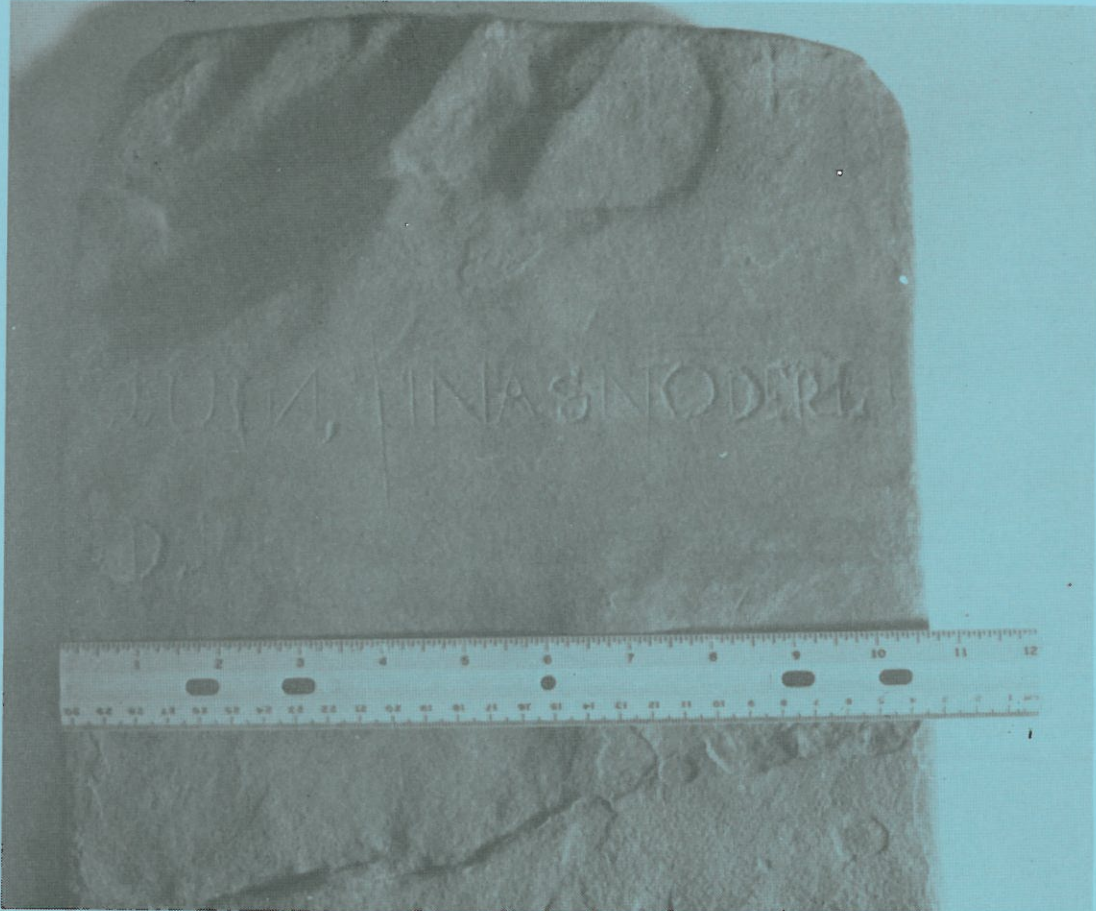


THE WYOMING ARCHAEOLOGIST



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FALL 1990

THE WYOMING ARCHAEOLOGIST

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ANNOUNCEMENTS

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
1990 ANNUAL MEETING MINUTES
Old West Museum, Cheyenne, Wyoming
Saturday, April 28, 1990

PRESIDING: William Scoggin, President

CALL TO ORDER: 9:00 a.m.

ROLL CALL AND CERTIFICATION OF DELEGATES: Secretary/Treasurer Carolyn Buff certified the voting delegates: Absaroka, Milford and Imogene Hanson; Casper, Carl Belz and Ron Cadwell; Cherokee Trail, Rod Laird; Cheyenne, Lela Allyn and Susan Adams; Fremont, Loucille Adams; High Plains, Kathy Mark and Terry Paterson; Rawlins, Barbara Cook and Marilyn Mills; and Sweetwater, Joe Bozovich and Ted Hoefer. Roll call showed five chapters represented: Absaroka, Casper, Cheyenne, Cherokee Trail, Fremont, High Plains, Rawlins, and Sweetwater. Not represented at the meeting were Platte County, and Sheridan.

MINUTES OF LAST ANNUAL MEETING APRIL 21, 1989: Motion by Carl Belz, second by Barbara Cook to approve the minutes as published in the Fall 1989 issue of The Wyoming Archaeologist.
Carried.

TREASURER'S REPORT: Secretary/Treasurer Carolyn Buff gave the treasurer's report showing a total net worth as of March 31, 1990 of \$18,175.11. Motion by Milford Hanson, second by Ron Cadwell to file the treasurer's report for audit. Carried. The treasurer's report was audited and found to be in order. Motion by Terry Paterson, second by Barbara Cook to transfer funds from the checking and savings accounts to the certificate of deposit. Carried.

EDITOR'S REPORT: Bill Scoggin for Toddi Darlington: The bulk mailing permit has a current balance of \$666.00. All out-of- country mailings must be in separate envelopes and all books must have a return address notation. One hundred eighty-two back issues were mailed in the past year. The spring issue was sent only to those whose dues were current. Motion by Marilyn Mills, second by Carl Belz to increase the annual costs for out-of- country subscription by \$4.00. Carried.

LIBRARIAN'S REPORT: Danny Walker reported that we currently exchange publications with nine others.

SCHOLARSHIP COMMITTEE: Carolyn Buff, chair, reported that scholarship recipients would be announced at the banquet.

CHAPTER REPORTS: Were given by all chapters present.

ANNOUNCEMENTS: Carolyn Buff announced that the Atlatl Contest will be held at Fort Caspar on August 18. She also announced that stationary and membership cards are available to all chapters.

Mark Miller, State Archaeologist, announced that the Vore Site had been donated to the University of Wyoming. Chuck Reher proposed the possibility of a research/public information center at the site. Information will be distributed at a later time regarding estimates of building, other costs, etc. The project is currently in the study phase.

Preliminary plans for the fall workshop topic are centering around the amateur and the law, with a panel discussion and open forum.

BYLAWS REVISIONS: The committee met and worked on the revisions. These

will be sent to all members 90 days before voting commences. Voting delegates will need to be designated for the fall workshop meeting, at which time the revisions will be voted on.

FOUNDATION REPORT: George Brox: The foundation has funded the cleanup of the Hell Gap site which was done by the High Plains Chapter and is working with the University on funding curation, duplication, and ultimate publishing the information which was collected between 1955 and 1966. It would appear at this time that the deeds and legal descriptions of the property have been corrected. A letter was read from Guido Smith, President of Eastern Wyoming College, donating a building to the High Plains Chapter.

NEW BUSINESS: Chuck Reher reported on a proposal from one Joseph Cramer of Denver. Mr. Cramer has proposed making a donation for the purposes of promoting interaction between professional archaeologists and the Wyoming Archaeological Society. The donation is \$5,000 with some specific conditions: all of the money must be used; a committee would be formed consisting of a faculty member, the president of the Society, and an outside person not connected with any organization; proposals may include field work, lab analysis, workshops, museum displays, emergency salvage, work with private collections, etc.; no salaries may be paid to the Society or University personnel; no part of large projects; coordinated by a professional archaeologist; a report will be given to the board at the end of the year; that all newly-found archaeological materials are turned over to the department. The grants are designed to promote chapter activities. The explanation and application form is attached.

Carl Belz asked what an individual could do if he/she had an artifact collection that one wished to donate to the Society. Bill Scoggin suggested that we need to try to develop some means of accepting

such a collection. Inherent problems are space limitations, who or what entity would have the responsibility for donated items, etc. President Scoggin asked that Mark Miller write a proposal to be presented at the Fall Workshop.

Motion by Loucille Adams, second by Rod Laird to send a get-well card to Ray Parman. Carried.

NOMINATING COMMITTEE: Danny Walker, chair submitted the names of the nominees for office: President, Bill Scoggin; 1st Vice President, Susan Carlson; 2nd Vice President, Joe Bozovich and Dewey Baars; Three-year term to the Foundation, Debbie Chastain and Sandra Hansen. Motion by Bonnie Johnson, second by Ted Hoefler to table the motion on elections because a majority vote could not be obtained. Carried. Motion by Barbara Cook, second by Rod Laird that nine votes would constitute a majority vote for elections. Carried. Elected were Bill Scoggin, Susan Carlson, Joe Bozovich, and Debbie Chastain.

SELECTION OF SITE FOR 1991 ANNUAL SPRING MEETING OF THE SOCIETY AND FOUNDATION: Motion by Marilyn Mills, second by Barbara Cook to have the 1991 spring meeting in Billings on April 18-21 to participate in a tri-state symposium between Montana, North Dakota and Wyoming. Carried.

Motion by Milford Hanson, second by Imogene Hanson that the summer meeting be held at South Pass City. Carried. Two dates were proposed by Danny Walker: June 23-24 or July 21-22. Since the spring meeting the June 23-24 date has been determined.

President Scoggin announced that the Foundation meeting would be held at 8:00 a.m. on Sunday in the Presidential Room of the Hitching Post Inn.

APPOINTMENT OF NOMINATING COMMITTEE FOR 1991: Milford

Hanson, Chuck Reher, and Danny Walker.

ADJOURN: 11:46 a.m.

SATURDAY'S PAPER PRESENTATIONS:

"The Excavation of an Oregon Trail Burial," by Carolyn M. Buff

"Age and Chronology of Rock Art in Northwestern Wyoming and Implications for Its Changing Role in Shamanism," by Julie Francis and George C. Frison

"Mysteries of the Fluted Point People," by Eric Ingbar

"The Powars II Site: A Paleoindian Red Ochre Mine in Eastern Wyoming," by Michael D. Stafford

"Attributes of Plains Woodland Ceramics and Their Potential as Behavioral Indicators," by Jay Meyer

"Investigations at the Laramie Penitentiary: Results of Testing and Impacts of the Project," by Charles A. Reher, Marcel Kornfeld and Dale L. Wedel

BANQUET:

GOLDEN TROWEL AWARD: Milford Hanson, Cody.

BANQUET SPEAKER: Dr. Gary Haynes, Associate Professor, Department of Anthropology, University of Nevada, Reno, "Mammoths and Mastodons: The Mountains That Fell Down."

SCHOLARSHIP RECIPIENTS: Laura Scheiber, WAS Scholarship; Ruth Shepherd, Mulloy Scholarship; and Cynthia Webb, Frison Scholarship; each in the amount of \$300.00.

Carolyn M. Buff
Executive Secretary/Treasurer

William E. Scoggin
President

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
SCHOLARSHIP COMMITTEE
MINUTES

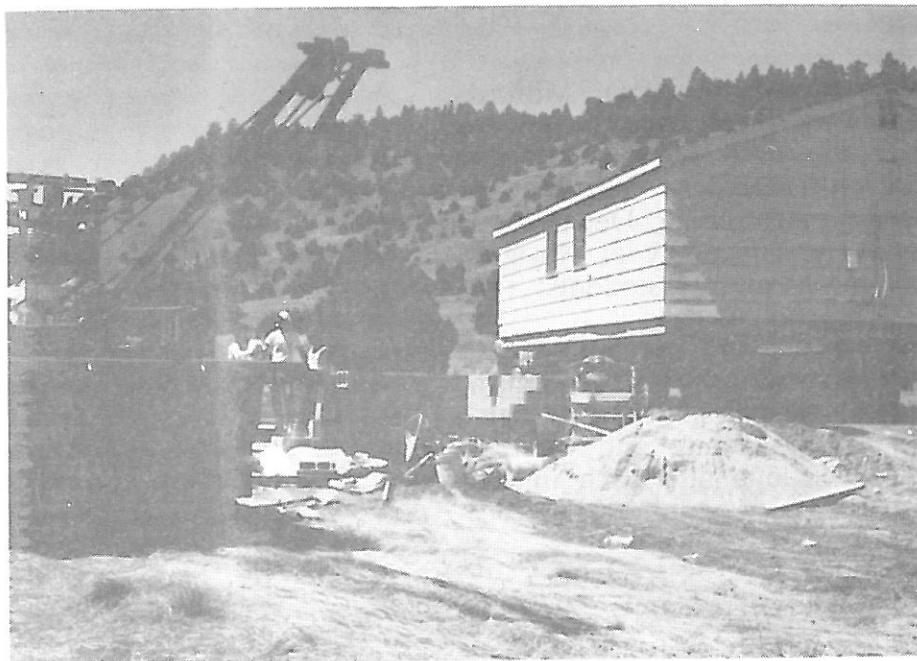
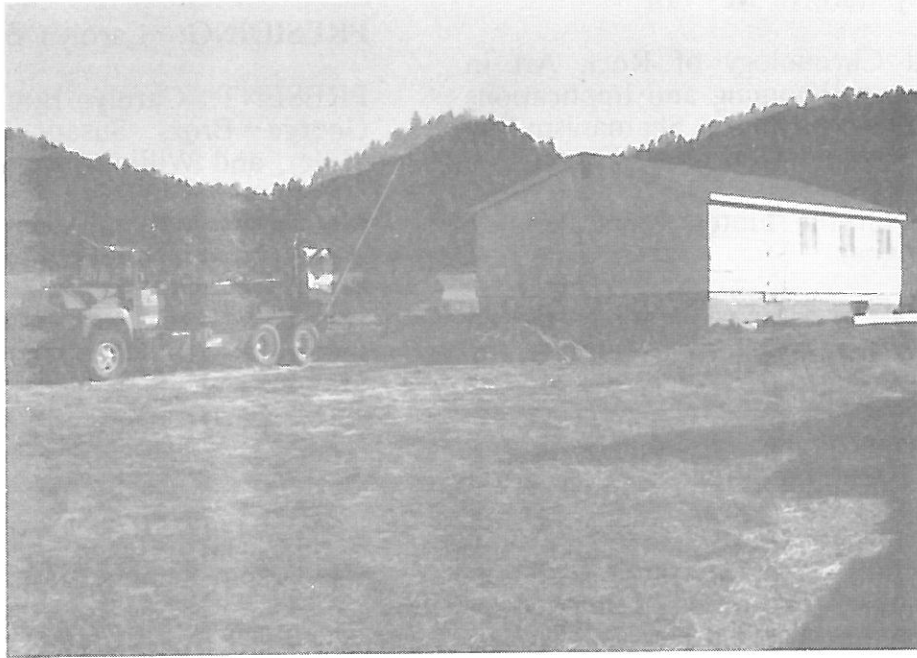
PRESIDING: Carolyn Buff, Chair

PRESENT: Carolyn Buff, Joe Bozovich, George Brox, Susan Carlson, Mark Miller, and William Scoggin.

Motion by William Scoggin, second by Susan Carlson to award the Frison Scholarship to Cynthia Webb, the Mulloy Scholarship to Ruth Shepherd, and a special WAS Scholarship to Laura Scheiber, and that the awards be \$300.00 each. Carried.

Carolyn M. Buff
Scholarship Committee Chair

The beginnings of a research center at the Hell Gap site are now in place, thanks to the cooperation of several groups. Eastern Wyoming College donated a 24x40 foot building to the High Plains Chapter of the Wyoming Archaeological Society for use at Hell Gap. The chapter in turn donated the building to the Wyoming Archaeological Foundation. The foundation paid the expenses for moving the building and putting it on a new foundation at the site. The moving was done July 26 and 27, 1990 by O'Neil Housemoving of Williston, N.D. The arrangements were coordinated by Alan Korell, Foundation board member of Lingle, Wyoming and Sandra Hansen, High Plains Chapter member of Torrington, Wyoming. A special thanks is also due to Leslie Jordan of Torrington, who volunteered a day as flag car for the move. (photo by Sandra Hanson).



44th Annual Northwest Anthropological Conference

The Department of Anthropology, University of Montana, will host the 44th Annual Northwest Anthropological Conference in Missoula, Montana. The conference dates will be from Thursday, March 28 to Saturday, March 30, 1991.

INQUIRIES: Please direct general inquiries to the Conference Chairman-
Dr. Gregory Campbell
Department of Anthropology
University of Montana
Missoula, Montana 59812
(406)243-2693 or 243-2478

THE EXCAVATION OF AN OREGON TRAIL BURIAL

by

Carolyn Buff

ABSTRACT

An Oregon Trail historic burial was excavated in 1974. The grave was that of Quintina Snoderly, a passenger who died in 1852 while emigrating to Scio, Oregon on the Joab Powell wagon train. The discovery of this burial dispels some current opinions that Oregon Trail burials were casual, quick, and shallow. The investigation yielded information on coffin shape and size, clothing of the deceased, details of the interment, pathological information, and historical data.

INTRODUCTION

Traces of the old Oregon Trail are still visible across the state of Wyoming. Along this historic highway of empire, fur traders and missionaries, loose-footed gold seekers and permanent settlers pioneered the way. During the 1850s, thousands of Oregon bound emigrant wagons toiled across the Plains. Now automobiles and trains follow the Oregon Trail set by covered wagons, Indian bands, and roving buffalo.

Today the North Platte River is, for the most part, a pleasant, shallow stream. The river is spread out in many places into narrow channels separated by islands and harnessed by dams. However, in the days of the emigration to Oregon and California, the river was tremendously wide, much of its bed was quicksand, and the water, poor tasting, was too muddy for washing. It well deserved the name, "Platte," meaning "Flat Water," so named by French explorers (Schmitt 1955). When rains fell, or during the high-water season, the river became a killer on the loose. Lewis Stout summed up the feelings of many emigrants in a diary entry:

"Left the Platte River for good, none of us shedding any tears, for we were all tired of it. We have traveled up to 750 miles and longed for a change" (Eaton 1974).

Stout's words were no doubt a mildly stated opinion, for the North Platte River took the lives of many loved ones during the long trek to Oregon. Such was the case of the Snoderly family.

During the summer of 1974, a burial on the Oregon Trail was discovered and excavated on the north side of the North Platte River, east of Casper, Wyoming. The burial was that of a woman, Quintina Snoderly, who died in 1852 while emigrating to Scio, Oregon. Enough archaeological data was present to determine coffin shape and size, clothing of the deceased, details of the interment, pathological information, and historical data.

The prevailing opinion is that Oregon Trail burials were casual (Schmitt 1955), shallow and quick. This grave, showing the opposite, is important in establishing diversity of burial customs during the westward migrations.

Other archaeological data from the same site raises questions about this important river crossing. This crossing is not recognized as such in major historical records of the area.

AN OVERVIEW OF THE AREA

Around 1970, archaeological excavations were begun on a site, privately owned, on the north bank of the North Platte River 22 km east of Casper, Wyoming (Figure 1). The first area of investigation was on an old river terrace that over the years had produced surface



Figure 1: Aerial photograph of site, with arrow showing burial location (photograph by Leon Campbell, photographer and Les Obert, pilot, both of Casper, Wyoming).

material representative of both historic Indians and emigrants. A judgmental survey in the summer of 1988 indicated that several hearths and earlier-period artifacts had begun eroding from the hillside. These artifacts included projectile points, manos, metates, scrapers, beads, flakes, musket balls, three-tined forks, a Franklin Pierce medallion, a gold-plated brass wedding ring, bits of crockery and glass, and an ox shoe. Because of erosion and soil fluctuations of sand dunes in the area, materials such as these work in and out of the soil. Archaeological work exposed a feature comparable to a corduroy road. This feature showed the residue of planks, 4.57 m wide, extending over 45.72 m from an old river meander. These planks were supported by stringers every 2.44 m on posts no more than 61 cm into the soil. There was also residue of planks in such a position that they had probably formed a wall or fence on the north side of the road bed. Planks extended beyond the lip of either a river channel or a seasonal river flow. A

support was also found in this region. Historical research has eliminated the possibility of this structure being built post-1870. Therefore, one would conclude that it was related to westward migrations through the region.

During the period 1834-1865 (with 1852 being the peak year for emigration on the Oregon Trail) French-Indian, Mormon, or independent businessmen maintained stores, blacksmith shops, ferries, and eventually toll bridges near camp sites and established river crossings. Yet, many of these business enterprises lasted only one or two seasons in any single location. The North Platte River between Glenrock and Casper had many fords and ferries (Morgan 1959a), at least during the major period of migrations, 1843-1861. Research during this project did not provide the necessary specific data to allow absolute identification of this site with any known major ferry or ford. Speculation leads this author to believe that it may have been one of several locations named Bridger Crossing. This problem of identification

is partly because major fords and ferries were given several names. Many times the same name was given to several fords and ferries during this period. The name "Bridger Crossing" can be found any number of times in Nebraska, Wyoming, Idaho, and Utah. Distances, as recorded by the early emigrants, are not always the epitome of accuracy. Based on archaeological data, it is believed that this was a ferry that also had served as a major ford. Primary sources, particularly the diaries of emigrants, would probably aid in identifying these particular sites if they were more readily accessible. Unfortunately, not all pertinent diaries can be locally obtained.

If this were a major ferry, there had to be resident quarters for those who maintained it. Burials for those who died attempting to get across the river would also be present. Crossing the North Platte resulted in innumerable accidents and deaths with many bodies lost in the currents (Morgan 1959b). The inherent dangers were undoubtedly a major factor in the popularity of the bridges once they were built.

QUINTINA SNODERLY

In April, 1973, Wyoming had an unusually severe snowstorm that prevented any movement along the highways for three days and stranded motorists in their automobiles. The heavy, wet snow disappeared rapidly, damaging many dirt roads so common in this area. One of these was the private access road on the property where we had been excavating. The county maintenance crew, attempting to correct the deeply rutted, slanting roadbed, cut to the east, eliminating the edge of a thinly vegetated, large sand dune. Over the next several months, natural forces eroded this face enough to expose a piece of gray sandstone. This was gently slid out of position, and, upon examination, proved to be the gravestone of Quintina Snoderly. On the possibility the stone had been near its original position (and not a rock to hold fence wire), the area was ex-

cavated in June, 1974. Added to the difficulty of working in fine-grain sand was the ever-present gusting winds. This was compounded by wandering livestock, to which a hole is extremely dangerous. Thus, the burial had to be excavated in one day. A small crew of four, (Maryann Frary, anthropology instructor at Casper College at the time, Carolyn Buff, Katheryn Fritts, and William Fritts) did this with a high degree of organization. Each member handled one specific duty for the long day in an assembly-line fashion.

Perhaps the lack of professional excavation of Oregon Trail graves has been a factor in the continuation of the common idea that trail-side burials were quick, shallow, unmarked, or poorly marked (Driggs 1947; Schmitt 1955). Of course, from one example, generalities that would be true in all instances cannot be made. Trail burials were probably as diverse as the backgrounds of the individuals following the routes. No doubt many of them were quick, shallow, unmarked, or poorly marked. Such appears to be the case of Mr. Davis. Eaton writes of an incident from the diary of John Verdenal on June 21, 1852:

". . . the first thing in the morning we did was the solemn spectacle of interring Mr. Davis, two men proceeded to dig a grave, which they quickly finished, it was six feet deep, two and a half wide, and six feet long. he was lowered enveloped in his blanket, and in a few minutes was in that bourne from which no traveller returns, at the head of his grave we placed a board which bore the following inscription,

'John Davis'
of Saint Louis, Mo,
died June 21st 1852.
aged 52 of Choleral.

and so the solemn and impres-

sive spectacle ended, and again we travelled on for that land we seemed never to reach" (Eaton 1974).

This was undoubtedly more elaborate than many, especially since Davis's fellow emigrants dug the grave six feet deep. The discovery of the careful burial of Quintina Snoderly, giving all evidence of attempts to follow funeral customs in established communities, shows that some emigrants were not necessarily devotees of the hasty funeral and shallow grave. Many burials along the Oregon Trail were probably more carefully prepared and took longer if the deceased was part of a family group moving west, as opposed to gold seekers and camp followers.

The stone marker, with the inscription facing an easterly direction, was at the head of the grave. The marker was made of local sandstone, still readily available in appropriate sizes less than 205 m from the burial site, and approxi-

mately half way between the possible ferry landing and the grave. The stone, measuring 90.7 cm at the top and having a thickness of 3.8 cm, falls within the range of tombstones of the period. It was incised with metal tools, the letters following the lightly-cut guidelines. Apparently, the original plan was to give the date of death, but this was never completed (Figure 2). This marker shifted south and fell on its face within a few years of erection from the same factors of wind, rain and snow that exposed it.

The uncut portions of the dune displayed two definite layers of vegetation, separated by sand, 7.6 to 20.3 cm thick. Variation of natural strata is common in this area. The lower of these two layers was the covering at the time of the burial. The grave, with the head oriented westerly toward the top of the hill, was dug about 1.83 m deep into the top of the dune, requiring a large pit. This large pit was validated by soil variations noted during the excavation,

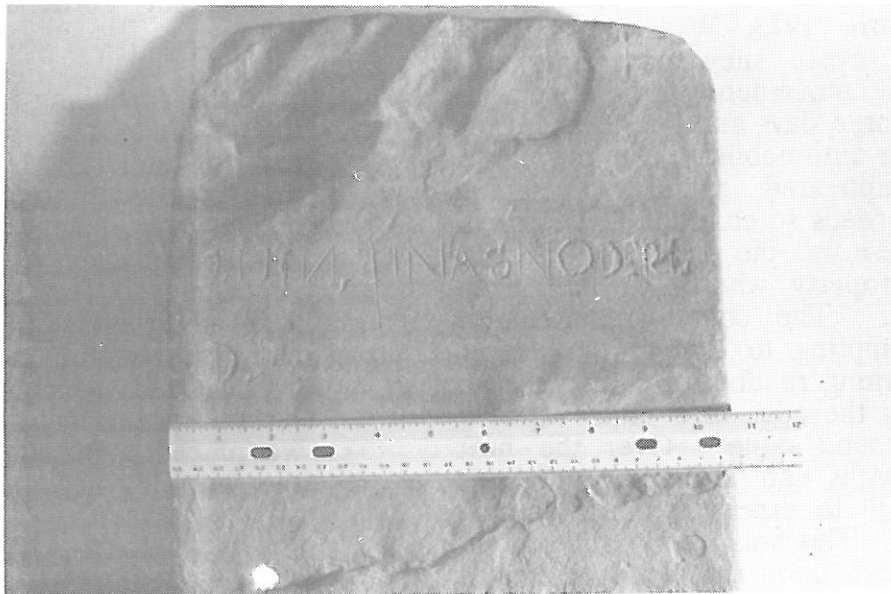


Figure 2: Gravestone showing original plan was most likely to carve the date, but was never completed.

and the practical data from excavation of the pit.

The sand, slightly moist, dries quickly on exposure. The slightest touch results in large sections being dislodged. Because of the damage to one side of the dune from the road grader, the exact size of the original pit was impossible to determine.

The keyhole coffin (Thomas Bustard, mortician, personal communication, 1975) was wrapped in a light-weight blanket and lowered by ropes into the grave. The ropes were then thrown on top of the coffin. Other than portions of the lid and small scraps of the base, the coffin had decayed. The enclosing sand preserved the outlines of both coffin and rope. Coffin stains, rope stains, and body stains were all distinctive shades of medium brown. Body stains were tinged with orange, wood with sienna, and rope with gray/brown. Because of the clarity of the coffin outline, and the stain of the vertical foot end, coffin dimensions were easily determined. The bottom of the coffin was made from two boards 1.82 m long, reinforced on the underside with a 2.5 cm square board running the central length. The base was shaped to 61 cm in breadth, tapering to 22.9 cm at the foot and 22.9 cm at the head. The

maximum breadth was 45.7 cm from the head. The sides of the coffin slanted at a 15° angle. The side boards were 25.5 cm in breadth. The lid of the coffin was constructed to form a peak, with the end pieces triangular in shape and sloping in. The bottom portion of the casket was reconstructed from the stain measurements (Figure 3). According to a local professional carpenter (Ray Fritts, personal communication, 1974), no one unskilled in cabinet-making could possibly have "slapped" this coffin together. This leads to the conclusion that among the members of the wagon train was a skilled carpenter.

The scraps of wood retrieved indicate that at least two types of lumber were used: rough lumber and fine-grained, cabinet-like wood. Since traces of blue paint were found on some wood fragments, it is probable that part of a wagon was used as well as some type of furniture. Discarded furniture and abandoned wagons were common along the Oregon Trail during the major periods of family migrations (Gibbs 1851). In a letter from Green River, the following was related:

"From Fort Laramie "after the first fifty miles, dead cattle and

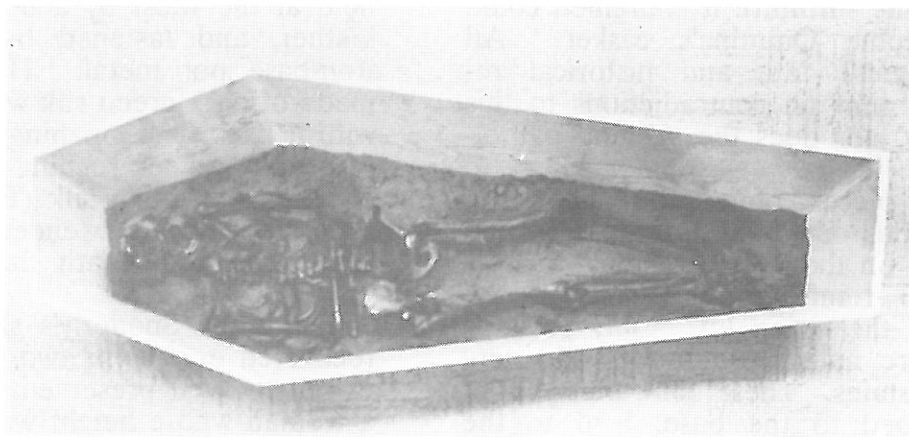


Figure 3: Reconstruction of coffin base holding skeleton of Quintina Snoderly in approximate position when found.

fragments of wagons come in sight, and as far as here (Green River), I have counted one thousand wagons that have been burnt or otherwise disposed of on the road . . . From Deer Creek to the summit, the greatest amount of property has been thrown away. Along the banks of the North Platte to where the Sweetwater road turns off, the amount of valuable property thrown away is astonishing -- iron, trunks, clothing, &c, lying strewn about to the value of at least fifty thousand dollars in about twenty miles. I have counted about five hundred dead oxen along the road, and only three mules" ("Joaquin," Letter from Green River, Aug. 19, in St. Louis Missouri Republican, Oct. 25, 1849) (McDermott 1968).

Some of the foregoing is probably considerably exaggerated, but the example does illustrate that wagons and personal belongings were indeed abandoned along the trail. Perhaps a Snoderly wagon slipped off the ferry as it bumped into the north bank landing, pinning Quintina Snoderly in the shallow waters. Parts of the now damaged wagon and the furniture it contained could have become Quintina's casket. All archaeological data and historical research present no contradictions to this possibility, nor does the skeletal pathology refute it.

Two pieces of angle-shaped iron were found, one between the legs and the other on the chest. These probably served to reinforce the angle of the center of the coffin lid. Only parts of two square nails were found, and very few iron stains. These data, plus the lid being roped to the base, led to the conclusion that few nails were used in the casket construction. This, in turn, suggests nails were most likely scarce.

Within a few years after interment,

the coffin had shifted southward from its original position. The foot end was displaced approximately 1.22 m and the head section approximately 76.2 cm horizontally. A vertical displacement of about 15 cm at the foot to no more than 8 cm at the head also occurred. This slippage was within the original pit, the coffin having moved toward the low side of the dune in the direction of the natural drainage. Both end pieces remained in their original positions, the head piece falling outward but the foot section remaining vertical (Figure 4). The lid remained almost in its original state, probably because of the rope ties.

The body moved to the south side of the coffin. At the time of excavation, the skull was turned to the left with the mandible resting on the clavicle. The left leg was bent up at the knee with the left foot beneath the right tarsal. The right foot phalanges projected beyond the end of the coffin. The skeleton was fully articulated except for the right phalanges (hand), found in the pelvic cavity.

Threads adhering to the bone, a few bits of cloth, a belt buckle (Figure 5), and two hooks and eyes were all that remained of the clothing and wrappings. The body had been wrapped in a light-weight blanket shroud. Quintina Snoderly was buried without shoes, dressed in a dark blue, coarse-weave skirt held at the waist by a belt, probably of leather, and fastened by a buckle of iron-base pot metal. Her blouse was made of dark green silk with full sleeves, with a back neck opening, and trimming of a narrow neck ruching and small bow of the same green silk (Figure 6). She was buried in an extended position with arms crossed beneath the bust (Figure 7).

Quintina Snoderly's skeleton, totally recovered except for two phalanges, was extremely well preserved. Quintina was a woman whose height was between 167 cm and 175 cm, tall for a woman of that period in time. Generally, the skeleton is compatible with individuals of North European ancestry (Bass 1971). Exam-

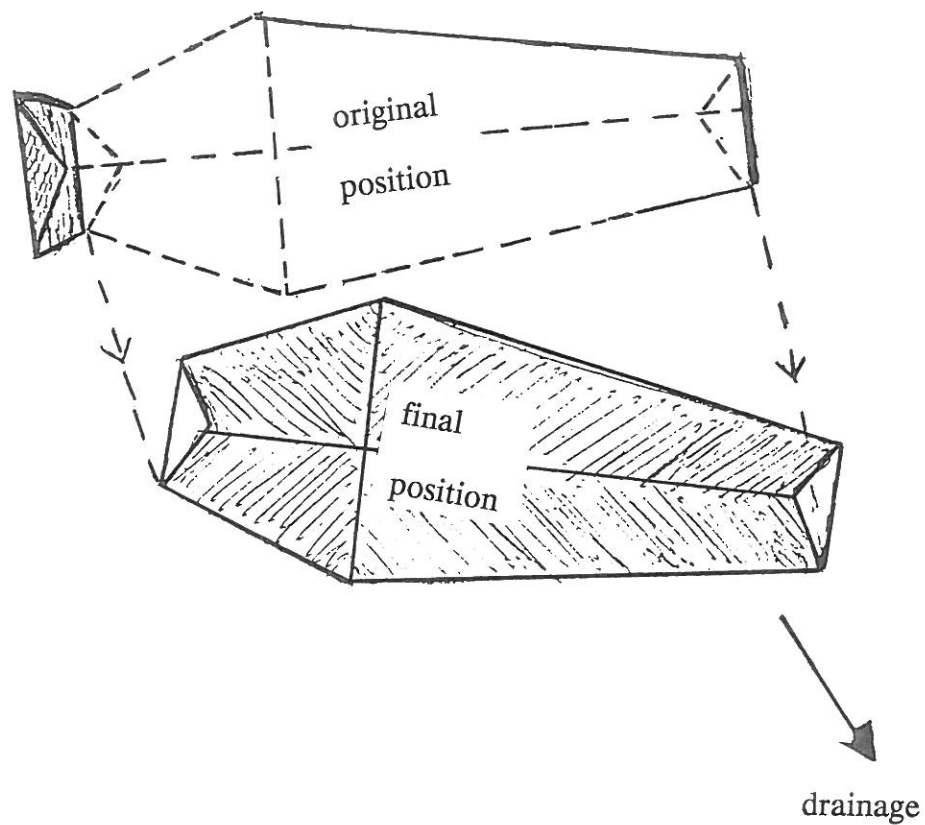


Figure 4: Horizontal displacement of coffin within grave. Foot section remained in position, head section fell outward. Scale is approximate.



Figure 5: Iron-base belt buckle found in pelvic cavity.



Figure 6: Blouse fabric scrap ruching and bow found under mandible.



Figure 7: Chest area in situ. Note position of arms.

ination of the cranial sutures placed death between 35 and 45 years of age. The large pelvis shows wear patterns consistent with child birth in both the posterior aspect of the symphysis pubis and the pre-auricular groove (Houghton 1974). The skull is noteworthy for its relative smallness, narrow mandible, and sharply projecting chin. The smallness of the mandible probably contributed to evident molar problems that were solved by extraction at different periods of life. All molars had been removed from the mandible, with only the third molar removed from the maxilla. After the dental treatments, the woman suffered a facial blow resulting in a loss of the upper left central incisor and damage to the other upper incisors (Dr. Michael Charney, personal communications, 1974-1988).

The left side of the body showed size differences compared to the right. For example, the left ulna was 0.5 cm shorter than the right. The left scapula was 0.9 cm shorter than the right, and less robust. In the pelvis and legs, the differences were reversed. These latter differences fall within the normal range in the human body.

Additional examination of the skeleton indicated damage to the spinous processes of the third through sixth

cervical vertebrae; a severe abscess of the upper left first premolar; healed fractures of the left ribs; and evidence of initial stages of arthritis in the lower thoracic vertebrae and the pelvis. The presence of an extra zygomatic suture also should be noted because of its rarity in all populations except for Japanese. Also unusual, and abnormal, is the sternum length being more than twice the length of the manubrium, a characteristic found primarily in males (Dr. Michael Charney, personal communications, 1974-1988).

The immediate cause of death was a pressure impact to the left rear chest area, centering between the scapula and the ilium. The blow did not directly hit the spine, but resulted in multiple rib fractures and damage to the medial border of the left scapula (Figure 8). Examination of the vertebrae suggests the impact had sufficient force to cause fractures of the eighth through tenth thoracic spinous processes (Figures 9, 10, 11). These injuries are not likely to have happened on hard ground (Dr. Michael Charney, personal communications, 1974-1988). An interesting phenomena is the unfractured ribs on the left side. Most of these have been distorted, almost straightened (Figure 12). Analysis revealed the cause to be post-

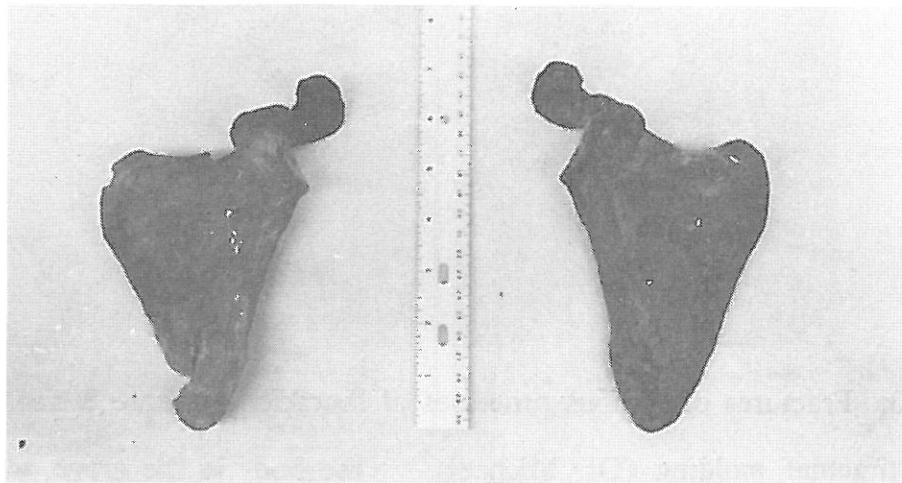


Figure 8: Scapulas, showing damage to medial border of left scapula.



Figure 9: Fractures of spinous processes of thoracic vertebrae 8 and 9.



Figure 10: Fractures of spinous processes of thoracic vertebrae 8 and 9.

burial artifactual molding (Dr. Michael Charney, personal communications, 1974-1988; Dr. James Thorpen, pathologist, personal communication, 1974). The left side received the most damage in the accident, and because of the slippage of

the body in the grave, was not against a coffin side. The sand is damp in mid-summer within 46 cm of the surface. There was 1.5 m of sand on top of the casket, thus plenty of moisture would be available for the proposed molding.



Figure 11: Fracture of spinous process of thoracic vertebra 10.

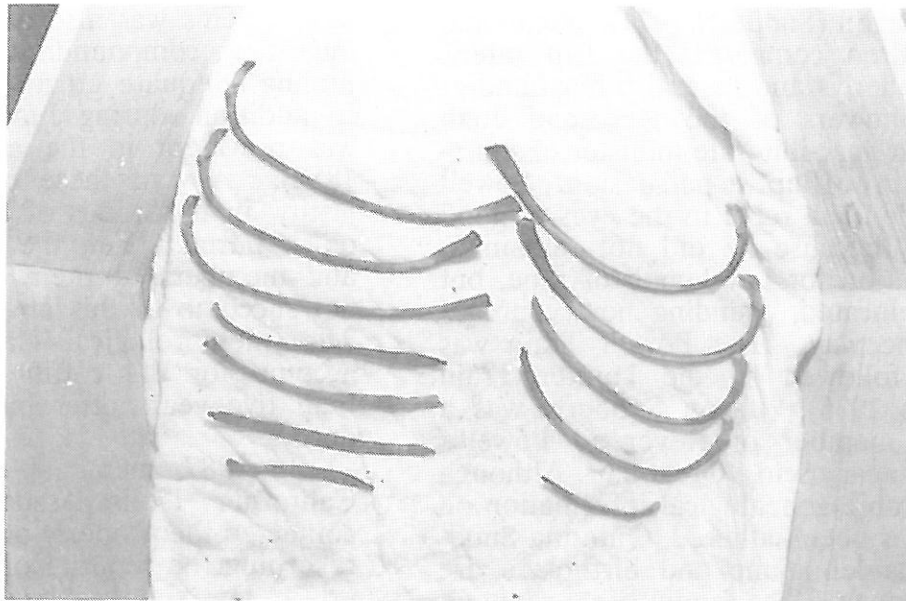


Figure 12: Selected ribs showing comparison between right side and distorted left side, illustrating artificial molding.

The archaeological data suggest a burial showing great care and one that could not have been done with less than one-half day of preparation. Certainly there was nothing casual or quick about it! Based upon the archaeology, the conclusion is that Quintina Snoderly was part of a group or family who were impelled by love or religious belief to lay her to rest in as proper a manner as possible, despite a loss of at least one day of travel time. Any delay would mean following more wagon trains thus creating additional problems of adequate grazing for livestock, hunting and fuel. These factors would be compounded by the fear of smallpox and cholera, both prevalent at least three times during the periods of migration.

The historical aspect of this study has documented that Quintina was the wife of Jacob Snoderly, mother of John William, Sarah Ellen, Nancy Jane, Laura Ann, Susanna Melissa, Elizabeth Caroline, George Washington, and James Huston, who, at the time of their mother's death, ranged in age from 3 to 22. She died June 25, 1852, while crossing the Plains from Missouri to the Willamette Valley in Oregon. This is documented by the family Bible, now the property of a grandson, Roy Snoderly, of Scio, Oregon (Snoderly 1974). Jacob and his children completed the trip safely. The Snoderlys and several other families were followers of the Reverend Joab Powell, a near-illiterate minister of something akin to Baptist persuasion. Powell was evidently a rebel in the eyes of good Baptists, because he did not remain in one location for any length of time, but often relocated, founding new churches along the way. The Powell Train was closely followed by the Hunter Train (Nichols 1935). Jacob Snoderly was a charter member of Reverend Powell's church near Scio, Oregon. Although considerable genealogical information on Jacob has been gathered, Quintina Snoderly's maiden name and birthplace are still unknown. The family Bible reputedly lists only her first name, and although

it stipulates that she died while crossing the Plains, it states burial was in the Blue Mountains of Oregon (Snoderly 1974). The emigrants left Missouri in late April or early May. Because the trip took four to five months (Gold-Thwaites 1906), it is virtually impossible that anyone could have left Missouri in the spring of 1852 and been in Oregon's Willamette River Valley by June of the same year! Therefore, I would propose that the original burial place listed in the family Bible is the Rocky Mountain spur, now known as Casper Mountain, but during the midnineteenth century was more commonly known to the westward-moving pioneers as the Black Hills, Blue Mountains, and Blue Hills, to name just a few of many.

CONCLUSIONS

Historical research substantiates the initial proposal that a family group moving west did not necessarily bury a deceased member in a shallow grave after a hasty funeral, even under the stressful conditions of traveling the Oregon Trail in 1852. This (1852) and the following year were ones of excessive precipitation (Table 1). This would result in a slower and more difficult trip with increased dangers when crossing abnormally high rivers. This was also a period of heavy migration, compounding the difficulty of finding adequate grazing, fuel and food. In addition, during June, 1852, cholera was prevalent in the area (McCartney 1852). Any of these conditions would justify, in the minds of the pragmatic, a quick burial. Yet, the Snoderly family and members of their wagon train did not succumb to this obvious temptation. The meteorological data also would account for the coffin slippage in less than five years after burial and before decay.

In 1987, members of the Oregon/California Trails Association (OCTA) contacted the property owners and myself regarding the reburial of Quintina Snoderly. The site has been fenced and a plaque erected identifying the grave as

Year	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1849									0.21	2.72	0.24	0.38
1850	0.30	0.42	1.31	1.03	1.41	1.40	1.80	0.51	0.22	0.22	0.28	
1851			0.10	0.16	4.21	0.33	0.32	0.78	0.42	0.36	5.20	8.84
1852	1.51	1.11	7.76	1.25	7.29	4.08	1.88	1.46	2.74	1.75	6.43	1.23
1853	0.08	0.57	1.78	4.53	12.19	4.95	1.86	0.55	2.80	0.68	0.08	0.71
1854	0.18	0.40	0.80									
Mean	0.52	0.63	2.19	1.74	6.28	2.69	1.47	0.82	1.28	1.15	2.45	2.23

Year	Spring	Summer	Autumn	Winter	Year
1849			3.17		
1850	3.75	3.71	0.72	0.72	8.90
1851	4.47	1.43	5.98	8.84	20.72
1852	16.30	7.42	10.92	3.84	38.47
1853	18.50	7.36	3.56	1.36	30.78
Mean	10.21	4.98	4.88	3.38	23.45

Table 1: Amount of precipitation (both rain and snow) at Fort Laramie (Stevens 1854), by month (upper) and season (lower).

that of an Oregon Trail traveler.

A broader context relating to the burial of Quintina Snoderly is that it seriously questions the belief that the hasty funeral and shallow grave were typical. The burial also in terms of problem-oriented historical archaeology, shows that one can postulate cultural factors from the archaeological evidence and corroborate these with historical records.

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REFERENCES CITED

- Bass, William M.
1971 Human Osteology: A Laboratory and Field Manual of the Human Skeleton. Columbia, Missouri: Missouri Archaeological Society, University of Missouri.
- Driggs, Howard R.
1947 Mormon Trail: Pathway of pioneers who made deserts blossom. New York: American Pioneer Trails Association, Inc.
- Eaton, Herbert
1974 The Overland Trail to California in 1852. New York: G.P. Putnam's Sons.
- Gibbs, George
1852 George Gibbs Diary. Fort Laramie, Wyoming: Fort

- Laramie, National Historic Site. Xeroxed copy, with permission.
- Houghton, Philip
1974 The relationship of the pre-auricular groove of the ilium to pregnancy. American Journal of Physical Anthropologists 41:381-391.
- McCartney, William F.
1852 Letter to Father. Fort Laramie, Wyoming: Fort Laramie, National Historic Site. Xeroxed copy, with permission.
- McDermott, John Francis, ed.
1968 An artist on the Overland Trail: The 1849 diary and sketches of James F. Wilkins. San Marino, California: The Huntington Library.
- Morgan, Dale L.
1959a The ferries of the Forty-Niners, Part I. Annals of Wyoming 31:1:4-31.
1959b The ferries of the Forty-Niners, Part II. Annals of Wyoming 31:2:144-189.
- Nichols, M. Leona
1935 Joab Powell: Homespun Missionary. Portland, Oregon: Metropolitan Press.
- Schmitt, Martin F., with Dee Brown
1955 The Settlers' West. New York: Ballantine Books.
- Snoderly, Roy
1974 Letters to Department of Anthropology, Casper College, Casper, Wyoming. Grandson of Quintina Snoderly. Scio, Oregon.
- Stevens, Isaac I.
1854 Report of exploration of a route for the Pacific Railroad from Saint Paul to Puget Sound. Fort Laramie, Wyoming: Fort Laramie, National Historic Site. Xeroxed copy, with permission.
- Gold-Thwaites, Reuben
1906 Palmer's journal of travels over the Rocky Mountains, 1845- 1846. Early Western Travels, Volume 30. Cleveland, Ohio: The Arthur H. Clark Company.
- Carolyn Buff
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The McLeary Site, (48NA1152): A Late Prehistoric bison processing site, Natrona County, Wyoming

by

David Reiss and David Eckles

INTRODUCTION

The McLeary Site, 48NA1152, was located during a cultural resource survey of the proposed Deer Creek Reservoir project in 1986. The project was funded by the Wyoming Water Development Commission. Recording of the site was conducted in 1986 with test excavations performed in 1987. The site is situated on the northern base of Banner Mountain, which has a maximum elevation of about 2438 meters (8000 feet) (Figure 1). The site is found on both sides of Negro Creek, a small spring-fed, permanent water source. The area is on the boundary between the montane forest zone and a sagebrush/grassland community. Negro Creek supports a riparian plant community including cottonwood trees and chokecherry bushes. The western side of Negro Creek has a considerable amount of soil deposition. The eastern side has comparatively shallow soil deposition and a considerable amount of exposed bedrock.

THE McLEARY SITE

Western site area

Test excavations were concentrated on the west side of Negro Creek because of a higher potential for subsurface materials (Figure 2). A total of 13 units were excavated. Units 1, 2, 5, 6, and 7 were placed in the northwestern part of the site. This area contained a dense surface artifact scatter and possible stone cairn.

A total of 149 surface artifacts were mapped and collected in 1986 (Table 1). These included one Duncan-like Middle Plains Archaic projectile point (NA1152-4), one reworked Pelican Lake Late Archaic point (NA1152-23), one corner-notched Late Archaic point (NA1152-6), and one side-notched Late

Prehistoric period point (NA1152-2) (Figure 3).

All excavation units produced cultural materials, but none of which could be associated with a discrete level. Sediments in these units consisted of a few centimeters of silty sandy topsoil underlain by at least 35 cm of brown clay. All units were excavated to a maximum depth of 35 cm. Artifacts were found in all excavated levels within each unit (Table 1). Of particular note is the recovery of three white glass trade beads from 16-25 cm below surface in unit 6. These beads are conical in shape with no surface decoration, engravings or indentations. Similar trade beads have been found at Fort Laramie, Wyoming, which operated from 1834 to 1875 (Murray 1968:27). The occurrence of these beads indicates a historic period occupation of the site. However, because of the mixed nature of the deposits and artifacts in this area, a discrete historic occupation cannot be inferred.

Unit 7 was excavated to investigate the cairn. The rocks in this feature were buried up to a depth of 20 cm below the surface. The feature measured 1.12 m north-south by 1.0 meters east-west with the top 25 cm above the surface. Twenty-eight flakes and one side scraper were found beneath the cairn. Since similar cultural materials were found in similar contexts in the other excavation units, these artifacts cannot be positively associated with the cairn. There was no evidence of a purposefully excavated pit or other indication of the cairn's function.

Eastern site area

Units 4, 8, 9, 10, 11, 12, and 13 were excavated in the southeastern portion of the site. These units yielded evidence of

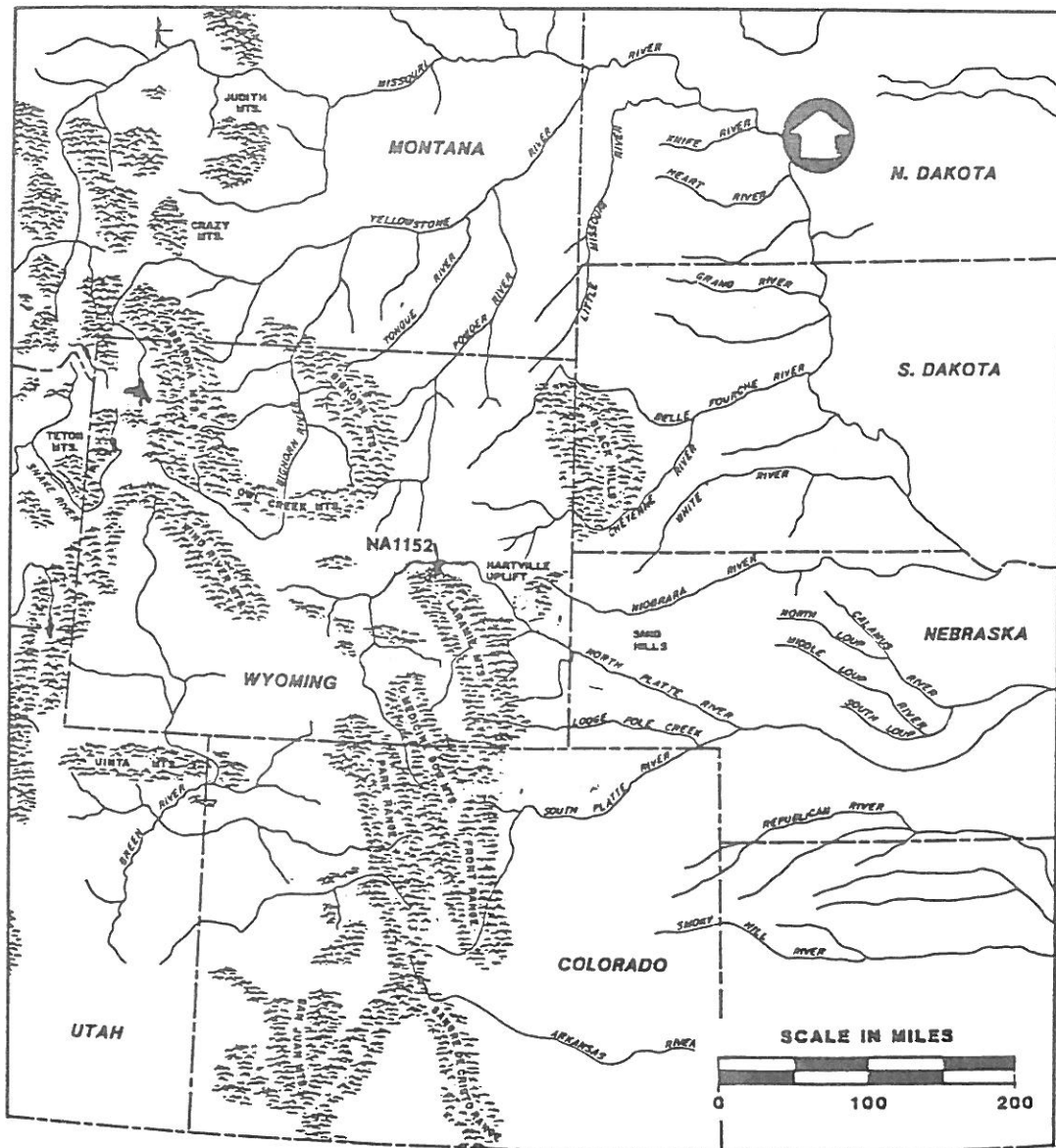


Figure 1: Location of the McCleary site (48NA1152), Natrona County, Wyoming.

a single occupation, intact cultural level. Sediments within these units consisted of a few centimeters of topsoil underlain by a gray silty sand. Maximum depth of excavations was 35 cm below the surface. The cultural level is marked by the occurrence of a concentration of faunal remains, chipped stone artifacts, ceramics, and dispersed charcoal. The charcoal was buried at depths from 6-20 cm in unit 10, dipping slightly to the north to depths of 25-35 cm in unit 13. Dis-

persed charcoal recovered from unit 4 yielded a radiocarbon date of 250 ± 60 years B.P. (A.D. 1700) (Beta-17446). This area is thought to be a bison bone processing area.

Only a small portion of the eastern area has been excavated. Based on this excavation, the processing area is estimated to extend north-south from unit 10 to unit 13, which is about 50 meters (Figure 2). The east-west boundaries are less exact because the test excavations

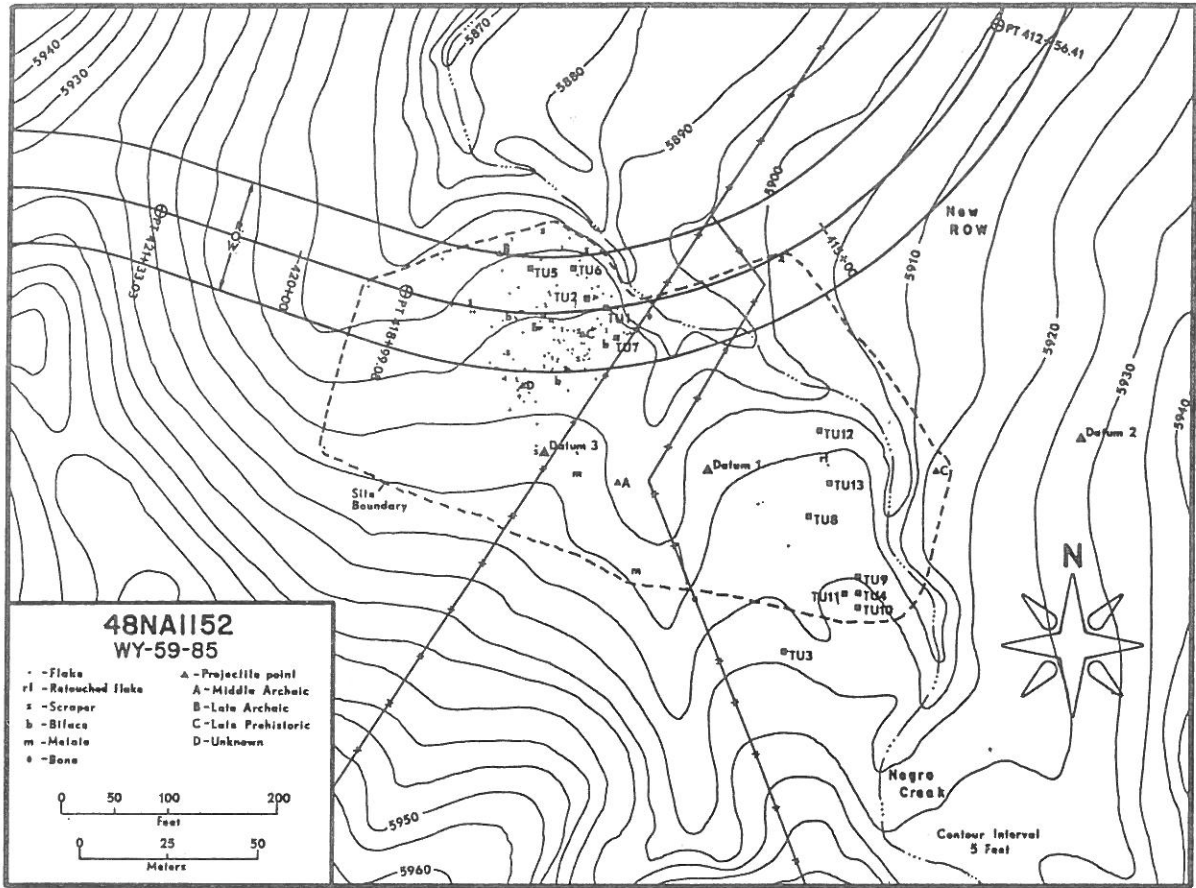


Figure 2: McCleary site map, showing distribution of excavation units, surface features, and artifacts.



Figure 3: McCleary site surface projectile points. Top row, left to right: NA1152-4, NA1152-23, NA1152-6. Bottom row, left to right: NA1152-2, NA1152-5.

Material Type	P	S	T	SH	UF	RF	ES	LPP	MAP	UNKP	MET	C	SSP	B	TOTAL
Madison Chert	-	6	32	18	1	-	1	-	1	-	-	1	1	4	69
Quartzite	-	2	44	8	1	1	1	1	-	-	-	1	-	1	60
Phosporia Chert	-	-	-	-	1	-	-	-	-	-	-	-	1	-	2
Chert	-	2	2	-	-	-	1	1	-	1	-	-	-	1	8
Chalcedony	-	-	3	-	1	-	-	-	-	-	-	-	1	-	5
Obsidian	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Sandstone	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1

Table 1: Summary of surface artifacts, 48NA1152. P = Primary flake; S = Secondary flake; T = Tertiary flake; SH = Shatter; UF = Utilized flake; RF = Retouched flake; ES = End scraper; LPP = Late Prehistoric point; MAP = Middle Archaic point; UNKP = Unknown point type; MET = Metate; C = Core; SSP = Side scraper; B = Biface.

did not extend to the far western end of the site. Based on the surface artifact evidence and the apparent soil deposition the area may extend west from Negro Creek about 40 meters. Thus, the surface area of the processing component may be 200 square meters.

RECOVERED ARTIFACTS

Faunal remains

One thousand, four hundred and eighty-seven bones and bone fragments were recovered from the excavation units in the eastern area. Most of these bones exhibited breakage that made identification to specific taxa difficult. Identifiable elements include those of *Bison bison* (bison), *Cervus elaphus* (elk), *Odocoileus* sp. (deer), *Castor canadensis* (beaver), *Sylvilagus* sp. (cottontail), *Pitymys ochrogaster* (prairie vole), *Neotoma cinerea* (packrat), *Microtus* sp. (vole), *Zenaidura macroura* (mourning dove), and an amphibian. A small portion of the faunal remains show evidence of butchering marks. Most are spirally fractured from butchering and carnivore modifications, and some are burned.

Each bone fragment or element was identified by comparison with known skeletons in the University of Wyoming, Department of Anthropology comparative osteological collection. Published osteological keys and anatomy references, including Getty (1975), Gilbert (1980, 1981), Lawrence (1951), and Olsen

(1960), were consulted. Butchering marks were identified by comparison of the archeological samples with the osteological collection specimens to find location and direction of each butchering mark.

Specific taxon identification was not possible in most cases. Bone fragments were therefore grouped into categories of large to medium sized artiodactyl, and large, medium and small sized mammal. This was done by comparing the fragments to known species and examining the shape, thickness and possible element of each fragment. Nearly all "unidentifiable" fragments are pieces of long bone shafts and rib blades.

Most identifiable bones recovered from the McCleary site were bison (Table 2). Thirty bison bones were identified. These represent a variety of skeletal elements, including maxillary and mandible fragments, molars, cervical and thoracic vertebrae, ribs, humerus, radius/ulna, metacarpal, carpals, phalanges, innominate fragments, femur and tarsal (Figure 4). This encompasses almost the entire range of skeletal elements, with a slightly greater representation of the front quarters and hump/neck region of the bison. Because only a small portion of the site has been excavated, no firm conclusion about meat selectivity can be made at this time. Yet, it would appear that the bison were killed and butchered nearby, with processing occurring at the

TAXON	Number
<u>Bison bison</u>	30
<u>Cervus elaphus</u>	1
<u>Odocoileus sp.</u>	1
<u>Castor canadensis</u>	1
<u>Sylvilagus sp.</u>	3
<u>Neotoma cinerea</u>	4
<u>Microtus sp.</u>	4
<u>Pitymys ochrogaster</u>	1
Rodentia	4
<u>Zenaid macruora</u>	1
Amphibia	1
Large artiodactyl	34
Medium-large artiodactyl	113
Medium artiodactyl	5
Medium-large mammal	568
Medium mammal	5
Small-medium mammal	681
Small mammal	30
Total:	<u>1487</u>

Table 2: Faunal remains from McCleary site, 48NA1152.

site. There is a minimum of two bison present, based on two right radii proximal ends, two cervical and two thoracic vertebrae, one each from a mature and immature animal.

Most elements and fragments which exhibit clear evidence of butchering are bison (Table 3). Because of the small sample, no reconstruction of the butchering pattern is proposed at this time. Spiral breakage is most common, with 72.2% of the total assemblage having spiral breaks. Longitudinal breakage is present in 26.7% of the assemblage, and only 1.1% are whole bones. Evidence of carnivore damage was found on 1.1% of the assemblage. The bones recovered are remarkably intact, given that they were found in shallow soil deposits. Only 2.2% show limited surface weathering and a small degree of longitudinal cracking. Evidence of burning is seen on

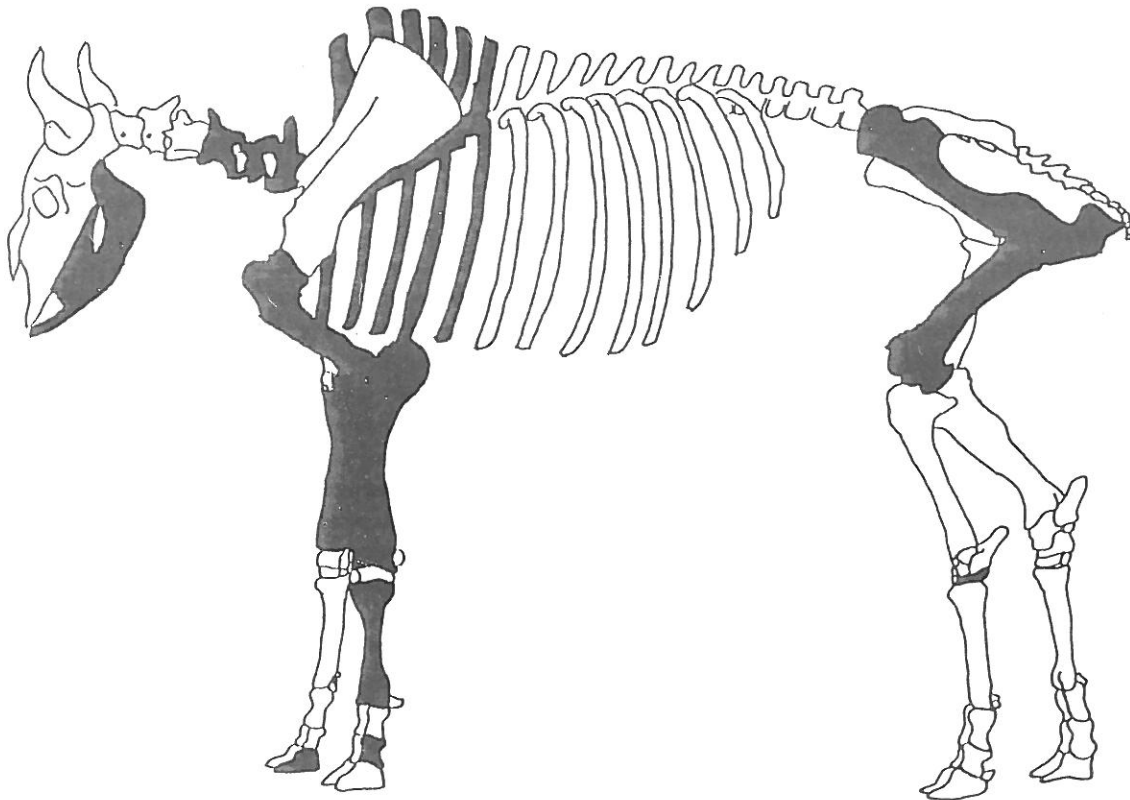


Figure 4: Bison bison skeletal element distribution from 48NA1152 (shaded areas represent those elements recovered, not necessarily whole bones).

Catalog #	Species	Element	Butchering evidence/marks
NA1152-102	<u>Bison bison</u>	radius	spiral fracture across proximal end of shaft, cutmarks on dorsal side, just above tuberosity on right side of shaft, Articulates with NA1152-10
NA1152-10	<u>Bison bison</u>	humerus	spiral break above radial fossa, cutmarks on capitulum
NA1152-324	<u>Bison bison</u>	radius	spirally broken shaft fragment, cutmarks on lateral side
NA1152-285	<u>Bison bison</u>	humerus	spirally broken shaft fragment with 1-2 cutmarks at bottom of, and across, deltoid tuberosity
NA1152-274	<u>Bison bison</u>	3rd phalanx	split lengthwise and burned
NA1152-60	<u>Bison bison</u>	rib	groove and snap cut across end of blade, cut line visible, end and blade edges rounded and polished
NA1152-251	<u>Bison bison</u>	6th or 7th cervical vertebra	cutmarks above caudal left articular process
NA1152-325	<u>Bison bison</u>	thoracic vertebra	blow mark or carnivore tooth puncture on forearm side of arch and on arch below cranial articular process
NA1152-250	<u>Bison bison</u>	thoracic vertebra	deep cutmarks diagonal across spinous process
NA1152-105	large artiodactyl	long bone	spirally broken shaft with cutmarks on shaft
NA1152-51	large artiodactyl	long bone	spirally broken shaft with cutmarks on shaft
NA1152-88	medium/large artiodactyl	long bone	spirally broken shaft with snap and groove break and cutmarks across shaft
NA1152-75	medium/large artiodactyl	long bone	spirally broken shaft with cutmark on shaft
NA1152-126	medium/large artiodactyl	long bone	spirally broken shaft with cutmarks on shaft

Table 3: Bone elements from 48NA1152 with butchering evidence preserved.

18.2% of the assemblage.

A bison rib bone tool was recovered from the test excavations. It is a mid-blade fragment with a spiral break at one end and a groove-and-snap break at the other end. The grooved cut is visible at this end. There is considerable chipping of the bone at the worked end on both the dorsal and ventral sides. The cut end and blade edges also show rounding and polish. There are several diagonal cut marks on the dorsal blade edge as well. This bone was intentionally worked for some purpose, possibly as a tool by itself, or as the haft for a lithic tool at the larger, worked end (see Frison et al. 1978).

Only a small portion of 48NA1152 has been excavated. However, the number, density and condition of the faunal remains is similar to other sites where marrow extraction and bone grease manufacturing have been inferred. For example, at 48UT390 in southwestern Wyoming, dated at 1140±80 B.P.,

". . . the pronghorn bone from the site appears to have been systematically broken for marrow extraction. Marrow is an extremely high nutrition source and is generally very important to most hunting and gathering people (Binford 1978:23). Patterns of marrow-bone breakage are discussed in detail by Binford (1978, 1981). Within the present assemblage, all of the marrow producing bones show evidence of deliberate breakage" (Reiss and Walker 1982:17).

Besides breakage for marrow extraction, there is some evidence that the bones were further pulverized for the manufacturing of bone grease. Bone grease is the term used to describe the fat and grease contained in the bone tissue (Binford 1978:32). The manufacture of bone grease requires the reduction of the bones to small fragments that

are then placed into some kind of container with water and boiled. The grease and fat will float to the top, where it can be recovered (Binford 1978, 1981; Vehik 1977). Before introduction of ceramics or iron pots, archeological evidence indicated that some sort of hide container was used (Frison et al. 1978). Rocks were heated and dropped into the water, causing it to boil. The large amount of fire-affected rock at 48UT390 and the absence of ceramics is further evidence for this method of preparation. Bone grease was used for a variety of purposes, including a food source and part of a tanning procedure (Vehik 1977). A by-product of grease manufacture was the soup or broth left in the container after the grease had been skimmed off (Vehik 1977).

There are two types of evidence at 48UT390 for the manufacture of bone grease. The mean size of the bones is approximately three centimeters, much smaller than expected if the bones were only broken for marrow. Also, the articular ends are highly fragmented, which does not occur during marrow breakage (Binford 1981:166).

Similarly, at the Sun River site in northwestern Montana, considerable bone breakage is evident in level IV dated at 3450±350 B.P. and in level V dated at 4500 years ago. *Bison bison* and *Antilocapra americana* make up the bulk of these assemblages (Greiser et al. 1985).

" . . . Most bones recovered from level IV were very fractured perhaps as a result of cultural activities such as butchering, marrow removal, and bone grease processing. The effects of certain non-cultural taphonomic or post-mortem processes also were apparent, although limited. These include exfoliation, acid etching, and carnivore gnawing . . . We believe that the high frequency of long bone diaphysis fragments, coupled with the gross under-representation of articular

ends, vertebrae, and innominates indicate that marrow and bone grease processing were undertaken (We cannot, however, determine the extent of carnivore impact on the faunal remains . . ." (Greiser et al. 1985: 857-859).

The faunal remains from 48NA1152 show similar patterns of breakage, suggesting marrow extraction and bone grease manufacture. This is seen in the average size of the bone fragments, skeletal elements represented, and intra-site element distribution. The faunal remains from 48NA1152 contain two general sizes of bone fragments (Figure 5). The first category includes large (identifiable) fragments of bison bone ranging from 3.0 by 1.5 cm to over 20.0 by 10.0 cm. These fragments consist of articular ends of long bones, shaft fragments and as cranial fragments. The remaining fragments are in the medium-large artiodactyl and small-large mammal categories and range from 1.0 by 1.0 cm to 10.0 by 3.5 cm in size. The average size of the bone fragments was calculated (Table 4).

It is suspected that bison, as opposed to smaller artiodactyls, is the predominant species represented in both size grades. This is based on lack of other artiodactyl remains in the identifiable portion of the assemblage and the rela-

taxon	average size length x width (centimeters)	number
<i>Bison bison</i>	9.27 x 4.49	18
large artiodactyl	5.77 x 2.56	34
medium/large artiodactyl	2.10 x 1.10	117
medium/large mammal	2.09 x 0.98	573
small/medium mammal	1.87 x 1.06	681

Table 4: Bone fragment sizes, McCleary site, 48NA1152. *Bison bison* count does not include 12 complete bones (vertebrae, phalanges, carpals, tarsals, and teeth).

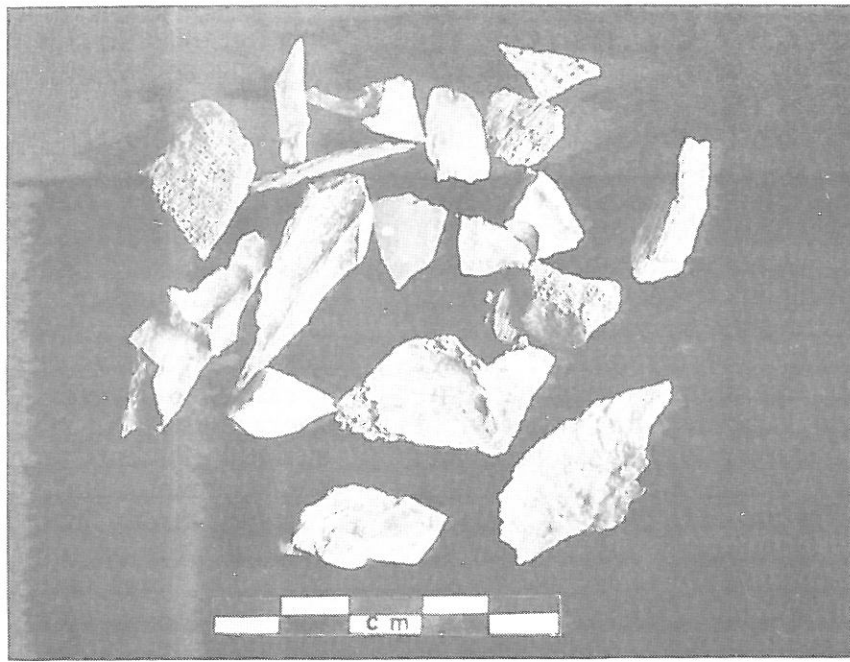


Figure 5: Bone fragments from processing area, 48NA1152.

tive thickness of the bone fragments. It is likely that the small size of the fragments in the assemblage are the result of intensive processing, the kind that has been associated with bone grease manufacture.

Looking at frequency of skeletal elements, there is additional evidence for marrow extraction and bone grease manufacture. There is a high frequency of long bone shaft fragments and few long bone articular ends, vertebrae, and innominates (Table 5, Figure 6). Clearly, long bone shaft fragments dominate the assemblage and correspond to the kinds of breakage observed at the sites discussed above.

There may be internal differences within the site with regard to bone breakage. This distribution of long bone shaft fragments and other bone elements by unit is presented (Table 6). It also shows the average size of the fragments by unit. These data show a mixing of identifiable bison bone fragments and whole bones with smaller unidentifiable fragments. In units 4, 8, 13, and 13

there are generally larger fragments associated with the identifiable bison bone. Unit 9 has higher numbers of long bone shaft fragments and generally smaller sized fragments. Units 8, 10, and 11 also have the smallest average fragment sizes.

Thus, it would appear that both marrow extraction and bone grease production occurred in and around units 4, 8, 12, and 13. Greater evidence is present for bone grease manufacture in and around units 8, 9, 10, and 11. The effect of post-occupation disturbance is as yet unknown. The small proportion of carnivore and rodent modified bone suggests some displacement of *in situ* bone refuse, but to what extent is unknown. Thus, there may be several areas of marrow extraction and bone grease production within the site area.

Lithic remains

Four hundred and twenty-three lithic artifacts were recovered from the bison processing area. Most were flakes (416), with tertiary flakes the most common

Taxa	long bone diaphysis	long bone with epiphysis	vertebrae/ innominate	other fragments: cranial/tarsals/ teeth
<u>Bison bison</u>	6	10	5	9
large artiodactyl	26	0	2	6
medium/large artiodactyl	113	0	1	3
medium/large mammal	567	0	3	3
small/medium	675	0	2	4
Total	1387	10	13	25

Table 5: Frequency of bone elements, 48NA1152.

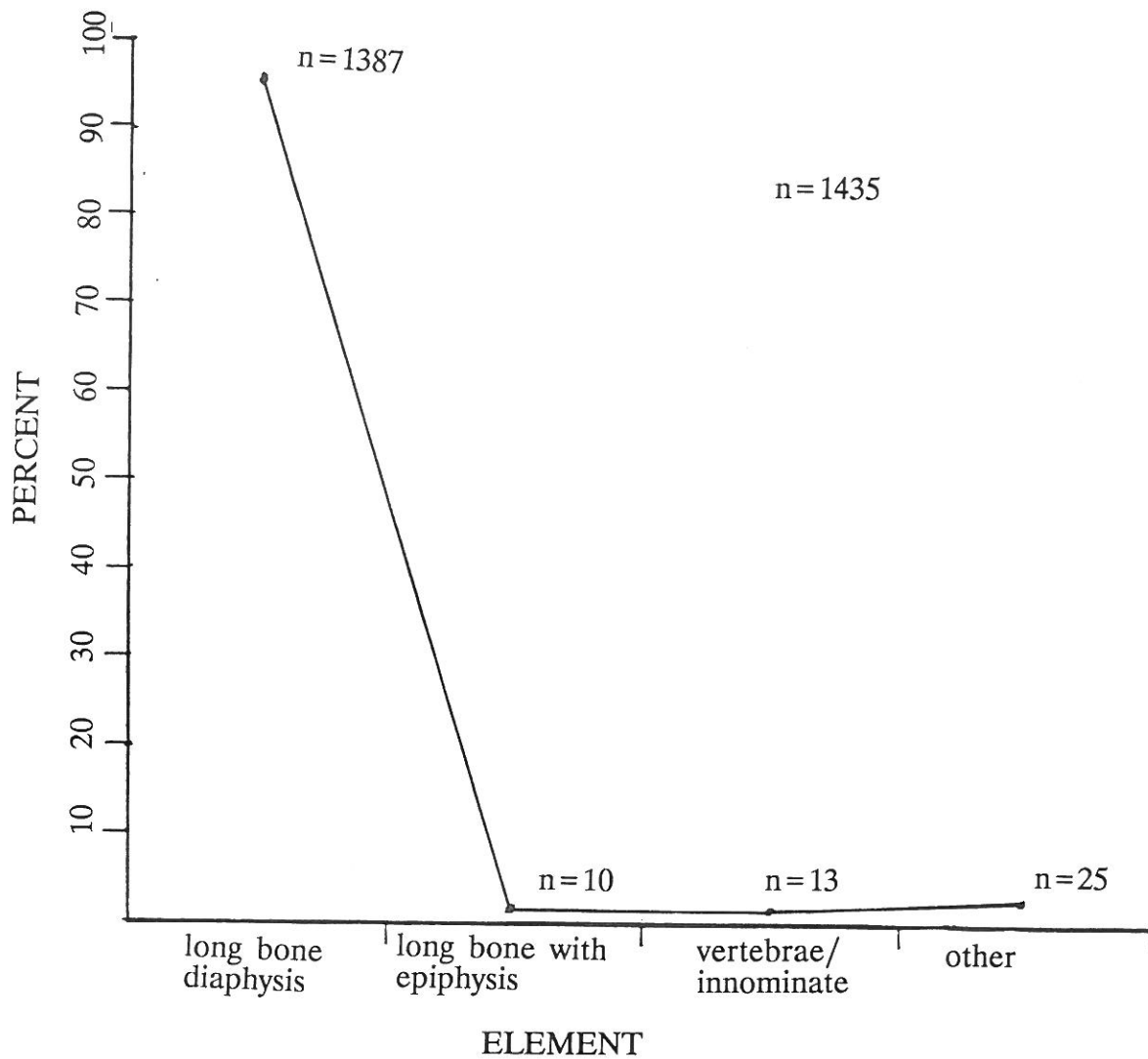


Figure 6: Bone element frequency, 48NA1152.

Unit	Bison bison				Large Artiodactyl				Medium/Large Artiodactyl			
	Ave. size L x W	% shaft	% other	n	Ave. size L x W	% shaft	% other	n	Ave. size L x W	% shaft	% other	n
4	8.6x4.4	33.3	66.7	9 (4)	5.2x2.4	84.2	15.8	19	4.4x1.3	100	0	5
8	14.4x6.4	40.0	60.0	5 (4)	0	0	0	0	0	0	0	0
9	5.2x2.9	60.0	40.0	5 (1)	6.6x3.9	100	0	1	1.8x1.1	100	0	104
10	0	0	0	0	6.4x2.1	50	50	2	0	0	0	0
11	6.5x5.3	0	100	1	6.6x2.4	25	75	4	0	0	0	0
12	18.4x7.9	0	100	6 (3)	7.9x2.2	100	0	2	6.7x1.5	100	0	1
13	6.7x4.2	50	50	4	5.6x2.7	100	0	6	3.4x1.4	100	0	7
Totals				30				34				117

Unit	Medium/Large Mammal				Small/Medium Mammal				Total
	Ave. size L x W	% shaft	% other	n	Ave. size L x W	% shaft	% other	n	
4	3.6x1.3	97.4	2.6	115	1.9x1.1	99.8	0.2	268	516
8	2.4x1.0	100	0	2	2.2x1.1	100	0	28	35
9	2.1x1.1	99.6	0.4	274	1.6x0.7	93.4	6.6	30	414
10	4.5x0.8	100	0	1	1.6x1.3	100	0	34	37
11	2.1x1.3	100	0	174	2.2x1.2	100	0	8	187
12	5.1x1.2	100	0	1	3.0x0.9	98.6	1.4	68	78
13	2.9x1.4	100	0	6	1.9x1.2	99.4	0.6	145	168
Totals				573				681	1435

Table 6: Distribution of bone elements and average size by unit. Average size in centimeters. Other = vertebrae, innominates, long bone with epiphysis, cranial fragments, carpals, tarsals, and phalanges. *Bison bison* counts includes whole bones with the number in parenthesis indicating number of whole bones.

(Table 1). Two Late Prehistoric points (NA1152-184 and NA1152-304) were recovered from unit 12 between 21-30 cm below surface (Figure 7). A third Late Prehistoric point (NA1152-2) was found on the surface east of Negro Creek. The points in unit 12 were found in association with the butchered bison bones. Other associated tools include

two biface fragments, one from unit 4 (NA1152-57) and one from unit 10 (NA1152-356). The raw material of these artifacts is from locally available cherts and quartzites. Obsidian is the only non-local material and accounts for only two of the tertiary flakes in unit 9 (Table 1).

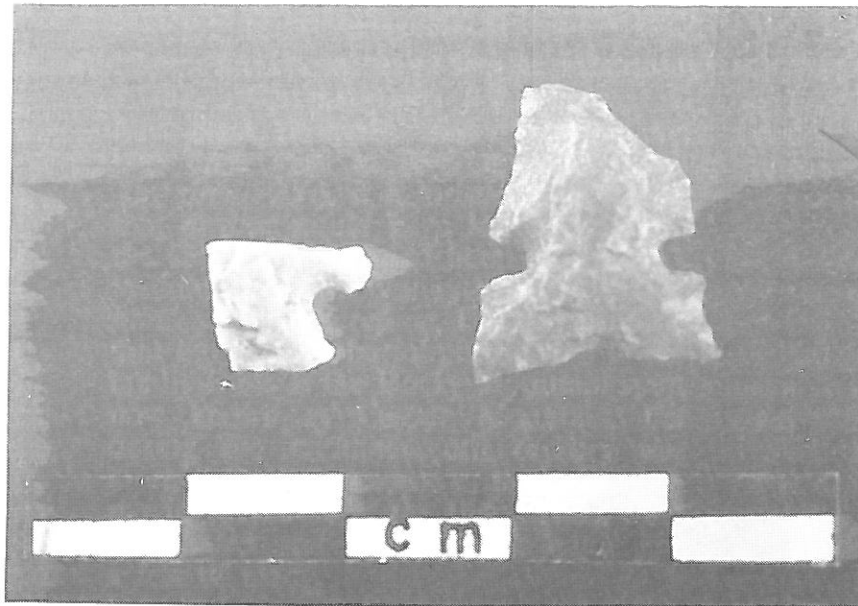


Figure 7: Late Prehistoric Period projectile points from test unit 12. Left to right: NA1152-304, NA1152-184.

Pottery analysis

Ceramic found at 48NA1152 include ten body sherds, found in unit 4 (one), unit 9 (two), unit 12 (five), and unit 13 (two). All artifacts were found in association with the bones and lithic artifacts.

Generally, all sherds were similar in paste composition and surface finishing, and were manufactured using the same techniques. It is thought that more than one vessel is represented by the nine sherds.

Specimen temper is almost identical, consisting of a mixture of uncrushed quartz sand particles and mica. The temper comprises between 40-60% of the paste. Temper particles are fairly uniform in size and average about 1.0 mm in diameter. A few larger temper particles (up to 3.5 mm) are present. The sherds range from 2 to 3.5 on the Moh's hardness scale. Some are soft and slightly friable, but most appear well-bonded. Most exhibit some kind of fluting or grooving on the exterior surface (Figure 8). On the largest sherds the fluting is distinct and appears to have been produced by a grooved paddle. The interior

surface is rough and large numbers of thick lines are evident. Finger impressions are evident on the interior of several sherds. The presence of distinct laminar texture on many sherds, longitudinal splitting, and evidence of a grooved paddle used on the exterior surface suggests that the vessels were manufactured by the paddle and anvil technique.

Construction techniques, paste composition and surface treatment observed on the ceramic assemblage from 48NA1152 are similar to those found on "Crow pottery" described by Frison (1976, 1978, 1979). This assemblage seems to fit well within the range of variation of Crow pottery as described by Frison. However, several ethnohistorical and analytical problems in assigning ethnic affiliations to ceramic assemblages from the Northwestern Plains have been pointed out in recent years (Heidenreich 1979; Johnson 1979; Wood and Downer 1977). Keyser and Davis (1982) have recently created a new regional ceramic grouping for assemblages from northeast Wyoming and southeast Montana, which they call the "Powder River Tradition." These

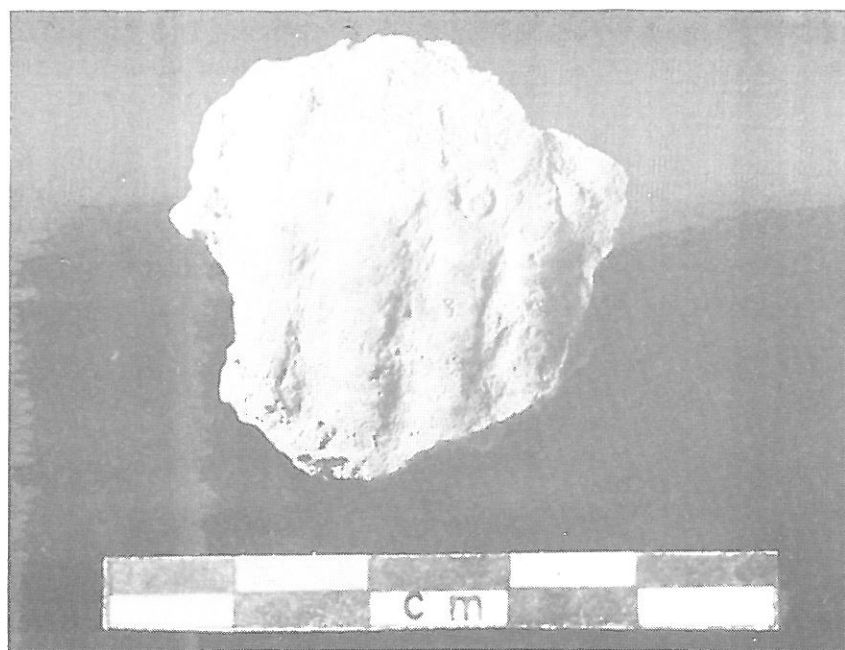


Figure 8: Pottery sherd (NA1152-155) showing surface decoration (fluting).

authors assign no ethnic affiliation (i.e., Crow) to ceramics but have proposed alternative hypotheses to account for the presence of pottery in the Northwestern Plains.

The ceramics from 48NA1152 have been tentatively identified as within the range of the ceramic grouping known as "Crow pottery." Because of the recent controversy concerning ethnic affiliations and prehistoric pottery, the precise identity and origin of the group that manufactured the ceramics from 48NA1152 remains speculative.

SUMMARY

In summary, site 48NA1152 appears to be a marrow and bone grease processing area. The eastern portion of the site is probably a single occupation dating to 250±60 years B.P. (A.D. 1700). Ceramics and Late Prehistoric period side-notched and corner-notched projectile points were found in association with butchered faunal remains, primarily those of bison. A large portion of this area of the site is buried and appears intact.

The western area of the site apparently contains several historic and prehistoric occupations with no intact cultural levels.

REFERENCES CITED

- Binford, Lewis R.
 1978 Nunamiut ethnoarchaeology. Academic Press, New York.
 1981 Bones: Ancient men and modern myths. Academic Press, New York.
- Frison, George C.
 1976 Crow pottery in northern Wyoming. Plains Anthropologist 21(71):29-44.
 1978 Prehistoric hunters of the High Plains. Academic Press, New York.
 1979 The Crow Indian occupation of the High Plains: The archaeological evidence. Archaeology in Montana 20(3):3-16.
- Frison, George C., Michael Wilson, and Danny N. Walker
 1978 The Big Goose Creek site: Bison procurement and Fau-

- nal Analysis. Occasional Papers on Wyoming Archaeology 1:1-50.
- Getty, Robert (ed.)
1975 The anatomy of the domestic animal. W.B. Saunders, Philadelphia.
- Gilbert, B. Miles
1980 Mammalian osteology. Privately published by author, Laramie, Wyoming.
1981 Avian osteology. Privately published by author, Laramie, Wyoming.
- Greiser, Sally T., Weber Greiser, and Susan Vetter
1981 Middle Prehistoric Period adaptations and paleoenvironment in the Northwestern Plains: The Sun River Site. American Antiquity 50: 849-880.
- Heidenreich, C. Adrian
1979 The bearing of ethnohistorical data on the Crow-Hidatsa separation(s). Archaeology in Montana 20(3): 87-111.
- Johnson, Ann M.
1979 The problem of Crow pottery. Archaeology in Montana 20(3):17-29.
- Keyser, James D., and Carl M. Davis
1982 Ceramics from the Highwalker Site: A study of Late Prehistoric Period cultural systematics of the Northwestern Plains. Plains Anthropologist 27(98):287-304.
- Lawrence, B.
1951 Post-cranial skeletal characters of deer, pronghorn and sheep-goat, with notes on *Bos* and *Bison*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University 35(3):1-43.
- Murray, Robert A.
1968 Glass trade beads at Fort Laramie. The Wyoming Archaeologist 11(4):27-37.
- Olsen, Stanley J.
1960 Post-cranial characters of *Bison* and *Bos*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University 35(4):1-15.
- Reiss, David, and Danny Walker
1982 Pronghorn utilization at 48UT390 in southwestern Wyoming. Wyoming Contributions to Anthropology 3: 1-25.
- Vehik, Susan C.
1977 Bone fragments and bone grease manufacturing: A review of their archaeological use and potential. Plains Anthropologist 22(77):162-182.
- Wood, W. Raymond, and Alan Downer
1977 Notes on the Crow-Hidatsa schism. Plains Anthropologist Memoir 3:83-100.
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THE CONTINUING USE OF PETROGLYPH SITES

by

Thomas H. Lewis

Rock art on all continents has been sadly damaged by vandals. Such destructive mischief seems incomprehensible, but experience teaches that it is utterly dependable. Many sites known a few decades ago have now disappeared under graffiti. Only a step removed from idle defacement is the mindless target shooter who delights in the destructive power of firearms. Others take pleasure in placing their initials and dates across ancient images. The collector, if the inscribed block for sale or souvenir cannot be wrenched away, is coarsely given to chalking or retouching prehistoric figures to make photography easier.

In decrying such behaviors, we should not ignore another and differently motivated human alteration of rock art; namely, the continued votive use of sites. These notes will document some current ritual practices which alter images at petroglyph and pictograph sites. They will further provide a structure around which further data on these processes may accumulate. Pertinent to this discussion are Burl's descriptions (1976) of the persistence of pagan beliefs and practices across centuries in Britain, and Durant's (1950) discussion of medieval religious transitions. Comprehensive ritual systems, in these instances, have devolved into fragments of folklore, often with more discontinuity than substance and thus often difficult of interpretation. The problems of petroglyph interpretation on the Northern Plains might be enriched by examining what is known about visitors with ritual preoccupations who use and alter primitive rock art.

Between 1980 and 1984, my colleagues and I (Leppert 1983; Lewis 1981a, 1981b, 1981c, 1982, 1983a, 1983b, 1983c, 1984) surveyed rock art sites along

the middle Yellowstone River in south-central Montana. Begun as a sampling exercise, it was soon possible to document 103 old and new sites and to compare the material with older descriptions. We were often aided in our searches by ranchers and local residents with special knowledge of their regions. These people also had interests in the "writings" and drawings of their field experience.

One of these was a Gros Ventre man with a job in town and friends on the Crow Reservation. He knew, he said, of a buffalo petroglyph "on Bell Butte near Bitter Creek" and would be pleased to guide us to it "some day" in the indefinite future. The day was serially postponed. After two years of increasingly reluctant promises, he finally said he would not show the glyph "because the place is still used." He did not wish to explain further, and perhaps could not. On two other occasions, Crow informants also have refused to divulge the location of petroglyphs to archaeologists of my acquaintance "because those places are still used by the people."

In 1981, a search for reputed pictographs in the Pryor Mountains led to the canyons above the headwaters of Arrow Creek. According to Roy Marsh, keeper of a small museum at Pryor, Crow mythology assigns the home of the Little People to this locality. Its ancient name, "They Shot the Rock," came from the custom of shooting prayer arrows into the creviced cliffs. On the day we passed this landmark, there were scores of fresh offerings of colored cloth, coins, cigarettes, and food. Such observations the Crow will not discuss with outsiders, as they will not discuss other oblation places.

On a working ranch at Joliet, a deep sandstone alcove looks out across Rocky Fork River to the site of a large historic village at the mouth of Red Lodge Creek. Several polychrome shield holding warriors stand on the back wall (24CB406; Lewis 1981a). According to the landowner, groups of unidentified Native Americans have made long visits to the place and were said to have "marked on and thrown water on the figures." The landowner feels the paintings are his property and prohibits "any more traffic," citing damage to the glyphs as the reason. The apparent chronic bad manners suggest the inhospitality has not been enforceable.

At desert-like Weatherman Draw, (24YL408, Lewis 1982), one of a complex of sandstone canyons, an incised glyph (Figure 1) stands on a prominent cliff face above a hidden water source. Water is a rare commodity in this landscape. The glyph has been crudely and recently augmented; not defaced or destroyed, but reemphasized, perhaps by ritual visitors? Two nearby pictographs, a tipi-like object and a circle seem to have been crudely redone in orange paint. This may be vandalism, because the paint appears to be a commercial material. Yet, 25 meters to the east are two brightly colored shields in red, pale red, and yellow. These are on a large boulder and are so large and bright to cause a viewer to gape on encountering them. Between the first photographic recording and original site report in 1965, and rephotographic examination in 1983, the shields have been extensively augmented, first with black paint and then with white outlines. The original portions of the glyphs are brightly colored and in good contrast with the background. An alteration by a photographer seems unlikely. Simple vandalism is the first and easiest conjecture, but ritual use and alteration is at least equally possible. There is no way to tell, of course, but we limit ourselves unnecessarily to dismiss either explanation. Repeated visits to this site have, however, yielded surprising information. In May 1984, fresh-

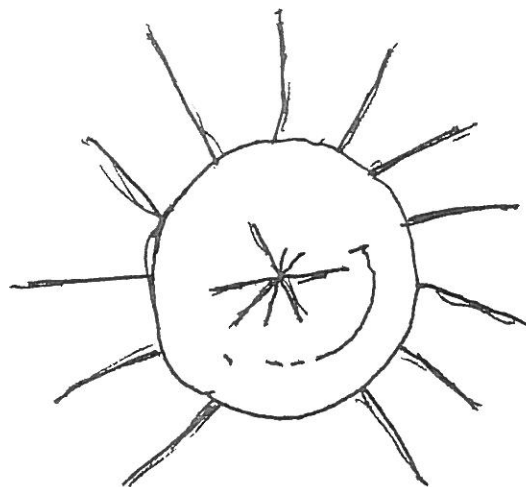


Figure 1: Incised glyph from Weatherman Draw, 24YL488. Glyph is 16 cm across.

ly deposited tobacco offerings were found here, certainly confirming the current use of the site in ritual contexts.

At a rockshelter in the foothills of the Beartooth Mountains (24CB413, Lewis 1983b) (Figure 2), a painted bear and two shield-bearers stand in a row. The paintings are faded and in part fallen away with the weathering of the substrate. The jaws of the bear have been augmented by deeply-rubbed lines. The remainder of the drawings are undamaged. Similarly, a bear petroglyph at 24YL419 in the Bull Mountains (Figure 3) has been repeatedly and crudely augmented with deeply-rubbed lines. Although there are three other bears, three armed men, two shield-bearers, and several count marks on the same panel (Figure 4), none have been touched at all. One must question why one figure, no more accessible than the others, was so oddly selected for emphasis.

Further along the same cliff are large yellow and red painted shield-holders. Deep scratches and incised lines have been added to these figures, along with white paint (not chalk) outlines. The damage seems, if anything, to increase a photographer's problems and perhaps therefore were not done to enhance modern recording of the images.

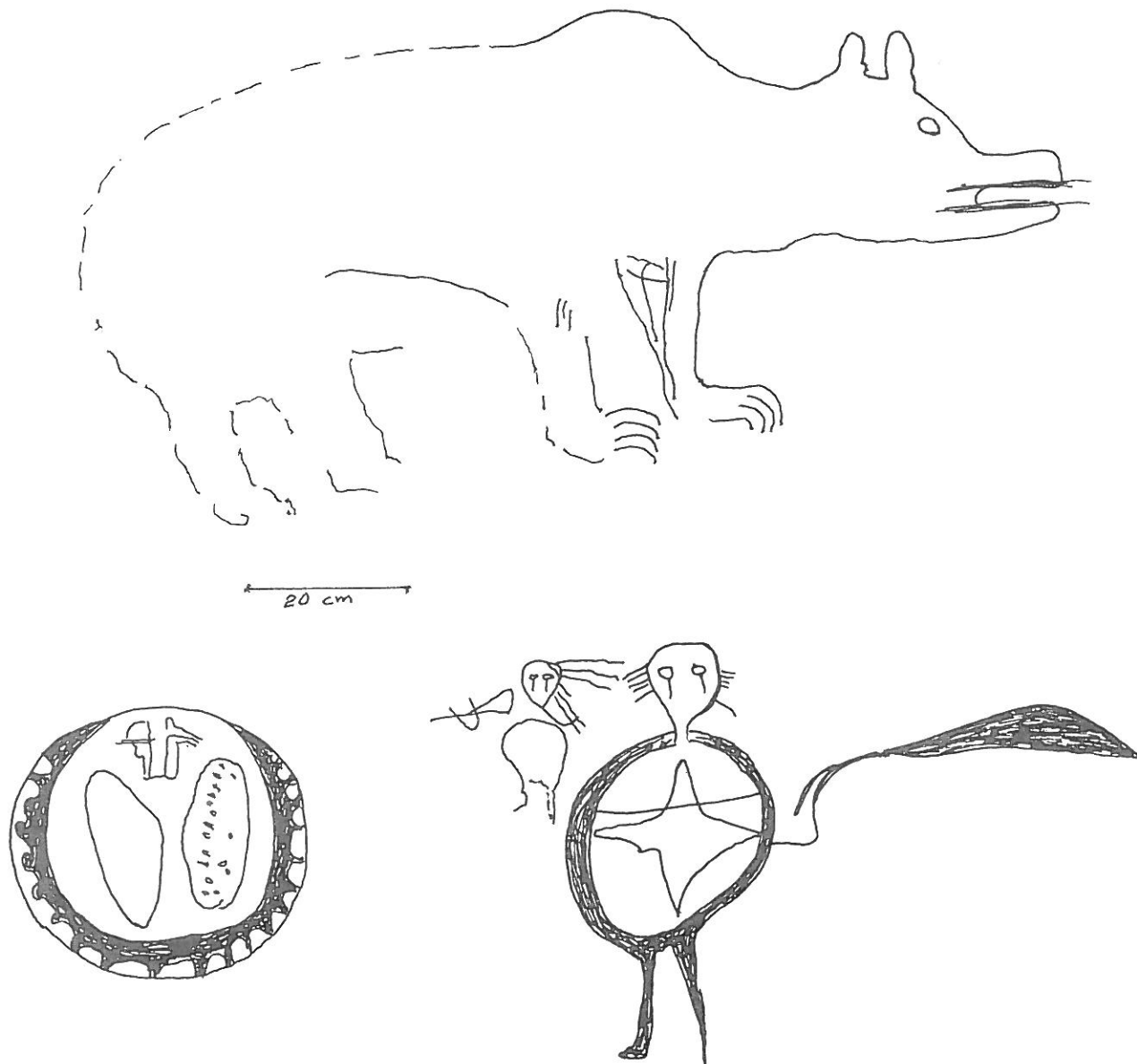


Figure 2: Painted bear and shield figures from Langstaff site, 24CB413. Scale below bear is 20 cm long.

Site 24CB466 (Lewis 1983a) south of Bridger, Montana, is an ancient habitation site in a large cave. On the rear wall are two V-neck man-like figures done with incised lines overlain with dim black paint. Nearby is a recent, ill-drawn, charcoal figure of a mounted man, about the same size. Removal of the fresh charcoal particles without damage to the drawing surface would require

restoration techniques hardly practical after a hard day's climb, but does an original glyph lie beneath? Have recent visitors retouched an older drawing?

At 24YL402 (Lewis 1981b) and 24YL403 (Lewis 1981c) (Figure 5), bear pictographs in black have been "damaged" by multiple deep vertical scratches and vertical black lines. Perhaps the vertical slashes were part of the original

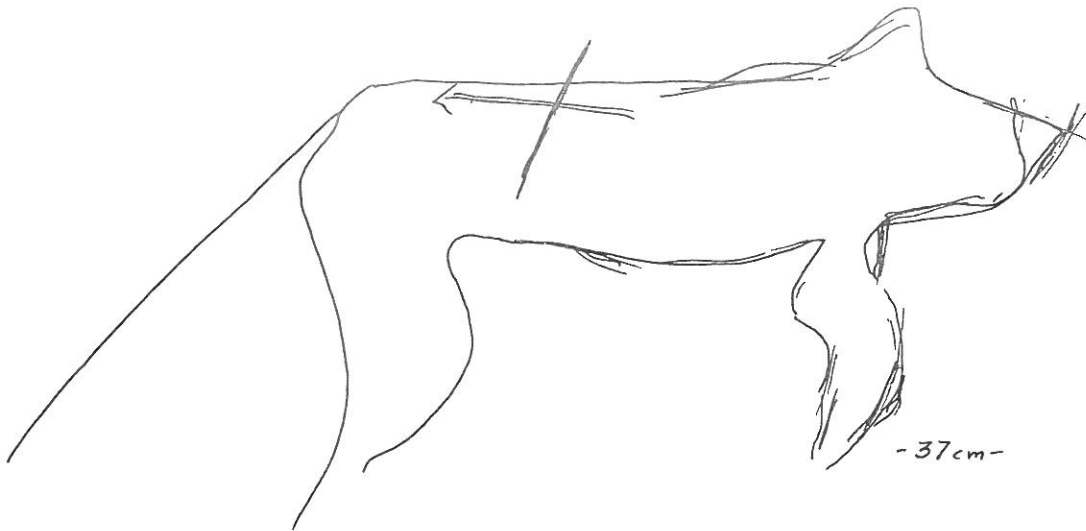


Figure 3: Bear petroglyph from 24YL419. Glyph is 37 cm long.

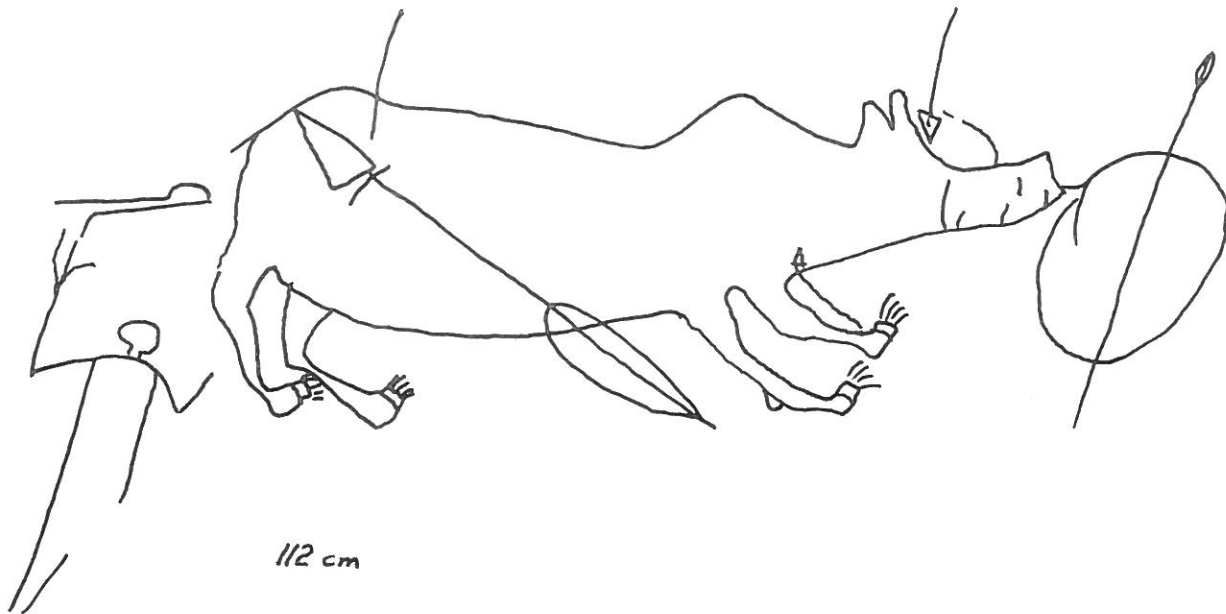


Figure 4: Other petroglyph figures from 24YL419. Panel is 112 cm long.

drawing. Perhaps they were added in single or multiple later events. Some of them seem recent, and taken altogether, they seem to add to a visual message and do not serve at all to delete the drawing. One's first impression, that the lines convey the idea that the bears were "killed," must dangle without confirma-

tion. However, a pair of human hands painted in red, also at 24YL403, has similar scratched, black-pigmented, or rubbed vertical lines. Again, at a site called "Three Kills" (24CB63, Lewis 1984), three bear-like animals are slashed with many vertical marks, as if injury inflicted upon the images might effect

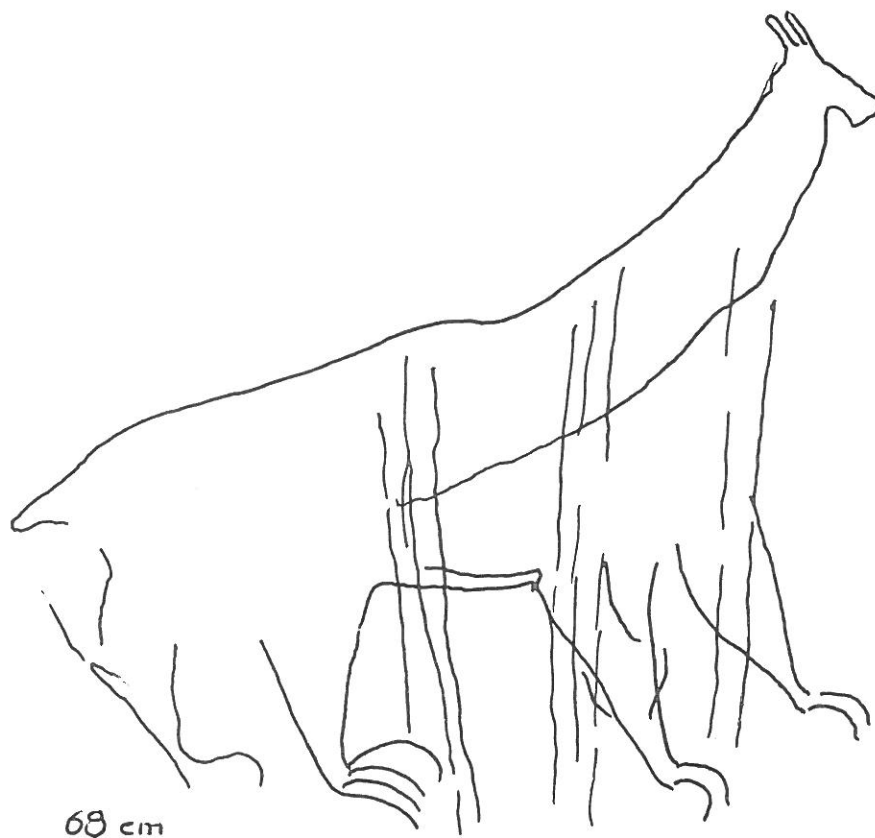


Figure 5: Pictograph from 24YL403. Figure is 68 cm long.

injury to the actual creatures. "Scratched-out" bear figures also can be seen at 24GV561. It is curious to read that in the slums of Los Angeles, gang death sentences are announced by writing the enemy's name on an important territory wall. Cross-out and over-scratched lines signify the execution has been carried out.

In a brush-choked blind canyon in the Pryor Mountain uplift is a weathered series of painted figures, a large bear, rampant, in black and red flanked by shield-holding warriors (Figure 6). The warrior on the right is rendered in black, and, like the bear, appears to be as originally painted. The shield of the warrior on the left, however, has been repainted with a different shade of yellow-orange carelessly slapped on with poor attention to margins and detail. The outlines of the figure have been

recently overlain with white, and some red portions are overlain with white. There is little to suggest why one figure in this old painting has been repeatedly retouched and others have not. The site is in remote, seldom travelled country, difficult of access, and has little to invite a camper or visitor. Yet, in the winter of 1982, a snow-sodden cloth was noted in front of the panel. In the early spring of 1983, a scarf was positioned there. A rill that is currently depositing silt and dry pine cones has since covered these seeming-random cloths, and I did not beforehand think of them as offerings.

In May, 1984, I showed the panel to a colleague. Several novelties now appeared before the glyphs. Three lengths of dead timber had been drawn up as if for seating. Beneath one was stuffed an empty sardine tin. Downhill were several soft drink cans and paper food wrap-

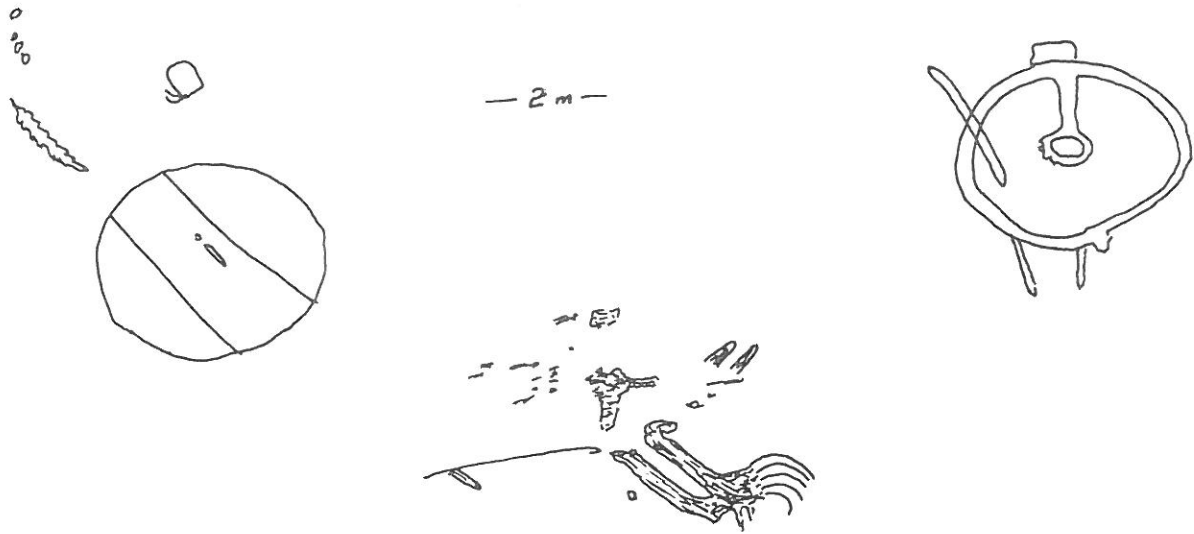


Figure 6: Pictographs from Pryor Mountain region. Panel is 2 m long.

pers. The scuffed sand surface suggested a considerable group of visitors. In front of the bear was a large multi-colored cloth. By mid-June, this had disappeared, but a new smaller cloth was in position.

The reader may grow impatient with these fragmentary observations and speculations. It is of course difficult to establish on physical evidence alone that ancient rock art sites are still used in ritual contexts. One final example will round out my thesis. In the desert west of the Pryor Mountains, and far from roads, is a high forbidding ridge surrounded by broken cliffs and deep arroyos. On top of the ridge is a hidden swale, a *corral excondido*, with remnants of a prehistoric wickiup and scatters of worked stone chips. Since the early homestead days, no one has lived within miles of this spot on the open range. High on a sandstone boulder, a 45 cm long bear has been carved through a thick red-brown patina (Figure 7). The figure has been repatinated, and is now almost the color of the mother rock (24CB198, Leppert, 1983). It is all but invisible to the casual view. The bear has a smoothly outlined forebody and limbs, head, eyes, and ears. The outline

is 3 mm deep. Inside the lines the stone has been smoothly cut away except for old "strike marks." These may be imperfections in the rock or mistakes by the artist. Equally, and heuristically, they could be scars from spear or arrow points. There are two jab marks in the dorsal hump, two in the thorax, and two in the lower jaw. The prosaic scientist would avoid imagining that the marks represent wounds made during reenactments of the hunt.

A close reexamination of the bear carving shows that the outline has been emphasized by meticulous rubbing with something soft and metallic such as a lead bullet. This is not perceivable by the camera and must have been undertaken for some purpose other than photographic enhancement of a low-contrast image.

The setting of this glyph is of special interest. It is a solitary carving above eye level and is almost invisible because of repatination. The style of drawing (with two eyes on one side), the degree of repatination, and the severe degree of weathering suggest considerable age. The panel is on a large isolate boulder in a grassy depression. Five large rough pine timbers and several smaller ones

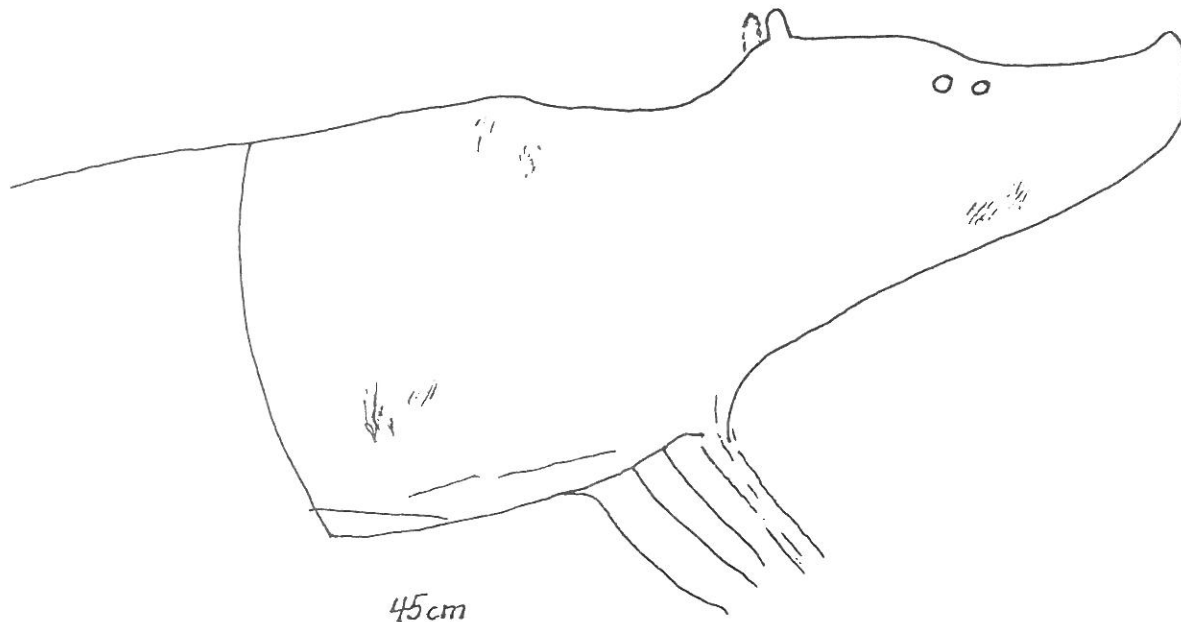


Figure 7: Petroglyph from 24CB198. Glyph is 45 cm long.

have been drawn up with great labor from downslope. These now lie against the rock walls, half-embedded in the sand substrate. One boulder, leaning against another, forms a flat-floored, room-sized cave. Here, a 9.5 foot long, forked upright, with an eight foot long timber still in the notch, lies fallen. The two openings of the cave might easily have been blocked with timber and some covering material such as hide or thatch. In the sand blow-outs nearby is a wealth of gray and maroon worked porcellenite chips.

I have emphasized the emptiness of the surrounding country. This site is without access except by a long and arduous climb from the desert below. Yet, on my third visit, a fresh medicine bundle containing colored cloth, tobacco offerings, and a braid of sweet grass had been placed in the crevice above the bear.

NOTE: All figures in this paper are line representations of original glyphs, recorded by tracing and photograph.

REFERENCES CITED

- Burl, Aubrey
 1976 The stone circles of the British Isles. Cambridge, Yale University Press.
- Durant, Will
 1950 The age of faith. New York, Simon and Schuster.
- Leppert, Gary
 1983 Half-Bear (24CB198) site report.
- Lewis, Thomas H.
 1981a Lorenz Ranch (24CB406) site description.
 1981b South Alkali Creek (24YL402) site description.
 1981c North Alkali Creek (24YL403) site description.
 1982 Province (Weatherman Draw) (24YL408) site description.
 1983a Habitation site cave (24CB466) site description.
 1983b Langstaff (24CB413) site description.
 1983c Bear Two Shield (24CB630) site description.
 1984 Three Kill (24CB63) site description.

THE ARCHAEOLOGIST

Buried forearm deep
in the clinging sand,
sweat trickling from the bridge
of his nose;
hunched shoulders soaked.

Careful, so careful
with the fragment of bone,
a portion of its brittle surface
already blanching in the sun.

Gracefully he brushes away,
instruments glinting and
brush -- wisping slowly
grain by grain,
at the grasping sod.

He probes slowly deeper
at his Mother Earth,
extracting this tendril of time;
exposing it to the ruin
of modern air.

The connection waves
up through his searching fingertips,
-- like a surging volt
this feeling of one,
this common time.

What was once an
insignificant portion of organic matter,
is now the embodiment of soul,
for this yearning scientist.

Even he rarely comprehends the compulsion
to scabble in the packed ground,
fingers blunt and raw,
the unforgiving sun
collecting toll for the begrudging land.

But this sliver
of what once was,
is to this probing mortal,
also the passport to what may
one day be.

And gently, so gently
he burrows in the terra,
groping in the cloying soil,
the common tomb,
--for his own truth.

Garry Alkire
High Plains Chapter
Wyoming Archaeological Society
Torrington, Wyoming

BOOK REVIEWS

Mechanized Archaeology, DAVID VAN HORN, Wormwood Press, Clabaras, California, 1988. 174 pp., figures, tables, references, glossary, appendix, \$12.95 (Paper).

Archaeology for Money, CLEMENT W. MEIGHAN, Wormwood Press, Clabaras, California, 1986. 151 pp., figures, tables, appendix, references, \$10.95 (Paper).

The following review of two recent books by California publisher, Wormwood Press, is of particular interest to Wyoming Archaeological Society members involved in, or interested in, cultural resource management.

The first book reviewed is about excavation strategies by David Van Horn, an archaeological consultant from California. The dichotomy between painstakingly slow, accurate recovery of small samples from archaeological sites, versus less strenuously controlled recovery of larger samples, has long been a methodological issue. Obviously the method that is appropriate to the research goals is the method that should be applied. Yet, the issue becomes more complicated when time and costs must be justified within a compliance archaeology context.

Dr. Van Horn's book draws on many years experience using mechanical equipment to excavate archaeological sites. The book begins with explanations of several situations when mechanical equipment is not the appropriate approach to an excavation program. Beyond that Van Horn explains, using excellent illustrations and verbal description, the various kinds of equipment and their application.

Van Horn begins by explaining the use of bulldozers, graders, plows and mowers to clear areas in the process of discovering archaeological materials. The use of various augering equipment in testing contexts is also explained. The

discussion is very detailed and accurate throughout the chapter. There are also handy "pros and cons" tables concerning various kinds of equipment that seem particularly helpful.

The author goes on to discuss the use of backhoes and loaders to excavate sites. Here again the discussion is thorough. It includes descriptions of the operating procedures for various pieces of equipment and the standard hand signals for directing equipment operators. These first two chapters reflect a real hands-on approach to excavation with heavy equipment.

Large-scale mechanical screening methods are the focus of the third chapter. Obviously no large, mechanical excavation would be efficient if there were a bottleneck at the screening phase. Van Horn includes plans for designing large screens and hydraulic screening systems that are especially helpful.

The book ends with a twenty-page glossary of heavy equipment and pipe-fitting terminology, and an appendix of costs for various kinds of equipment. Both appendices are valuable additions to the book. The appendix on costs will become dated and may differ among regions, although it is close to equipment costs in Wyoming, even though Van Horn states that it is based on personal experience in California. The glossary is particularly important in that it helps the archaeologist speak the language when discussing equipment and procedures with contractors or equipment rental firms, and in preparing proposals.

Mechanical excavation is by no means new in Wyoming archaeology. Academic and contract archaeologists have saved time, money, and increased research capabilities by employing mechanical methods for retrieving large samples. Many archaeologists working in Wyoming already are familiar with these field methods so might get by without the information Van Horn presents.

Still, the book is worthwhile even if just to have all this detailed information in one concise reference.

Van Horn avoids long winded discussion of the pros and cons of mechanical excavation techniques that will be debated for a long time to come. An assumption is made that the reader has considered these issues and decided that a large sample needs to be recovered as quickly and cheaply as possible. The focus is then necessarily on how to perform such investigations. There is a time and a place for mechanical excavation, just as for trowels and paintbrushes. Van Horn describes the former procedure and provides a valuable service to contemporary and future archaeology.

The second review concerns a new book by the eminent University of California at Los Angeles archaeologist Clement Meighan. In introductory remarks, Professor Meighan notes that ". . . most Americans agree, the handling of cultural resources in the U.S. is not completely satisfactory to anyone." Truer words have never been written. This being the case, the need for a text devoted to cultural resource management is obvious.

Meighan, in prefatory remarks, states that the book is intended to serve as a practical guide to students and junior professionals who are "doing archaeology for money" instead of a salary from a university or museum. Thus the book could be expected to be used in upper division or graduate course work in cultural resource management. Any book written for this purpose also should be able to be read by those who pay for compliance archaeology and by the public as a source of explanation why certain things take place within the context of cultural resource management.

A comprehensive cultural resource management (CRM) textbook should begin by explaining the historical background of historic preservation law. Cultural resource management today, for better or worse, is the result of an evolu-

tionary process of laws, regulations and policy development. Without an awareness of the process, one cannot hope to understand how it operates. Indeed, cultural resource management is as much a political issue as it is an archaeological or scientific issue. That is not to say that compliance archaeology does not have very important ramifications within the scientific archaeological community. However, in a classroom situation, the subject must be discussed first within the context of its historical background and legislative intent.

Professor Meighan discusses the various terms for cultural resource management -- contract archaeology, salvage archaeology, compliance archaeology and public archaeology at some length in the first chapter. Yet, the National Register of Historic Places is not discussed until the end of the book, and then only superficially. Since the National Historic Preservation Act of 1966 created the National Register and the bureaucracy that is cultural resource management, this relationship should have been explained immediately. The result of this omission is that the legal context in which cultural resource management takes place is never clear.

In fairness, Meighan does note in the preface that his experience is primarily with cultural resource management in California and is thus skewed somewhat to local issues. Nearly all cultural resource management, whether local, state or federal, is directly or indirectly derivative of the federal process as set forth in the National Environmental Protection Act, the Federal Land Policy and Management Act and a host of other federal organic acts, historic preservation laws, and environmental protection legislation.

Since cultural resource management (archaeology for money) is a political process, it includes, by definition, a bureaucratic component. Professor Meighan expends considerable effort on the bureaucratic process. Unfortunately, instead

of explaining the "table of organization" that underlies the bureaucracy and getting at the real issues that result from this complex process, Meighan's comments are primarily "pot shots" at state and federal CRM agencies. Although it may be politically popular today to take pot shots at agency officials, it does nothing to help the student deal with the problems, or the casual reader to understand them. Any course in cultural resource management would have to be supplemented with additional lecture time or readings concerning the evolution of cultural resource management and the bureaucratic process within which it operates.

Cultural resource management, like any other management, is mostly a communication issue. Professor Meighan seems to express a lack of understanding of the federal land management process. The distrust and acrimony responsible for many problems in historic preservation today is promoted when Meighan makes statements like the following:

"There are some people who are truly cultural resource managers, but most such employees have an inflated title which is like calling typists "manuscript preparation technicians." Management of cultural resources requires more than clerical attention to the details of bureaucratic regulations. The people who are actually "managing" cultural resources are the ones who maintain, restore, and interpret (by publication, guided tours, etc.) various cultural resources that attract public use and interest, such as the Statue of Liberty or the archaeological parks like Mesa Verde."

The cultural resource data base includes much more than specific sites, like Mesa Verde, where government can afford the luxury of site specific manage-

ment. Without the rest of the data, i.e., all those other seemingly less significant sites scattered across the landscape, sites like Mesa Verde will inevitably be incorrectly or incompletely interpreted. Management of the cultural resource data base involves bringing together the interests of academia, industry and the public, and arriving at a decision. The mechanism for arriving at that compromise at the federal level is set forth in 36 Code of Federal Regulations 60, 61 and 800 (the regulations that implement the National Historic Preservation Act). This process is neither good nor bad; it is democracy in action.

There are also times when Professor Meighan purports to know how "agencies" think, for instance, "some agencies are impressed by jargon, so depending on the reviewer it may be strategic to use terms like 'adaptive subsistence strategy' rather than simpler terminology like 'foodgetting'." Whether a particular archaeologist prefers terms like "adaptive subsistence strategy" to something like "foodgetting" really has more to do with where one stands in relation to the processual approach to the study of prehistory than whether an agency archaeologist is impressed with jargon. One shudders to think there could be graduate students in archaeology anywhere who are taught that adaptive subsistence strategy means simply "foodgetting." To make this assumption ignores the complexities of hunter-gatherer technology and lifeways that we find so fascinating, and that make archaeology such a vital social science.

Professor Meighan's book will not help the young person contemplating cultural resource management work get along with agency managers. If one cannot negotiate effectively with the instruments of bureaucracy, one is of little value as a consulting archaeologist. The book, therefore, will not prepare students for CRM employment as was its intent as stated in the introduction.

Archaeology for Money does not use

case studies that are the tried and true method of teaching clinical skills in most social sciences. The historic preservation laws, especially National Historic Preservation Act sections 106 and 110, include many innovative ways of "getting the job done" to protect resources, whether by mitigation through data recovery or by preservation in many different ways. The value of this book could have been greatly enhanced by presenting case studies of the excellent preservation work that has been done within a cultural resource management framework in recent years.

There is still need for a good textbook to teach cultural resource management professionals. Despite Professor Meighan's other exemplary contributions to archeology, the shortcomings of this book prevent it from fulfilling this vital need.

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Mourning Dove: A Salishan Autobiography. Edited by JAY MILLER, University of Nebraska Press, 1990. 265 pp., notes glossary, index, references, \$24.95 (cloth).

Mourning Dove is the pen name for Christine Quintasket, the first Native American woman to publish a novel. She writes about life among the Colvilles near Kettle Falls on the upper Columbia River during the late nineteenth and early twentieth centuries. This autobiography is a valuable contribution to Native American Indian literature with its woman's view of life on the Colville Reservation.

Mourning Dove was not fluent in English and her formal education was minimal. She was also not supported in her political efforts to describe the conditions of the Salish to promote justice while challenging the stereotypes about Native Americans. Mourning Dove began her autobiography in defence of the criticism that she did not write the novel Cogewea, but had only allowed her name to be used on the manuscript. She also deeply resented the perception about Native Americans that they do not react with the same emotional feelings as do the whites. It was her strongest desire to make the true character of the Salish understood.

This book describes the life of a woman from early childhood training through widowhood, with the events portrayed by Mourning Dove in her youth. In this process, she was able to capture the great occasions of her time. Not only does she discuss the ceremonial gatherings and the reunions for salmon fishing, but Mourning Dove describes the severe winter and subsequent flood in 1892-1893. She contributes the change from hunting and gathering activities to agriculturalists by local Salish to this single devastating event.

One reason this book is so powerful is the copious notes and research included by Jay Miller. The manuscript was brought to Miller's attention by the University of Washington Press, whose editors asked him to review it because of his ties with the Colville elders. Since Mourning Dove's death in 1936, the manuscript had remained untouched in the possession of a newspaper publisher, Dean Guie. Guie had been enthusiastic about editing Mourning Dove's stories, and Mourning Dove had entrusted everything she had written to him. Jay Miller contacted Gerry Guie, Dean's widow, who had discovered the manuscript in the attic of their home in Yakima. It was not until 1981 that Miller, as he reviewed the text, was aware of the "most sustained discussion of Interior

Salish life by an insider, full of historic and ethnographic gems" (p. xxxii).

Miller began an extensive research effort that would lead him to entirely confirm Mourning Dove's observations of the white settlement on the Colville reservation. Colville elders corroborated Mourning Dove's description of the Salish woman's life cycle. Miller states that her work was ungrammatical, and he did edit the manuscript. Still, Miller does credit Mourning Dove entirely for the content and choice of descriptive terms.

Mourning Dove attended what is considered the last gathering of her people in which they all stayed in a single longhouse or constructed encampments nearby. Her reverence for native customs and shamanistic practices does allow the reader a chance to imagine, if only for a moment, the magnificent display by the hundreds gathered for a passing way of life. Mourning Dove shares her feelings about Salish practices as a young girl would experience them. She did not want to participate in some of their traditional ways. As a grown woman writing her own story, she cleverly lets the reader know the rebellious little girl missed some valuable lessons.

The footnotes by Miller offer the reader interesting insights into the daily routines of the Salish. The notes are almost as thorough as the written autobiography. They provide a larger body of data to Mourning Dove's writing. The introduction by Miller describes Mourning Dove's life as a mature woman. In the autobiography, she only encompasses her life as a young child through the adolescent years. Miller discusses her acculturation into the migrant labor force of fruit pickers. Mourning Dove describes the difficulties encountered in her youth by the Salish once they were required by the government to live within the boundaries of the reservation. The introduction is misleading because Mourning Dove's actual writings never mention her mar-

riages, work or visits as a guest into the homes of influential whites, such as the newspaper publisher Dean Guie.

Essentially, Mourning Dove's autobiography contributes a unique ethnographic account to anthropology. It reveals the hardships, humor, and reliance of the Salish upon knowledge of their own surroundings. Her descriptions of Shamanistic practices are not presented in a mystic sense, but provides an in-depth understanding of human behavior.

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