, and potential for, fleshing out the history of America, is succinctly stated by Kelso:

So the interplay of history and archaeology rediscovers Jamestown. The lost 1607 James Fort is found. Burials reveal its people. Thousands of objects open windows on daily life. And documents and digging lay bare the places of American democracy (p. 213).

Kedso speaks with authority in his research and with the passion of a good storyteller. Although it is more difficult to ascertain in a volume written for popular consumption, both the historical and archeological research appear quite solid. The book does contain extensive endnotes to supply sources for reference, and it is very well illustrated.

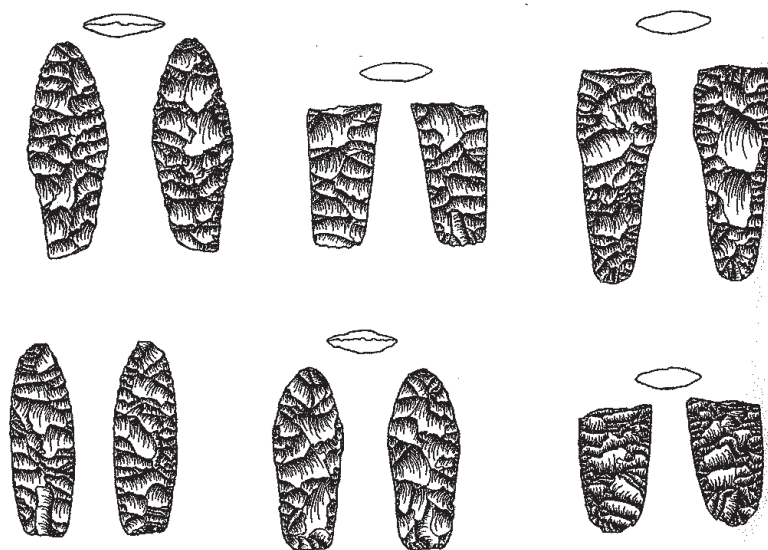
Jamestown: The Buried Truth gives an intimate glimpse into life at Jamestown. The archeological research provides a great amount of new information about the settlement. While the volume is written for a wide audience, professional and avocational archeologists, as well as most who are interested in American history, will also find much to learn and enjoy. This reviewer is confident that most readers of *The Kansas Anthropologist* would find *Jamestown: The Buried Truth* quite fascinating.

Hell Gap: A Stratified Paleoindian Campsite at the Edge of the Rockies. MARY LOU LARSON, MARCEL KORNFELD, and GEORGE C. FRISON (editors). University of Utah Press, Salt Lake City, 2009. xxiii + 444 pp., including 202 figures, 153 tables, references, 13 appendices, contributors, index. \$60.00 (cloth). ISBN 978-0-87480-943-5. Reviewed by Jim D. Feagins, St. Joseph Museum.

Paleoindian archeology was changed forever by finds at the Hell Gap site (48GO305), starting with the site's discovery in 1958 and continuing throughout the 1960–1966 excavations. Archeologists from Harvard University's Peabody Museum and the University of Wyoming-Laramie worked on the site at various times over the years. As one of the foremost Paleoindian sites in North America, Hell Gap served to some degree as the Rosetta stone of chronology for most of the earliest complexes in the Great Plains.

Residing in a small valley near the transition between the High Plains and the Rocky Mountains, the Hell Gap site is on the Hartville Uplift. Named for a local geological feature within the Haystack Mountain range of eastern Wyoming, the Hell Gap site has never been described in detail—until now. Outside of early reports and short articles, the information from Hell Gap languished. The untimely deaths of two of the principal investigators, Cynthia Irwin-Williams and her brother, Henry T. Irwin, undoubtedly contributed to the tremendous lag in detailed publications about the site. Until recent years many of the site's artifacts were stored in their original field bags, unwashed, uncataloged, and unanalyzed. Although the field notes and other records, especially from the Peabody work, were excellent, it was difficult to analyze and write about excavations conducted so long ago. The writing of *Hell Gap: A Stratified Paleoindian Campsite at the Edge of the Rockies* provided an opportunity to ask modern questions and to glean answers from the site's data, most gathered a half century ago but some resulting from excavations in the 1990s. Needless to say, this long overdue volume is greatly welcomed by all who are interested in the earliest cultural complexes in the New World. Indeed, the Hell Gap site is the type site for three previously unidentified complexes: Goshen, Hell Gap, and Frederick. The

Figure. Selected Hell Gap (top row) and Agate Basin (bottom row) Projectile Points from the Hell Gap Site.



Goshen and Frederick complexes are still rather poorly understood. In addition, the site contained significant information on a number of previously identified Paleoindian components: Folsom, Midland, Agate Basin, Alberta, Cody (Eden and Scottsbluff), and Lusk. Site data prompted definition of four new point types: Frederick, Goshen, Hell Gap, and Lusk.

The Hell Gap site, mostly a series of habitation/quarry occupations with a complex of living surfaces, provided information on Paleoindian lifeways not available on the better-known, more widely studied megafauna kill sites. Twenty-seven cultural components, separated vertically and horizontally, were identified from four localities at Hell Gap. Thus, the site made a major contribution to understanding the stratigraphic relationships among a wide range of Paleoindian materials found on the plains. Collectively the soil stratigraphy in the Hell Gap valley is somewhat complex; however, generally the sediments are well dated, especially in Locality I. More than 150 radiocarbon dates were obtained, spanning the time period from 12,000 to 8,000 years BP. Humans occupied the Hell Gap landscape throughout this period.

A portion of the site has been interpreted (correctly, I think) to contain domiciles, as evidenced by stone circles, hearths, and circular post molds. In addition to the features and a range of chipped-stone tools and lithic debitage, the site contained ground stone, hammerstones, red ocher, stone and

bone beads, and faunal remains, especially deer and bison. The site was a gold mine of information on Paleoindian technology and provided data extremely useful in typological comparisons with Paleoindian sites across the continent.

Hell Gap: A Stratified Paleoindian Campsite at the Edge of the Rockies was written by 29 authors, some with an international perspective. Actually, 23 (79 percent) are from the United States with six representing Argentina, Canada, Germany, Japan, and the United Kingdom. The preface (Frison) and two chapters (Part I) introduced the volume (Kornfeld and Larson) and presented the history of the research at the site (Ruthann Knudson). Also several appendices by James Duguid, George A. Agogino, and others gave additional information on the early research.

The next six chapters (Part II) focused on the natural history of the Hell Gap site: Geochronology (C. Vance Haynes, Jr.), Soil Development (Richard G. Reider), Micromorphology and Paleoenvironments (Christopher E. Miller and Paul Goldberg), Phytolith Evidence for Vegetation and Climate Change during the Pleistocene-Holocene Transition (Glen Fredlund), Gastropods and Their Paleoenvironmental Implications (Christopher N. Jass and Jim I. Mead), and Site Specific High-Resolution Climate Models of Paleoindian Sites in the Plains (Reid A Bryson and Robert U. Bryson). Several appendices by additional authors supplemented Part II.

Part III, Culture History, Adaptive Systems

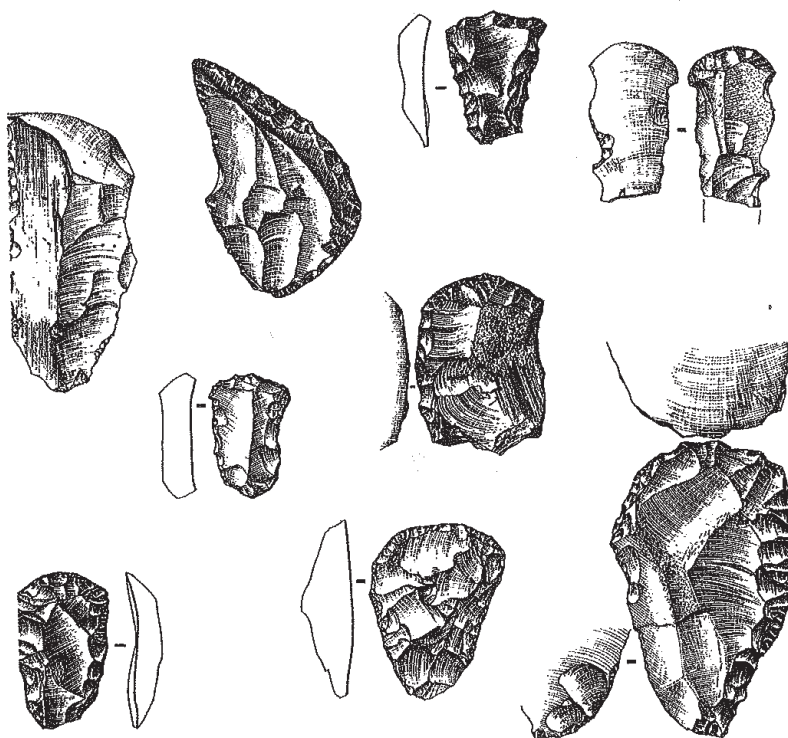


Figure. Selected types of scrapers from Hell Gap.

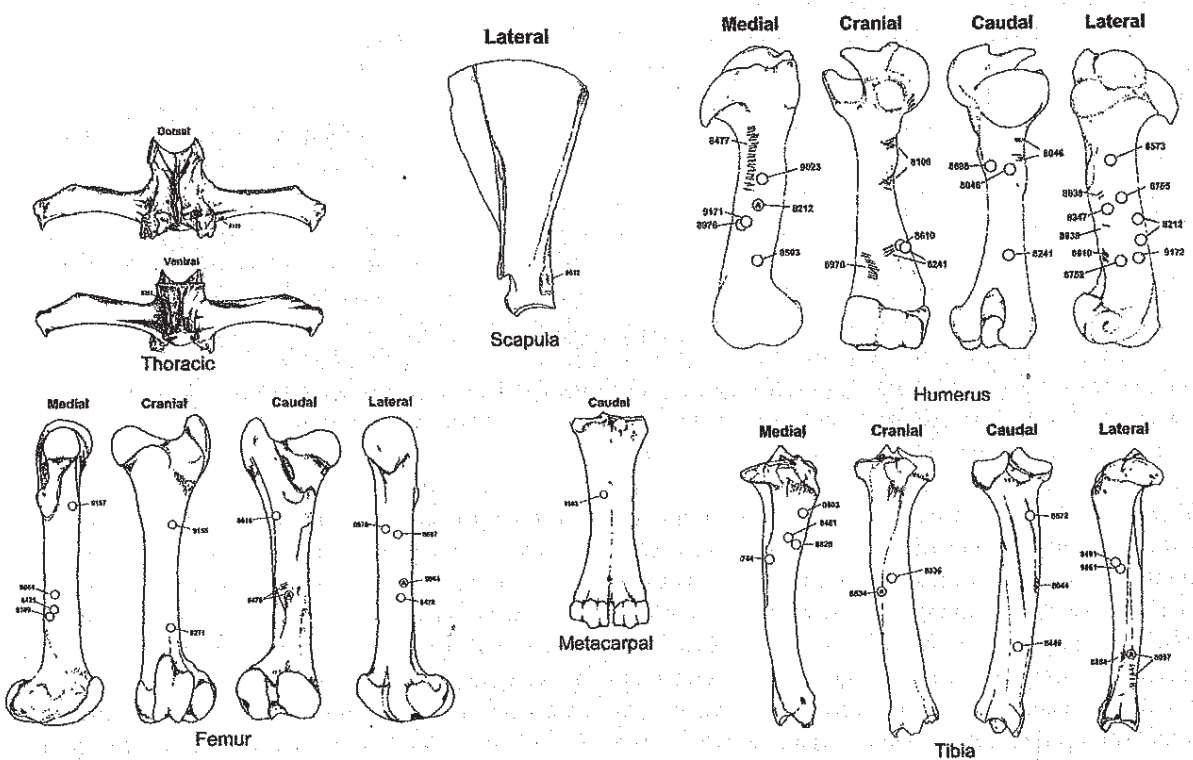


Figure. Selected Bison Bone Elements with Cultural Modifications from Agate Basin Level at Locality II, Hell Gap.

and Technological Strategies, was the longest (182 pages) section and the heart of the volume. Three subparts dealt with zooarchaeology, case studies of various components, and lithic tool manufacture and use. The 11 chapters were Faunal Assemblage, 1960–1966 (David J. Rapson and Laura B. Niven), The Agate Basin Faunal Remains at Locality II (David A. Byers), The Locality IIIS/V Eden Complex Component (Edward J. Knell, Matthew G. Hill, and Andrés D. Izeta), Cody Complex at Locality I (Knell), Microwear, Typology, and the Cody Component (Mark P. Muñiz), Frederick Component at Locality I (Allison Byrnes), Site Formation and Technological Organization at Locality I (Larson), Modified Chipped Stone and Implications for Paleoindian Technology and Adaptation (Kornfeld), Bifacial Technology and Paleoindian Projectile Points (Bruce A. Bradley), Paleoindian Projectile Point Breakage and Reshaping (Jun Hashizume), and Microwear, Tools, and Handles: A Pilot Functional Investigation of the Chipped Stone Assemblage (Douglas B. Bamforth and Mark Becker). To comment on each of these chapters would require far more space than usually is allotted to a review. Larson summarized the volume in Chapter 20 (Part IV), Hell Gap: Fifty Years On.

Much more could be said about other aspects of Hell Gap not covered in this volume, which was the first of a promised series about this rare site. It is often quite difficult to keep a book of this size, written by so many authors about such diverse topics, from

being somewhat disjointed or inconsistent. Generally, but not quite completely, the editors avoided that problem. The thick volume was presented in a large format (8 ½ x 11 inches) with relatively small print. Some photographs could have been improved by enlargement. In place of certain photographs, pen and ink drawings could have shown to better advantage artifact flake scars from manufacturing and use. In all fairness, quite a few line drawings were used, but more were needed. Considering the many fine attributes of this volume, these criticisms are minor.

Not only was an immense amount of data contained within its pages, but also the original investigators' interpretations were reevaluated using updated archeological and geoarcheological methods. Tremendous advancements in these fields have occurred during the 50 years between the first excavations and the publication of the report. The extensive index was necessary considering the volume's size and variety of contents. The hardcover volume must have been expensive to produce; however, for its size and quality, it is reasonably priced. It can be obtained by ordering online at www.UofUPress.com or by telephone at 800-621-2736. *Hell Gap: A Stratified Paleoindian Campsite at the Edge of the Rockies* was written primarily for professional archeologists and a host of researchers in related fields, but serious avocational archeologists interested in Paleoindian archeology also should find much to enjoy.

ABOUT THE AUTHORS

Jim D. Feagins



Jim Feagins is a private archeological consultant who also serves as part of the adjunct archeological staff for the St. Joseph Museum and is senior archeologist for Environmental Advisors and Engineers, Inc. He received a BS degree from Pittsburg State University and a MNS degree from the University of Oklahoma. After 30 years as a science instructor for Consolidated School District No. 4, Grandview, Missouri, he retired in 1995.

Active in promoting archeological education, he is president emeritus of the Missouri Archaeological Society. He also served as president of the Kansas City Archaeological Society and as a vice-president of the Missouri Association of Professional Archaeologists and the Kansas Anthropological Association (KAA). He is a life member of the KAA.

Marie Fletcher



Marie Fletcher is a freelance writer and member of the Kansas Author's Club. She is a volunteer at Scott State Park and is a member of the Friends of the Park. In 1989 she published a poem, "Vision Quest," in Volume 9, Number 7 of the *Kansas Anthropological Association Journal*.

Marlin F. Hawley



Marlin Hawley is presently an archeology curator with the Museum Archaeology Program at the Wisconsin Historical Society. In his spare time, as a would-be historian of archeology, he sifts through the large collection of primary documentation related to early Kansas archeology that he amassed years ago and tries to put together articles of interest. Marlin, his wife Amy, their children Ben and Rachel, as well as their assorted pets, live in DeForest, Wisconsin.

Robert J. Hoard



Robert Hoard grew up in Omaha, Nebraska, and received degrees in anthropology from the University of Nebraska-Lincoln (Bachelors), the University of Oregon (Masters), and the University of Missouri-Columbia (Doctoral). He has worked in many parts of the United States and for a brief period in Micronesia. He is interested in the performance characteristics of prehistoric pottery, the adoption of horticulture by people in prehistory, and the application of techniques from physics and chemistry to archeological investigations. He currently is the State Archeologist of Kansas.

Brad Logan



Brad earned his MA in anthropology at the University of Nevada, Reno (1977) and his PhD at the University of Kansas (1985). He has 35 years of archeological experience with work in the Great Plains, Rocky Mountains, Great Basin, southern France, and lower Austria. Until 2003 Brad was Senior Curator and Director of the Office of Archaeological Research at the Museum of Anthropology at KU. Since 1998 he has been Research Associate Professor at KSU where his recent research has focused on the prehistoric, ceramic-age cultures of the Central Plains. He is a native of Clay Center, Kansas, from which on frequent "Sunday drives" his parents took him and his five noisy siblings either west to the Smoky Hills or east to the Flint Hills (check your physiographic map of Kansas . . . the town is at the interface). Whichever way they went, Brad became, and remains, a child of the prairie. Oh, and he is a member of the KAA.

Lauren W. Ritterbush



Lauren is Associate Professor of archeology at Kansas State University. She gained her first archeological training more than 30 years ago in her home state of North Dakota, later moving to Kansas to pursue graduate studies at the University of Kansas. She has since made Kansas her home, shifting her employment to KSU in 1998. Her research interests focus on understanding past human societies in the Great Plains. She has a special interest in identifying, documenting, and understanding the migration and adaptation of groups that moved into the Plains during prehistory and the early historic era, as well as the impact of these migrations on indigenous Plains societies. She has been involved with research on Oneota migration into the Central Plains for more than 12 years. As a university professor she teaches a variety of classes, including the popular undergraduate "Archaeological Fact or Fiction" course, which helps students learn and apply sound reasoning or critical thinking skills to a wide variety of interpretations about our human past.

Randall M. Thies



Randy recently retired after many years as a highway archeologist with the Kansas State Historical Society. During that time he was involved in Kansas burials, both prehistoric sites and historic cemeteries, but currently he is working like crazy, both around the house and out back by the pond.

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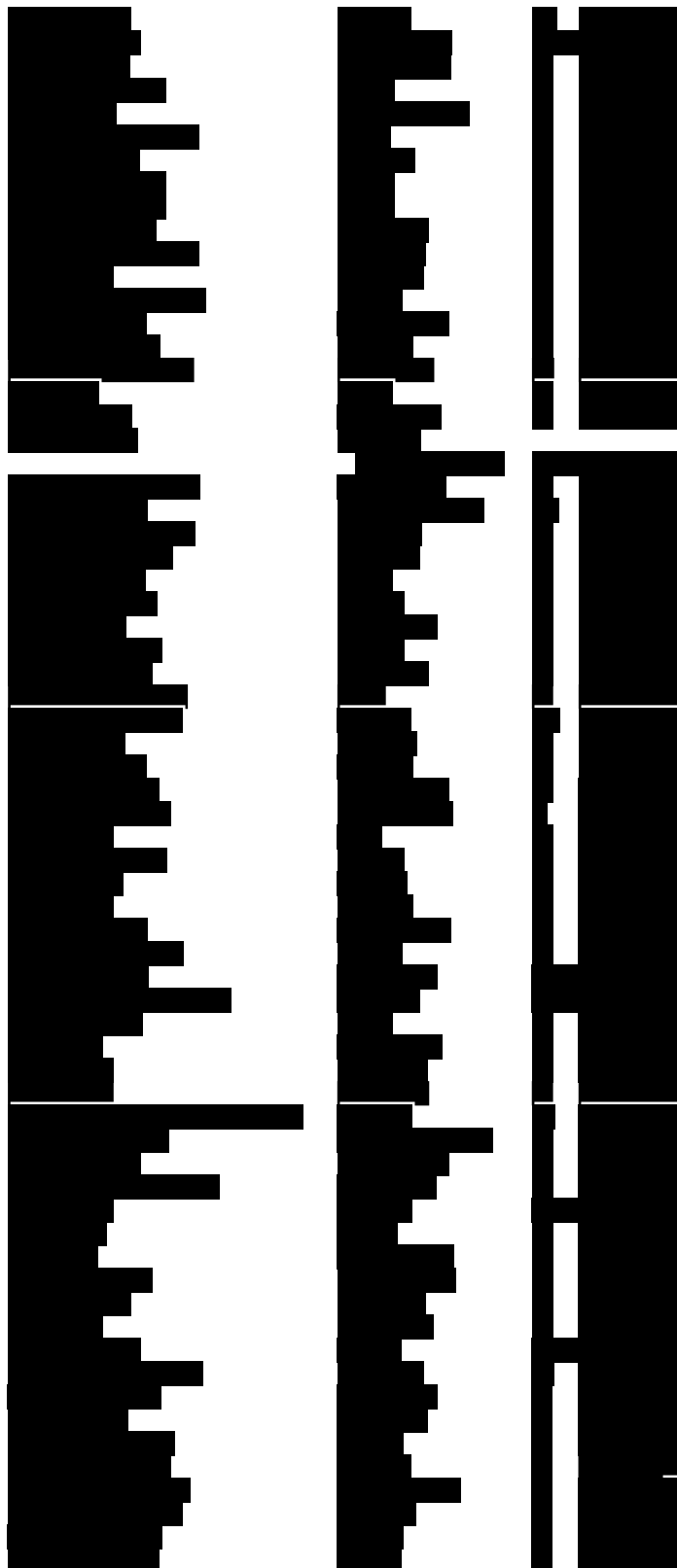
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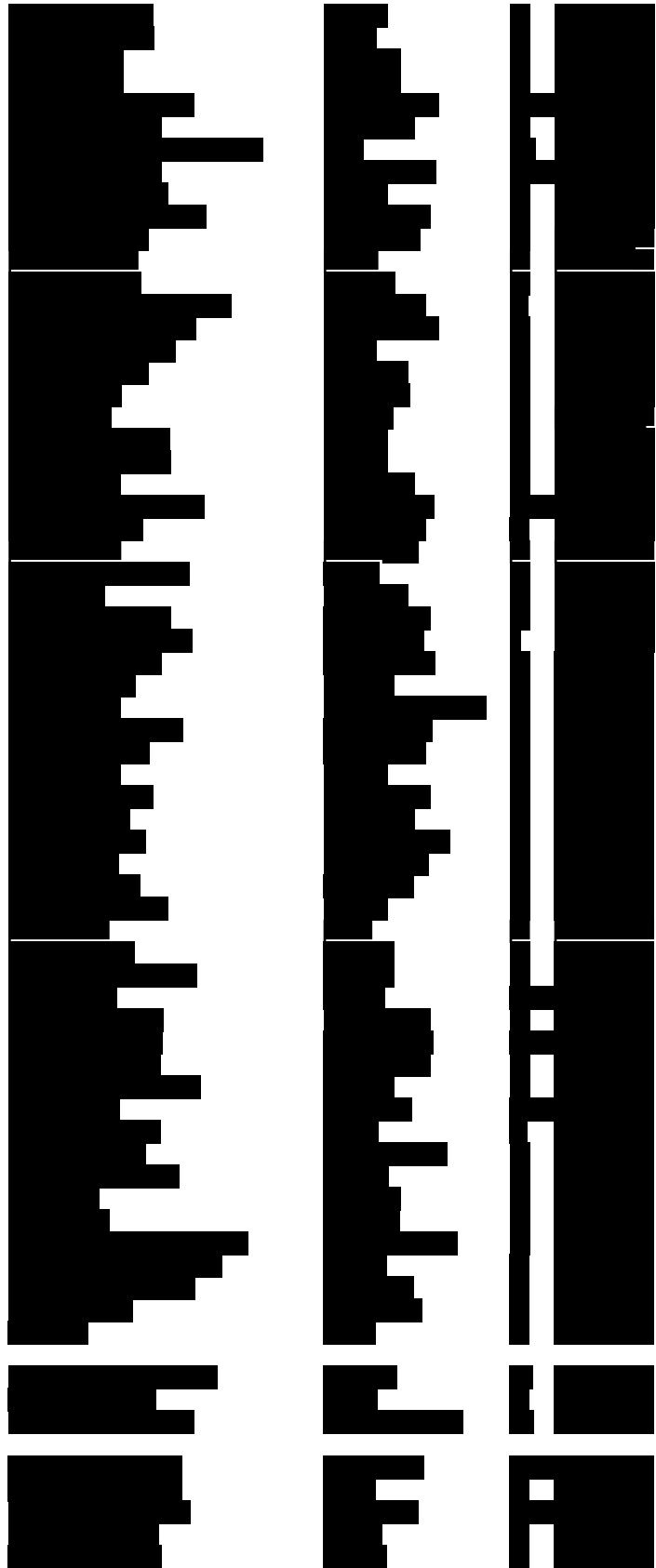
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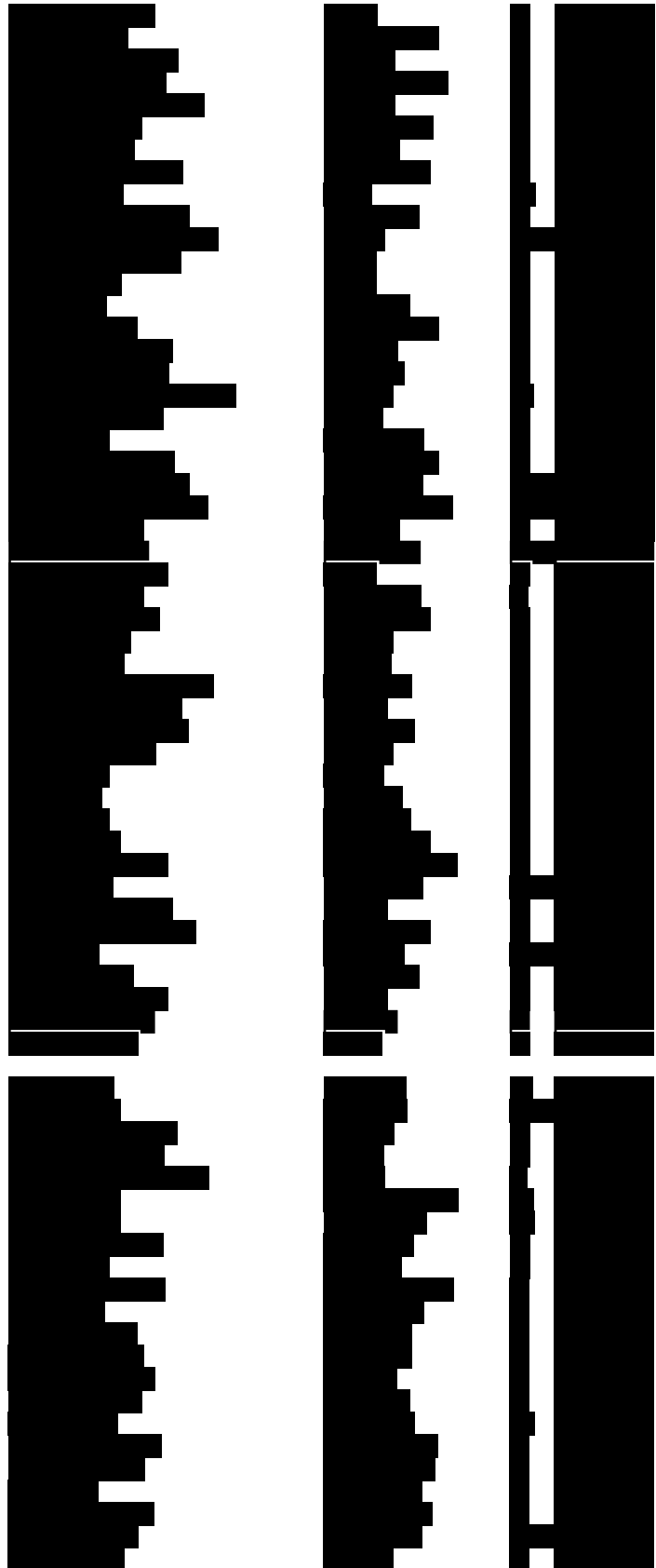
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The varied readership of the journal should be kept in mind when preparing papers. **Jargon should be avoided.** The style authority is *American Antiquity* (see Volume 57, Number 4, 1992). Professionals are expected to submit their manuscripts in this form; others who are not familiar with the *American Antiquity* style guide will receive editorial assistance.

Illustrations are encouraged; at least two or three should be included if possible. **Digital photography with original resolution less than 300 dpi is not optimal for print publications.** High resolution digital images are acceptable, as are 35-mm black and white or color prints or slides. All illustrations should be designed to fit within 6 x 8.5-inch margins, including caption. If protected by copyright, securing written permission for use is the responsibility of the author.

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