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

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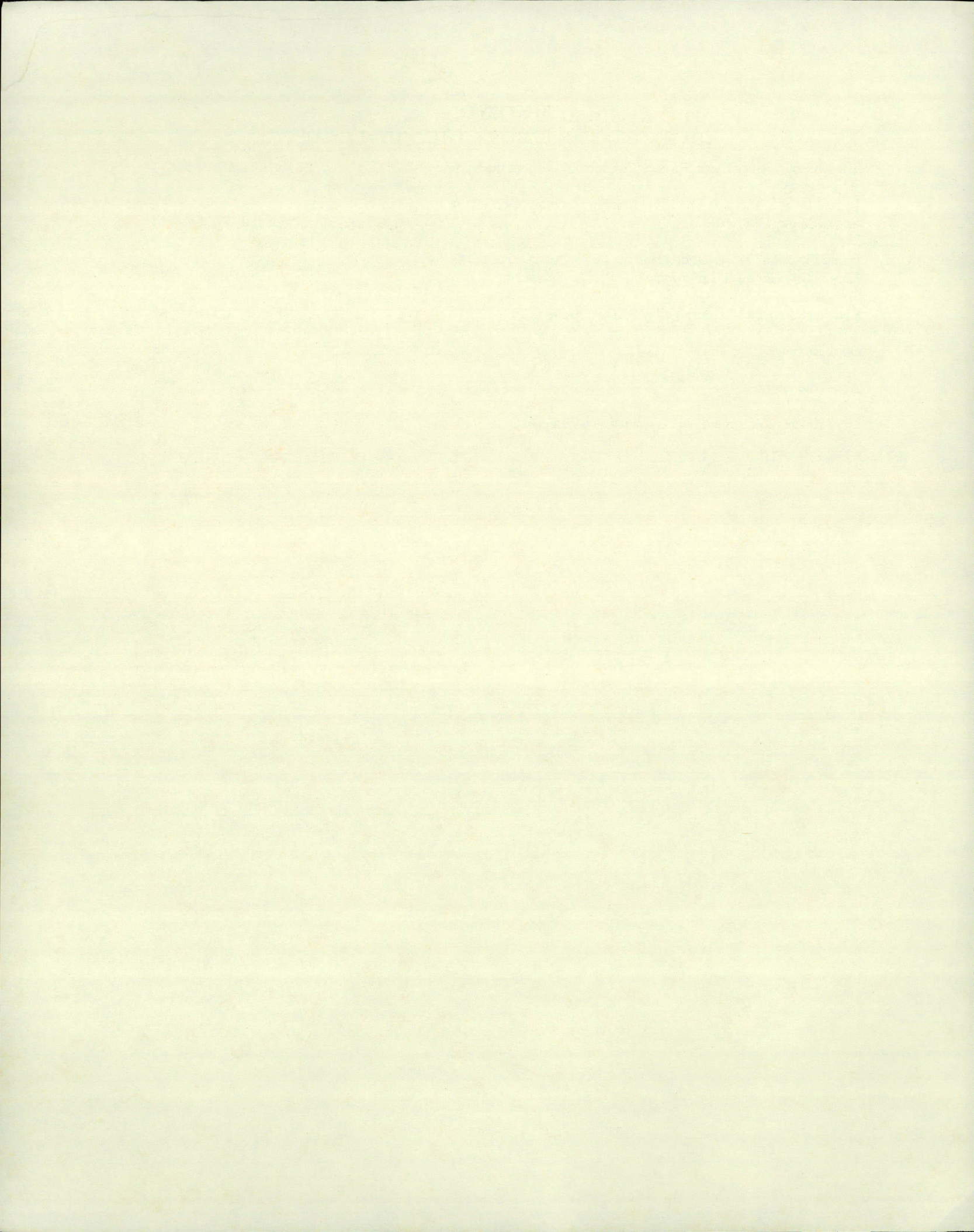
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### PUBLICATIONS

Each year members will receive six issues of the *Kansas Anthropological Association Newsletter* and two issues of *The Kansas Anthropologist*, the Association's journal. All members and interested individuals, professional or amateur, are invited to submit material to the editor for use in these publications. Five reprints will be provided free of charge to the author of each major article accepted. Additional reprints or back issues of the journal or newsletter, if available, may be ordered from the Historian-Recorder at the address listed above. Prices will be furnished upon request.

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## THE MISSOURI RIVER BASIN SURVEYS: ARCHEOLOGY WITHOUT THE MIDDLE "A"

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The Kansas Anthropologist 16(2), 1995, pp. 1-13

*Experiences with the Missouri River Basin Surveys program between 1949 and 1968 included work as a shovel hand, assistant archeologist, draftsman, cooperater, collaborator, and as a member of the 1968 ad hoc committee which recommended that the MRBS be absorbed into the National Park Service, leading to the establishment of the Midwest Archeological Center in 1969.*

For an aspiring anthropologist, the year 1949 was an exciting time to arrive at the University of Nebraska in Lincoln. The headquarters for the Smithsonian Institution's Missouri River Basin Surveys (MRBS), of the Inter-Agency Archeological Salvage Program, earlier had been established in the Department of Anthropology in the basement of Burnett Hall at the invitation of John L. Champe. It was small space indeed for a group responsible for salvaging prehistory from the post-war flooding that was to affect streams across the entire Missouri River basin. Paul L. Cooper, its director, had his office there in a suite, which included that of John Champe, Chair of Anthropology and director of the university's Laboratory of Anthropology.

Anthropology's end of the Burnett Hall basement included two classrooms and a large open room containing desks occupied by John E. Mills (a historical archeologist, ribbed as being a "tin can archeologist"), Franklin Fenenga, Robert B. Cumming, and others, both transient and whom I've forgotten. A very large adjoining open space was used for laboratory tables both by MRBS and Laboratory of Anthropology projects. The tables were cleared off and the room filled with chairs every fall when the Plains Conference (then called the Plains Archaeological [or Archeological] Conference) convened in Lincoln. At one side of the great room was a table occupied by the Coffee Klatch that met during twice-daily breaks. It was a varying mixture of university and Smithsonian personnel.

Archeologists serving with the MRBS, and those archeologists working at cooperating institutions that submitted manuscripts to the National Park Service, were required to use the spelling of archeology without the middle "a." This ruling by the United States

Government Printing Office (GPO), beginning about 1890 or 1891, had been in force since the early years of the Bureau of American Ethnology, because the "ae" in the original spelling was commonly printed as a ligatured symbol (i.e., æ), and this modification was an economy move and a convenience to the printers. The GPO spelling became widespread, for federal involvement in reservoir construction and salvage was intense not only in the Great Plains but in Texas and the Columbia Basin. A number of university presses and boards of editors also came to use the GPO spelling. Use of this "government spelling" was to persist for many years among those indoctrinated with its use, and pockets of it endure to the present time—as in the Archeology Office at the Kansas State Historical Society and even the Society of Professional Archeologists (SOPA).

Having been interested in physical anthropology since the fourth grade when I read about *Pithecanthropus erectus* and its discovery, there was no doubt that I would major in anthropology from the day I enrolled at the university. That was predetermined. My older brother had been a pre-medical student at the University of Nebraska before he enlisted on December 8, 1941, to become an Army Air Corps casualty during World War II. During high school I'd read and re-read his college notes, especially those from his anthropology courses from John Champe. Having already purchased and devoured E. A. Hooton's *Up From the Ape* and Roy Chapman Andrews' *Meet Your Ancestors*, I entered eagerly into college life. I took Anthropology 1 as a freshman—a course usually reserved for sophomores and above—and volunteered for laboratory projects. My first task was cataloguing artifacts from the Leary site, an Oneota village that had recently been tested. (It had been dug extensively in 1935.)

The anthropology department then consisted of two archeologists: John Champe and E. Mott Davis, who was then conducting excavations for the University of Nebraska State Museum at the Lime Creek and Red Smoke sites in Medicine Creek Reservoir, Frontier County, Nebraska. My first fieldwork experience was a weekend dig near the base of the deep bulldozer cut at the Lime Creek site. Graduate and undergraduate students in the department formed a genial cadre that carried out such digs as members of the "Beaver Patrol." Alan R. Woolworth, James H. and Dolores A. Gunnerson, James H. Howard, and Alvin W. Wolfe were graduate students on my arrival, later to be augmented by Mary Kiehl and Raymond S. Price, Jr. (who was to be my roommate over many semesters). Champe was not a great classroom teacher—he was, in fact, average—but his one-on-one instruction out of class was inspirational, and I'm both indebted and deeply grateful for his tutelage.

The 7th Plains Conference for Archeology was held in the Laboratory of Anthropology over the Thanksgiving holiday in 1949, as it was for years to come. Not yet knowing its coming significance, I did not attend, but went home for the holiday. I did, however, attend in 1950, and have failed to attend only four of them in the ensuing 45 years. For years, ending only in 1960, when the conference was sufficiently established to break this tradition, the conference met on this holiday. The dedication that led its participants to abandon their families for such a meeting testifies to the professionalism of its attendees (Figure 1). Thanksgiving was not, however, necessarily a good time to aggregate in Lincoln; on more than one occasion Burnett Hall was emptied of participants, like rats abandoning a ship, as news of an impending blizzard sent people fleeing for home to avoid being snowed in.

The Coffee Klatch was an informal setting for the many visiting archeologists who passed through Lincoln and allowed anyone present to meet such nationally known figures as Frank H. H. Roberts, Jr., Director of the River Basin Surveys and Associate Director of the Bureau of American Ethnology in 1952 (Figure 2). This renowned former Southwestern archeologist was a frequent visitor. He was one of the most gracious and unpretentious individuals in American archeology, courteous to the most junior field hand. I recall Roberts best at social gatherings, at which a favorite pose while seated was to lean into a conversation, one elbow resting on his knee. He was never arrogant in behavior, as may be observed in a

few prominent individuals that scarcely deign to speak to graduate students.

The Plains Conference was then an intimate group consisting of only a few dozen individuals. Even the most novice student archeologist rubbed elbows with such luminaries as J. O. Brew of Harvard, a perennial member of the Committee for the Recovery of Archaeological Remains (CRAR) and John M. Corbett, Chief Archeologist of the National Park Service. Having dinner with such persona was simple: simply remain underfoot. The ensuing conversations one overheard were highly educational from many points of view. At one Plains Conference, however, I was about to sit at a banquet dinner table with a culture hero—William Duncan Strong, my major professor's major professor, and my academic grandfather, so to speak. I slunk away when he turned to me and said, "Beat it, kid. I'm having dinner with my friends." It was a violation of the democratic spirit that prevailed then.

The end of my freshman year meant finding summer work and, infected by the discussions I overheard at the Coffee Klatch, it was inevitable that I'd become a crewman on one of the Smithsonian digs. Paul Cooper signed me on as one of the crew to be sent with Walter Douglas Enger, Jr., to the Tiber Reservoir in extreme northwestern Montana. (It was called "Tiberia" because of its great distance from Lincoln.) We spent the summer camped in a small park on the Marias River south of the hamlet of Galata. The only crewman I can now recall from that summer was Grover S. Krantz, now a physical anthropologist and an international authority on Sasquatch.

The camp was isolated, and no one had a radio. One Saturday evening, having a drink in the bar in Galata (they were casual about age), the bartender said, as he wiped a glass, "Well, what do you think about the war?" There were stunned faces as he described the opening of the Korean War, although no one was called to go at the time. I was fortunate to survive the summer; Grover Krantz and I several times swam races across the Marias, then in flood. (Remember that, because of its size, Lewis and Clark paused at the mouth of this river in June 1805 to determine whether or not it was the Missouri River.) We also enjoyed (I'd faint now) walking across the river on the one-foot-wide, top girders of the steel frame bridge near camp. In September, as the dig was winding down, I reached a salary level that would have lost my father his annual IRS deduction for me, so I continued working for a few weeks without salary so I could ride back to Lincoln



Figure 1. David A. Baerreis speaking at the 16th Plains Conference, Lincoln, Nebraska, fall 1958. At extreme left is John L. Champe in his role as conference recorder; at extreme right is Robert L. Stephenson (MRBS photograph).



Figure 2. Lawrence L. Tomsyck, John M. Corbett, and Frank H. H. Roberts, Jr., in front of the MRBS "O" Street office, Lincoln, Nebraska, summer 1961 or 1962 (MRBS photograph).

with Enger. It was cheaper to do so than try to get home on my own, but it impressed Cooper with my enthusiasm as much as it must have pleased my father. My coup that summer was the discovery of pottery buried in a terrace at the Galata site—among the first pottery recorded as being found *in situ* in the state of Montana (Figure 3) (Miller 1963).

By the end of the summer, my interest in physical anthropology was forgotten, and the following summer I again signed on as a Smithsonian field hand, this time on the crew of Robert Cumming. He was scheduled to dig at the Oldham site, an earthlodge village of uncertain affiliation in the lower reaches of the Fort Randall Reservoir, South Dakota. It wasn't long, however, before I was transferred with a few others to Richard Page Wheeler's camp in the Keyhole Reservoir, northeastern Wyoming. He'd been unable to hire local help, and Lawrence (Larry) L. Tomsyck drove us to Keyhole, Wyoming, to join his crew. Tomsyck was the Administrative Officer for the MRBS (Figure 4) and later for the Midwest Archeological Center before becoming the perennial treasurer for the Plains Anthropological Society and publisher of J&L Reprints. He and his wife Janice deserve a medal of commendation for their selfless service to the community of Plains scholars. We stopped for lunch at Wall Drug. (It was enlarged to unrecognizable proportions when I saw it again a quarter-century later, though the mechanical cowboy band remained.) Wheeler was in a remote tent camp on a hill not far from that of William T. Mulloy, of the University of Wyoming, who was digging the McKean site.

I wasn't to remain there long. Franklin Fenenga, who was to become a close friend, was doing reconnaissance that summer in a number of small reservoirs and he needed an assistant. He spent several days in camp assessing who he wanted to accompany him, and eventually he chose me. For the remainder of the summer, we conducted surveys in the Alzada Reservoir, Wyoming (it was never built), the Jamestown Reservoir in eastern North Dakota (we were rained out), the Gavins Point Reservoir in Nebraska-South Dakota, and in Lovewell Reservoir in Kansas. It was a stimulating period. Fenenga was an excellent teacher and mentor with an incredible range of knowledge, and we had unending opportunities to discuss anthropology and archeology, not to mention practical aspects of site survey, excavation, and interpretation, often during meal preparations over a Coleman stove in the Wyoming or North Dakota outback. We frequented no motels, but lived in our

Chevrolet Carryall; on occasion, we even slept in it during rainy nights.

In the summer of 1952, Fenenga took a crew to the Oahe Dam locality near Fort Pierre, South Dakota, which Donald J. Lehmer had earlier used for his dissertation at Harvard and that led to his synthesis of Middle Missouri archeology (Lehmer 1954). The principal goal was to excavate the Buffalo Pasture site (Figure 5), though we also did limited work at the Indian Creek site (Lehmer and Jones 1968). Fenenga's field assistant, a classical archeologist, did not last the season, and Richard Keslin and I were chosen to take his place. On weekends a few of us made tours to visit some of the local sites (like Arzberger and Fort Sully) or traveled to North Dakota to visit landmarks such as Huff, Double Ditch, and Fort Abraham Lincoln. We also dug a few weekend test pits in a few sites near Fort Pierre, including Breeden (just downriver from camp) and McClure (at the base of the bluff below Arzberger).

Camp near Fort Pierre was established in the abandoned ranch buildings of Scotty Philips, famed as the eccentric who tried his best to put *Bison bison* to practical use, hitching them to wagons (until they were torn to pieces) and pasturing them along the Missouri River north of the future site of Oahe Dam. The protohistoric Arikara Buffalo Pasture village site was in their former pasture. (In 1907 Scotty Philips made a major wager that his buffalo would mop up the ring in a confrontation with any Mexican fighting bull. The results of that encounter [Dickson 1995] should be required reading for all Plains scholars.) We cooked our meals in his barn and had our sleeping quarters in the adjoining grain bins. The ranch buildings were in an area that is now high above the emergency spillway for the dam. Nightly we could hear the roar of earth movers as they worked around the clock to complete the dam under floodlights that made it unnecessary to illuminate the ranch grounds. It was an other-worldly setting.

The Hopscotch Bar in Fort Pierre was a favorite watering hole for those that came to visit. It still is a local favorite, but its competition for Saturday night visiting archeologists, the Silver Spur, went out of business long ago. The Spur was perhaps best renowned then as a hangout for Casey Tibbs, a nationally-famous champion rodeo rider. When Carlyle S. Smith, for example, visited from his dig at Talking Crow, the combined archeologists and their crews would assemble in one or the other of these

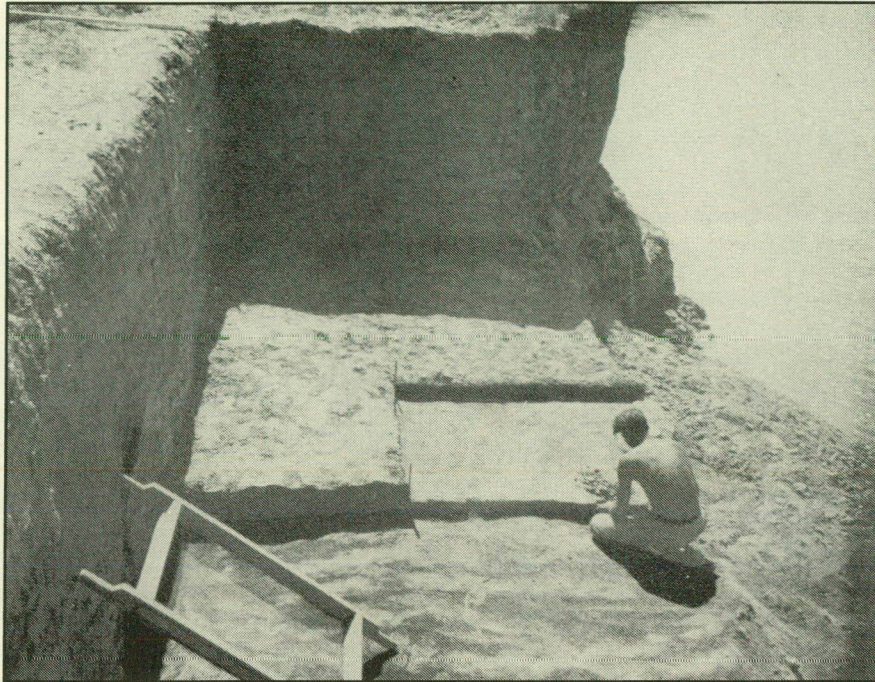


Figure 3. Author excavating in the lower levels of the Galata site in the Tiber Reservoir, Montana, summer 1950 (from Roberts 1952:Plate 2-2).

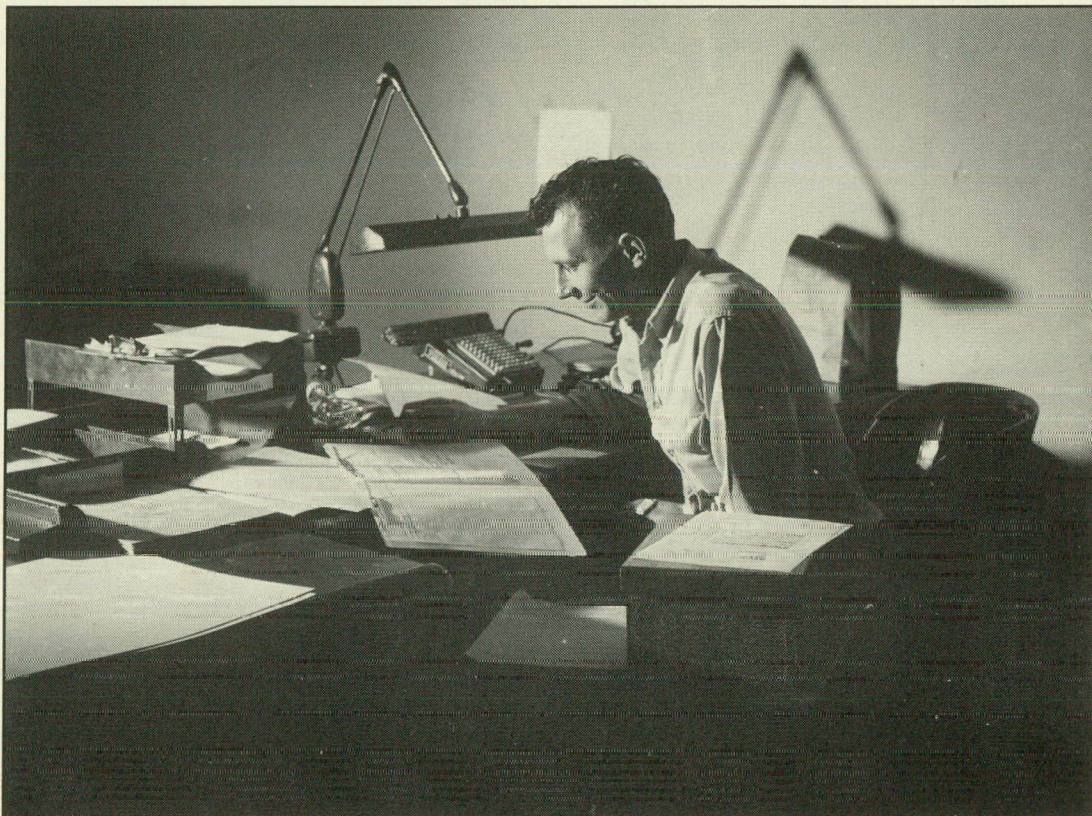


Figure 4. Larry Tomsyck at his desk, Lincoln, Nebraska, fall 1955 (MRBS photograph).

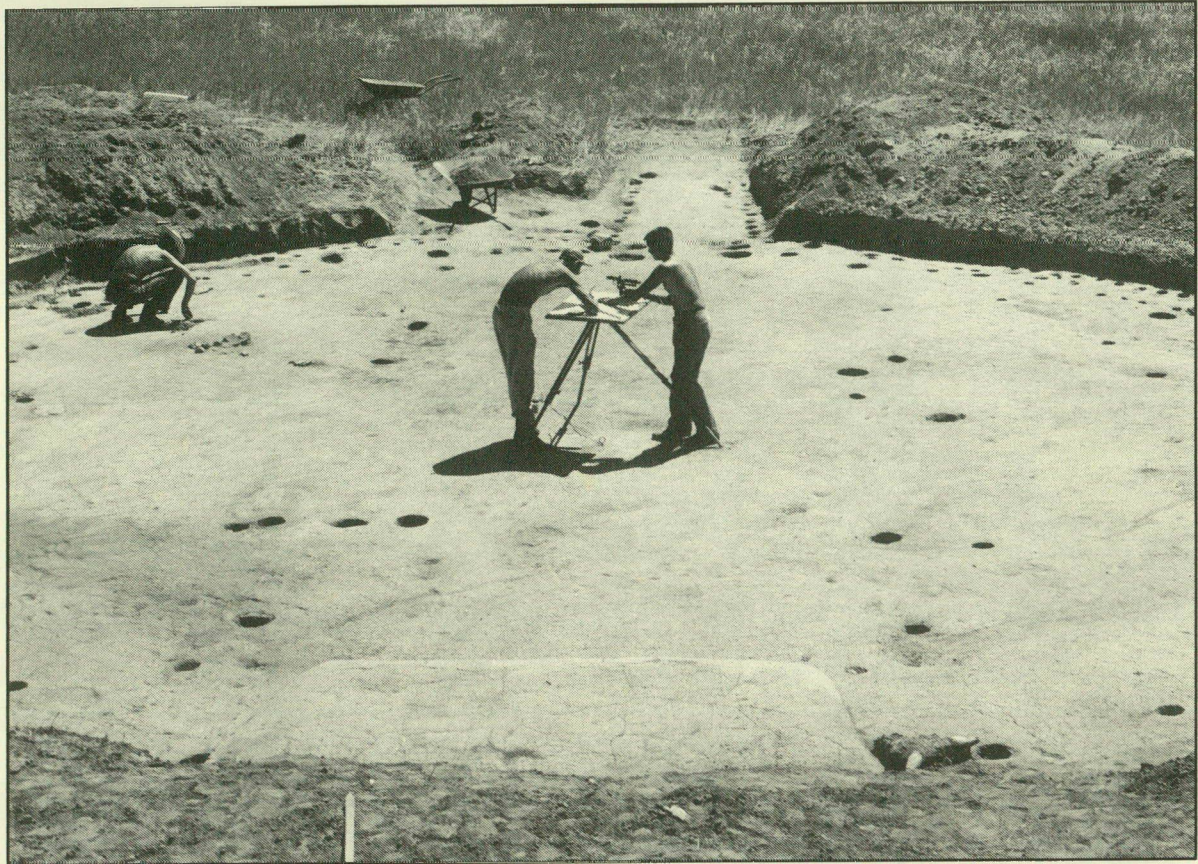


Figure 5. Mapping a house at the Buffalo Pasture site, South Dakota, summer 1952 (MRBS photograph).

landmarks, as we did when Smithsonian Institution/National Park Service inspection teams arrived to review the work under way (Figure 6). A recent visit revealed that the Hopscotch has changed little over the past forty years—except that dancers are now topless.

Theodore (Ted) E. White was a Smithsonian vertebrate paleontologist who was assigned the task of surveying the paleontological resources of Missouri basin reservoirs. His efforts in that arena were not conspicuous, for fossil-bearing deposits were rare in most of the reservoirs slated for construction. In any case, Ted's efforts weren't major topics of conversation among archeologists, and we heard little of his traditional professional accomplishments. However, when he began identifying animal bones from archeological sites, at first more as a courtesy than anything else, his reputation in archeology bloomed. He soon began publishing papers devoted to the interpretation of butchering and other aspects of prehistoric hunting practices, and these gained international attention. Today, his pioneering work in archeological interpretation ranks him as one of the

most significant founders of zooarcheology. He later became superintendent of Dinosaur National Monument in northwestern Colorado.

I graduated from Nebraska with my B.A. in June 1954, and Alan Woolworth hired me as his assistant in the excavations at Like-a-Fishhook village and the site of Fort Berthold I, an American Fur Company post in the Garrison Reservoir, North Dakota (Figure 7). Like-a-Fishhook was the last earthlodge village occupied by the Mandan, Hidatsa, and Arikara on the upper Missouri. Our employer, the State Historical Society of North Dakota, was collaborating in that project with Smithsonian archeologist G. Hubert Smith, one of the pioneers of American historic sites archeology. The fort had been stripped of overburden by a road patrol when I arrived, and the challenge of separating the features of the fort from those the Arikara had built over its charred ruins proved an interesting task. In one sense it was a distinct rarity: a Euro-American site stratigraphically below a native American occupation. The final report on Fort Berthold and Like-a-Fishhook village, prepared by



Figure 6. "The stomp dance." An Inter-Agency inspection team visits the Buffalo Pasture site, South Dakota, summer 1952. From left to right are Gordon Baldwin, unknown, Frank H. H. Roberts, Jr., and Franklin Fenenga (MRBS photograph).

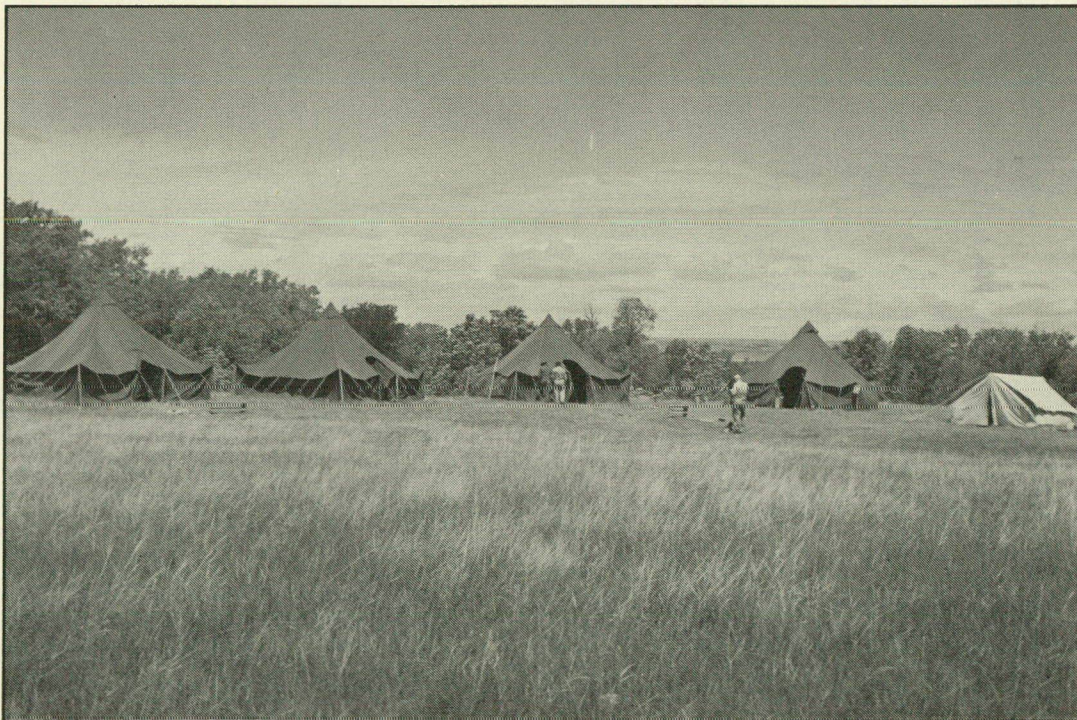


Figure 7. Surplus army tent camp at Like-a-Fishhook village, Garrison Reservoir, North Dakota, July 1954 (author's collection).

Smith (1972), was based on a host of reports prepared by Glenn Kleinsasser, James Howard, Alan Woolworth, and me.

When excavation of the fort was completed, Hubert Smith returned to Lincoln, and in July our crew went further up river and excavated Kipp's Post (now identified as the elusive Fort Floyd, precursor of Fort Union) (Woolworth and Wood 1960). After the work there was over and the crew left, Woolworth and I completed the excavation of Grandmother's Lodge, the northernmost Extended Middle Missouri site on the Missouri River. When it was published (Woolworth 1956), this brief report became the first site report on a Missouri valley village people to appear in the full half-century since Will and Spinden's 1906 report on the Double Ditch Mandan site. I stayed on in Bismarck that fall to work on the excavated material (Figure 8) and returned to the University of Nebraska in January 1955, when I began work on my Master's degree and worked part-time as a draftsman for the MRBS. My roommate during that period was Raymond Price, who as a MRBS employee had mapped Like-a-Fishhook Village in 1954. He worked at the Nebraska State Historical Society after obtaining his M.A. from Nebraska in 1956, later moving on to a museum career in the National Park Service.

In the summers of 1955 and 1956, I was again Alan Woolworth's assistant in projects that excavated the Paul Brave and the Demery sites, both near the North Dakota-South Dakota boundary (Wood and Woolworth 1964; Woolworth and Wood 1964). Woolworth gave me my first non-MRBS job, initiated me into historic sites archeology, and treated me as an equal partner in everything we did at North Dakota. I'll never forget his kindness and helpfulness to me as a fledgling archeologist. I returned to Lincoln in the summer of 1956 to defend my M.A. thesis, *The Redbird Focus* (Wood 1965) (Figure 9). Frederick Hadleigh West, today editor of the *Review of Archaeology*, was our assistant at Demery. (He will remember the day we ran over a piglet in the society's station wagon, and we had to shoot it.)

Our field quarters were the women's dorm, which was vacant during the summer, at the Indian school in the town of Fort Yates on the Standing Rock Reservation, North Dakota. This placed us in daily touch with Native Americans, some of whom became friends and others became crew members, and we sometimes attended local pow-wows with them (Figure 10). Now that I had my M.A. in hand, I remained as a full-time archeologist at the State Historical Society of

North Dakota for the fall and winter of 1956-1957. Opportunities for continuing research there were great, but the pay was so poor that both Woolworth and I resigned to accept new positions. I moved to the University of Missouri-Columbia on April 1, 1957, to become a Research Associate in the Division of American Archaeology. For the next year and a half I did survey and excavation in the future Pomme de Terre, Table Rock, and Harry S. Truman reservoirs in southwestern Missouri.

The Missouri work was great experience, but I was anxious to return to school and in the fall of 1958 I enrolled in the University of Oregon-Eugene to pursue my doctorate under Luther S. Cressman. The principal outcome of my work in Missouri was an overview of the prehistory of the Pomme de Terre Reservoir. The manuscript was in nearly finished form, and I planned to use it as my doctoral dissertation. Cressman agreed it could be so used—but that was not to be.

One reason I'd chosen Oregon for further graduate work was its distance from the Great Plains, for I needed broader experience. After my first year at Oregon, I spent the summer of 1959 on one of Cressman's digs in the John Day Reservoir on the Columbia River. Excavations were sponsored by the Columbia Basin Project, the regional equivalent to the MRBS. Our camp was in a peach orchard on the south shore of the Columbia River near the hamlet of Blalock, Oregon. I directed excavations at the Wildcat Canyon site, a mile or so west of Blalock (Dumond and Minor 1983). The site posed new and challenging problems: it was a cemetery in which the inhumations had been interred in pits, dug into sand and covered by blocks of basalt, after which a sand dune had formed over them. Rodents then had a heyday churning the material. Needless to say, there were many frustrating moments, but it was an instructional summer. The deep, basalt-lined Columbia gorge was a distinct change from the Missouri valley trench.

During my graduate career at Oregon, I came under the spell of an enthusiastic Africanist, a member of my doctoral committee, who had done fieldwork in Sierra Leone. I devoted a great deal of class work to African archeological and ethnohistorical studies, focusing on West African forts and trade posts. One afternoon the Africanist, on his way to visit his colleagues at Northwestern University, stopped by my cubbyhole office and asked if he could help in any way with my research. It was a perfect opening. I told him that I'd really appreciate any help he could give me in

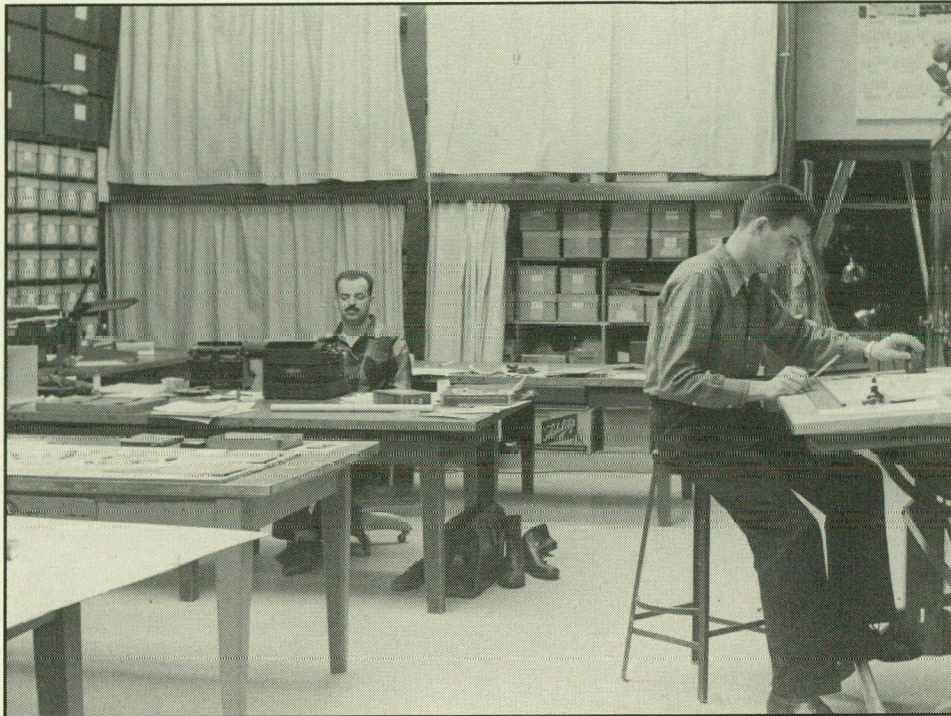


Figure 8. Museum work room at the State Historical Society of North Dakota, Bismarck, spring 1957. Alan Woolworth is on the left; author is on the right (author's collection).

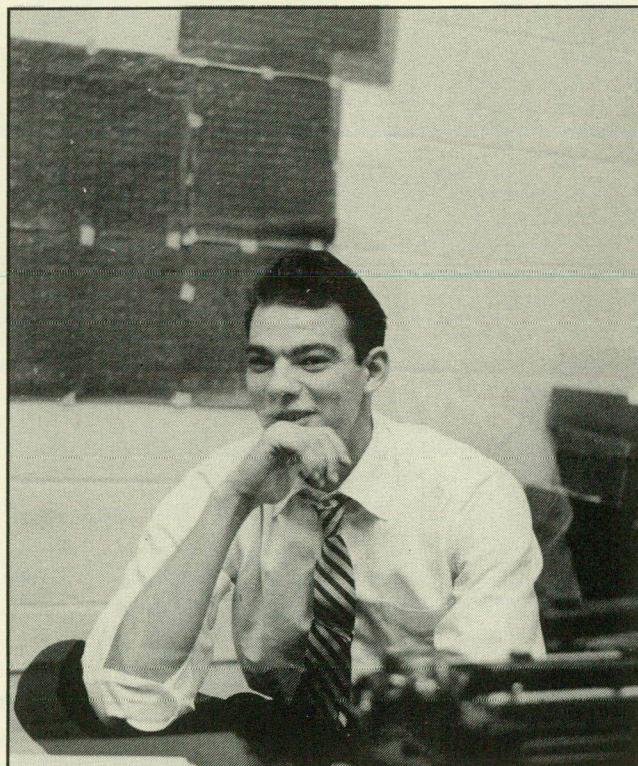


Figure 9. Author takes time out from working on 25HT3, the Redbird I site, fall 1955 (author's collection).



Figure 10. "The young mimicking the old." Fort Yates Fair and pow-wow, Fort Yates, North Dakota, summer 1960 (Bernard Weinreich photograph).

locating the site of Lord Greystoke's cabin. To the best of my knowledge, I said, it had to be somewhere on the coast of Sierra Leone. He agreed to do so. A few weeks later, however, he returned to my office, pelted me with expletives, and otherwise verbally abused me. His Northwestern colleagues were more widely read than he in Edgar Rice Burroughs' Tarzan books. I'm fortunate to have graduated, but he too had a sense of humor.

In my second year of graduate work at Oregon, Paul L. Beaubien in the National Park Service office in Omaha, Nebraska, contacted me to ask if I'd be interested in conducting salvage work at the Huff site

in the upper Oahe Reservoir, North Dakota. I jumped at the chance, for this distinctive fortified village was one of the most fascinating sites on the Missouri River, and I'd been intrigued by it since my first visit there in 1952. I subsequently spent June to September 1960 in excavations there, unearthing the first (and only) sub-circular, four-post earthlodge in a prehistoric Mandan village of long-rectangular houses. Jon Muller (now at Southern Illinois University-Carbondale) and Walter H. Birkby (now at the Arizona State Museum) were both members of the crew. Birkby was from my home town of Gordon, Nebraska, which coincidentally is also the home of Melvin L. Fowler (now retired from the University of Wisconsin-Milwaukee).

The following academic year at Oregon was supported by a National Science Foundation grant to Cressman to write up the Huff site and for an interpretation of Mandan culture history—a fact that led Cressman to insist that I use Huff as my dissertation. My third year at Eugene was a busy one; course work was winding down, and I was given laboratory space to work up the Huff material—a space that I shared with a most stimulating visiting professor, Fay Cooper-Cole of University of Chicago fame. I completed the Huff report for the National Park Service in February 1961, and the text of my dissertation four months later. In the publication (Wood 1967a) the Huff site report was inserted between the introduction to my dissertation and the interpretation of Mandan culture history that concluded it.

A career change was imminent, for after graduation I assumed duties as Curator of Anthropology at the University of Arkansas Museum in July 1961. During my tenure in that position, I excavated Breckenridge Shelter in the Beaver Reservoir and at the Crenshaw Mounds on the Red River, and I prepared a number of papers on existing museum collections. I also submitted a proposal to the National Science Foundation in mid-1962 for a research grant to initiate an archeological and ethnohistorical survey and interpretive program for the lower Gambia River in The Gambia, West Africa. It was not funded, however, and any prospects and enthusiasm I had for becoming active in African prehistory and ethnohistory evaporated as I became more involved in midcontinent American archeology. The \$31,000 budget that I submitted for a year's fieldwork in Africa seems incredible by today's standards, but it included such necessary amenities as a domestic staff: a "cook-steward and small boy" for nine months for \$243. I salvaged what I could of my background research for that project in an article that appeared in the *Journal of African History* (Wood 1967b).

In July 1963 I left Arkansas to become a Research Associate and Director of River Basin Archaeology with the Division of American Archaeology, Department of Anthropology, University of Missouri-Columbia. I've remained there ever since, though my titles have changed. My position at Missouri was to coordinate and direct excavations within in-state reservoirs, but I later was able to direct some of those activities through a growing cadre of exceptionally high-quality graduate students. By the mid-1960s I had the time to accompany Wilfred D.

Logan and other National Park Service and CRAR personnel on their summer inspection tours of sites being salvaged in the Central and Northern Plains. Later I also contracted with the National Park Service to continue work along the middle Missouri River at the Lower Grand and Walth Bay sites, and I initiated work in the Stanton-Sanger area above Bismarck in collaboration with Donald Lehmer of Dana College.

I first met Lehmer in 1950. He helped drive Douglas Enger's crew to the Tiber Reservoir, then he returned to South Dakota and began work at the Dodd site. Our contacts were casual and fleeting until 1965, when we both attended the annual meeting of the Society for American Archaeology in Urbana, Illinois. We were having a drink with a group of colleagues in a bar one evening after the sessions, and as others drifted slowly away, we become more and more engaged in conversation. Eventually we were by ourselves, and it was late that night when we concluded our palaver, during which we laid our initial plans to investigate Plains village cultures in the Missouri valley trench between the Oahe and Garrison reservoirs. We became close—inseparable—until his tragic death in 1975. During the intervening time we investigated the upper Knife-Heart Region on the Missouri River in North Dakota (Wood 1986). Don was a friend, mentor, father-figure, and role model; only the death of members of my family equaled the sense of loss I felt when he was gone.

Several times in the 1960s, I went to Washington, D.C., to testify before the Committee for the Recovery of Archaeological Remains, and to Lincoln, Nebraska, to serve as a consultant for the Knife River Indian Villages National Historic Site in North Dakota. In each instance I was appointed a National Park Service "collaborator," a term some of us found somewhat discomfiting, given its World War II connotation as a "Quisling."

My first fieldwork had been in the Plains, and whatever my duties, it remains the area most emotionally charged for me. There is the dual attraction of having grown up in the Sand Hills of western Nebraska—*Old Jules* country (my parents knew him)—and the hypnotic effect the treeless, ocean-like expanse of the mixed and short-grass plains has on so many people. I always experience a feeling of awe on crossing the Wide Missouri, and whereas I'd never want to live again in the rural Plains, it is a privilege and joy to work and travel there. Notwithstanding, here I shall slight my post-MRBP activities, both in the Dakotas and in the Ozark

Highland of Missouri, to comment on the twilight history of that organization.

In 1965 at the request of the Smithsonian Institution, an *ad hoc* review committee carried out an evaluation of the River Basin Surveys program. I did not participate in that meeting, but another *ad hoc* committee was formed in 1968 and was asked to review the objectives, administrative organization, and procedures of the MRBS. Committee members David A. Baerreis, Jesse D. Jennings, Douglas W. Schwartz, and I convened in late January in Lincoln, Nebraska, with representatives of the MRBS, Smithsonian Institution, and National Park Service.

The review was called to consider the changing nature of salvage archeology in the Missouri basin. The major reservoirs were now completed and either were filled or filling with water. Furthermore, there were by then many more state-affiliated archeologists available to work in the area. What was the continuing role of the MRBS to be in this new environment? There had been ambiguity in its administration from the beginning; the MRBS was not an integral part of the Smithsonian Institution, despite outward appearances, but more of an autonomous unit—one that was entirely funded by a second federal agency, the National Park Service. In practice there was no conflict between these two agencies, principally because each of them assumed that responsibility for the operation and its quality control resided with the other.

Smithsonian administrative personnel in Washington at this time seemed to be most concerned about the lack of problem orientation in fieldwork and reports. The committee was again asked to consider the publication record of the MRBS staff, especially its review procedures. Articles and monographs were routinely and carefully reviewed internally by MRBS directors and staff, but rarely did they undergo outside review except for feedback from papers delivered at the Plains Anthropological Conference and informal consultations with cooperating archeologists. Despite this lapse, the bulk of MRBS reports—admittedly emphasizing a culture-historical paradigm, then the reigning one in American archeology—were of consistently high quality, certainly with respect to some of those being prepared by many of the state cooperating institutions.

The committee contemplated future directions the MRBS might take, but it was obvious to us from

Smithsonian representatives at the meeting that they were reluctant to maintain a role as a partner in continuing the unit. We debated at length the pros and cons of many options, eventually contemplating four of them: (1) retaining the status quo, but adding research and training, (2) a gradual phase-out of the operation, (3) absorption of the MRBS by the Smithsonian, and (4) absorption of the MRBS by the National Park Service.

To best protect the program and insure continuity in its activities, the committee eventually endorsed its fourth recommendation: that the MRBS be absorbed into the National Park Service and developed into a regional research center (Schwartz *et al.* 1968). It was a difficult, unpopular, and controversial decision that engendered no small degree of bitterness by many of the parties involved, but it was accepted by the principals, and the transfer was effected almost immediately. The result was the formation of the Midwest Archeological Center (MAC) in Lincoln.

The first Chief of MAC was Wilfred Logan, who took over in July 1969. With this transition the MRBS entered history, although its contributions to Great Plains history and prehistory remain a benchmark in Plains anthropology. Twenty-twenty hindsight permits hypercritical reviews of its performance today by a few archeologists with little patience for or an appreciation of history. Nevertheless, the lessons, both good and bad, that it provided nearly a generation of archeologists were put to very good use in a host of interdisciplinary programs in the following years. The Harry S. Truman Dam project in the Missouri Ozarks in the 1960s and 1970s was one such project that benefited from those lessons (Wood and McMillan 1976). Given the time, funds, and circumstances of the period, we have every reason to be grateful for the contribution to our discipline by those that were dedicated to the MRBS program.

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# RECENT INVESTIGATIONS AT THRESHING MACHINE CANYON (14TO105) ON THE SMOKY HILL TRAIL

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*Archeological survey was recently performed at site 14TO105 (Threshing Machine Canyon), Cedar Bluff Reservoir, Trego County, Kansas, on November 16-17, 1994. This work was undertaken by the University of Nebraska State Museum in conjunction with the United States Bureau of Reclamation. As evidenced by the rock inscriptions carved on the bluff walls, Threshing Machine Canyon was visited as early as 1849 (quite possibly earlier) and up to the present. The majority of the names, dates, etc. on the bluff are from the "Pike's Peakers" in 1859 and from U.S. cavalrymen (3rd Wisconsin and 13th Missouri) on the Butterfield Overland Despatch in 1865.*

## INTRODUCTION

Site 14TO105, commonly known as Threshing Machine Canyon or Bluffton Station, [REDACTED]

[REDACTED] The bluff face itself is heavily vegetated with vines, brush and locust, and cottonwood trees. An intermittent stream and large cottonwood trees are found at the base of the bluff (Figure 1).

[REDACTED]

Lee and Raynesford (1980:63) provide a sketch map of the site done by Howard C. Raynesford and son sometime prior to the 1960s. This map shows a portion of the trail in the same location as the modern access road and a portion of the trail curving along the base of the bluff. Lee and Raynesford (1980:64) note that past flood action and later the reservoir have covered the trail between the Cedar Bluff dam and the site. Water action has apparently undercut the bluff,



Figure 1. View of bluff from 14TO105 site datum, looking southwest.

causing many of the limestone blocks, carved with inscriptions, to cave in and crumble along the bluff base. The reservoir water presently does not back up to the base of the bluff, as it did in the past.

Very little investigation has been undertaken at Threshing Machine Canyon, although a brief description of the site is found in Lee and Raynesford (1980:62-64). The name "Threshing Machine Canyon" derives from oral tradition in which freighters transporting a horse-powered threshing machine to Utah were attacked and killed by Native Americans as they camped at the bluff base. Supposedly, early homesteaders found the remains of the threshing machine and gave the name to the bluff (Lee and Raynesford 1980:63-64).

The relatively flat, grassy area below the bluff was a popular camping area for explorers, surveyors, homesteaders, and others during the nineteenth and early twentieth centuries. For a brief period in 1865, the site was a Butterfield Overland Despatch (B.O.D.) station (Lee and Raynesford 1980). This is evidenced by inscriptions of names, dates, military units, places, and symbols present on the limestone rock face. Dates found on the rocks vary from 1849 to the present. Possible earlier dates are 1796, 1800, and 1811. Much of the bluff base has been silted in, and the possibility of buried remnants of camps or station structures exists. Monahan (1985:241) describes B.O.D. stations as being standard, composed of low dugouts for the main stage building and stables, often dug underground as well.

Site 14TO105 certainly serves as a good indicator of Euro-American use of and presence on the Smoky Hill Trail throughout the latter half of the nineteenth century. Currently no evidence of Native American presence at the site is apparent. Native American use of the site cannot be ruled out, as their presence on the Smoky Hill Trail was common during and before the nineteenth century. Native American petroglyphs are known at other rock faces on the Smoky Hill, such as Inscription Rock in Ellsworth County (Wedel 1959:482-494).

## METHODS

The goals of this project were to record and map the rock inscriptions at Threshing Machine Canyon (14TO105) and to assess the condition of the site. A secondary objective was to appraise the natural and human-induced (vandalism) damage to the rock art. A site datum was established on the northeastern edge

of the site at the base of the "Threshing Machine Canyon" sign. This point was recorded with differential Geographical Positioning System (GPS) equipment for an exact location of the datum. The particular GPS system used (Magellan Systems MBS-1 base station and Magellan Systems ProMark 5000 remote station) is shown to have a field accuracy of 2 meters. Two mapping stations were established and tied into the site datum (Figure 2).

Twenty-three arbitrarily defined clusters (A-W) of rock inscriptions were found along the bluff face and on limestone blocks that had fallen to the base of the rock face. The central point of each of these clusters (reference points) was tied into one of the mapping stations (see Figure 2). For each reference point, all legible inscriptions were recorded, photographed (when possible), and assigned catalog numbers. Notes were taken on the condition of the inscriptions as well. Additionally, series of points along the bluff top was recorded to derive a plan view of the bluff with the location of the rock inscriptions (Figure 2). Due to time constraints, topographical mapping of the site and two-dimensional mapping of the bluff face were not possible.

## SUMMARY OF ROCK INSCRIPTIONS

All of the still legible inscriptions are listed in Tables 1-4, following the text. It should be noted that the data in the tables show the content of the inscriptions, not necessarily how they appear on the bluff itself. A summary of the condition of the inscriptions and discussion of some of the more interesting aspects of the site are presented below. Photographs of selected panels are presented in map reference order at the conclusion of the paper.

## CONDITION

Rock inscriptions and drawings are found along the bluff face east of the ravine and on the extreme northwestern edge of the bluff (see Figure 2). Large chunks of the cliff have fallen in, and many of the inscriptions are found down slope and at the base of the cliff. Natural weathering has damaged and destroyed many of the inscriptions, especially the older ones. In addition, vandalism has affected a large portion of the site as bullet holes, superimposed inscriptions, attempts to remove inscriptions, recent carvings, and altering of inscriptions have occurred. As a conservative estimate, 50 to 55 percent of the inscriptions have been damaged or destroyed either through natural means or vandalism.

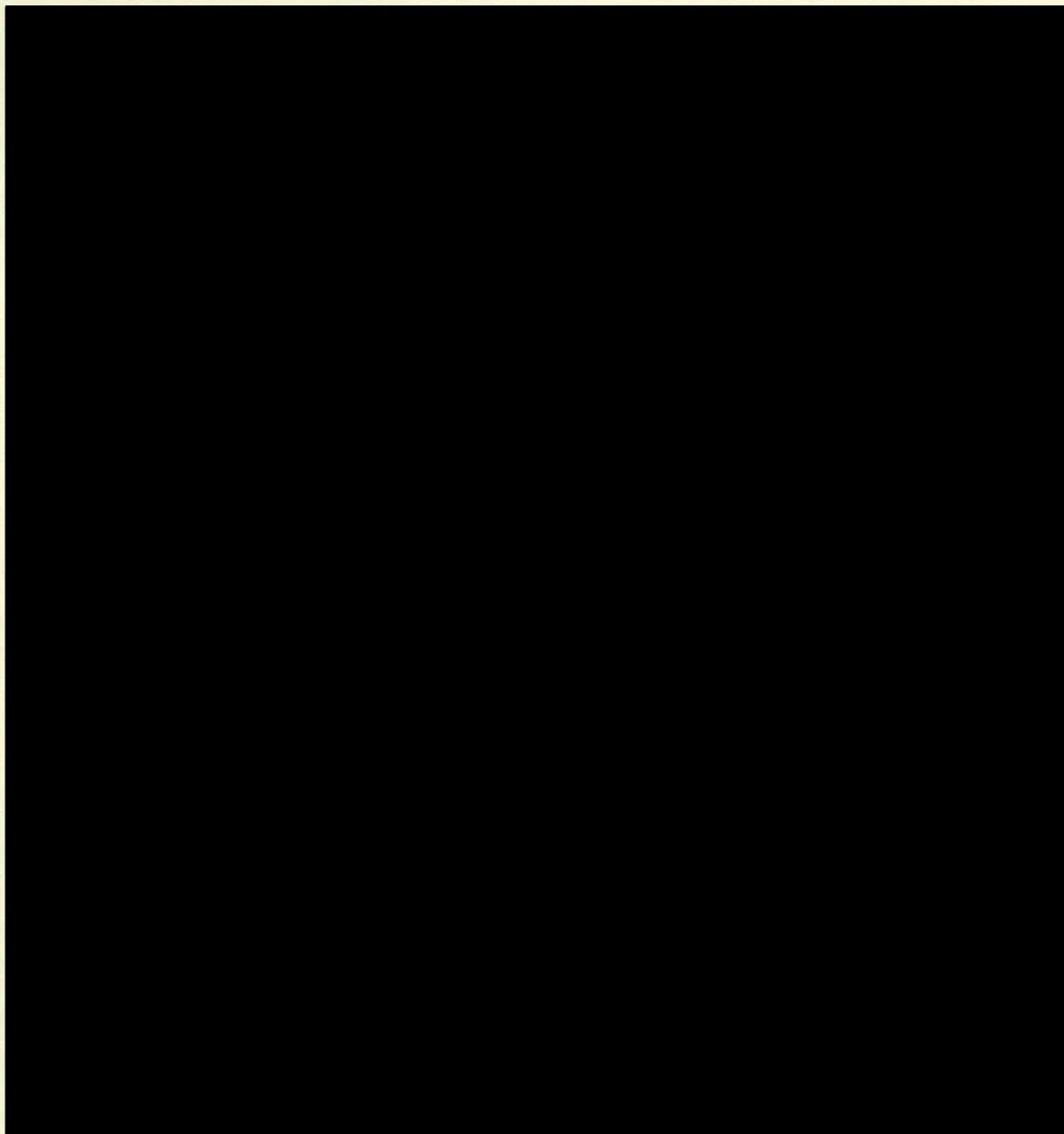


Figure 2. Plan view of Threshing Machine Canyon (14TO105), showing cliff edge across the site and location of datum points where rock carvings were found.

#### PRE-1865 (TABLE 1)

The oldest known inscriptions are from 1849, although the possibility of earlier ones exists. One of these possible pre-1849 inscriptions is an apparent date of 1800 associated with "W.A. Thompson" (map reference L, Figure 8). Also associated with this inscription were the letters "KY." All members of the field crew viewed this date and agreed that it certainly appeared to be 1800. This seems early, however, for a Euro-American with an English name in western

Kansas. Another, though less distinct, inscription has a date that appears to be either 1796 or less likely 1776 (map reference U, Figure 16). Of interest, this date is above a carved drawing that looks like a stick figure with a staff just to the right of the figure. Some script letters are near the theorized year but are unreadable. Another perplexing inscription is "THO<sup>S</sup> RYAN" (map reference S, Figure 15). The date associated with this inscription is rather difficult to read, but it is 1811, 1861, or more likely 1866.

### California Gold Rush of 1849

With the discovery of gold in California, a large-scale emigration across the Plains was seen in 1849. Paxson (1924:375) states, "The emigration of the 'forty-niners' was the largest and most heterogeneous that the plains had seen." The Platte River Trail was the most popular but not the only route used to get across the plains (Paxson 1924:375). It is evident that the Smoky Hill Trail was also used in 1849, as seen by a few inscriptions at 14TO105. At least two inscriptions bear the date 1849, and several others are likely associated. The best example is "T.R. HUNT NJ 1849" (map reference M, Figure 12). The "NJ" may stand for New Jersey, as Lee and Raynesford (1980:63) interpret. Another inscription with "NJ" is "W. SimoN" (map reference J, Figure 6). W. Simon's inscription also shows a nicely carved dove just under the name. It is possible that "W. SimoN" is associated with "T.R. HUNT." Lee and Raynesford (1980:63) state (without providing a reference) that the 1849 inscriptions are part of a U.S. Government survey party sent to investigate the Smoky Hill Trail, as a result of Fremont's report on the area. Fremont explored the Smoky Hill in 1844 and was again in the vicinity on the eastern portion of the Smoky Hill and also along the Arkansas River in 1848 (Lee and Raynesford 1980:12-13; Hafen and Hafen 1960). A more likely explanation, however, for the 1849 inscriptions at 14TO105 is from fortune seekers heading west for the California gold rush.

### Colorado Gold Rush of 1859

The discovery of gold in the Rocky Mountains of Colorado led to another emigration across the plains in the spring of 1859. Several inscriptions at 14TO105 are from May and June of 1859 and are presumably

from travelers following the Smoky Hill route to the gold region in Colorado. The Smoky Hill route was more direct and shorter than other routes across the plains. The trail in the spring and summer of 1859 was arduous, and travelers suffered from thirst, hunger, and Native American attacks. (See Hafen 1942 for descriptions of these ordeals.) Emigrants apparently came from a widespread area to take the shortcut to Colorado, as evidenced by such inscriptions as "CHB BOSTON 59" (map reference M, Figure 10); "H. HOGAN canada 1859" (map reference B, Figure 4); "J. Rees Ohio 1859" (found at Sternberg Museum, Hays, Kansas); and "J.J.K. Thompson Sterling, Illinois, May 19, 1859" (found at Sternberg Museum, Hays, Kansas). Worthy of note is the drawing of a running deer above "KELLY" in 1859 (map reference L, Figure 9).

### 1865--13TH MISSOURI, 3RD WISCONSIN, B.O.D. (TABLE 2)

Green Russell surveyed the Smoky Hill Trail for the purposes of building a road in the summer of 1860 for the city of Leavenworth. Leavenworth anticipated a large scale rush up the Smoky Hill Trail to the gold region of Colorado in 1861 (Lee and Raynesford 1980:43-44). Such was not the case, however, with the onset of the Civil War. Much of the road surveyed by Green Russell did provide the basis for the B.O.D. survey in 1865 (Figure 3). Use of the Smoky Hill Trail reached its apex with the Butterfield Overland Despatch, and consequently most of the inscriptions at Threshing Machine Canyon reflect this period.

Among the most extensive inscriptions at 14TO105 are those of representatives of at least two companies of the 13th Missouri Cavalry and one company of the 3rd Wisconsin Cavalry in 1865. As

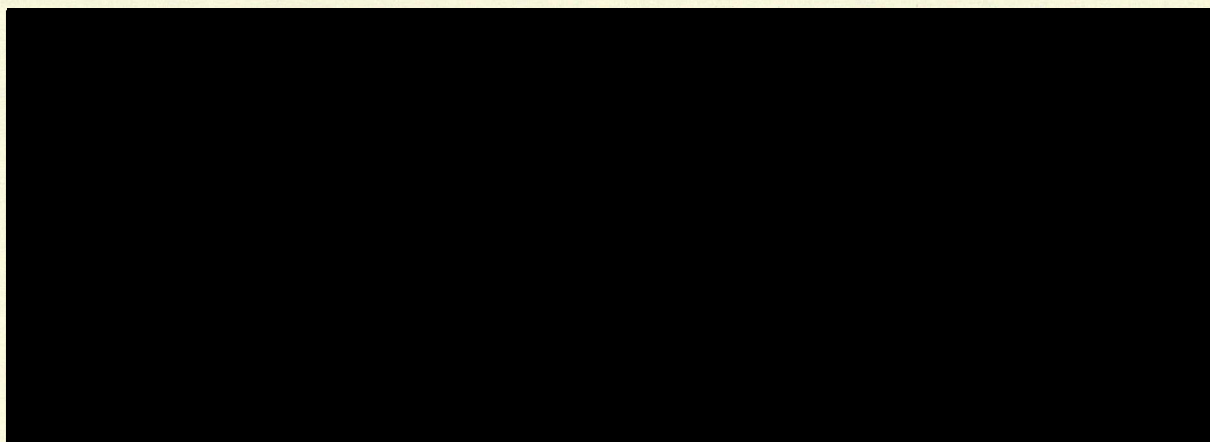


Figure 3. Approximate path of the Butterfield Overland Dispatch, showing the location of 14TO105.

evidenced by several dates on the bluff face, cavalrymen were at Threshing Machine Canyon on at least two separate instances in 1865: July 20-21 and September 8. The 13th Missouri and 3rd Wisconsin were both at the site on July 20, 1865, while the September 8, 1865, date is only associated with a 3rd Wisconsin cavalryman. For the most part the 3rd Wisconsin cavalry inscriptions are restricted to the eastern end of the bluff, while the 13th Missouri cavalry is found on the extreme northwestern end. One exception is "C.J. CRANE, Co I. 3<sup>rd</sup> WIS. CAV" (map reference W, Figure 20) with the associated date of September 8, 1865. This indicates that the 13th Missouri and 3rd Wisconsin were together at Threshing Machine Canyon at least on July 20-21. It would appear that the 13th Missouri camped near the northwestern edge of the bluff, while the 3rd Wisconsin camped near the eastern edge. Besides the cavalry inscriptions, one other inscription is reflective of the Butterfield Overland Dispatch—"D.H. Crosby 1865 BOD." (map reference V, Figure 17).

Lieutenant Fitch of the Signal Corps and Colonel Isaac E. Eaton surveyed the Smoky Hill Trail for the Butterfield Overland Dispatch in the summer of 1865 with several companies of cavalry for protection, members of the 13th Missouri and 3rd Wisconsin (Fitch 1994; Lee and Raynesford 1980:63; Linville 1974:52-53). Missouri and Wisconsin troops in particular were fairly prolific in Kansas in 1865 as two companies of the 3rd Wisconsin were also at Fort Larned in July of 1865 (Brown 1963:51).

The surveying party left Fort Ellsworth on July 14, 1865, headed for Denver. Fitch (1994) sums up the composition of the group as follows.

Our party at this time consisted of Col. Eaton and his party of constructionists, twenty-six in number; eleven of our mule-wagons loaded with tools, reapers, and everything necessary for putting the road in fine condition; Major Pritchard; two hundred and fifty cavalry as escort, and the Engineer Corps.

A portion of this group camped at Threshing Machine Canyon on July 20, as evidenced by the rock inscriptions and Fitch's report. Fitch (1994:422) notes that on July 20, the group "bore away from the river and kept on high level land about three miles north of the river." He describes the area as such: "On the south of the river, opposite this point [vicinity of 14TO105], we discovered high bluffs covered with cedar" (Fitch 1994:422). The Butterfield Overland

Dispatch began business soon after the survey, and the first coach run arrived in Denver on September 23, 1865 (Brown 1963:192).

Threshing Machine Canyon, during the time the Butterfield Overland Dispatch was in operation, was known as Blufton station as a result of Fitch's survey. Blufton station, however, had a short life of only a few months due to Native American raiding (Davis 1867:145; Lee and Raynesford 1980:62). T. R. David (1867:145), a journalist for *Harpers New Monthly Magazine*, notes Blufton station as being "deserted and burned" when he passed through on November 21, 1865. He calls the site "Chalk Bluffs" but notes the station as being between Ruthden (maybe 10 miles east of 14TO105) and Downer's station (13 miles west of 14TO105). It seems likely that Davis' "Chalk Bluffs" was Blufton station. Stations were in the process of being renamed and respaced in 1865, which would have led to Davis' confusion regarding station names. Blufton station, though not an official station for long, apparently did remain a popular camping/rest stop.

#### 1866-1931 (TABLE 3)

The use of the Butterfield Overland Dispatch decreased dramatically in 1866, and Butterfield sold the business to Ben Holladay in 1866 (Brown 1963:201; Hafen 1926; Monahan 1985:241). The stagecoaches quit running a few years later in 1870 with the completion of the Kansas Pacific Railroad (Lee and Raynesford 1980:141). Inscriptions at Threshing Machine Canyon are sporadic but consistent after 1865. There are a few inscriptions with discernible dates from each decade between 1870 and 1930. The Smoky Hill Trail was evidently still being used in the latter half of the 1860s and 1870s, as evidenced by a handful of inscriptions from this period.

#### Public Land Survey

A few inscriptions are apparently from federal or state land surveys. Public land survey in Kansas was initiated with the formation of the Kansas Territory in 1854 and was finished by 1876 (Socolofsky 1976). Three inscriptions, "HEAD US." (map reference I, Figure 5), "J.E. Burrell (?), U.S. Survey" (map reference B), and "U.S. Survey Roberts" (map reference D), would seem to be from these surveys. Survey of the area around Threshing Machine Canyon (Township 14 South, Range 22 West) was done in July of 1867 (General Land Office Map 1867). These inscriptions may date to this period. Survey and construction of the Kansas Pacific Railroad was in the

vicinity of 14TO105 in 1867 and 1868, as the railroad ran about 12 miles north at Ogallah (Miner 1986:28, 40).

In regards to government survey parties at Threshing Machine Canyon, one problem needs clarification. Lee and Raynesford (1980:63), as discussed previously, note a government survey party at Threshing Machine Canyon in 1849. They believe "T.R. HUNT NY 1849" (map reference M, Figure 12) to have been a member of this party. This survey, however, is not referenced in Lee and Raynesford's book, and it is questionable if such a survey took place. It is proposed here that the 1849 inscriptions are from emigrants heading west for the California gold rush. Thus early government surveys, other than the Green Russell (1860) and Fitch (1994) road surveys, would have taken place with the public land surveys.

#### Homesteading

There are several inscriptions from the 1880s and 1890s, reflecting perhaps homesteaders settling in or passing through the area. Homesteaders from across the country, and especially from Ohio and Illinois, were settling in Trego County (Miner 1986:68). Inscriptions from the early 1900s show a local use of the site, likely as a recreation area. One prolific "carver" from this period was Hugh Adair of Ellis, Kansas, who carved his name in at least four areas of the site around 1906 (map references E, K, S, and U). Other relevant inscriptions are "WT Barrett" of Windom, Kansas, November 10, 1908 (map reference S) and "J.L. Joy" of Hays, Kansas, 1917 (north of map reference S). It seems that Threshing Machine Canyon was still a popular camping area well into the twentieth century.

#### MISCELLANEOUS AND MODERN (TABLE 4)

After 1931 there are no readily discernible dates until the 1990s. Many other inscriptions are without dates or are unreadable, and various drawings and symbols are seen as well. One group of drawings in particular is superimposed over older inscriptions. These drawings are of a man, woman, cow (or deer), and face (map reference M). Others include a Masonic symbol (map reference J) and a probable cattle brand (map reference E).

As stated above, many of the names, initials, etc. were without dates, but several are probably from the 1859 "Pike's Peak" and the 3rd Wisconsin or 13th Missouri cavalries. One inscription in particular "KT

T. PATTON OF LEAVENWORTH" (map reference M, Figure 11), was carved sometime during the era of the Kansas Territory (KT), 1854-1861. A few new inscriptions have shown up, probably the result of the guided trail recently installed along the site. Of special note are the fake Native American motif inscriptions and "Geronimo," associated with "Rusty 1994" (map reference Q).

#### SUMMARY/RECOMMENDATIONS

Site 14TO105 is an interesting site and serves as a good indicator of Euro-American use of the Smoky Hill Trail in the nineteenth century. A series of inscriptions reflect four different eras of use at the site: (1) 1849 fortune seekers headed to the California gold rush, (2) Pike's Peak seekers seeking a shortcut to the gold region in Colorado in May and June of 1859, (3) and survey of the site for the Butterfield Overland Despatch in 1865, exemplified by the inscriptions of the 3rd Wisconsin and 13th Missouri cavalries, and (4) local use of the area as a camping and recreation area from the latter half of the nineteenth century to present. Furthermore, the possible inscriptions reflecting the years 1796 (1776 ?) and 1800 may demonstrate a very early presence of Euro-Americans in the region.

The goals of this study were to provide an inventory of the inscriptions at 14TO105 and note the current condition of the site. This work is necessary as the site is not well known, and little has been documented about the site. Lee and Raynesford (1980) provide a brief description of the site as seen just prior to the construction of the Cedar Bluff dam, which is among the very little published available information on Threshing Machine Canyon. Davis (1867:145) provides a brief statement on the condition of the site in November of 1865. Davis creates some confusion by referring to what seems to be Bluffton Station as Chalk Bluffs, although it seems likely that he actually was referring to Threshing Machine Canyon.

Threshing Machine Canyon would be eligible for the National Register of Historic Places as it demonstrates an association of significant events, activities, and/or patterns (National Park Service 1991:37). For this reason, and given that many of the inscriptions are historically significant but in poor shape, some means of protecting the site from further damage is needed. It is unlikely that much can be done to prevent damage to the site due to weathering and other natural processes. However, acts of vandalism, such as attempted removal of inscriptions and shooting of the inscriptions with rifles, etc., should be

discouraged. Effort also needs to be made to prevent the making of new inscriptions on the rocks (especially fake petroglyphs) so that the historical integrity of the site can be preserved.

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Table 1. Descriptions and Locations of Pre-1865 Rock Inscriptions at 14TO105.

Content	Date	Reference Point	Note
W.A. Thompson, KY	1800	L	Name and date are weathered, but date appears to be 1800.
T.R. Hunt, NJ	1849	M	
WHF	1849	B	Year is listed as "49."
	1859	W	Date may be associated with "Austin Twitchell."
	June 16, 1859	M	Date is shown as "June 16, 185P."
C.H.B., Boston	1859	M	Year is listed as "59."
J.M. Forrester	May 21, 1869	M	Year is a guess; it could be 1865.
H. Hogan, Canada	1859	B	
J. H.	1859	M	Initials are superimposed with other inscriptions.
D. Kelly (?)	1859	L	Name is in the vicinity of "Bradley Marks 1885."
J.W. Morrell	May 14, 1859	G	Name is associated with several unreadable names.
J. Rees, Ohio	1859		Inscription is located at Sternberg Museum, Hays, Kansas. *
W.W. Spencer, Kelly	1859	L	
Jacob Thomas, E. Eberman	May 14, 1859	G	Date may not be associated with names.
J.J.K. Thompson, Sterling, Illinois	May 19, 1859		Inscription is located at Sternberg Museum, Hays, Kansas. *
J.A. Wo	May 21, 1859	W	

\* Richard J. Zakrzewski, Chief Curator of the Sternberg Museum of Natural History, has provided the following note from the museum records.

Two rocks of Historical interest from "Thrashing Machine Canyon"

Two rocks with the following dates on them have been brought in to the college museum from what is known as "Thrashing Machine Canyon" south of Ogallah, Kansas, not as far south as the river. These were brought in by Dr. C. D. Blake, Dr. I. Scott, Dr. Wm Moreland, Dr. Wely, Mr. Cliff Witt, Mr. J. E. Rouse and George F. Sternberg, in November 1941.

The one with the following inscription: A.P. Williams/Co. D U.S. McElroy/A.D. 1866 U. S. C. V. Nov. 13/May 1 1866 measures about 18" X 40" and was a separate piece of rock when found will be stored. The other with the following inscription: J. Reeves [sic]/Ohio 1859/J. K. Thompson/O. F. Sterling/Ill./May the 19th 1859 is mounted in a glass frame on the wall just west of the main stairs going up to the library. The slab is 29" wide by 23" high.

Table 2. Descriptions and Locations of 1865 Rock Inscriptions at 14TO105.

Content	Date	Reference Point	Note
3rd Wisconsin Cavalry	July 20, 1865	L	Inscription is with unreadable names.
Aebersole Company C, 13th Missouri Cavalry	1865	U	
W. Albright, James "Elvis" Sloan, Roy Madison Company A, 13th Missouri Cavalry	July 20, 1865	W	Inscription is with other unreadable names and initials.
D. Carr, R. White, David Ca	1865	H	Date may not be 1865.
M.R. Carter (?), McMichael (?) 13th Missouri Cavalry	1865	V	"McMichael" may be Captain of Company A (Brown 1963:196).
A.H. Casel, CAP WMROTH 17	1865	U	"CAP WMROTH 17" may not be associated with "1865."
H.N. Compton, J.H. Willcox, WDK 13th Missouri Cavalry	1865	U	1865 is not shown on inscription.
Crane, C.J. Company I, 3rd Wisconsin Cavalry	Sept. 8, 1865	W	
D.H. Crosby BOD (Butterfield Overland Despatch)	1865	V	
H.G. Gilmore Company A, 13th Missouri Cavalry	1865	U	
W. Hinnman 3rd Wisconsin Cavalry	1865	M	1865 is not shown on inscription.
B. Hodges	1865	M	
JB, EM, FH, 66 1776 (?) Company A, 13th Missouri	1865	U	1865 is not shown on inscription. Most of cavalry inscription is unreadable, especially the numbers.
John 3rd Wisconsin Cavalry	1865	K	Inscription is with other unreadable names and initials.

E.R. Joseph, W.A. Adam, J.T., S.A., D.S.N., J. Howd	1865	I	Inscription is with other unreadable names and initials.
J.S. McTour Company A, 13th Missouri Cavalry	July 21, 1865	W	
NM (VM ?)	1865	V	
Oakes Company H, 3rd Wisconsin Cavalry	1865	L	1865 is not shown on inscription.
W.R. Pace	1865	B	
Bes Roberts	1865	W	Name is hard to read.
Thomas A. Sloan, W. Edgar (Eagen ?) Company A, 13th Missouri Volunteer Cavalry	July 20, 1865	W	
L.F. Stone 3rd Wisconsin Cavalry	July 20, 1865	M	Name appears twice on rocks.
T.E. Stone	July ??, 18??	S	Date is hard to read, but individual is likely from 1865 cavalry.
W, W.C. 3rd Wisconsin Cavalry	1865	N	1865 is not shown on inscription.
Mm (Wm ?) William, Metcalf 3rd Wisconsin Cavalry	1865	J	Inscription is with other unreadable names and initials.

Table 3. Descriptions and Locations of 1866-1931 ("Homestead Era") Rock Inscriptions at 14TO105.

Content	Date	Reference Point	Note
	1897	S	Initials are unreadable.
	1903	C	Several names near date are unreadable.
	1907	S	Initials are unreadable.
	1915	D	Names are unreadable.
H.R. Adair - Ellis, KS	Sept. 22, 1906	S	
Hugh Adair - Ellis, KS	1906	U	Name are superimposed over 13th Missouri Cavalry names.
WT Barrett - Windom, KS	Nov. 10, 1908	S	Date 1908 may be wrong.
H.A. Clark, C.M. Deane	Nov. 11, 1869	M	
C.L.Z.	1931	U	Initials are superimposed over 1865 name.
Pete Cosgray	1870	F	
Dawils, J K CO	1891	U	Names are hard to read.
Ellah	1901	E	Names are unreadable.
HCN, MCN, HLE, IVN	July 7, 1902	B	
J. Howd	May 20, 1899	E	J. Howd (1865) also appears in Reference Point I.
F.C. Joy	April 30, 1917	U	
JL Joy - Hays, KS	1917	S	
J.J. Kulina (?)	April 12, 1887	M	
MAH	1880	W	
Bradley Marks	1885	L	
J. Maude, Joseph	1907	E	
J McNau	1892	P	
JAJ Moore	1872	W	

E. Nelson, G.G. Blakely	Jan. 1907	D	Unreadable names are nearby.
EBOCarlson	1881	B	
J.J. Oliver, J.A. Mahaffie, C.W.H.	1881	I	Inscription is with unreadable names and initials.
E.A. Olson, Ron Jones	July 21, 1867	E	Year 1867 may be wrong; it is shown as "167" on rock.
I.L. Roser (Rosen ?)	May 21, 1879	M	
Thomas Ryan	1866 ?	S	Year may be 1811 or 1861.
EG Star, JT Sanborn	1871	F	
F.J. Steicer	1871	E	Year may be 1899.
J.S. Urton, KY	Nov. 9, 1870	M	
L.E. Wagner	1896	M	Year may be wrong.
A.T. Williams, CBD	1881	G	
J.J. Wolf	Oct. 13, 1890	M	

Table 4. Descriptions and Locations of Miscellaneous Names, Drawings, etc. without Dates, and Recent Inscriptions at 14TO105.

Content	Date	Reference Point	Note
(drawing)		E	Drawing is perhaps of a cattle brand.
(drawing)		J	Drawing of a Masonic symbol is partially vandalized.
(drawing)		M	Drawings of man, woman, cow, and face are superimposed over other inscriptions.
(drawing and date ?)		U	Drawing of a stick figure or tipi (?) with year that appears to be 1776 or 1796.
Hugh Adair		E	
Hugh Adair, J.P. (?) Davies		K	Inscription is with other unreadable names.
Austin, Twitchell		W	Inscription is probably from 1859.
BB Scott II		B	
T.W. Bell		L	
J.E. Burrell, U.S. Survey		B	Inscription possibly dates from Public Land Survey.
C.C. Coleman, M.J. Garrity, Hatty Marks		L	
D.K. Curtis, W. LeMaster, P.H.O., Ohio		L	Inscription probably dates from 1859.
E.H.B.		W	Individual was probably with 13th Missouri Cavalry (1865).
Wendy Elten	1994	N	
F.		D	Letter is nicely carved; it is probably remnant of older name left due to attempt to remove inscription from rock face (vandalized).
Geronimo (and drawings)		Q	Inscription is very recent (probably 1994) with fake Native American motif drawings.
DF Harlan		V	Individual was probably with 13th Missouri Cavalry (1865).
Head U.S.		I	Inscription possibly dates from Public Land Survey.
JFT		N	

J.S.					Initials are with unreadable name.
JW Johnson, BNE (?)			F		
W.R. Kint			L		Inscription is with several unreadable names.
LEHAR (?)			T		Most of inscription is broken off, remnant is carved in very large and nicely done letters.
Rusty Long, T&J=Lust	1994		Q		
MT, ATT			B		Inscription is with several unreadable initials.
Phelps, MO			E		
WJ Mason			F		
T. PATTON OF LEAVENWORTH, KT			M		Some of inscription is unreadable; KT (Kansas Territory) dates from 1854 to 1861.
Rusty (and drawing)	1994		Q		Name is with drawing of face.
Shad Schreiner	1991		B		Name is partially carved over older inscription.
W. Simon (and drawing), NJ			J		Drawing of dove is below name, possibly from 1859.
J. Smith			O		
DM Stooey (?), (?) Ohio, Zoar (?)			N		
J.S. Urton, Lon Roberts, KY			F		Inscription is with several unreadable names and initials.
U.S. Survey, Roberts			I		Inscription possibly dates from Public Land Survey and is with other unreadable names.
W, RKF			A		
WC and JC			F		Last names are unreadable.
T.H. Weldon			H		Inscription probably dates from 1865.
W.H.P.Q. MO.			I		Inscription is possibly from 1865 cavalry.

Ryan Windholz	1994	Q	Name is associated with fake Native American motif drawings and "Geronimo."
WZ NE, J. Smith NE (?)		R	Inscriptions are faint.
Douglas A. Young	1992	B	
Doug Young, Ellis	1992	N	



Figure 4. View of inscriptions in map reference B. Note especially "H. Hogan/Canada/1859."



Figure 5. View of inscription "HEAD US" in map reference I.

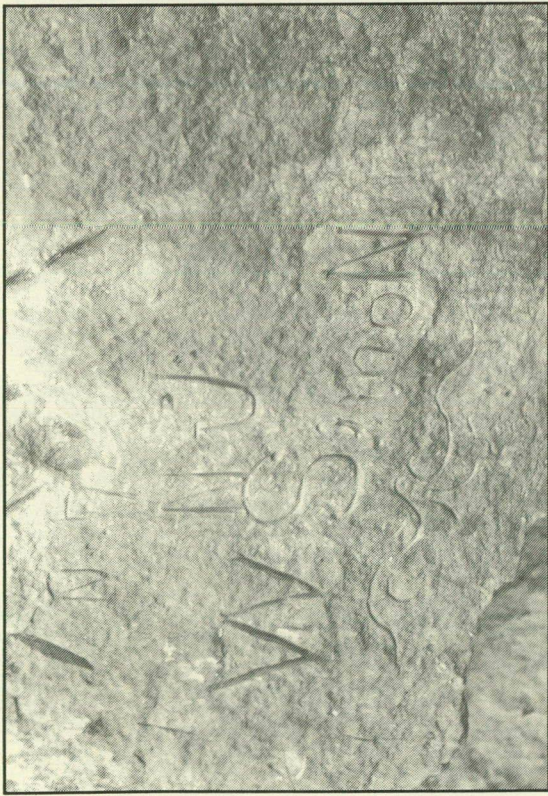


Figure 6. View of inscription "W. Simon/NJ" in map reference J. Note carving of dove below name.

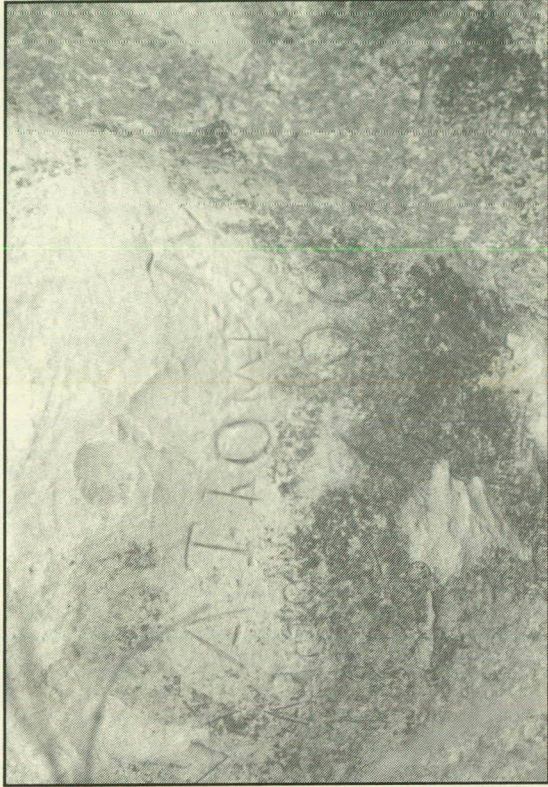


Figure 8. View of inscription "KY/W.A. Thompson/1800" in map reference L.



Figure 7. View of inscription "Wm. Metcalf /3rd/Wis./Cav./1865" in map reference J.

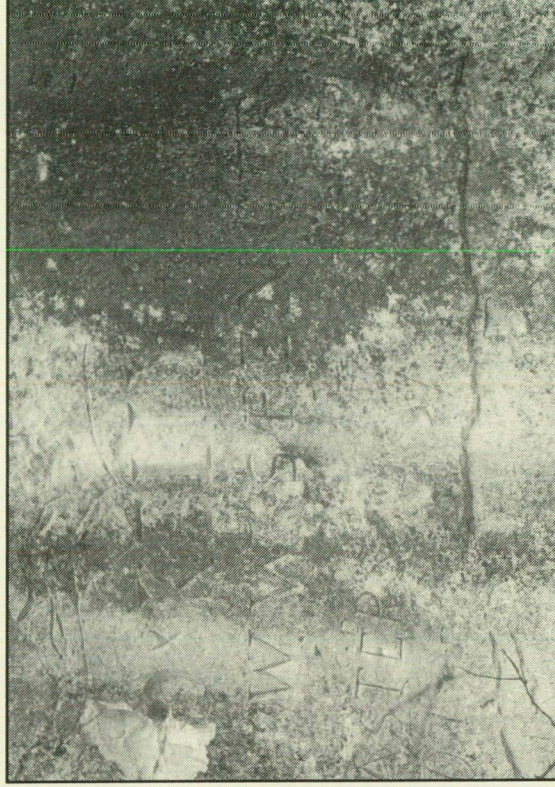


Figure 9. View of inscriptions "Kelly," "W.W. Spencer/1859," and others in map reference L. Note bullet hole in top-left of photo.

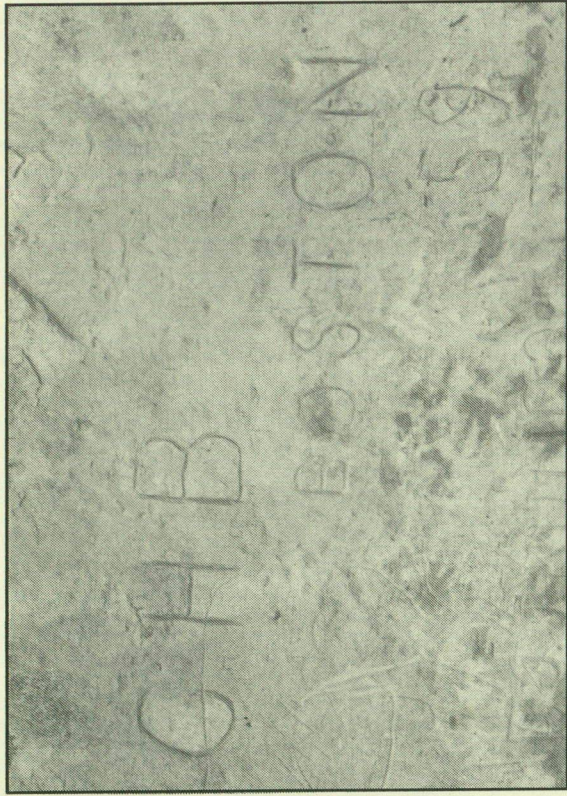


Figure 10. View of inscription "CHB/BOSTON/59" in map reference M.



Figure 12. View of several inscriptions, especially "T.R. HUNT/N/1849" (center of photo) in map reference M. Note the extent of superimposed inscriptions in this photo.

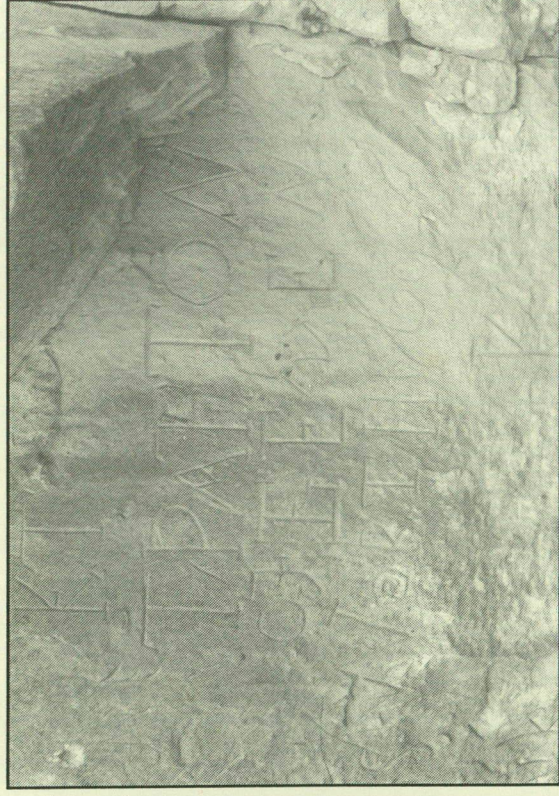


Figure 11. View of inscription "KT T.PATTON OF LEAVENWORTH Co. K" in map reference M. Note this inscription dates to era of Kansas Territory (KT), 1854-1861.

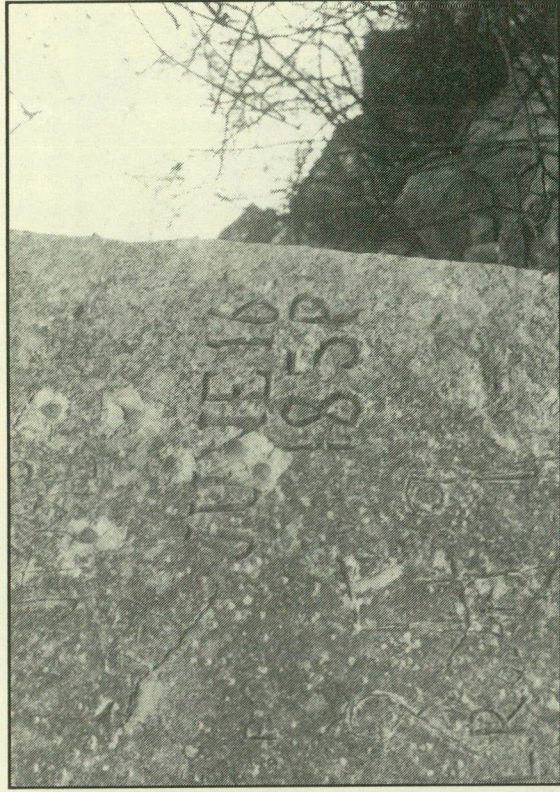


Figure 13. View of inscription "JUNE 16/1859" in map reference M. Note bullet holes around inscription.

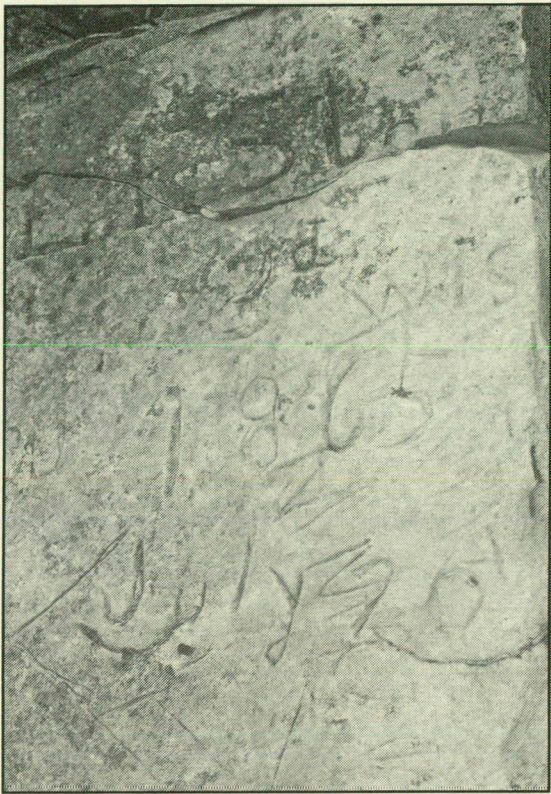


Figure 14. View of inscription "L.F. Stone/3rd Wis./July 20, 1865" in map reference M.



Figure 16. View of possible inscription "1796" in map reference U. Note carving below of possible stick figure with pole to right of figure.

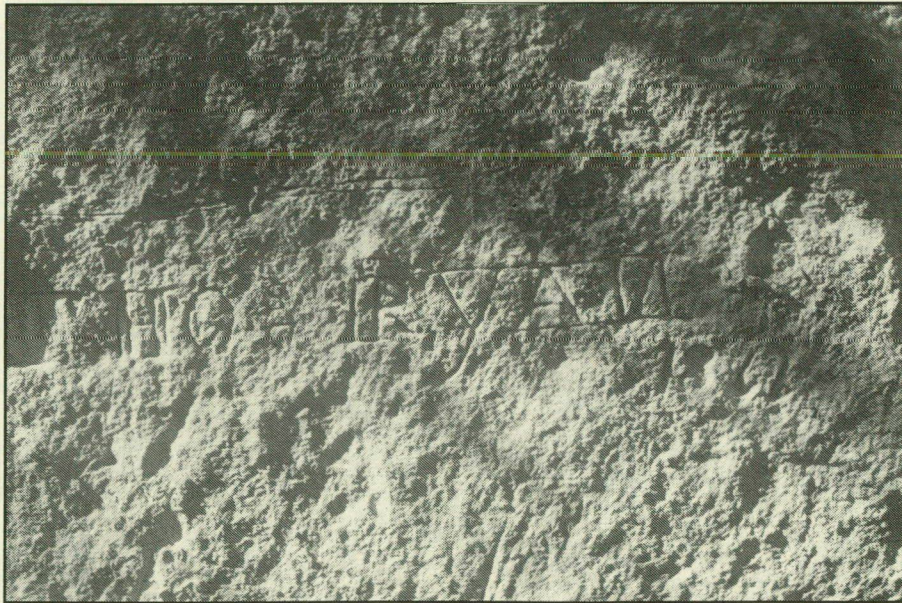


Figure 15. View of inscription "THO RYAN/1866" (?) in map reference S.

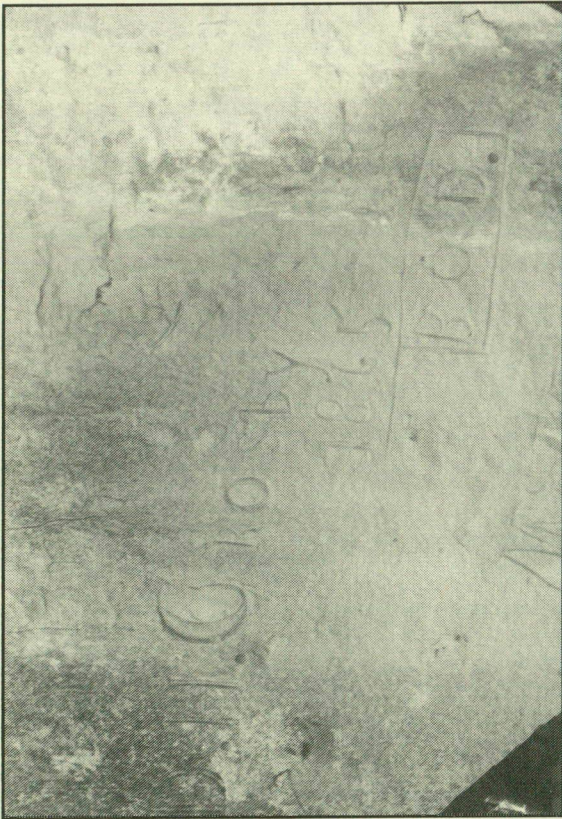


Figure 17. View of inscription "D.H. Crosby/1865/B.O.D." in map reference V.

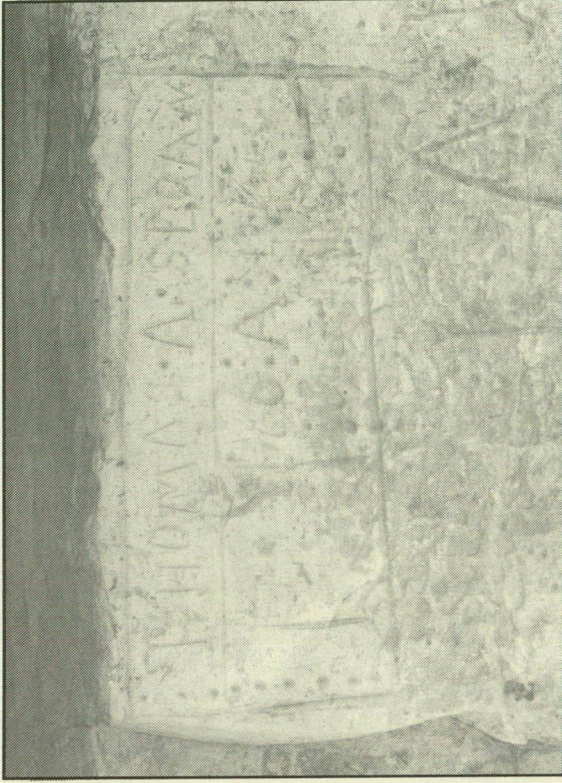


Figure 19. View of inscription "THOMAS A. SLOAN/July 20, 1865/Co. A/13th Volunteer Cavalry" in map reference W.

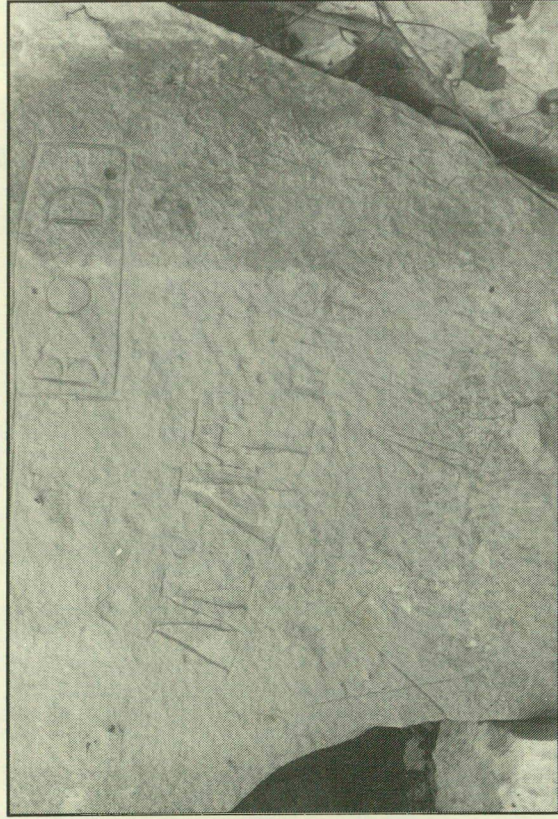


Figure 18. View of inscription "McMichael" in map reference V with unreadable carvings below.

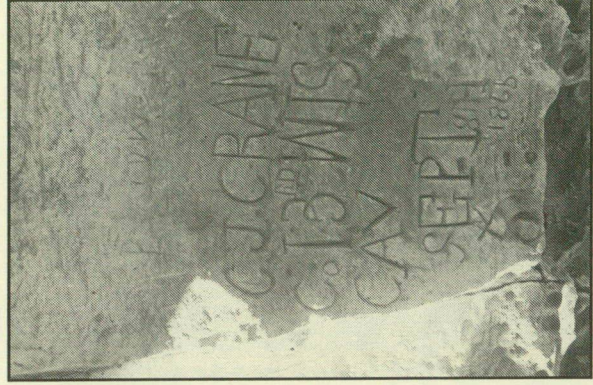


Figure 20. View of inscription "C.J. CRANE/Co. I 3rd WIS/CAV/SEPT 8th/1865" in map reference W.

**USING FLOTATION DATA TO UNDERSTAND THE PAST:  
QUARRY CREEK (14LV401),  
KANSAS CITY HOPEWELL ENVIRONMENT AT FORT LEAVENWORTH**

John Romine

*The Kansas Anthropologist* 16(2), 1995, pp. 33-38

*The analysis of flotation samples taken during an excavation gives a world of information to the archeologist. Working with the samples from the 1991 Kansas Archeological Field School excavation at Quarry Creek (14LV401) on the Fort Leavenworth Military Reservation increased the understanding of the importance of these samples. A total of 317 samples was collected and sorted. The entire fill from one feature, Feature 7, was floated and documented by 10-cm levels along with the piece-plotted items at the same 10-cm levels. The information taken from other features at the excavation could be compared to Feature 7 for study.*

### INTRODUCTION

The Kansas City Hopewell, a Middle Woodland period complex, dating from A.D. 1 to 750 and centered along the Lower Missouri valley in the Kansas City area, has been studied since 1963 by the Museum of Anthropology at the University of Kansas (Johnson 1976). The ethnobotanical aspect of this complex was further clarified by Mary Adair (1977, 1988). Her studies have added a much needed insight as to the subsistence of these people.

In 1992, as part of the team that sorted the 317 heavy fraction flotation samples, the author was able to sort all of the heavy fraction samples from the refuse pit, Feature 7. Of the 50 samples, which comprised the total taken from Feature 7, 6 of the heavy fraction samples already had been sorted. Thus, the author was able to see all of the bone splinters, lithic debris, burned bone, charcoal, and a random sampling of the seed samples.

### METHODS

Before excavation of the site, a survey of it was done with a proton magnetometer (Weymouth 1993). This scan revealed an anomaly in an area that was trenched (79N/168E to 93N/168E) through the center of one of four midden mounds at the site.

As the site was excavated, this trench was dug to a level of 40-50 cm below each unit's datum. This trench was sampled for flotation; one-half bushel of fill was collected from the southwest quadrant of each 10-cm level in each 1-meter square unit. These samples were sorted for ceramics, bone, burned bone, lithic

debris, charcoal, burned earth (daub), limestone, sandstone, mineral, and shell, and then each category was weighed (Logan 1993:Methods Chapter). As the digging of the trench progressed, in the bottom of 84N/168E at the 50-cm level, the soil began to show traces of a possible trash pit. This was not totally defined until the 65-cm level, at which time the pit was designated as Feature 7. It was decided at this time that all of the fill from Feature 7 was to be floated, and this fill was to be kept in level sequence also. This pit extended an additional 60 cm in depth or 1.25 m below surface. All the large artifacts (a total of 100) were piece plotted, and 50 flotation samples were taken. The heavy fractions of the samples were sorted and weighed in grams on an Ohaus Dial-o-Gram scale (Table 1). The light fractions of the samples were not sorted at this time.

As a comparative analysis, the author extended the investigation by looking at random light fraction samples from Feature 7, comparing them to the light and heavy fractions of Features 4, 5, and 6, to determine any variation in subsistence information. The author examined at least one randomly selected sample of the light fraction from each level of Feature 7. Random samples from the other features were also examined to show any relationship.

After receiving the radiocarbon date of 1780±60 B.P., Feature 7 did become a factor in comparison. As the oldest dated feature, it could convey any changes in cultural activity and climatological information (Table 2).

Samples of light fraction from Feature 4 contained large quantities of two different species of land snails.

One, a small flat type of snail that is identified as *Anquispira alternata*, ranged in diameter from 2 mm to 1 cm. The identifying characteristics were semi-translucent shells with small orange to yellow spots (Leonard 1959:129). The other snail, a conical-shaped type identified as *Carychium exile*, ranged in length from 2 to 8 mm. The identifying feature of this species is that the tip of the cone is not pointed but rounded (Leonard 1959:191). A total of 9 flotation samples from Feature 4 had these snails, but 13 samples from Feature 7 had none. These snails prefer a moist, high humus, forest floor type of habitat. Both can survive in small watery depressions (Leonard 1959:130, 194). Their presence suggests that the pit (Feature 4) was filled in a very wet season or was filled over a number of wet seasons. These snails also appear, but not in comparable quantity, in Features 5 and 6, which are temporally close to Feature 4. Radiocarbon dates from Features 4, 5, and 6 all cluster around ca. A.D. 425, but Feature 7 has a date 200 years earlier. Thus, the contrast in their snail assemblages also may indicate a possible climatic differentiation during these periods of

Table 1. Contents of heavy fraction samples from the Quarry Creek site.

Material	Total Weight in Grams
ceramic	208.1
lithic	440.9
burned bone	194.5
unburned bone	409.1
daub	464.8
limestone	863.1
charcoal	133.6
sandstone	163.1
mineral and shell	45.3
seed	2.2

Table 2. Radiocarbon dates of the Quarry Creek site.

Provenience	Beta Number	Lab Date	Date A.D.	Calibrated date*
Feature 4	47827	1590±90	360	400 (450) 600
Feature 5	47828	1650±80	300	270 (420) 540
Feature 6	47829	1580±80	370	410 (460, 480, 510, 530) 650
Feature 7	47930	1780±60	170	210 (250) 340

\* One sigma age range (cal age); results rounded to nearest 10 years (from Logan 1993:185).

occupation. Thus, a wetter climate was evident around A.D. 400.

Other unusual items found were ant heads. At first the author thought these were seeds, but under microscopic examination they proved to be carpenter ants (*Camponotus pennsylvanicus*). One still had antennae. Another insect was a millipede segment with three sets of legs still attached. These may be recent intrusions, but they were charred, possibly by a forest fire or by glowing ashes thrown into the pit.

#### FAUNAL REMAINS

The bone fragments (409.1 g) of the heavy fraction from Feature 7 suggested that the main source of dietary meat was whitetail deer (*Odocoileus virginianus*). These fragments and splinters allow an inference that the Hopewellians shattered these bones to obtain the marrow grease to be used with seeds and dried meats to make a gruel or possibly pemmican.

Also present were fish bones and scales of varying sizes. The most common of the larger bones were

catfish (*Ictalurus punctatus*) and gar (*Lepisosteus osseus*). The smaller bones were possibly sunfish (*Pomoxis* sp.), bullheads (*Ameiurus nebulosus*), suckers, shiners, and minnows (all *Cyprinidae* sp.).

Small animals were represented by the teeth of ground squirrels, voles, mice, and rats. Other types of small animals with larger teeth were beaver (*Castor canadensis*), rabbits (*Sylvilagus floridanus*), and squirrel (*Sciurus niger*). In several samples the presence of squirrel phalanges appear, which indicates use of the entire animal. Other teeth present were canines and molars of a juvenile fox (*Vulpes fulva*), adult canids, and a right mandible of a raccoon (*Procyon lotor*).

The beaver was used by many northern tribes in the United States and Canada. The beaver contained more body fat than deer and elk during the winter months in these northern areas (Speth 1989). Deer and elk have their maximum amount of body fat during the fall and early winter months of the year. As the winter becomes more severe, these animals use their body fat to sustain themselves. Gathering together in small herds, they start to consume all of the available browse in order to maintain their body weights. On the other hand, the beaver's metabolism slows and uses less body fat to maintain its body during the winter. These Middle Woodland people realized the need for fat in their diets and relied for sustenance on the beaver rather than a thin, sickly deer or elk.

Turkey (*Meleagris gallopavo*) bones were very evident, especially in FSN-203, where the distal end of a tarso-metatarsus was found. This bone shows cut marks into the bone where it cracked off. The balance may have been split and sharpened to make a bone tool, probably an awl, samples of which were piece plotted in the Feature 7 fill (Logan 1993:Modified Bone Section). Other fragments of bird bone included a piece of skull and small pieces of wing bones of other small birds. This shows the wide variety of the faunal diet of the Hopewell. It also reflects a variety of habitats and thus provides insight into the Quarry Creek environment of A.D. 250-550.

## FLORAL REMAINS

### Woody Plants

The most common of the woody plants represented in the charred remains of the heavy fraction were black walnut (*Juglans nigra*), hazelnut (*Corylus* sp.), and hackberry (*Celtis occidentalis*)

shells and seeds. The hackberry is rather interesting in its ancient use. Seeds and shells were crushed and ground into a powder. This was added to meats and fats to make a form of pemmican. It also was sprinkled into soups as a seasoning. Gilmore (1977:24) states that, when the Indians first saw the white man use peppercorns, they named the substance white man's hackberry.

Other woody plants include cherry (*Prunus* sp.), both black and choke cherry, oak (*Quercus* sp.), and grapes (*Vitis* sp.). These woody plants bear their fruit during the summer months and become ripe from August through November. All are high in nutritional value of oils and fiber. The Hopewellians could have stored nuts for future use during the winter months by grinding them into paste and forming them into cakes to be dried (Gilmore 1977:36).

### Non-Woody Plants

Amaranth and chenopodium were the major non-woody plants identified. A few *Iva* sp. were found, but these were small (5 mm) and did not look as if they were cultivated (Asch and Asch 1978). Little barley seeds were also found. Little barley is like a small stalk of wheat. The seeds were collected, parched, and winnowed to remove the chaff. Then the seeds were crushed and ground with a stone mano. The product was cooked to an oatmeal type of gruel or baked into cakes, as were chenopodium and amaranth (Asch and Asch 1985:193). Sunflowers (*Helianthus* sp.) were found but not in the abundance anticipated. The author only randomly sampled the light fraction of the flotation, but Adair (1993:173) did find more.

In the original study of the material from Feature 7, the author recommended that further study should be done (Romine 1993). Examination of samples from Features 4, 5, and 6 by Adair (1993:174) has resulted in identification of *Iva* sp. as a possible cultivated plant. Adair also identified remains of corn (*Zea mays*) in Features 6 and 7. This has added to the information that archeologists can use to interpret Kansas City Hopewell subsistence (Adair 1993:174).

## LITHIC MATERIAL

The chipped stone industry was very evident in Feature 7. Just as the piece-plotted chipped stone tools and percussors/flakers used to make these stone tools were numerous, the debris from the manufacture of these tools was extremely heavy. All of the samples of lithic material from the Feature 7 flotation samples

were examined. The figures in Table 3 are actual counts from each sample at each level and do not include any of the piece-plotted flakes and chips.

The frequencies of flake size and chert type are presented in Table 3. They ranged from very small (2

mm) retouch and pressure flakes to large flaking debris. As can be seen in Table 3, the maximum amount of debitage appeared in Levels 3 through 6, showing that at the period of time when this midden was being filled, a lithic industry was present producing stone tools.

Table 3. Frequencies of flake sizes and chert types from the Quarry Creek site.

Flakes 1 cm or Larger

Level	Number of Samples	Westerville		Plattsmouth		Toronto		Boone		Total Count
		Count	%	Count	%	Count	%	Count	%	
1	10	3	60.0	2	40.0	0	—	0	—	5
2	7	3	37.5	5	62.5	0	—	0	—	8
3	9	4	66.7	1	16.7	1	16.7	0	—	6
4	9	14	50.0	14	50.0	0	—	0	—	28
5	5	15	50.0	15	50.0	0	—	0	—	30
6	4	8	50.0	6	37.5	0	—	2	12.5	16
7	3	3	75.0	1	25.0	0	—	0	—	4
8	3	2	40.0	2	40.0	0	—	1	20.0	5

Flakes 5-9 mm

Level	Number of Samples	Westerville		Plattsmouth		Toronto		Boone		Total Count
		Count	%	Count	%	Count	%	Count	%	
1	10	26	46.4	22	39.2	8	14.2	0	—	56
2	7	18	58.0	13	41.9	0	—	0	—	31
3	9	26	57.8	18	40.0	1	2.2	0	—	45
4	9	17	42.5	23	57.5	0	—	0	—	40
5	5	22	57.9	12	31.5	4	10.5	0	—	38
6	4	20	60.6	13	39.3	0	—	0	—	33
7	3	4	30.7	8	61.5	1	7.6	0	—	13
8	3	3	33.0	4	30.7	0	—	2	22	9

Chips - 4 mm or Smaller

Level	Number of Samples	Westerville		Plattsmouth		Toronto		Boone		Total Count
		Count	%	Count	%	Count	%	Count	%	
1	10	180	38.0	272	57.8	10	2.6	8	1.7	470
2	7	251	52.0	220	45.0	4	0.8	5	1.0	480
3	9	269	55.0	215	43.9	3	0.6	2	0.4	489
4	9	160	43.3	201	54.4	5	1.3	3	0.8	369
5	5	242	69.0	101	28.8	5	1.4	2	0.5	350
6	4	200	46.0	226	52.0	2	0.4	3	0.6	431
7	3	20	38.7	43	68.3	0	—	0	—	63
8	3	38	49.3	39	50.6	0	—	0	—	77

Four basic types of chert were used. Three were obtained locally, and the fourth (Boone chert from south-central Missouri) was obtained possibly through trading channels (Streuver and Houart 1972). Identifying the cherts in the samples was somewhat difficult due to the similarities in color. The basic way to tell the cherts apart was by the type of fossils that appeared in them. The Toronto cherts are pale brown to yellow brown but are fossil-free. The Plattsmouth chert is a medium gray with fossil fusulinids. The Westerville cherts are a light gray to pale brown with relatively few fossils. Another characteristic of the Westerville chert is that it is found in longer nodules and is a finer grained silicate, making it ideal for longer lanceolate types of points (Logan 1988; Miller 1966). Also, the majority of the larger flakes recovered showed thermal alteration.

#### SUMMARY AND CONCLUSIONS

Having seen the flotation material retrieved from Feature 7, the author has had an opportunity to understand the resource strategy of the Hopewellian culture. Comparison of the more recent Features (4, 5, and 6) to Feature 7 (see Table 2) showed a definite increase in the use of certain floral remains. It may be that the 200 radiocarbon-dated years difference could have caused some of the material to disintegrate and disappear, but carbonization should have deterred this. The author feels that the Kansas City Hopewell were expanding their horizons and expanding their adaptation to the new surroundings west of the original

Hopewell habitation area. These new surroundings could be an adaptation of the Interaction Sphere set forth by Streuver and Houart (1972) as a small regional center that may be adapting to the cultural-ecological mechanisms serving as ties to the local groups within their regional tradition.

*Acknowledgments.* The author would like to thank Dr. Brad Logan for the opportunity to work on this project and to be able to contribute to his report on the investigation of 14LV401.

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# RECOLLECTIONS OF A MISSOURI VALLEY SALVAGE ARCHEOLOGIST

Wesley R. Hurt

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*The author directed salvage archeology projects in the Missouri Valley in South Dakota from 1950 to 1962, except for the years 1956 and 1958, when he was on excavation projects in Brazil. During those years the University of South Dakota projects were directed by Roscoe Wilmeth and George Agogino, who were visiting professors. The projects were cosponsored by the University of South Dakota and the National Park Service. The objectives of the excavations were to salvage information on village sites that were to be flooded by construction of dams in the Fort Randall and Oahe reservoirs.*

My introduction to the Plains region of the United States was a trip to Lincoln, Nebraska, in the winter of 1948. I attended the Plains Conference there and took the bus to Vermillion, South Dakota, where I interviewed for a position at the University of South Dakota (USD) as an instructor in anthropology and director of the university museum. At the time I was finishing the course work for the Ph.D. in anthropology at the University of Michigan. I had grown up in New Mexico, where I had become interested in archeology at an early age and had gone on digs from about 1936 until I was drafted in January 1942. After discharge from the service in 1946, I began work on the Ph.D. at the University of Chicago. In the spring of 1948, I transferred to the University of Michigan, along with several other advanced graduate students in archeology, where we became the first Ph.D. class at the University of Michigan.

I was hired for the position at the University of South Dakota, beginning the fall semester 1949. In the intervening summer I went to the Aleutian Islands with two other men from the University of Michigan, and I arrived in Vermillion just in time for the beginning of classes. During the next 14 years I taught classes in anthropology in the Department of Sociology at USD.

The previous director of the university museum, Dr. W. H. Over, had been at USD for many years and was highly regarded in the state. He had retired in 1949 at the age of about 80, and the regents of the university renamed the museum the W. H. Over Museum in his honor. Dr. Over and Elmer Meleen had done some archeological surveying and excavation during the 1930s and early 1940s. There were also a State Archaeological Commission and a state museum in Pierre. I do not know the details of how the USD first became involved in the salvage archeology

projects in the Missouri River basin. The building of dams along the Missouri River had been planned from before the war years but postponed because of World War II. The Missouri River basin project was the largest of several salvage archeology projects administered by the Smithsonian Institution through the River Basin Surveys. By July 1946 the Smithsonian had established an office in Lincoln, Nebraska, from which it undertook survey work in the Missouri basin. By 1949 the Smithsonian Institution had a agreement with the National Park Service (NPS) by which the NPS would enter into cooperative agreements with institutions such as the USD to carry out salvage archeology projects in the Missouri basin, which was threatened with flooding as a result of dam building. By 1950 there were eight institutions involved in the Missouri River basin salvage program. They were the University of Nebraska, Nebraska State Museum, Nebraska State Historical Society, University of Kansas, University of South Dakota, University of Wyoming, University of Montana, and the North Dakota Historical Society.

The first site excavated by the W. H. Over Museum in the summer of 1950 was the Swanson site, 39BR16, north of Chamberlain, in the Oahe Reservoir (Hurt 1951). This site was found by Dr. W. H. Over in a survey made many years earlier. In late May, accompanied by Carlyle Smith and his wife Judy, my wife and I left Vermillion to look for campsites, since Carlyle was to excavate at the Talking Crow site that summer. We started for Chamberlain on a sunny spring day but found ourselves in a fierce blizzard before we got to Chamberlain. We were forced to spend the night in the only hotel in that town, along with many others who were caught by the blizzard. The hotel rooms were all full, and some people had to sleep in the lobby. Our infant son (really) had to sleep in a dresser drawer.

We spent eight weeks that summer partially excavating the Swanson site. We had a total of \$6,000, half from the South Dakota Archaeological Commission and the same from the NPS. This amount was barely sufficient to hire 15 college students and to purchase surplus army tents, other salvage military equipment, and an old Chevrolet pickup. In the contract with the NPS, the museum agreed to excavate one house completely and as many others as time would permit and to cut at least one trench across the entire site to find the features between the houses. We accomplished the excavations agreed upon and did some lab work in the field. However, we decided that eight weeks was too long to spend in the field and thereafter spent only six weeks.

It was always difficult to find a satisfactory location for a camp in the Missouri valley. At the Swanson site we had to haul water for drinking and other camp uses. There and at other camp sites the water was distinctly unpleasant, and we used a lot of Kool-Aid. We rigged up a shower with a barrel and canvas, but most crew members used the nearby Missouri River for bathing. We selected the camp site on the recommendation of the landowner, who told us that, because of the wind, we should be down in the bottoms (Figures 1 and 2). There was always a lot of wind in the Missouri valley, but in addition that

summer there was a lot of rain. One day after a cloudburst a flash flood roared through the camp. The considerable supply of canned goods, including our personal stock of baby food jars, was swept away, and we found stray cans the rest of the summer on our way to the shower.

That summer we began our annual battle with bugs in the Missouri bottoms, where we occasionally won a skirmish but lost the wars. Mosquitoes and chiggers were pests that we were never able to eliminate. We did find a partially satisfactory way of getting back at the insects who plagued us when we tried to have evening discussions and read at the dining table by the light of Coleman lanterns. By placing these lanterns in a washbasin filled with water, the insects would fly at the glass, knock themselves out, and fall in the water and drown. By the end of all the projects, we had the world's greatest bug collections!

Having had my field experience in the southwestern United States, I was not too well prepared to excavate a prehistoric site in the Middle Missouri. Since the Swanson site was characterized by large, round depressions, it was assumed that, like great kivas and Mogollon houses in New Mexico, round depressions meant that underneath the ground surface were round structures. To excavate the first of

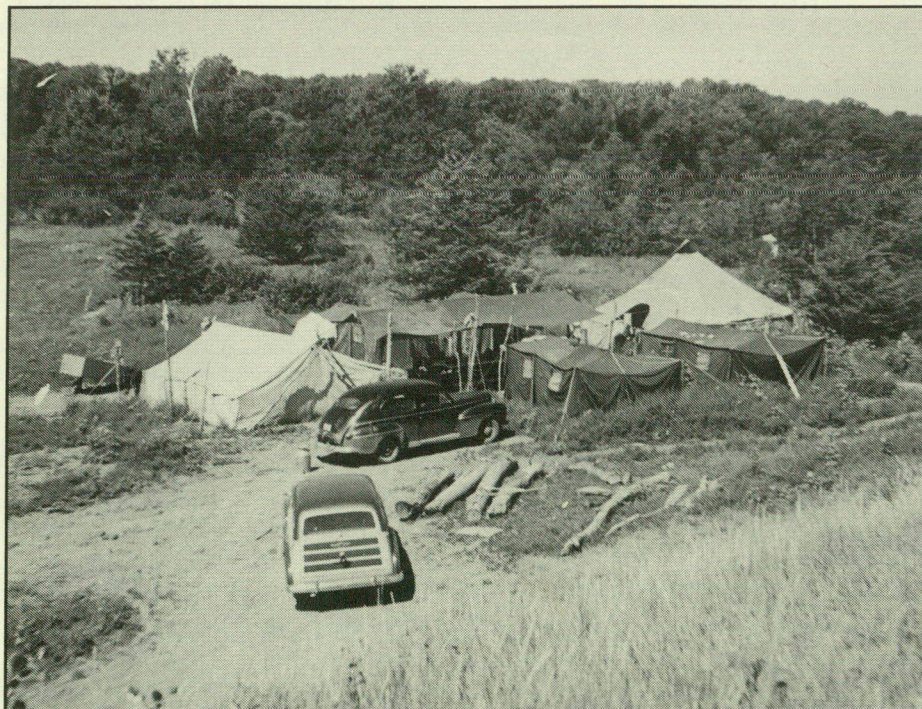


Figure 1. Field camp at the Swanson site near Chamberlain, South Dakota, summer 1950.

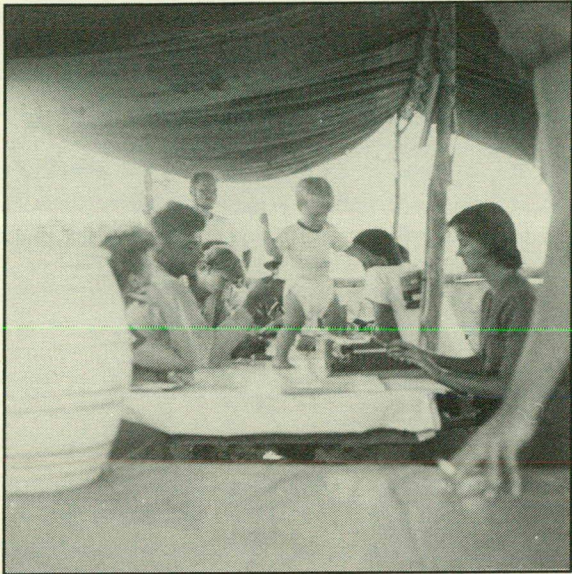


Figure 2. Stephen and Mary Hurt and the crew at the Swanson site, summer 1950. Judy Smith is seated by the water cooler.

these depressions, a cross trench a meter wide was cut from one side of a depression to the other edge, revealing the burnt stubs of the wall posts of an earthlodge. In trenching along the line of wall posts, we discovered to our amazement a large rectangular house with a rectangular antechamber.

At the Swanson site most of the field and laboratory techniques were established that were followed in all the projects of the W. H. Over Museum that I directed. The site was laid out in 5-foot squares from a datum point outside the first depression we planned to excavate. The coordinates followed the cardinal direction from magnetic north. Wood stakes, connected with carpenter's cord, were driven into the ground. For surveying instruments a plane table, alidade, Brunton compass, rod and chain were utilized. Excavation proceeded in 6-inch arbitrary levels. All work was done with the traditional archeological tools, such as dental instruments, tooth brushes, whisk brooms, trowels with triangular blades, long-handled shovels with pointed blades, and wheel barrows. Vertical sides of the trenches were troweled very smooth to reveal the natural stratigraphy. Water was sprayed on the vertical walls to increase the visibility of the strata. In the house a cross-shaped balk was left for the same purpose. A barbed wire fence was erected around the site to prevent cattle from falling into the excavations.

For photographs three cameras were used, one for color slides, another for black-on-white prints, and a movie camera. To obtain a bird's-eye view, a wood double extension ladder was erected to the height of 30 feet and held up at 4 corners with heavy duty wires, attached to chain link fence posts. Climbing the ladder to take photographs was not a task that any of the crew relished. A daring individual from Carlyle Smith's field crew did a handstand on the top to show my reluctant field crew that climbing the ladder was nothing. Tripods were used for photographing the features of the site at ground level.

A variation of the Midwest Taxonomic System was used to classify the Swanson site in relationship to other sites of the Middle Missouri valley. In future projects this system was used along with a variation of the Willey and Phillips scheme. Thus, the Swanson site was assigned to a Swanson component of the Over focus. At a later date Donald J. Lehmer included this focus in the Initial Middle Missouri variant. The classification of the ceramics followed the system described in the newsletters of the Southeast Archaeological Conferences. In this system the rim form and rim design were the basic criteria. A single sample from a wall post was dated by the radiocarbon uncorrected date of 839 B.P. This date was not considered accurate since, with the bark removed, there was no means to ascertain the outside ring to reveal the actual date of cutting. In addition the methods of correcting and calibrating the true date had not been established at that time. There were no funds to pay for other dating to confirm or question the accuracy of this single date. In 1992 Dennis L. Toom gave the calibrated date for the Swanson site at A.D. 1005, which is considered to be more accurate.

The ceramics of the Swanson site were similar to those of the Mill Creek focus of northeast Iowa and, to a lesser extent, the Cambria focus of southwest Minnesota. It was suggested that the Over focus was derived from the Mill Creek focus. It was also observed that the pottery of the Over focus included some of the traits of the earlier Plains Woodland sites, such as cordmarked treatment of the body and cord-impressed designs on the rim. The globular-shaped pottery of the Swanson site, however, indicated that it was related to the Mississippian tradition of the eastern United States. Another hypothesis postulated that the Over focus was associated with the Mandan Indians, because it lay on the route of their origin legend and had their characteristic rectangular, gabled-roof earthlodge with a rectangular entrance antechamber.

The following summer, 1951, a similar type of excavation project was begun at the Scalp Creek and Ellis Creek sites of the Fort Randall Reservoir (Hurt 1952). These sites had been found in a survey made in 1941 by Elmer Meleen, who also excavated a nearby burial mound with primary inhumations. The field work in the Scalp Creek site revealed early and late Woodland components and a Wheeler component, consisting of a fortified earthlodge village, later assigned to the Extended variant of the Coalescent tradition. The cultural material of the oldest Woodland component at Scalp Creek was assigned to a Randall component. At Ellis Creek only the remains of the Randall component were found. Round-shaped floor levels were found but no wall posts. Thomas W. Haberman, who encountered many other sites similar to the Scalp Creek focus, in 1993 assigned this cluster of sites to a Randall phase and estimated that the dates ranged from A.D. 1050 to 1250.

The camp site for the Scalp Creek and Ellis Creek project was not a happy choice. For cooking and sleeping quarters an abandoned school house was used. In the crawl space lived a large family of skunks, who spent the night tearing around and squealing. They were not prejudiced, however, against the new occupants of the building, for no one was sprayed. Equally annoying was the poison ivy around the house, through which the crew had to pass on the way to the Missouri River to get a bath.

The third field season, 1952, was at the Thomas Riggs site, 39HU1, in the Oahe valley (Hurt 1953). Here a portion of one large rectangular house had been excavated by Elmer Meleen. Because the ceramics were different, the size of the house depressions were much larger, there were surface indications of a fortification moat, and it did not duplicate the Swanson site, it was selected for excavation.

The Swanson, Scalp Creek, and Ellis Creek sites had been excavated and backfilled by hand, and I decided that this was a waste of man hours. The technique for excavating the Thomas Riggs site followed these steps, as did all the other projects of the W. H. Over Museum. First a series of test pits were cut by shovel throughout the area to determine what portion of fill had accumulated over the site after it had been abandoned. A team of horses and a plow cut furrows down to one-half the depth of the accumulated fill, for the driver of the team could never be sure that the original deposits of the site did not have an undulating surface. Then the team of horses was

hitched to a fresno scraper, and the plowed zone was removed to a place outside of the village proper.

In backfilling the excavated pits a team of horses and fresno scraper again were used. These techniques saved many hours of labor. When it was observed that excavating by arbitrary 6-inch levels was cutting through two different stratigraphic deposits, this technique was abandoned. Instead trenches were cut from top to bottom to reveal the stratigraphy. Then a particular area was excavated one natural level at a time. Of course when the stratigraphy could not be seen, the 6-inch level technique was used.

Secondary burial was the custom at the Thomas Riggs site, and a major find was a dozen skulls placed side by side with piles of long bones. Since the Arikara Indians practiced scaffold burial followed by interment of the skulls and long bones, it was postulated that the Thomas Riggs site was an ancestral village to this band of Indians. On the other hand the long rectangular houses were characteristic of the Mandan (Figures 3 and 4). The site was located on a projecting point of a high terrace of the Missouri valley. As a result the fortification trench was necessary only on the interior of the site. In 1971 Donald Lehmer assigned the Thomas Riggs site to the Extended Middle Missouri tradition.

The camp for the Thomas Riggs site was located in the flood plain of the Missouri valley in an abandoned house that was almost completely filled with silts and debris from a recent flood. This pointed out an important difference between the locations for dwellings of present-day ranchers and the prehistoric peoples. The Thomas Riggs village lay on a terrace high above the flood plain, while the house that we used for an office and kitchen was so located that it was ruined by a flood.

That summer, at the request of a social worker, two boys from the South Dakota Boys School were hired as part of the crew. These boys were younger than most of the crew. They seemed to enjoy their field experience, as they worked very hard, had more patience with boring work, and were less frustrated than the college students on the crew if it took a long time to find artifacts. One of the boys liked to work on weekends for the farmer on whose property we were digging. The farmer was putting up hay. On the dig the boy suffered from heat exhaustion, and we were instructed by a doctor we telephoned to keep him out of the sun for several days. When Saturday came, he

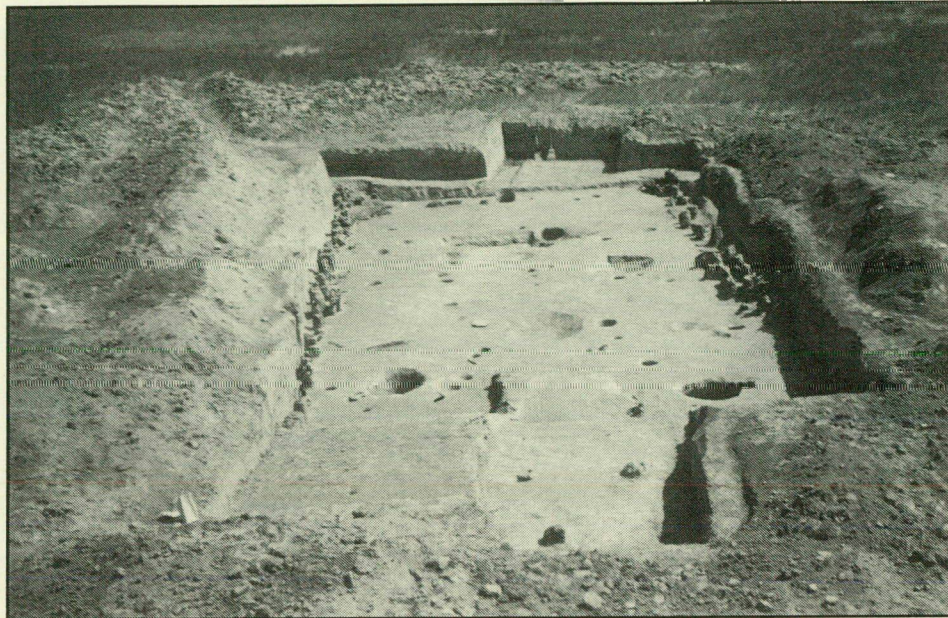


Figure 3. House 1 at the Thomas Riggs site, 39HU26.

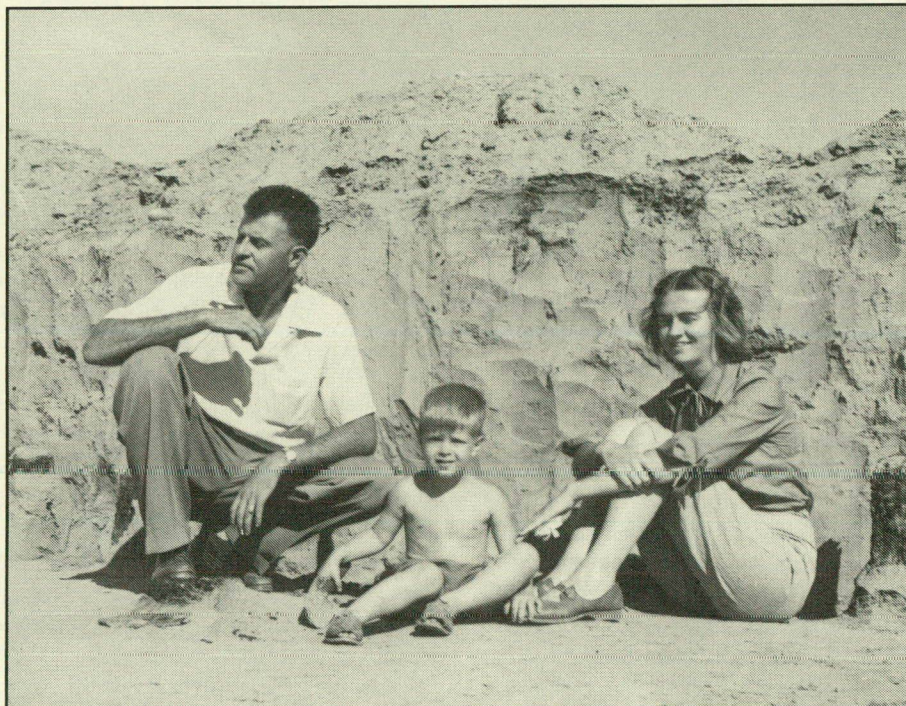


Figure 3. Wesley, Stephen, and Mary Hurt in House 3 at the Thomas Riggs site.

did not show up for breakfast or lunch, and all the crew denied knowing where he was. Since we had visitors from Vermillion the previous day, we thought maybe he had gone home with them. When he had not appeared by the late afternoon when we were ready to go into Pierre for our usual Saturday night, we said that we would call his parents in Vermillion to find out if he

had gone home. At this, someone of the crew admitted that the boy had spent the day with the farmer putting up hay. Thoroughly alarmed at this, we went to pick him up and called his parents in Vermillion before putting him on the bus for home. Although he was hospitalized for several days with a recurrence of heat exhaustion, he recovered.

Our excavation projects were visited at least once a year by Sigurd Anderson, governor of South Dakota, who had a lively interest in archeology. He always brought us watermelons, and we looked forward to his visit. On one of his visits to the Thomas Riggs site, the governor stood at the edge of an excavated house, asking about the exposed features. Our five-year-old son had been walking around the excavation, saying, "This is a cache pit; this is a fireplace, etc." The governor turned his attention to the little boy, and pointing to a cache pit, asked, "Steve, what is that?" Steve looked at the governor for a while and said with some disdain, "It's a hole."

In 1953 the W. H. Over Museum excavated the Spotted Bear site, 39HU26, and the Cottonwood site, 39HU43, Hughes County (Hurt 1954). Both these sites were marked by very small, basin-shaped structures in a single line on a low valley terrace (Figure 5). The small size and absence of prehistoric potsherds indicated that they may have been foundations of Dakota Sioux tipis or dome-shaped brush shelters. Again it could not be determined whether these may have been temporary shelters in agricultural fields or houses of an unknown prehistoric culture that were occupied after the flood seasons.

The excavation of the Swan Creek site, 39WW7, Walworth County, extended from 1954 to 1956 (Hurt 1957). The cultural complex at this site was assigned to a Le Beau phase, which included the Four Bear focus at the Four Bear site. At a later date, 1971, Lehmer assigned this phase to an Extended Coalescent variant. At the Swan Creek site a curvilinear fortification without any bastions surrounded the site. Inside the fortification was a moat. The deposits excavated from the moat were thrown to the outside, and the butts of fortification posts were inserted (Figure 6). The houses, which were key-shaped, were grouped closely together without any indication of a central plaza. There was one large circular structure that was assumed to be ceremonial in nature. Burials were both primary and secondary inhumations. Over some of the burial pits were log covers. The presence of a glass bead and a tubular copper bead indicated that some of the burials were associated with the Post-contact Coalescent. It was postulated that this was a Mandan site on the basis of the primary inhumations, although Lehmer in 1971 questioned this identification and postulated that this was an Arikara site on the basis of the house type. The major pottery type had an S-shaped rim and was named the Le Beau S-shaped rim. Some of the pottery was so thin walled that the incised designs showed through as ridges on the inside surface.

It is difficult to ascertain how it was made without collapsing before it could be fired.

At the Swan Creek site we had another crew problem. It was strictly forbidden on all projects that I directed to bring alcohol into the camp or onto the site. One very hot afternoon, when I was in Pierre on other business, the owner of a bar in a nearby hamlet brought several cases of cold beer to the crew. When I returned to the site, I found several crew members in an almost comatose condition. It was about sunset before they revived enough to return to camp. The experience certainly strengthened my belief that alcohol, teen-age archeology crews, and hot summer weather made a lethal combination.

The late Roscoe Wilmeth in 1956 directed the next W. H. Over Museum project at the Payne site, 39WW302, Walworth County, South Dakota (Wilmeth 1962). This was a small Extended Coalescent site that was completely surrounded by an oval wood stockade but lacked a fortification moat.

The Four Bear site, 39DW2, Dewey County, was excavated in 1958-1959 by William G. Buckles, Eugene Fugle, and George A. Agogino while I was on sabbatical in Brazil (Hurt et al. 1962). This site was assigned to the Le Beau phase since it had the same basic characteristics of the Swan Creek site.

During the month of June 1960, the W. H. Over Museum made a survey of sites that were to be destroyed by the construction of an interstate highway between Sturgis and Spearfish, South Dakota. A total of 30 sites was found, but only one, the Gant site, was partially excavated in a two-week project (Hurt 1961). Here several stone-lined roasting pits were uncovered in a site that lay on top of a hill that was being destroyed by water erosion. Here were encountered McKean and Duncan projectile points, as well as manos, metates, pulping planes, and scrapers. A single organic sample dated  $4130 \pm 130$  radiocarbon years.

A six-week project in 1960 was conducted at the No Heart Creek site, 39AR2, Old Armstrong County, South Dakota (Hurt 1961). This site yielded much more data on the Le Beau phase. The site had a double settlement pattern, a fortified village of 22 houses, surrounded by about 30 scattered earthlodges. It lay on a projection of a terrace that was being eroded away. The major objectives of the No Heart Creek project were to completely excavate one house, to cut a cross trench through two other houses, and cut trenches between these houses to expose cache pits and other

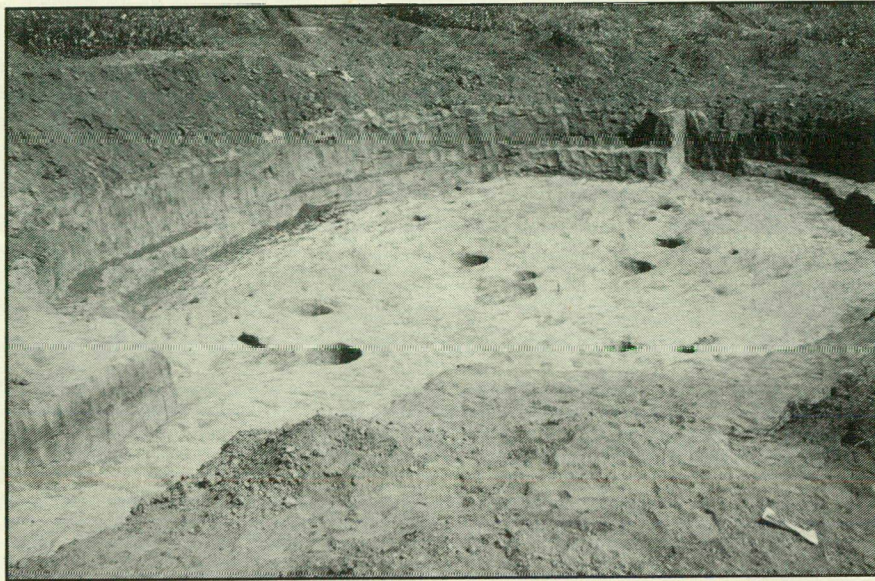


Figure 5. House 1 at the Spotted Bear site, Hughes County, summer 1953.

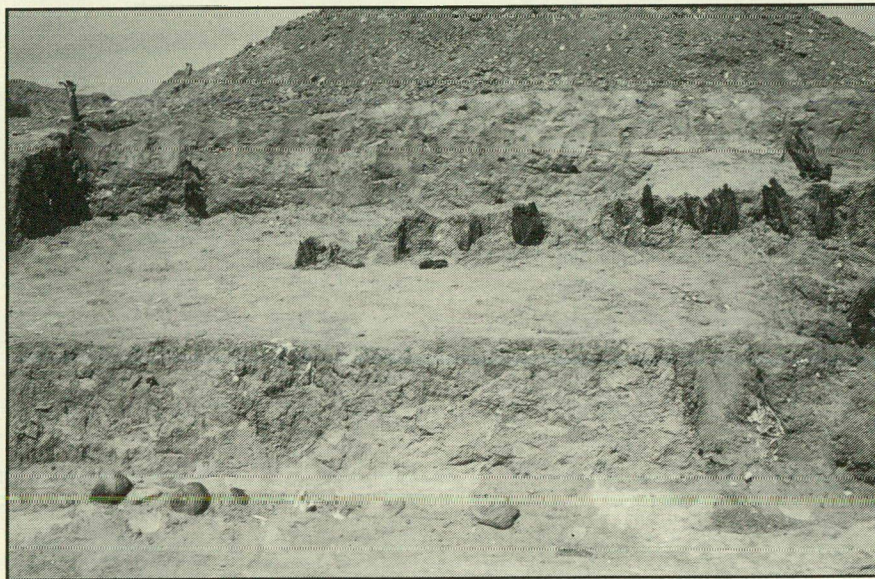


Figure 6. Palisade posts at the Swan Creek site, Walworth County.

features, such as the fortifications. These trenches exposed the wood palisade and the fortification trench. By excavating along the palisade, an outward projecting U-shaped bastion was found. The entrance to the village was like an open-ended bastion. On the outward side of the projection, the terrace was so high and steep that no fortifications were necessary. No definite plan was followed in the arrangement of the houses, nor was there a central plaza or a large ceremonial structure like the sites of the Middle Missouri tradition. Artifacts found on the two different occupational areas were similar. It was possible that

the fortified area was where all the inhabitants of the site retreated during warfare.

At this site and at several others, the following method was utilized to obtain a general estimate of the population size. George Catlin in the nineteenth century visited Arikara and Mandan earthlodges. His drawings of earthlodges show a series of canopy beds along the side walls. Assuming that each bed was occupied by one individual and that each bed was approximately 6 feet long, the diameter of the interior was divided by 6 to obtain a rough estimate of the

number of individuals occupying each earthlodge. To obtain the total population, this number was multiplied by the number of earthlodges, on the assumption that all the lodges were occupied at the same time. No superimposition of earthlodges was noted in the excavations, which strengthened the theory that they were occupied at the same time. The pottery was similar to that found in the Swan Creek and Payne sites. J. J. Hoffman assigned these sites to the Choteau aspect, Coalescent tradition. On the basis of comparison with other sites, the age of the No Heart Creek site was estimated at A.D. 1550-1575.

From September 23 to 25, 1960, the W. H. Over Museum partially excavated the Ree Heights Buffalo Kill site, 39HA3 (Hurt 1961). This site lies in a dead-end ravine on the north side of a long terminal moraine in Hand County, South Dakota. Evidently bison were driven from the grasslands into the ravine. As they tried to escape, they were slaughtered. Below a large number of bison skeletons was a butchering site, marked by the long bones and stone choppers. Farther up the ravine was a cooking area, marked by burned bone fragments, charcoal, hearths, knives, and scrapers. In the upper 18 inches of the deposits were sherds. They showed a distant relationship to those of the Over focus and the Randall phase, although there were some finely incised sherds of unnamed types. The deposits of the cooking area extended to the depth of 11 feet. The age of the deposits was not obtained by radiocarbon analysis, for there were no funds available for this purpose.

During the 14 years spent at USD, I was involved in salvage projects in the Missouri basin every year except for one year, when I went to Brazil on sabbatical to teach at the University of Parana. I left the USD in 1963 to take a position at Indiana University, Bloomington, Indiana. Most of my research after 1963 involved projects in Brazil, Colombia, and Uruguay.

The salvage projects in South Dakota were challenging as well as rewarding. There was never enough money to provide comfortable living conditions in the field or adequate vehicles for transportation. During the school year, in addition to teaching and running the museum in Vermillion, I worked on writing up a report on the previous summer's project. These reports were printed by the State of South Dakota with little regard for quality as compared to cost. I remember one report in which the word "buffalo" was consistently spelled "fuffalo." I refused to distribute the report.

During the summer our crew would visit other digs and go to rodeos or barbecues at nearby Indian reservations, and we would be visited by the crews of other digs. On weekends we would go into the nearby towns, such as Chamberlain, Pierre, or Gettysburg. None of the crew had much money, and many were under drinking age. Nevertheless they would mingle with the local people for whom Saturday night was the social event of the week, as farmers and ranchers and their families were in town to shop and visit with friends. Beer was a favorite drink with most crew members, but some had a great taste for peppermint schnapps. We especially liked to work near Pierre so that, when the bars closed at midnight in Pierre, we could go across to Fort Pierre, which was in a different time zone, and bars were open for another hour.

We had a few annoying problems with crews, but on the whole in retrospect, things went quite well. We were fortunate to have an experienced cook, Harry Ebbeson, for several years. Harry was a student at USD who was a cook in the state National Guard. His cuisine was plain but adequate, and in addition he knew how to handle the inevitable complaints from the crew.

Most crew members over the years had no previous field experience, and it was always a challenge to find someone with experience for an assistant. Since most crew members were teenagers, we were always concerned with safety rules and enforcement. We were fortunate to have few accidents, most of which were minor. The most serious occurred when a crew member, breaking the rule that no one should ride on the outside of the vehicle, suffered a concussion when he bounced off the hood of the pickup and hit his head on a rock. The accident occurred while I was in Vermillion for several days during the digging season. My wife was the cook that summer, and when the crew arrived in camp for lunch, she noticed that everyone seemed subdued, and one young man's behavior was very odd. Her repeated requests for explanations finally elicited the information. She and the assistant immediately took the injured student to the hospital in Gettysburg, a long, rough ride over a road under construction. Although it was first thought that the student might require surgery, he recovered after spending several days in the Gettysburg hospital. When I returned late that night and learned of the situation, I took the assistant with me to the hospital to check on the student. I was so angry that I fired the assistant and left him in Gettysburg. He decided that I would probably get over my anger in a few days, so he

stayed around, and I did in fact rehire him—and he went on to become a professional archeologist.

I do not know how many different students worked on the digs over the years, but I would guess that it was between 150 and 175. Many of these young men may have thought that they would like to be archeologists, and the experience in the field helped them decide. Only a few actually became professional archeologists. They included David Breternitz, Tyler Bastian, Bob Neuman, Bill Buckles, and Eugene Fugle, whose later work was in the United States. Since my return to the Southwest in retirement, I was surprised to meet Breternitz again and to learn that he is retired and his son Cory is a professional archeologist. It has been a long time! Jonathan Gell and Oscar Muscarella became classical archeologists.

A strong feeling of camaraderie developed as a result of shared experiences, good and bad, both with fellow crew members and with others working on projects nearby. Each summer a party, which included representatives of the National Park Service and the Smithsonian, would arrive without notice to inspect our project, and these visits were sometimes very interesting. At the end of the field season each summer, various field supervisors and some crew members would meet in Lincoln to attend what were called the "One/half Plains Conferences." These conferences were of great value in our efforts to define the big picture of the prehistory of the Middle Missouri valley, as the participants argued over the validity of their pet theories. Occasionally a consensus was reached. The annual Plains Conference in those days was held in Lincoln at the Cornhusker Hotel over Thanksgiving, with the result that I never had Thanksgiving dinner with my family while we lived in Vermillion.

There are few left of us who were project supervisors in the Missouri valley salvage projects. The experiences of those years are now cherished memories. The contributions to archeology from that salvage project have been evaluated elsewhere, but from one who was a project supervisor, I feel that we accomplished a lot under very difficult conditions for very little financial reward. And on the whole, it was an enjoyable experience.

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## BOOK REVIEWS

*Evolutionary Archaeology: Methodological Issues*. PATRICE A. TELTSEER, editor. University of Arizona Press, Tucson and London, 1995. vi + 206 pp., index. \$45.00 (cloth); \$21.95 (paper). ISBN 0-8165-1509-3. Reviewed by Chris Benison, Kansas State Historical Society

On page one of this volume, Teltser notes that for more than a decade some archaeologists "have advocated the application of Darwinian evolutionary theory to explain variation in the archaeological record." Her collection of interesting papers under the title *Evolutionary Archaeology* thus represents an attempt to identify, describe, organize, and interpret archeological patterning in accordance with a coherent and explicitly defined body of evolutionary theory. In this effort Teltser and her contributors seek to account for the relative persistence or non-persistence of archeological traits—whether these be a specific ceramic type or a unique architectural style—over time within a circumscribed geographic space. That Teltser and her contributors believe that evolutionary theory has broad-scale applicability to archeological interpretation is reflected in this volume's wide diversity of research topics. For example, while Chapter 6 (Timothy D. Maxwell) deals with the adaptive importance of gravel mulch to the relative success of late prehistoric horticulture in New Mexico, Chapter 8 (Michael W. Graves and Thegn N. Ladefoged) provides a framework for explaining the advent and persistence of stone monumental architecture in a specific Polynesian cultural and symbolic landscape. Many of the other papers in Teltser's volume are concerned with issues of selecting appropriate scales of analysis for evolutionary-oriented research (e.g., Chapters 2 and 3).

Typically, questions pertinent to the Darwinian archeologist's research agenda include: How do reproducible archeological traits arise in the first place? Do new archeological traits develop adventitiously, or is their development dependent on factors that are perhaps rooted in human biology? Can archeologists identify the mechanisms responsible for the maintenance of certain archeological traits over relatively long spans of time? Perhaps the most important question within an evolutionary research framework is: Why is this (any) particular archeological trait *adaptive*? Problems of

interpretation such as this demand the clear and precise definition of relationships between a specific trait and the larger cultural system to which it belongs. Does the trait—e.g., shell-tempered ceramics manufactured during late prehistory—confer an adaptive benefit to a past people? What is the nature of the origin of this shell temper innovation? Is there significant, long-term change within the larger society as a result of the technological innovation (i.e., shell-tempered ceramics)? For example, does efficiency of food processing increase? Do population levels within a region increase? Most importantly, are these increases measurable in the archeological record?

These kinds of problems have a very long history within the discipline of archeology. In this regard one important lesson to be drawn from *Evolutionary Archaeology: Methodological Issues* is that Darwinian theory is central to defining and explaining relationships between and among a variety of archeological phenomena. At a very basic level evolutionary theory has been a means for researchers to organize or to provide a structure for what may have initially seemed to be unrelated sets of data. Evolutionary theory was helpful to early archeologists because it proceeded according to the premise that non-identical archeological traits frequently developed one into another and, because of this, could be organized both temporally and spatially. Evolutionary theory thus provided the organizing principle behind which archeologists during the middle 1900s constructed their programmatic cultural chronologies for most of North America. While somewhat disparagingly referred to as "cultural historians" by younger generations of researchers, field workers who employed these explicitly evolutionary frameworks produced solid, reliable chronologies that have lasted to this day.

While Teltser has produced an interesting, very readable volume, she and her contributors do not succeed in providing a systematic body of theory applicable to constructing and evaluating explicitly evolutionary explanations for relationships between prehistoric cultures and their constituent archeological traits. Rather, this volume instructs students of the discipline about where archeology has been and makes useful suggestions regarding directions for future research.

*William Becknell, Father of the Santa Fe Trade.*  
LARRY M. BEACHUM. Southwestern Studies  
Monograph No. 68. Texas Western Press, El Paso,  
1982. 89 pp. ISBN 0-87404-127-9.

Reviewed by Verna Detrich, Kansas State Historical  
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Author Larry M. Beachum was born in Texas in 1948, received his education there, and has spent his professional life as an instructor of Texas history in the secondary schools of the state. His main interest is in the Southwest. A beginner's assessment of the validity of Beachum's work must rest on his assumed training in basic research methods, the variety of sources that are referenced, and his obvious interest in his topic.

There is an important story to be told. William Becknell will be remembered as the person who led one of the first successful commercial ventures to Santa Fe over Raton Pass in 1821, returning across the desert between San Miguel and the Arkansas River by a shorter, more dangerous route that bypassed the difficult mountainous region. On his second trip the following spring, he pioneered the use of wagons on the 775-mile journey, thus affirming his belief that a road was possible between the Missouri frontier and the Southwest trading points. However, there is much more to the life of Becknell than is indicated by the events of that five-year period.

Becknell was born near Charlottesville, Virginia, not far from Monticello, the home of Thomas Jefferson. He appeared in the St. Louis area in 1810 at the age of 22. His education seems to have been more practical than formal, and it was furthered by his association with the descendants of Daniel Boone in a unit of mounted rangers, defending the Missouri territory upriver from St. Louis in the War of 1812. In less than a decade the young Becknell had tried his hand at Indian fighting, ferrying, freighting, and salt manufacture. He had made an unsuccessful bid for public office and was embarking on a new role as a landowner and slave holder. This plunged him hopelessly in debt and, in what seems to have been his last chance to avoid disgrace, led to the first of the trips to Santa Fe for which he is remembered.

The second trip was less profitable than the first, and a subsequent trapping expedition even less so. These were his last efforts to make a fortune in the Southwest. Becknell's final involvement with the road to Santa Fe was the assistance he gave to the mapping party under George Sibley in 1825-1826. After serving two terms in the Missouri House of

Representatives and minor involvement in the Black Hawk War, Becknell moved his household south to the Red River country in eastern Texas.

Although Becknell did not take part in the Texas war of independence, he was captain of the Red River Blues, a unit of volunteer militia organized to meet the threat from immigrant Indians as white settlers took over their lands. This proved to be a means of acquiring property, as 3 months of service qualified a man for 320-acre bounty land certificates. Until his death in 1856, the activities of a large landowner occupied Becknell.

If the author's intent was solely to document Becknell's life, he seems to have succeeded. Prior to this study, information about the man was primarily concerned with the trail episodes. This small book of 89 pages, divided into 4 chapters, is full of the names of people and places and the details of events related to the life of the principal figure. There are more than 250 notes supporting the information, taken from such varied sources as tax and census records, bounty land claims, court and legislative records, military records, newspaper files, local histories, and diaries of the day. The story of a life is the story of the response of an individual to the social, political, economic, and environmental conditions of his time. In addition to his primary approach as a biographer, Beachum has given a moving impression of the uncertainties and challenges of the frontier.

The author's second focus is a minor one, and more philosophical, as he presents the central figure as an example of "the Jacksonian expectant capitalist" (see pages 43 and 80). The theme of the Jackson man is a concept that has been described by Goetzmann (1963:402-416), Hofstadter (1955:57-59), and Meyers (1960:33-56), among others, to define a particular type of personality and a belief system that was present in the developing nation: the idea that success was within the grasp and, to some extent, was the right of those who pursued it. The term was to be applied less to the explorer or the emigrant than to those whose ventures were carefully calculated to bring them economic and social status in their own communities. Thus Becknell's trips to Santa Fe in the face of financial ruin can be seen as enterprising and opportunistic. Equally a part of this configuration was the decision to abandon the trade when prices fell. To lapse into the vernacular, it is essential to know when to "cut bait." Becknell remarked in his diary, which appeared in the *Missouri Intelligencer* of June 23-25, 1825, and was reprinted in the *Missouri Historical Review* in January

1910, ". . . I am disposed to make another experiment." However, he never did enter upon that particular sort of venture again and closed his diary, as reported in the same source, ". . . the toils endured, and the privations suffered in these enterprises, very naturally give a tone and relish to the repose and plenty found at the civilized fireside."

This book gives insight into the motivation behind some of the trail personalities. It expands the reader's understanding of the trail period in general. The many references suggest future reading to one who hopes to get closer to the story of the trail.

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The Kansas Archeology Training Program excavation of the Jotham Meeker site in 1985 peaked John's interest in archeology. At that time he was a lithographic technician, working in Kansas City and living close to the site. Becoming a member of the KAA in 1985, he has attended all the field schools since that time. He became interested in flotation sampling through the course offered by Mary Adair in paleoethnobotany and also the University of Kansas fall field school in 1991. When he retired from the printing industry in 1993, he returned to academia at the University of Kansas. He has extended his knowledge of flotation by separating all of the samples from the 1992 and 1993 excavations at the Sharps Creek site and now is sorting samples from the Killdeer site, excavated by the 1994 KATP in Arkansas City. He is currently president of the Kansas City Archaeological Society.

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