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WYOMING ARCHAEOLOGICAL SOCIETY
1976

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EDITOR'S COMMENT

I direct your attention to the very pressing memo from Ned Frost. In that the subject of historic archaeology is as close to us as is the prehistoric, and with our past experience with the State Legislature in obtaining a State Archaeologist, a similar effort is now needed in behalf of the Historical Society.

Again, your Legislators need to be personally contacted while they are still at home, before they leave for the Legislative session, and advised of our strong interest in preservation, be it historical or prehistorical. We do not want to be locking the barn after the horse is stolen.

Just imagine what would have been left of Fort Laramie if no one had cared.

WYOMING
ARCHAEOLOGICAL SOCIETY, INC.



To All Society Members:

The end of a long and productive summer proves this to be an exciting time for amateur and professional alike.

Many of the recent discoveries have proved to be the "oldest", "largest", "most extensive" and so it goes. The fact that members of this Society have had an active role is indeed gratifying.

Continued cooperation in filing site reports and maintaining good communication between amateur and professional becomes more essential every day.

I extend a personal "thank you" to any and all who have contributed constructively to the cause and interests of archaeology in our wonderful state.

Plans are being finalized for a rather late fall work shop, with dates and theme to be announced soon. Hope to see many of you at that time.

A banquet speaker has been secured and plans are well along for the April meeting, and all this information will be forthcoming in a letter to each Chapter.

May your next discovery be the most spectacular ever.

Sincerely,

George Brox
President

MEMORANDUM

TO: All Chapters, Wyoming State Historical Society

FROM: Ned Frost, member Laramie County Chapter and Chief,
Historical Division, Wyoming Recreation Commission

SUBJECT: Fort Fred Steele State Park, Carbon County, Wyoming

During the recently completed annual meeting of the Wyoming State Historical Society, I spoke at the business session concerning observations I had noted over the past several years regarding Historic Preservation legislation and administration both at the federal and state levels. These remarks were delivered orally from a few notes. However, the Society requested that they be placed on paper and forwarded to Chapter offices--hence this memorandum.

Regarding legislation at the state level, I noted the immense amount of work with which Wyoming's legislators are confronted during very short sessions and that this work might be broken down into three major divisions. The first division includes sub-industry, highways, etc.--in which legislators are generally well informed and vote the necessary appropriations. The second division includes subjects promoted by the news media and, so, important to the public mind, whether really so or not--the most recent example being a dome for the University of Wyoming's football stadium. Such subjects generally receive an undue proportion of the legislators' time and consideration and are apt to receive an undue share of monies available for appropriations. The third division includes subjects not always vital to a young and growing state but often important--like attributes of the cultural environment, as distinguished from the natural environment, and including, of course, preservation of our historic heritages.

My comments regarding this third division were to the point that governments of most young civilizations, such as Wyoming's--barely more than 100 years old--are too concerned with affairs of the natural environment to give much consideration to the cultural environment which, almost without realization, they are building. But older civilizations know the value of cultural environments, European countries started protecting theirs hundreds of years ago and today--through American tourists' dollars running to the billions each year--are handsomely cashing in on the values they have protected. Our own federal government, considerably older than the State of Wyoming, is becoming ever more conscious of such values and the Congress has recently enacted Legislation increasing from around 20 millions

to 150 millions the amount of monies annually available for historic preservation work. But in Wyoming when a visitor expresses interest in our state we are apt to advise him to go up to Jackson Hole and take a look at the Grand Teton aspect of the natural environment without ever thinking to advise him that it is really Jackson's, not Jackson Hole and that we have a great heritage of fur trade history which he might find interesting. Similarly, the Wyoming Legislature--pressed for time and overloaded with affairs concerning the natural environment, the people's welfare and subjects of immediate interest to a news conscious populace--never has time to assimilate much understanding of any proposed historic preservation legislation and seldomly votes a realistic appropriation for such purposes. Fort Fred Steele State Park provides a realistic example of this circumstance.

In the summer of 1972 interested citizens of Carbon County, feeling that Fort Fred Steele possessed potentials to make a state historic park, invited personnel of the Recreation Commission's historical division to conduct a study of those potentials. This was done, with the following pertinent facts brought to light and thoroughly investigated:

1. Fort Fred Steele was a very important place during Wyoming's Territorial days.
2. There remains in material form: two barracks buildings of a military construction of which there are no longer any other existent structures anywhere; there is an interesting stone quartermaster corral; there are walks and outlines of officer's quarters and parade grounds; the original railroad grade remains as well as the original Lincoln Highway grade; the first railroad bridgetender's house still stands; the powder house stands; the post cemetery, from which soldier's remains have long since been exhumed, still exists--though much vandalized; various other remains; including related private buildings or ruins are evident.
3. Other historic associations of which vestiges and even continuing operations are still in evidence include an historic timber industry; an historic livestock industry; and an historic gravel pit operation.
4. In a semi-desert country this location along the tree-lined North Platte River is particularly adaptable to development of a recreational as well as an historic park.
5. Interstate 80, fully developed with an interchange and rest area adjacent to Fort Steele, carries upwards of two million people annually--many attracted to stop at this oasis 12 miles east of Rawlins and 87 miles west of Laramie. Visitor potential is great.

6. Almost all of Fort Steele was owned by Charles Vivian (Leo Sheep Co.) and Herman Werner (Bolten Ranch) both of who were disposed to donate lands to the park.
7. Development of a park, both historic and recreational, could be matched in costs--up to 50%--by federal funds.
8. The main line of the Union Pacific--reason for the Fort's founding--continues to go directly through the historic grounds. This adds to the historic interest but poses a danger to visitors that increases the potential costs of development.

On the basis of the above findings, plus others too detailed to mention here, the Carbon County delegation to the 1973 Legislature entered a bill to create Fort Fred Steele State Park. The Travel, Recreation and Wildlife Committee of the House called in the Recreation Commission personnel who had made the study for their views regarding feasibility of the proposed park. Their testimony was to the effect that the park was feasible but development would be expensive partly owing to alleviation of dangers inherent in the swiftly traveling freight trains. Commission personnel forcefully represented to the Committee that it would be better if the Legislature wrote off the vestiges of this historic heritage and did not create the park than it would be to create the park without proper funding, thus recognizing the importance of the heritage but allowing it to die regardless.

If the park was created, the Commission recommended the necessity of a two-year appropriation calling for \$44,000 in administration (maning the site, not matchable by federal assistance) plus \$105,000 for preservation development (subject to equal amount of federal matching assistance). The Legislature did create the park, and funded it to \$25,000--almost enough money to set a caretaker up at the site for two years and provide a trailer for living quarters.

The Recreation Commission conducted careful and lengthy negotiations with Charles Vivian and Herman Werner (later his estate administrators) concerning the properties which, subject to restrictions, were donated to the State for a park. Negotiations with the railroad finally resulted in an agreement whereby the west approach of the North Platte Bridge might be used as an underpass--thus bypassing development costs running to several hundreds-of-thousands of dollars.

In 1975 the Commission requested appropriations for the 1975-1977 biennium amounting to \$24,000 for administration and \$464,000 for development. The Legislature failed to appropriate any money.

In 1976 the Commission requested the Legislature to appropriate \$70,000 for operations and maintenance and \$164,000 for development; the Legislature appropriated a total of \$5,857. When questioned one member of the Legislature said he was informed that all that remained of Fort Steele was a vandalized cemetery and he wondered why he should vote even as much as a \$5,000 appropriation for preservation of such a value. Thus, it seems hopeless for the Recreation Commission to explain its budgetary request, legislators just have too many seemingly more important considerations demanding their attention.

According to the agreement between the State of Wyoming and Mr. Charles Vivian (Leo Sheep Co.) the 112.5 acres donated to the State that are the heart of Fort Steele will revert to the Leo Sheep Company by mid February 1977 unless, before that time, the State Legislature has appropriated a minimum of \$50,000 toward the restoration development--not including administrative or maintenance funds--of Fort Fred Steele.

The Recreation Commission appears to be powerless itself to impress this fact on Members of the Legislature. Believing that it would be a shame on the State to allow this valuable historic heritage to decay and be subjected to vandalism until it weathers away, and believing that it is still a worse shame to have once recognized its value and still allow that to happen, the Commission has turned to the Historic Society for assistance in alerting the Legislature to that danger.

AN ARCHAEOLOGICAL RECONNAISSANCE OF THE
LITTLE MOUNTAIN AREA, BIG HORN COUNTY,
WYOMING

SUBMITTED BY

THE WYOMING RECREATION COMMISSION,
OFFICE OF THE STATE ARCHAEOLOGIST

AND

STATE HISTORIC PRESERVATION OFFICER

IN FULFILLMENT OF BUREAU OF LAND MANAGEMENT

CONTRACT NUMBER 52500-CT5-1095

Prepared by

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Danny N. Walker
Nedward Frost
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December 15, 1975

I. INTRODUCTION

Objectives

By federal law (Executive Order 11593 and others), federal agencies are required to locate, inventory and nominate properties under their jurisdiction or control to the National Register of Historic Places. The same laws make the State Historic Preservation Officer responsible for compiling a comprehensive historical and archaeological sites survey for his state, including public land (Aten 1974:96). This study constitutes a joint effort (contract number 52500-CT5-1095) by the Wyoming State Historic Preservation Office and the Bureau of Land Management to locate, evaluate, and nominate cultural resources on certain lands in what is known as the Little Mountain area in northern Big Horn County, Wyoming.

In the past, Little Mountain has been a relatively isolated area. Within the last decade, outdoor recreation has steadily increased, greatly affecting the utilization of this as well as other remote and scenic areas in the Rocky Mountain Region. Technological advances in four-wheel-drive and other all-terrain vehicles have made the area much more accessible. The area also contains uranium ore, and exploration for this energy-related mineral has affected the amount of activity on the mountain.

For the past six years, the Wyoming State Archaeologist has been involved in intensive research on a state-wide basis but with special emphasis on the Big Horn Basin and surrounding area. This very comprehensive and longterm project supported by the National Science Foundation is known as the Medicine Lodge Creek Project. Little Mountain is within the areal limits of the project and contains archaeological sites that may contribute substantially to the study.

In view of the increased efforts of the federal government to inventory its lands, the increased recreational and industrial activities on federal lands in the Little Mountain area, and considering the scope of the current Medicine Lodge Creek project, it was decided that this was a good time to initiate an archaeological inventory study of the Little Mountain area. Studies of this nature are a necessary part of good cultural resource management and for planning orderly development of other kinds of resources.

Due to limited funds, this study was concentrated over a fairly small area (approximately 21,000 acres - Fig. 1). It is however, a good beginning and hopefully will eventually lead to a comprehensive, systematic and well coordinated study of all Bureau of Land Management holdings on Little Mountain and other area in Wyoming.

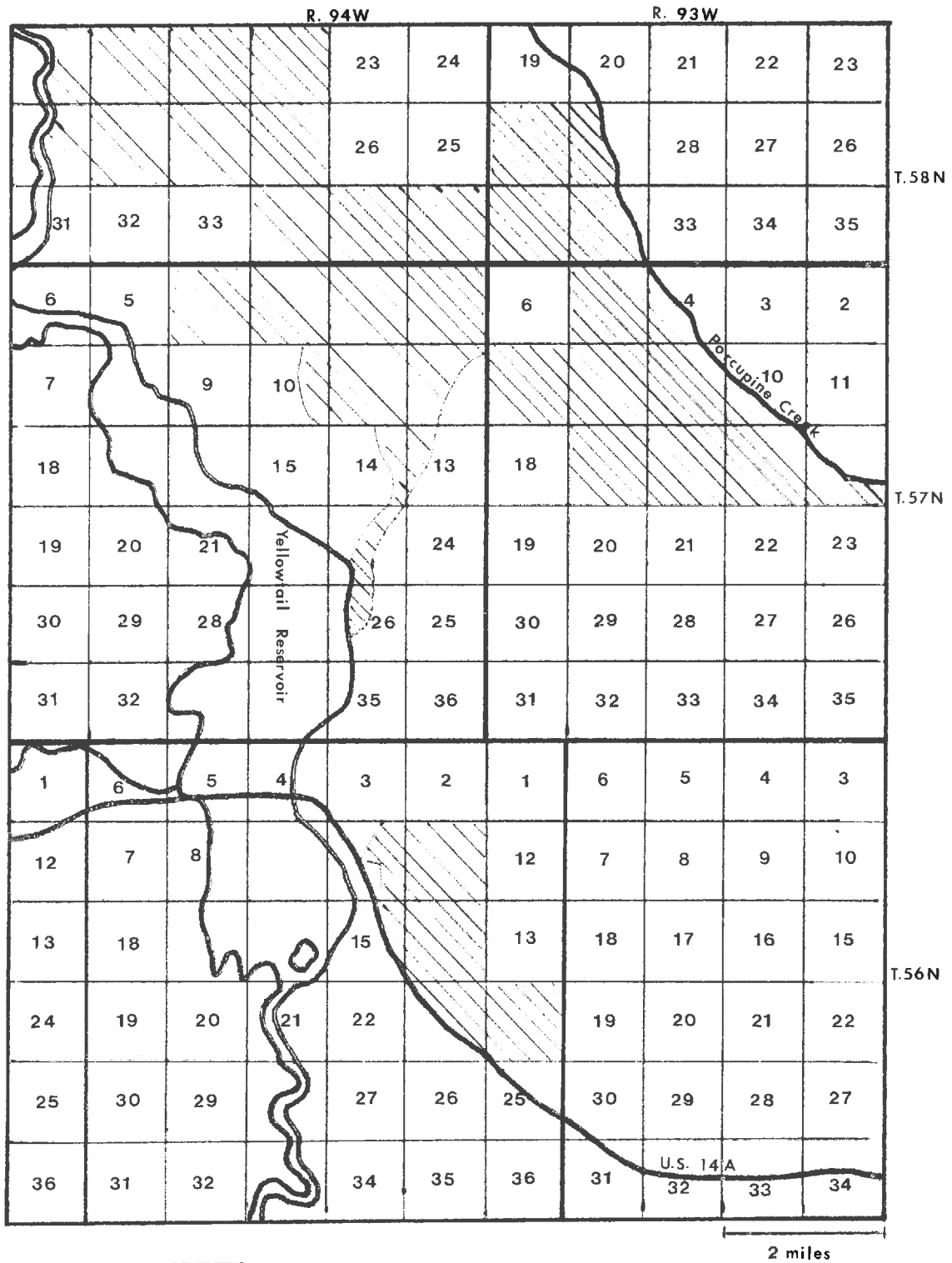


Figure 1.  - Area Covered by Little Mountain Survey

Methodology

The main purpose of this study was to locate, record, and evaluate archaeological sites on Little Mountain for their potential inclusion on the National Register of Historic Places. For this report, the analysis of the sites and materials went only as far as necessary to establish their significance. This report is purposely brief and of a descriptive nature. An in-depth analysis will be more meaningful in the future if, and when, several of the sites can be tested and if the study can be extended over a larger area. Such an analysis will also be more productive in the light of data collected from the more comprehensive Medicine Lodge Creek project.

The materials recovered are stored at the Anthropology Department, University of Wyoming, which serves as the official State Repository for such materials. They are available for study purposes to qualified persons. The sites found were assigned Wyoming site numbers and recorded on the Wyoming State Site File which has been established as a permanent record.

The project was funded by the Bureau of Land Management with contributions from the Wyoming Recreation Commission. The study was conducted under the auspices of Paul Westedt, State Historic Preservation Officer and Director of the Wyoming Recreation Commission. Project direction was provided by George C. Frison, State Archaeologist and Head of the Department of Anthropology at the University of Wyoming. The project was coordinated by George M. Zeimens, Associate State Archaeologist. The field crew was directed by Thomas Larson, Assistant State Archaeologist, and Danny Walker, Assistant State Archaeologist. Others involved in various stages of the project were Ned Frost, Historian, Caryl Simpson, Staff Archaeologist, John Greer, Patricia Treat, Jane Janis, Sandra Zeimens, Mary Anne Robeson, David McGuire, Harold Howells, Larry Todd, and Susan Schock. Three very valuable crew members in the field were Milford and Imogene Hanson, and Charles Slaughterbeck, members of the Northern Big Horn Basin Chapter, Wyoming Archaeological Society. These amateurs either had prior knowledge of many of the sites recorded here, or found them during the survey. They also provided contacts with local artifact collectors who had materials and knowledge of sites from the survey area.

The project consisted of three phases: a library research for documented resources and research in the area, a thorough field inspection of as much of the terrain as time and money allowed, and a laboratory analysis and preparation of this report. The library search was conducted prior to the field reconnaissance and consumed very little time due to the lack of documented research in the area.

The field work took place during the regular 1975 summer field season.

Known sites were visited and recorded first, and the remaining area was covered systematically on foot. Trail bikes and four-wheel-drive vehicles were used for access whenever possible, but all areas were inspected on foot. Site locations as well as isolated finds were collected and a sample of lithic debitage was taken where possible.

Site testing was held to an absolute minimum mainly due to lack of time and money. The four sites that did receive minor testing either contained conspicuous materials that were in danger, or there was some doubt that they were indeed sites. In these cases these sites had been badly damaged due to looting.

The laboratory analysis is still not complete. All materials have been catalogued and, where possible, they have been compared with other materials in an effort to determine their age and cultural affiliation. Two carbon-14 dates have been submitted but are not yet available.

Fortunately, comparative materials from the Medicine Lodge Creek project were available at the University of Wyoming. Materials from several other projects (mainly River Basin Survey studies) have been removed from the state and in all but one case have never been published. Because of time and money limitations, it was not possible to travel outside the state to review these collections. Materials from Mummy Cave, a deeply stratified site in the area, are in a private museum in Cody, Wyoming and unavailable for study.

Data from range studies and other ecological considerations should be included as an integral part of the Little Mountain archaeological study. This may be done at a later date, but once again, due to a lack of time and funds, it was not possible to spend the time extracting this information from the Bureau of Land Management Worland District files.

Natural Setting

The Big Horn Basin is described as a typical intermontane basin (Frison 1974:1-2). It is bordered on the east and south by the Big Horn Mountains, on the south and west by the Owl Creek Mountains and on the west by the Absorakas. A minor mountain uplift, the Pryor Mountains, partially encloses the basin on the north (Fig. 2). A narrow corridor on the north connects the Big Horn Basin with the plains area and it is often considered a detached lobe of the Great Plains (Thornbury 1965:352). However, ecologically it is quite different from the plains environment. The Absoraka Mountains form a rain shadow over the basin and most recording statistics indicate a semi-arid condition with average rainfall of less than 10 inches annually (Alyea 1964, 1965, 1969, 1970). This

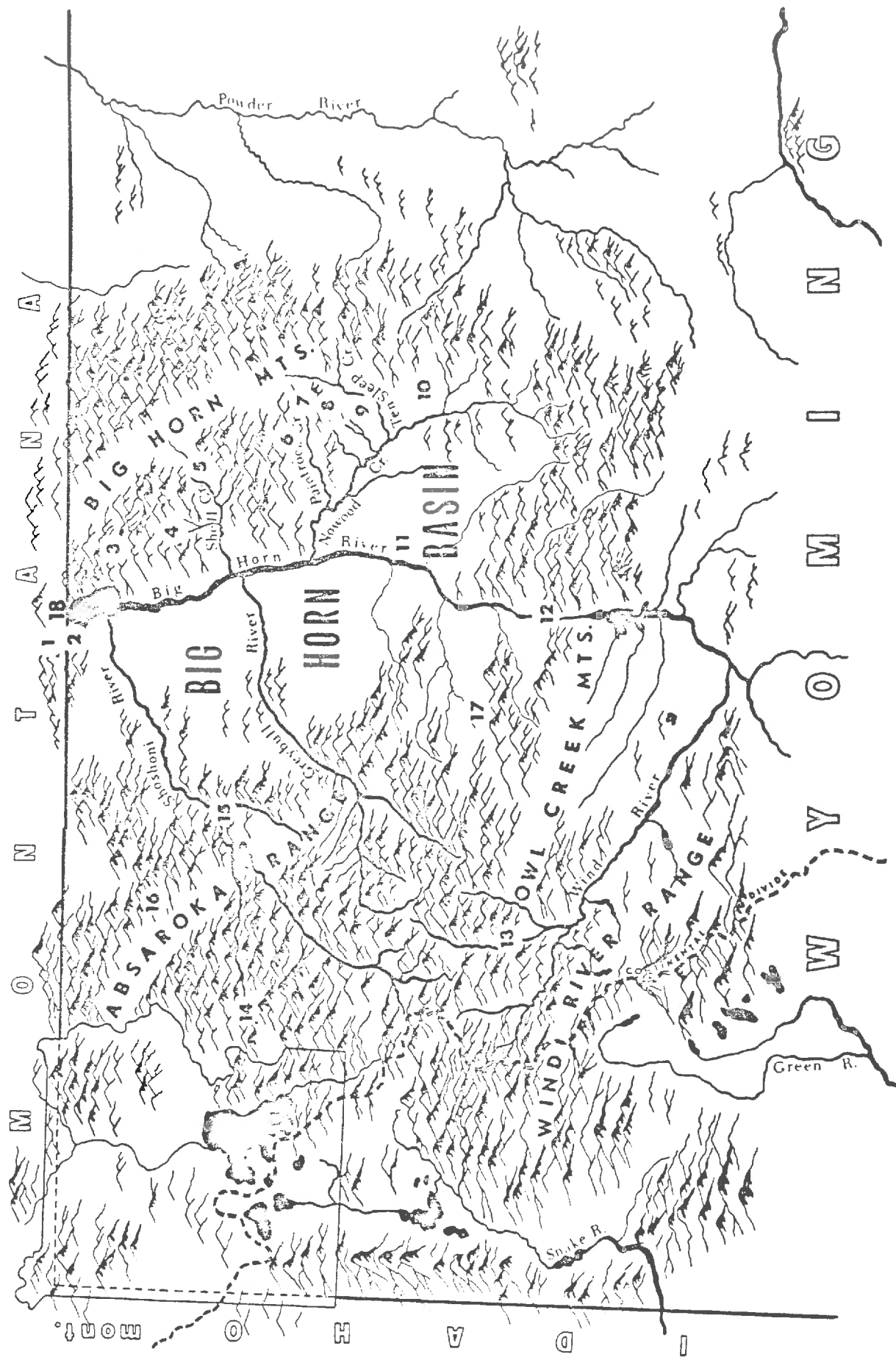


Figure 2. Location of some important archeological sites in and adjacent to the Bighorn Basin (courtesy of George C. Frison). 1-2, Big Horn Canyon Sites; 3, Medicine Wheel; 4, Hanson Site; 5, Granite Creek Rockshelter; 6, Medicine Lodge Creek Site; 7, Paint Rock Creek V; 8, Laddie Creek Site; 9, Leigh Cave; 10, Spring Creek Cave, 11, Colby Site; 12, Wedding of the Water Cave; 13, Lookingbill Site; 14, Mummy Cave; 15, Horner Site; 16, Dead Indian Creek Site; 17, Hamilton Dome petroglyph Site; 18, Little Mountain Area.

produces a much different ecological situation than the plains areas to the east and north.

The basin is drained by the Big Horn River from south to north and by its two major tributaries, the Greybull and Shoshone Rivers. Numerous other smaller rivers and streams drain into these three rivers to form the basin drainage pattern.

Little Mountain is a vaguely defined area found on the Wyoming-Montana border east of Big Horn Canyon and on the west slope of the Big Horn Mountains. Most of the Big Horn Basin is considered to be in the Upper Sonoran Life Zone with the Transition, Canadian, and Hudsonian zones present on the flanks of the surrounding mountain ranges (Carey 1917). The Little Mountain survey area is within both the Upper Sonoran and Transition Life Zones. The contact between the two zones is found along the base of the escarpment along the southwest side of Little Mountain, with the Upper Sonoran Zone found mainly along the lower river terraces. The Transition zone is present from the slopes of the escarpment to the top of Little Mountain. There is a good ecological break at the base of this escarpment and the differences between the two zones is the presence of numerous junipers mixed with sagebrush in the Transition Zone, while the Upper Sonoran Zone is characterized by sagebrush and saltbush without the presence of the junipers. There are also differences in the grass species between the two zones.

The following archaeological sites discovered during the survey are located in the Upper Sonoran Zone: 48BH700, 48BH702-703, 48BH705-706, and 48BH725. Several sites recorded by Husted (1969) are also in the Sonoran Zone, including: 48BH3, 48BH6-7, 48BH12, and 48BH219. All other sites recorded by the Little Mountain survey are within the Transition Zone.

Geologically, the Little Mountain area is a minor anticline radiating from the major Big Horn Mountain Anticline. Several of these smaller anticlines occur on the slopes of the Big Horn Mountains and what is called the Porcupine Creek Anticline (Willis 1953) forms the basis of the geomorphic feature called Little Mountain. Rocks from all pre-Cenezoic geological ages except Silurian are found on the west flank of the Big Horn Mountains. The Bighorn Canyon-Little Mountain area contains a complete section of these rocks with Mississippian (Madison Limestone) to Permo-Triassic (Chugwater Formation) rocks being found on the surface of Little Mountain. The Madison Limestone forms high, blocky cliffs in the area. Solution cavities and channels result in numerous rockshelters and caves in the cliffs formed by the Madison (Hart 1958). The Amsden Formation is non-resistant and forms long slopes on the areas above the Madison Limestone outcrops. The Tensleep Sandstone lies on the Amsden but is usually covered by a slopewash from the overlying Phosphoria Formation (Partridge 1948, Willis 1953,

Taucher 1953). The Phosphoria also forms long slopes due to its nonerodibility. Both the Madison Limestone and the Phosphoria contain numerous lenses of chert nodules, often quarried for flaking material by the prehistoric inhabitants of the area (Husted 1969). Tools and flakes made from these cherts formed the majority of the material recovered in the Little Mountain Survey.

No work has been completed on the Pleistocene and recent deposits in the area. Willis (1953) and Taucher (1953) record the presence of Quaternary landslides in the area. Gilbert (1975) reports a Late Pleistocene mammalian fauna from Natural Trap Cave. The authors of this report have seen several small side canyons on Little Mountain containing what are probably quaternary deposits on their floors. A well developed terrace system can be found along the Big Horn River above its entrance into Big Horn Canyon. An ash bed found in one of the higher terraces along the river has recently been dated by the fission-track method at around 600,000 years by the United States Geological Survey in Denver. The characteristics of this ash is very similar to Perlette Type-0 reported from other parts of the Great Plains at the same age (Zakrzewski 1974). Two other ashes, as yet undated are also reported from deposits in Horsethief Cave (Wayne Sutherland, 1975, personal communication).

Ethnographic and Historic Considerations

The ethnographic history of the Big Horn Basin is characterized by movements of several tribes through the area. Seasonal movements as well as aggression from outside groups are given as reasons for these movements. The Crow and Shoshoni are the two predominant tribes which occupied the region historically. The Blackfeet, Gros Ventres, Dakota, and Cheyenne are also discussed here and had some influence on the area.

The prehistory of both the Crow, a Siouian speaking group, and the Shoshoni, members of the Uto-Aztecan linguistic family, is clouded. Both were in the Big Horn Basin by A.D. 1600 (Frison 1967a:222; Shimkin 1941:20). Murphy and Murphy (1960:293) place the Shoshoni near the Eastern borders of Idaho, Utah, and Western Wyoming until A.D. 1500 with very little expansion onto the Plains during pre-horse time. However, Husted (1969:95) suggests that Shoshonean groups inhabited the Big Horn Basin as early as A.D. 900 and probably earlier.

The Early Equestrian Period, A.D. 1700-1750, saw the expansion of the Shoshoni northward into Canada and southward into Texas where they became known as the Comanche.

During Late Prehistoric times, the Crow split from the Hidatsa and moved into Wyoming and Montana, committing themselves to the exploitation of the buffalo (Bison bison). Whether this separation occurred before or after the acquisition of the horse (ca. A.D. 1700) is not known. Frison (1967a:233) suggests two separate migrations for the Crow -- one at the beginning of the 17th century and another during the first half of the 18th century.

The shift to nomadism, at least for the Crow, resulted in an increase in the number of sites and a greater variety in the material culture. Ceramics were being used by at least A.D. 1600. Certain dwellings, including hide tipis, earth lodges and log structures, have been noted in areas of Montana and Wyoming and are believed to be Crow in origin (Mulloy 1958:213-214; Husted 1968:68).

About A.D. 1730, guns were introduced and acquired first by the Blackfeet, an Algonquian speaking group. This tribe inhabited the areas of Saskatchewan, Alberta and northern Montana. The Gros Ventre, who separated from the Arapaho around A.D. 1650, were Blackfoot allies. Constantly at war with neighboring tribes, the Blackfeet drove the Shoshoni south and west into the region between the Wind and Green River, west of the Continental Divide. The Crow were driven south into north-central Wyoming. The Crow and Shoshoni suffered great losses due to the ravages of smallpox and were out of Blackfoot territory by A.D. 1800. After this withdrawal, the Shoshoni entered the Big Horn Basin area only for buffalo hunts (Ewers 1974; Murphy 1968).

The Fur Trade Period, from A.D. 1810 to 1840, marked the beginning of intensive white intervention in Indian affairs. A decline in the buffalo population was seen, and after 1840 the Shoshoni were forced to move east of the Continental Divide in search of buffalo. By 1868, the buffalo had disappeared from most areas of the Plains and the Shoshoni signed treaties which moved them to the reservation (Murphy and Murphy 1960).

At this time, the Crow were forced from their hunting ground along the Yellowstone, Tongue, and Big Horn Rivers as a result of white settlement, disease and Sioux and Cheyenne aggression. By the end of the 1870's, the Crow, also were on the reservation (Frison 1967a).

The Little Mountain Area, at least during historic times, was a naturally out-of-the-way place. The foregoing statement may not hold true for prehistoric time. Archaeological surveys (Fenega 1952, Husted 1969, this report) indicate considerable activity by Early, Middle and Late Prehistoric Period aboriginal people. Wyoming historic phases which do touch on this area are the Fur Trade, Cattleman's Frontier and, by the mid-20th century, Industrial Development as exemplified by prospecting for, and production of, uranium ores. However, no

activity from any one of these three historic phases has resulted in a site considered significant enough--on a local, state or national scale--for enrollment in the National Register of Historic Places.

Fur Trading Mountain Men, especially during formative years of the trade, did use the general course of the Bighorn River as a logistical route from, and returning to, St. Louis, their base of operations on the frontier of civilization. But Little Mountain, on the east side of the river, was, for cross country travelers, what the Mountain Men would have called the end of a cul-de-sac. Their trail was to the west of the river; there is no known important fur trade site or tract on Little Mountain.

The most important site of the Cattleman's Frontier Phase of Wyoming History having a relationship with Little Mountain is the headquarters location of the M L Ranch. That location is on the same side of the Bighorn River as Little Mountain, but is further upstream and in the bottom lands of the valley. There can be no doubt that Little Mountain figured in the vast open range operations of the M L, but no single place on the mountain was especially significant to the success or eventual modification of such operations.

There is a site on the mountain, Horsethief Cave (48BH304), practically on the Montana-Wyoming state border, wherein the name indicates a connection with the Cattleman's Frontier historic phase. But if this area was regarded by Mountain Men as the end of a cul-de-sac--and the state line runs across the very bottom of said cul-de-sac--how much more so would horse thieves be aware of that fact? Any significant horse stealing operations, at least one on an organized basis, needed a hide-out incorporating good pasture lands plus several avenues of escape--avenues suitable for moving a herd of horses quietly and speedily. Horsethief Cave could have been a hide-out for thieves on the dodge, but it does not figure as a locale for an historically significant horse stealing operation.

The historic phase of Industrial Development was a late comer to Little Mountain. Not until the early part of the 1950 decade did any extensive and successful prospecting for mineral values occur in the area. Then, it was for uranium ores. Several small--sometimes no more than a truckload or two--but rich pockets of ore were discovered and removed. Later, uranium values went into decline and mining activities on Little Mountain became quiescent. Now, under increasing demand, there are many signs of a return to such activity, looking for deeper and larger bodies of ore--but such business is current, not historic. Suffice to say that, to this date, mining on Little Mountain has produced no site that can be marked as significant in the Industrial Development phase of Wyoming history.

The best road approach to Little Mountain is via John Blue Canyon, so called out of deference to an eccentric individual of that name. When Blue came into the northern Big Horn County area shortly after World War I, he claimed to be a deserter from the German Army. He had ability as a blacksmith and at first worked in Lovell at that trade. But he steadily grew more withdrawn and finally became a hermit living in a stone-piled dugout in John Blue Canyon. His last days were spent in the Wyoming Insane Asylum at Evanston. Blue's dugout home relates to an individual rather than any distinctive phase of history. Still, it is typical, in a way, of a number of lonely, eccentric men who have established peculiar types of bachelor homes in isolated tracts of Wyoming's mountains and prairie lands. It is not really an historic place but is perhaps worthy of some sort of historic marking.

Past and Current Research

The status of archaeological research in the Big Horn Basin reflects the general situation in Wyoming. Past investigations in Wyoming, including those at major sites, have been sporadic and findings have been poorly reported. In general, these include major Paleo-Indian finds such as the Finley Site, Hell Gap Site, Agate Basin Site, and the U. P. Mammoth Site. In the Big Horn Basin, two major sites were investigated: the Horner Site and Mummy Cave. A large number of sites representing later cultural periods have also been poorly recorded.

It was not until the early 1960's that the archaeological record in the Big Horn Basin began to be investigated on a systematic basis with well-documented results. Examples of these are: Wedding of the Waters Cave, Spring Creek Cave, Piney Creek, Daughtery Cave, the Kobold Site, Schiffer Cave (Frison 1962, 1965a, 1965b, 1968, 1970, 1973) and The Big Horn Canyon Project (Husted 1969). Several other articles in reference to the archaeology of the area have also been published.

These studies have since culminated into a large-scale inter-disciplinary research program for the Big Horn Basin (Frison 1975; Zeimens 1974). This project centers on deeply stratified deposits at the Medicine Lodge Creek Site, ranging in age from 10,000 years to the Historic era. It involves a large number of sites from the floor of the basin to the top of the mountain (Figure 2). Included are the Colby Mammoth Kill Site, the very extensive Hanson Folsom Site, and a number of sites containing a sequence of Late Paleo-Indian assemblages. Also included are six very significant sites which provide a sequence of Altithermal Period occupations and a large number of sites which provide a long sequence of Post-Altithermal materials. The project is not only filling many gaps in the chronological record, but is yielding a quantity of different types of data relevant to prehistoric cultural interaction with past environments.

The Little Mountain Project will contribute significantly to the Medicine Lodge Creek study. As the Medicine Lodge Creek Project progresses, the Little Mountain sites and materials can be evaluated with a greater degree of accuracy and confidence.

II. THE LITTLE MOUNTAIN SITES

Forty-three archaeological sites were found during the course of the survey (Fig. 3). These are described below with individual recommendations for each site. Because collectors and looters have in the past used archaeological reports to gain access to sites, exact locations are not included in these descriptions.

The use of typological names to classify materials has been kept to a minimum. This is because the range of variation of the materials from the Big Horn Canyon area is still somewhat obscure. This is especially true for many of the Late Paleo Indian and Altithermal assemblages which demonstrate very subtle changes over long periods of time. The broad chronological terms used here are essentially the same as those devised by William Mulloy (1958:204-223). Exceptions to this terminology are due to the fact that many gaps have been filled since his original formulations. Also, the term "Paleo-Indian" has become more common than "Early Prehistoric" and is therefore used in this presentation.

Recommendations for the sites are based on present conditions in the area. Increased activity in the future was taken into account, but such activities are difficult to estimate. As plans for the area develop, recommendations for the protection and preservation of the archaeological resources will need to be changed.

Aboriginal Quarries

Eight sites were found whose primary use is believed to have been the quarrying of lithics for the manufacture of stone tools. Numerous other sites are believed to have been quarried as a secondary activity.

Materials quarried on Little Mountain fall into two main categories: coarse grained quartzite cobbles at lower elevations and red, purple, brown, and grey cherts from the Madison, Amsden and Phosphoria formations at higher elevations. Red and purple cherts are by far the most utilized material at these higher elevations of the survey area.

48BH702:

This quarry area is on the side of a small sparsely vegetated hill overlooking Yellowtail Reservoir. The material quarried here is coarse grained quartzite cobbles ranging from white to grey in color. A few manufacturing flakes of red and grey chert, which does not appear to be outcroppings in the immediate area of 48BH702, were also found on the site. This chert type was probably quarried at another site (48BH703) just to the south of 48BH702, or may have been carried in from chert quarries at higher altitudes.

Also found on the surface of 48BH702 was a heat-fractured basalt mano (Plate 1). Although no other grinding material or evidence of fire hearths could be found, this mano may indicate that 48BH702 was a living area as well as a quarry. No other artifacts were found.

At present, 48BH702 does not seem to be in danger of being destroyed or looted. If any type of construction is planned for the site area in the future, it is recommended that the site again be examined in case more artifacts should appear due to erosion.

48BH703:

Just to the south of 48BH702 is an intermitant drainage which was dry at the time the survey crew visited it in early June. Along either side of this drainage there were many concentrations of red chert cores and large flakes indicative of quarrying.

The quarried material appears to come from both stream cobbles and off the eroded slopes. Broken hammerstones were found with the cores in several areas. The only other artifacts recovered were three flake tools of a lustrous light brown chert. The high edge polish on these tools may indicate that they were used for cutting or scraping materials such as grass, roots, or some other soft items. In any case, they do not have the appearance of either butchering or wood-working tools.

48BH703 has been greatly eroded by stream action and any further interpretation would probably be quite limited. No further work is recommended.

48BH705:

This is one of two sites recorded on top of a high gravel terrace above

the Big Horn River. Broken cobbles of coarse-grained white quartzite litter the south edge at this bench for a distance of about one quarter of a mile. In addition to the large amount of quartzite cores and flakes, other materials were also present, particularly red chert.

48BH705 appears to be almost exclusively a quarry area with no indication of any other form of cultural utilization. No cultural deposition is apparent and no further work is recommended for this site.

48BH706:

This site is located on the same terrace as 48BH704 and demonstrates similar, but more limited, quarrying with some indications of an occupation area. Small sharpening flakes and several broken tools were collected.

48BH706 is very superficial and both artifact and flaking debris are thinly scattered. No further work is recommended for this site.

48BH707:

A small quarry area was found on a hill above the Gode's Springs stone circle site (48BH704). Nodules of red Amsden chert occurring naturally on or near the surface have been quarried here. Similar chert found at 48BH704 may have come from this quarry.

The only artifacts found were one hammerstone and several small, utilized flakes. No features were visible and cultural debris is entirely on the surface. No further work is recommended for this site.

48BH715:

This is a small quarry area of brown and red chert nodules near the rim of a small canyon. It does not appear to have been used very extensively. The only artifacts found here were several flake tools, hammerstones and a small notched projectile point. No further work is recommended here.

48BH717:

A quarry area consisting of brown chert cores and flakes was found on a

small hill visible from Little Spring. The site suggests extensive use of chert nodules from the top and the sides of the hill. The only tools found were small utilized flakes and several hammerstone fragments. The site is not presently endangered, and no further work is recommended.

48BH738:

At this quarry site, the same types of red and brown chert materials were quarried as at 48BH715 and 48BH717. An existing road through this small site has probably destroyed a large portion of the site.

The site is situated on a small clearing surrounded by junipers about three hundred yards from an intermittent stream. The only artifacts found were several granite hammerstone fragments. The granite apparently came from the stream bed.

The site seems to have gone unnoticed by persons using the dirt trail passing through the area. It is not in danger, and no further work at the site is necessary at this time.

Rock Cairns

Rock cairns are features whose age and function are extremely hard to determine by visual examination. Lines of cairns have been referred to as trail markers (Nelson 1942:262-67; Mulloy 1958:178-80; Wedel 1961:260-261; Fenenga 1952:9). Some circular arrangements of cairns or stones have been called "medicine wheels" (Simms 1903:107-10; Grinnell 1922:299-310; Wedel 1961:266-270).

The rock cairns in the Little Mountain area occur both singly and grouped in curved and circular arrangements. All those recorded are believed to be prehistoric in origin. In all cases there was at least some prehistoric debitage associated with them. In addition to the sites listed in this section, rock cairns were also found at 48BH700, 48BH710, and 48BH734. It is believed that other cairns have been destroyed but at the same time, many still remain to be found in the Little Mountain area.

48BH708:

An alignment of seven rock cairns was found on a high hill above 48BH701. The cairns formed an oval figure approximately 30 ft. by 15 ft. with the western

most cairn being by far the largest. It is approximately four feet in diameter and two and one half feet high. The others are from 12 to 18 inches high and two to three feet in diameter.

As mentioned earlier, the function of these rock cairns is unknown. The only cultural material found in association with those cairns was a single basalt core found in the largest feature. The cairns are rounded piles of stone and it appears that some of the rocks used in their construction tumbled down off their sides long ago. Lichen growth has crossed from the surface of one rock to another.

It is recommended that this site be preserved if at all possible. The relative inaccessibility of the site has allowed it to remain in a fairly stable condition up to this time.

48BH720:

Three areas of rock cairns were found on projecting points on top of Little Mountain overlooking the Little Spring area. An arc of five small cairns was found in one area. A scattering of flakes was associated with these features.

The other two areas of this site consist of single cairns. One of them appears to have had more rocks added at a later date.

The age of this site is unknown. No diagnostic artifacts were found. These cairns are believed to be aboriginal in origin with some historic period additions. It is recommended that the cairns be preserved for later study.

48BH733:

This rock cairn is located on a small hill northwest of Little Mountain. Next to the cairn is a circle of stone about two feet in diameter. On the east side of the hill is a small chert quarry. No artifacts were collected from the site but a small sample of flakes was found. No further work is recommended at 48BH733 at this time.

Stone Circles

Stone circles or tipi rings are the most abundant stone feature found on archaeological sites in the Northern Plains. Many functional and ceremonial interpretations have been offered for these structures (Mulloy 1958:211-213),

1965:49-50; Kehoe 1960:417-73; Malouf 1961:381-89), but their exact function remains elusive. One site found during the Little Mountain Survey (48BH704) may add considerably to our knowledge of stone circles.

Nine archaeological sites are included in this section. In addition, stone circles were also found at 48BH701 which is referred to in the Occupation Areas section of this report.

48BH704: Gode's Spring Site:

This stone circle site overlooks the canyon formed by Gode's Spring (Plates 12 and 13). It contains seven complete stone circles and two partial arcs which are believed to be remnants of other circles (Figs. 4-9). All the complete features had clear gaps in the circle of stone which consistently open toward magnetic north.

A scattering of flakes were found both inside and around the outside of the circles. The debitage material recovered indicates that all stages of tool production, except actual quarrying, took place at the site. Small cores, production flakes, bifacial reduction flakes and small sharpening chips were all found at Gode's Spring.

Pieces of juniper branches were found lying inside several of the stone circles. In most cases, the cultural significance of this wood could not be determined. Two pieces (Plate 14), however, demonstrated a diagonal wear pattern at one end which compares well with wear patterns on travois poles collected in other areas of Wyoming. These may be broken poles discarded by the occupants of the Gode's Spring Site. It would be easy to speculate that the larger pieces of wood found in the circles are fallen lodge poles, but information available at this time does not warrant such a conclusion.

Stone artifacts recovered from the Gode's Spring Site included a small metate fragment of fine grained sandstone from 3 to 6 cm. thick. It has been pecked and polished on one surface but shows no depression. The fragment appears to be a piece from the interior area of the grinding stone without evidence of a shaped side.

Also recovered from the area of this stone circle site was a bifacial knife of fine grained grey quartzite and a small base and side notched point. Similar projectile points have been recovered from very Late Prehistoric or Protohistoric levels at sites in the Bighorn Canyon (Brown 1968, Husted 1969) and from other areas in the Northern Plains. In some instances, they have been found in

association with pottery types attributed to Crow and Shoshonian groups (Frison 1967b:14, 1971:270; Zeimens 1975:20, 74; also see site description of 48BH735 in this report). This artifact is probably a good age indicator for at least one of the occupations of 48BH704.

The state of preservation of the Gode's Spring circles makes this site potentially invaluable to the interpretation of Plains prehistory, particularly in its later stages. The site merits testing and more extensive evaluation for possible nomination to the National Register of Historic Places.

48HB709:

This is an extensive area of occupation that stretches along the rim of a canyon for approximately one half mile. Included in the site area are several alignments of stone, at least five stone circles and a line of small rock cairns.

The stone alignments are on the eastern edge of the site. The significance or function of the alignments is unknown. They may be highly disturbed stone circles, but at present they have the appearance of partial arcs and straight lines up to thirty feet in length. A heavy scatter of flakes and a few tools were found in this area, but no diagnostic artifacts were obtained.

The stone circles are located in the center of the area and extend up to the canyon rim. Five definite stone circles and several probable rings were seen. The circles are from fifteen to twenty feet in diameter with twenty to thirty stones in each ring. Around the outside edge of two of the circles were four concentrations of stones distributed at equal intervals around the circle. If these circles are, in fact, tipi rings, it seems likely that these concentrations could have been braces for lodge poles.

In and around these stone circles were found projectile points (Plate 3 c, d) indicative of the Late Middle Prehistoric Period. Many concentrations of small retouch flakes were also found near these features.

The rock cairns on the western edge of the site consist of seven to fifteen stones each and extend in a straight line between the base of a small hill and the canyon rim. Their function is unknown. Three end scrapers were found around the cairns (Plate 3 e, f).

Most of 48BH709 appears to be fairly undisturbed. However, the increased activity around this site places it in danger. It is suggested that the stone features be carefully mapped, and that test excavations be seriously considered for the area in and around the stone circles.

48BH721:

Four stone circles were found along a jeep trail which leads down to Yellowtail Reservoir. The circles are from fourteen to seventeen feet in diameter consisting of approximately twenty stones each. There appears to have been more stone circles on this site which were destroyed by the jeep trail. Scattered flakes were found in and around the circles. It seems likely that artifacts found during the survey were several flake tools of chert.

Deposits in and around the circles remain intact and it is recommended that the site be mapped and tested.

48BH724:

Three badly eroded stone circles were found across the canyon from 48BH709 on a flat, gravel-covered point. The circles are all approximately twelve feet in diameter. Only a few flakes and no artifacts were found on the site. The stone circles are in a fairly isolated area and seem out of danger at this time. The only work recommended is that the circles be mapped.

48BH729:

A single stone circle was found on a small flat about half way up Little Mountain. The circle is about 20 feet in outside diameter and has a small concentric ring of rocks within it. Four corner notched projectile point fragments were found in and near the circle (Plate 22 e). Also found were an obsidian drill base (Plate 22 d) and many flake tools.

It is doubtful if all the cultural material found on the site is associated with the single stone circle. It would seem more likely that the site was occupied many times and that the circle represents only one of several occupations.

48BH729 is in very good condition and has been only minimally disturbed. There are some soils deposited over the site and artifacts may remain below the surface. If activity in the area of the site increases, testing is recommended.

48BH734:

At least eight stone circles are located at the base of a hill west of Cedar Buttes Reservoir. Two rock cairns were found on top of the fill and flakes

and tools are scattered over an area almost one quarter of a mile square. Side and corner notched projectile points, biface fragments, flake tools and a large number of end scrapers were found on the site. It is recommended that this site be mapped.

48BH740:

This site consists of three stone circles in an east-west line extending west from an overlook on the rim of Devils Canyon about one quarter of a mile south of 48BH739. The three circles are approximately twelve feet in diameter. There was no artifact assemblage or debitage associated with the site which suggests limited use of the circles as a camp. No testing is recommended, but these circles should be mapped for future reference.

48BH743:

This site consists of two stone circles approximately twelve feet in diameter spaced about thirty feet apart. To the east of these features is a natural pit formed in the limestone rim of a small canyon. This pit is rectangular in shape and about two and one half feet deep. Around the top of this pit are several pieces of juniper held in place by pieces of limestone. This depression has apparently been used for some purpose in the past, but its function remains unknown. No artifacts were found on the site.

It is recommended that the features at 48BH743 be photographed and mapped.

Conical Lodge Structures

Small conical lodges constructed of wooden poles and brush are fairly common in many isolated areas of northern Wyoming and southern Montana. These are perishable structures which would have rapidly disintegrated under less favorable conditions. The low humidity and sparse rainfall of the upper Big Horn Basin offer limited conditions for preservation.

Most, if not all, of the remaining conical lodges are believed to be Late Prehistoric, Proto-Historic, and Early Historic in age. Mulloy (1965:35-35), however, excavated the remains of several "brush and pole wickiups" associated with a Late Middle Period assemblage (Mulloy and Steege 1967:173).

Only one conical lodge structure is described in this section. Another, in better condition, was found in rockshelter 48BH719.

48BH741:

There is a conical log structure located in a heavily wooded portion of the western rim of Devils Canyon approximately one half mile northeast of 48BH704 (Plate 5). The structure is in extremely delicate condition with a large portion already destroyed by weathering. This site is easily distinguished from other piles of dead wood in the vicinity by its obvious artificial construction (Plate 6 and 7). There were no artifacts associated with the structure. Testing is not recommended as the site has been virtually destroyed by natural elements.

Caves and Rockshelters

The Big Horn Mountain area abounds in caves and rockshelters, many of which contain evidence of varying degrees of cultural occupation. Most of these features are erosional pockets along vertical sandstone formations or are solution cavities common in limestone formations. Many of these are dry and tend to yield perishable items which do not preserve well in other types of sites.

Deep deposits are the exception however, with shallow deposits ranging from several inches to three or four feet being more common. These deposits are generally loosely compacted and easily disturbed. The occupation pattern here is one of small groups of people for short periods of time. Occupation levels are thin and usually cover very small areas. A minimal amount of disturbance by an untrained person can completely destroy such sites in a very short time.

48BH719:

Evidence of a prehistoric habitation at this site was highly visible due to recent looting. A disturbed area about 5 feet by 5 feet revealed a cultural level about 3 inches below the surface consisting of a heavy charcoal lens and the remains of a bark mat (Plates 8-9). Remaining partially intact near the looted area is a conical pole lodge. Looting may have destroyed another lodge.

Enough limited testing was conducted to determine that materials still remain in the deposits both in and around the lodge. A carbon-14 sample was obtained but results are pending.

Sites of this nature are very fragile and, in this case, in imminent danger. Measures should be taken soon to salvage or protect this site. 48BH719 is definitely recommended for nomination to the National Register.

48BH735:

Another badly disturbed shelter contained evidence of prehistoric occupation. Disturbance here was caused by the burning of a large pack rat nest. One partially burned arrow shaft survived the fire suggesting the nest once contained an unknown quantity of perishable material (Plate 11a).

A large number of artifacts were found scattered over the floor including a bone awl and a side and base notched projectile point (Plate 11b, c). Enough pottery sherds were obtained for a partial reconstruction of what appears to be a Crow vessel (Plate 10).

Enough material remains at the site to warrant further investigations. The ceramic evidence is especially significant and further testing is recommended to determine if the site is eligible for nomination to the National Register.

48BH304: Horsethief Cave:

The entry room to Horsethief Cave contains archaeological deposits which were recorded by Bentzen in 1960 (Wyoming State Site File). At that time he noted that the deposits had been considerably disturbed by looters. During the Little Mountain Survey, limited testing was carried out in Horsethief Cave to ascertain if any cultural materials remained in place.

The test excavations revealed the presence of butchered bone, flakes, and charcoal in at least two locations in the cave. No diagnostic artifacts were found.

Around the entrance to the cave is an extensive surface site, the age of which has not been determined. It is likely that it is associated with at least one of the occupations within the cave itself. Because of the large amounts of materials in and around the entrance to Horsethief Cave, more extensive excavations are recommended to determine if this site should be nominated to the National Register.

48BH730: Wortham Shelter:

Wortham Shelter is a small rockshelter near the junction of the east rim of Bighorn Canyon and the west rim of Devils Canyon. A large pack rat midden found within this shelter contained hundreds of arrow shaft fragments, fifty-five projectile points, bones, charcoal, and many perishable materials. This site is being described in detail by John Greer of the University of Missouri, Columbia, Missouri.

It is likely that older deposits are still in place within the shelter. It is recommended that further testing be done at Wortham Shelter to determine if the site warrants nomination to the National Register.

48BH736:

A large rockshelter site is located at the junction of two canyons and contains the remains of a problematical wooden feature. This feature is too weathered to determine its design. Across the opening from this structure is a U-shaped alignment of limestone slabs similar to the one around the base of the conical lodge at 48BH719. Only a few pieces of wood remain inside this feature.

Inside the opening, the shelter expands into a huge room approximately one hundred feet deep and thirty feet high. Although no cultural remains were found in this area of the site, there may be materials under the heavy soil and pack rat build-up on the floor.

48BH736 appears untouched by collectors. The potential for stratified cultural deposits in the site seems very good and test excavations are recommended.

48BH737:

An obscure rockshelter containing evidence of occupation was found in the canyon running past Natural Trap Cave. Neither the extent nor period of occupation could be determined.

The shelter is approximately ten feet across the opening and forty feet deep. A large pot-hole has been dug completely across the floor, and one thin layer of charcoal can be seen in the profile. No flakes or artifacts were found in the site. Test excavations are recommended to determine the significance of this site.

48BH739:

This shelter on the west rim of Devils Canyon is approximately 30 feet across and 12 feet high at the entrance. It contains one main room and two smaller side rooms. The side rooms appear to contain artificial wood partitions. Preliminary testing revealed buried charcoal suggesting that the site has potential for further investigation.

Testing is recommended to determine National Register eligibility.

48BH742:

This small rockshelter is also located on the western rim of Devils Canyon. It contained one badly eroded fire hearth in the opening. It appears to contain no other evidence of occupation and no further considerations are recommended.

Occupation Areas

The designation "occupation areas", as used here, is rather a catch-all term for open-air surface sites believed to have been camps or activity areas other than quarries or stone circles. The sixteen sites listed under this classification range from a single fire hearth (48BH723) to very expansive sites such as 48BH701 and 48BH727.

The descriptions and recommendations for these sites vary a great deal. All were probably situated in the proximity of one or more as yet undetermined resources. They were probably occupied periodically by small groups of people exploiting resources available on a seasonal basis. The distributions and size of these sites may prove to be especially valuable in the future as studies of prehistoric cultural and environmental relationships progress.

48BH701:

48BH701 is an extensive multi-component site covering an area approximately three quarters of a mile square near a spring-fed creek that drains into Devils Canyon.

For collection purposes, the site was divided into six arbitrary areas which may or may not be related. Area 1 is a ridge above the north side of the creek. Here are three stone circles along with a wide variety of lithic debris. Area 2 is located directly to the south of Area 1 and across the creek. As is the case with the entire site, the surface of Area 2 is covered with tools and debitage. Area 3 is a flat that extends to a point overlooking Devils Canyon on the south bank of the creek. Not as much material was observed here as on Areas 1 and 2, although diagnostic artifacts were recovered. Area 4 is on the north bank of the creek opposite Area 3. The material collected here is similar to the material from Area 3. Areas 5 and 6 are on the same side of the creek as Area 1 and contained material similar to that from Areas 2 and 3. They show substantially more deposition than the first four areas.

The limestone bed which underlies the site areas on the north bank of the creek supplies a quarry source of red chert. This material makes up a large percentage of the tools and debitage recovered from the site.

The artifacts collected from 48BH701 appear to range from early Paleo-Indian to Late Prehistoric in age. The earliest example by comparison appears to be a fluted projectile point fragment (Plate 19c). Other projectile points found on the site appear to represent the Paleo-Indian (Plate 17; Plate 18, a-e; Plate 19), Altithermal (Plate 18f, g), Middle (Plate 21b, c, d) and Late (Plate 21a) Prehistoric Periods.

A number of diverse scraping tools were collected (Plate 21e, g) and flake tools are the most abundant of all artifacts collected (Plate 20f, g). The flake tools display a variety of use and wear patterns.

The artifacts collected seem to indicate that 48BH701 was occupied extensively throughout prehistoric times. Areas 5 and 6 have enough deposition to warrant testing. The results of such testing, as well as further study of material already collected, will determine whether or not the site should be nominated to the National Register.

48BH710:

This site is along the same canyon as 48BH709 and about one quarter mile to the west. 48BH710 is a series of flaking areas containing cores, flakes, and several tools apparently broken during production. The diagnostic projectile points found suggest affiliation with the Middle Prehistoric and Late Prehistoric periods (Plate 2a, b). End scrapers from the site are comparatively large in size and show heavy use (Plate 10d, e). Much of the lithic material from 48BH710 is of a local red chert with a high percentage of clear chalcedony also present.

The recommendations for 48BH710 are the same as those for 48BH709. Many areas of the site appear to have been heavily surface collected and most remaining artifacts were found in a thick growth of junipers away from the road passing through the site. The site should be tested before it is completely destroyed.

48BH711:

A level of bison bone was found in a road-cut near a spring on the north side of Little Mountain. Most of the bone is about two feet below the surface.

Some bone also appears on the downstream side of the spring. Artifacts found at 48BH711 consist of several biface fragments and a large number of flake tools, probably used in some stage of meat processing.

48BH711 was also recorded by R. A. Flayharty as Bureau of Land Management archaeological site AR49-010-08-BH in December of 1974 (information from Wyoming State Site Files). Information and artifacts supplied by Flayharty correspond clearly with those of this survey.

It is recommended that the area around the road-cut be salvaged as soon as possible since it is eroding badly. Other areas of the site should also be tested to determine the extent of the site. This site is important because it is the only evidence so far for bison procurement in the Little Mountain area. It is believed at this time that 48BH711 is not a kill site, but an occupation area closely associated with a kill. This testing will aid in determining eligibility of the site for possible nomination to the National Register of Historic Places.

48BH712:

A thin scatter of flakes and several artifacts were found at this location which is situated on a sage-covered flat west of Oasis Spring Creek. Two projectile points recovered are both small corner notched points of red chert. Scrapers and flake tools from the site are also made of local cherts. No aboriginal features were seen in the site area.

48BH712 is fairly accessible by road and appears to have been collected extensively. Before the site is totally destroyed, limited test excavations are recommended near the center of the site.

This site is also recorded by R. A. Flayharty in December, 1974. He assigned Bureau of Land Management number AR49-101-09-BH to the site.

48BH713:

A scatter of flakes and one side notched projectile point (Plate 2c) were found northeast of Little Spring. Several fire-cracked rocks were also seen. Most of the site has apparently been destroyed by a road passing through it and no further work is recommended.

48BH714 Little Spring Site:

The area around Little Spring seems to have been heavily used by prehistoric peoples. A heavy scatter of flakes spreads out around the spring area. Five corner notched points were found as well as a quantity of unifacial flake tools and one bifacial quarry blank.

48BH714 was recorded by R. A. Flayharty as AR49-010-07-BH in December, 1974. Flayharty called the site both prehistoric and historic and collected materials representing both periods from the site. There does not, however, appear to have been much historic occupation of the area.

This site is frequently collected by amateurs. It is recommended that testing be conducted to determine if any meaningful context exists for the materials that continually appear at the site.

48BH716:

A lithic scatter was found to the south of Titan Mine. The material was found among juniper breaks between the south side of a small hill and the north rim of a drainage. A number of flakes, flake tools, scrapers, and a projectile point fragment were collected. Due to the lack of deposition, no testing is recommended.

48BH718:

Approximately one fourth of a mile south of 48BH716 is another small site. The area and material content here is similar to 48BH716. However, there is a noticeable break in concentration between the two areas. A flake sample, one flake tool, a scraper, and a scraper-graver composite tool were collected. No testing of this site is recommended.

48BH722: Rich's Spring Site:

This site is located at and around Rich's Spring which supplies a drainage into Porcupine Creek. Four projectile points were recovered which range from Middle to Late Prehistoric Period types (Plate 22a, b). A number of flake tools and biface fragments (Plate 22a) were recovered. No fire hearths or stone circles were observed. Erosion caused by perennial washing of the drainage from Rich's Spring could have caused the removal or disturbance of such features due to the location of the site. Most of the artifacts are manufactured from local material including brown, red, purple, and green-gray chert. One flake tool recovered

was manufactured from Knife River flint which occurs along the Knife River in western North Dakota. No testing is recommended at 48BH722 due to the lack of deposition.

48BH723:

An isolated fire hearth was found eroding from a road bed north of Little Spring. The hearth is in poor condition with only a light charcoal stain and a few fire cracked rocks. Numerous other fire hearths have undoubtedly been completely destroyed along this road. In the spring or after a heavy rainstorm, vehicle tires form ruts over a foot deep in this road tending to obliterate archaeological materials close to the surface. Due to the poor condition of the one hearth at 48BH723, no further work is recommended. The area on either side of the road should be tested if further disturbance is planned around the area of the site.

48BH725: Harmon Springs Site:

A large scatter of flakes and tools were found on a hilly terraced area along Harmon Springs. This is the most extensive occupation area located in the lowland part of the survey. Flakes and artifacts have been exposed by a road on the northern border of the site and by stream-cutting in the stream beds.

Of the projectile points found at Harmon Springs, the most predominant were shallow corner notched points probably from the Middle Prehistoric Period (Plate 4a, b). A small Late Prehistoric Period corner notched point of obsidian was also found at the site. Several end scrapers and a well-flaked bifacial knife base were also collected. The majority of the flaking debitage was of red chert and coarse grained white quartzite. No large cores or quarry blanks were found.

Harmon Springs appears to be an area that aboriginal groups used many times for camp sites. The remains of fire hearths can be seen at several stratigraphic levels in some of the stream cuts. The Harmon Springs site is worthy of testing to determine the spatial and temporal extent of the cultural levels. Attempts should be made to salvage as much of the site as possible if the area is going to be disturbed.

48BH727:

This is a very large site located on and around the Titan Mine. A number of flakes, flake tools, scrapers, (Plate 4d) bifacial knives (Plate 4c, e), and

projectile points were recovered. The material observed was scattered over approximately one fourth of a square mile. Projectile points ranged from Middle to Late Prehistoric Period types. Most of the points were fragmentary. The area is regularly picked over by amateurs and testing is recommended to determine if any context can be established for the quantities of materials that continue to appear on the surface.

48BH728:

This site is located at the northern end of the Titan Mine landing strip. Two projectile point fragments, two biface fragments, a flake sample, and two flake tools were recovered. The area is heavily impacted by man, possibly because of the proximity to Horsethief Cave (48BH304). No further collecting or testing is recommended.

48BH731:

The basal end of what is believed to be a Late Paleo-Indian point was found among a small concentration of flakes south of Little Spring. Also found were an end scraper and several flake tools of purple chert.

It is possible that only a small portion of this site has been exposed and that much of it remains in context. 48BH731 is dangerously close to an existing road and uranium claims have been placed close to the site. It is recommended that the site be extensively tested before it is destroyed.

48BH732: Browns Spring Site:

What is believed to be a Folsom channel flake was found on a site south of 48BH701 (Plate 15a). It closely resembles those excavated at the Hanson Site (48BH329), a Folsom campsite near Shell, Wyoming (Dr. George C. Frison, 1975, personal communication). The dorsal surface of the flake was collaterally flaked. The striking platform has been faceted and the upper break is in the form of a rounded hinge fracture. This channel flake, coupled with the fluted point tip from 48BH701 could indicate the area was occupied as early as 10,700 B.P.

Projectile points consisted of a concave lancolate base (Plate 16a), a large side notched base (Plate 15b), and many forms believed to be from the Middle Prehistoric Period (Plate 16b-d).

Areas of the Browns Spring Site could contain stratified cultural deposits and should be tested. If stratified cultural materials can be found in these areas, nomination to the National Register of Historic Places is recommended.

48BH700: Willow Creek Site:

Willow Creek was the largest of the intermittent streams to be investigated in the lowland area of the survey. Scattered flakes were found on both sides of the drainage for about one half mile. Several cairns were located on the right bank. Several eroded fire hearths were also located on small terrace remnants only a few feet above the existing stream bed. These hearths were found in a completely deflated state with only clusters of fire cracked rock remaining. The only artifacts found were several flake tools.

The Willow Creek Site is probably a series of small occupation areas. The site may continue sporadically to the west and eventually run into 48BH3, another recorded occupation area on Willow Creek (Fenenga 1952:7).

The Willow Creek Site appears to have been highly disturbed by both natural and human action. If this is to be further disturbed, both the stream bottom area and the rock cairns would merit testing.

III. INTERPRETATIONS

Of the artifacts and materials collected during the Little Mountain Study, the projectile points are the best indicators of age and cultural affiliation of the various sites. The reliance upon projectile points for such analytical purposes is necessary especially in case of survey projects where materials are not dated and the context in which they are found has not been fully examined. Although projectile points provide fairly reliable indexes of past groups in the area, they must be used carefully as is pointed out by Frison (1975:292).

They (projectile points) can be valuable as an interpretive means as long as the investigator is aware of the range of variation that is present in the projectile point assemblage of a given cultural group. . . . Projectile points may vary with distance so that there are dangers inherent in claiming cultural relationships based on similarities of projectile points alone.

With this advice in mind, the sites and materials found on Little Mountain have been carefully and, in most cases, tentatively assigned cultural affiliation (Table 3). If projectile points were not present, little could be said along these lines.

Evidence for fluted point traditions in the Little Mountain area remains scanty. One bifacially fluted point tip (Table 1, line 1; Plate 19c) came from 48BH701. This is believed to be an unfinished Folsom point, as points in a similar stage of production were found at the Hanson Folsom Site (Dr. George Frison, 1974, personal communication) and at the Adair-Steadman Site in Northwest Texas (Tunnell 1975). More evidence of fluting is a definite channel flake (Plate 15b) from Browns Spring, 48BH732. The significance of these items is that both specimens suggest that fluted points were being manufactured in the area. Folsom sites are rare and any information that may yield data concerning exploitation and occupation patterns in the Big Horn Mountain area is especially important in view of current studies at the Hanson Site.

Of the classic Plano traditions, only the Cody Complex is represented in the Little Mountain collection. In this case, two stemmed projectile point bases (Plate 19a, b; Table 1, lines 4 and 5) from 48BH701 closely resemble specimens from the Horner Site (Jepsen 1953). Both display shallow collateral flaking, a fine edge retouch extending across the bases and along both edges of the stem, basal thinning and basal grinding. Again, the greatest significance of these specimens may be in their eventual contribution to a better understanding of utilization of the Big Horn area by classic Plano-Indian groups.

Another type of projectile point from 48BH701 displays a deep basal concavity and heavy lateral and basal grinding (Plate 17a, b, e; Table 1: lines 2, 10 and 14). Very little is known about this point type, although it is common in the foothills regions in the Big Horn Mountains. So far they have been found in a good context only at the Medicine Lodge Creek site where they are associated with early Paleo-Indian levels. Hopefully current studies will reveal more about these points.

Husted (1969) described three Paleo-Indian point types from Big Horn Canyon as "Agate Basin-like, Pryor Stemmed, and Lovell Constricted". Agate Basin-like are described as having parallel-oblique flaking, straight to rounded bases, and lateral edge grinding. Pryor-stemmed points are characteristically bi-beveled with an otherwise nebulous flaking pattern and straight or concave bases. They are believed by Frison (1973:300) to represent Late Paleo-Indian marginal cultural groups contemporaneous with classic Late Plano-Indian groups. Dated at ca. 5800 B.C., these points seem to be restricted to the Big Horn Mountains area. This is also true for the Lovell Constricted variety which seems to be slightly later in age but about which little is known as yet. The Medicine Lodge

Creek project is concerned with a number of sites containing evidence for these Late Paleo-Indian occupations and which should contribute towards a greater understanding of the relationship between these and classic Plano groups.

Little Mountain sites containing Late Paleo-Indian materials include 48BH701, 48BH731, and 48BH732 (Plates 16a-17d, -18d, e; Table 1: lines 6, 11, 103 and 109). Frison (1975:292) proposed two economic adaptations during the Late Paleo-Indian period on the Northwestern Plains: one exploiting the more rugged mountainous and foothills regions. Little Mountain is a marginal area containing both open country and areas of extreme topographic relief. Both classic and marginal Late Paleo-Indian materials were found in the area, but at present their relationships are not clear.

Evidence for Altithermal Period occupation is recognized by the presence of large side notched projectile points. The range of variation of these points sometimes overlaps with Late Prehistoric side notched varieties and, again, one must be very careful in assigning cultural affiliation to isolated finds. Three points which are probably of Altithermal origin were found at 48BH701 and 48BH732 (Plates 15b-18f, g; Table 1: lines 19 and 112). These sites also contain Paleo-Indian materials which may support the hypothesis that Altithermal groups occupied the same ecological areas as the Paleo-Indian groups (Frison 1975:295).

The Middle Prehistoric Period in the area is distinguished by, among other things, larger campsites than earlier periods and a greater dependence upon a wider variety of vegetable and small animal resources (Frison 1975:29). Projectile points representing the Early Middle Prehistoric Period McKean complex were found at 48BH701, 48BH709, 48BH710, 48BH712, 48BH713, 48BH714, 48BH725, 48BH727, 48BH729, 48BH732, 48BH733, and 48BH734. All the Middle Period sites are found in ecological situations which appear to offer a greater variety of food resources. Without detailed vegetational studies, it is difficult to document exactly which areas provide the greatest amount of edible plants. For some reason, these sites were occupied for a long period of time, probably on a seasonal basis. It would be interesting to see if the sites demonstrating the greatest amount of occupation (48BH709-48BH710) were in the areas of greatest amount of resources. However, these kinds of studies are not a part of this study, but are only mentioned in regard to the potential for further investigations at these sites.

The Late Prehistoric Period is represented by a larger diversity of types of sites (open occupations, rockshelters, etc.) than the earlier periods. Evidence for Crow and Shoshonean occupations were found at 48BH704 and 48BH735. Further analysis (testing and dating) will probably reveal the presence of these groups at an even larger number of sites. The significance of these Late Prehistoric Period sites should not be underestimated especially since the area is lacking in ethnographic accounts for this period.

An overall view of the prehistoric archaeological sites from the Little Mountain Survey points to the fact that at least two types of utilization areas are found in the survey: the lower dry lands along the river, and the higher wetter areas in the junipers. The settlement patterns of these two areas has not been explored extensively in this report, but a debitage analysis is presented here (Table 2) for comparison with one done by Loendorf (1973:54-101), who has attempted to demonstrate seasonal settlement of the various ecozones of the Pryor Mountains. The names of the material types vary slightly between this report and that of Loendorf's, but the categories themselves are essentially the same.

Generally, sites from the lower areas of the survey had the greatest amounts of course-grained quartzites which are believed to have been quarried from river terraces. However, purple and red cherts are also well represented.

Lithic material from the higher elevations in the survey area is predominantly chert. The course-grained quartzite is only minimally represented, as is the fine-grained Morrison quartzite which comes from elevations higher in the Big Horn Mountains. Lithic material introduced into this zone of occupation includes obsidian and a form of brown chalcedony tentatively identified as Knife River flint.

IV. SUMMARY

Historically, Little Mountain seems to have always been an out-of-the-way-place. The area lacks ethnographic and historic documentation and seems to have been utilized only sporadically during the Historic era. However, this situation is rapidly changing as the area is developed for recreational and mining purposes. This study has demonstrated that the archaeological site density is high in the area, representing prehistoric occupations for over 10,000 years. As utilization of the area increases, the danger for damage or destruction of these resources, wanton or accidental, greatly increases. In view of the results of this very limited study, it is strongly recommended that the inventory be extended to all Bureau of Land Management holdings in the area. Also, other public lands in the area, including those administered by the National Park Service, Forest Service, and State of Wyoming, should be inventoried. Similar studies should also be initiated in Montana.

This study was very productive and has contributed significantly to a better understanding of the northern Big Horn Basin. A special thanks is due to the Bureau of Land Management personnel for their very conscientious efforts to preserve and develop archaeological resources in the area.

Table 1

Projectile Points

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.*	Notes
1	BH701 95750	30	24	5.5	1 _{w,th}	chalcedony, fluted projectile point
2	" 95751	20	23	5	1 _{w,th}	red chert, deeply concave base, lateral constriction
3	" 95752	26.5	28.5	7	1 _w	basalt, lateral grinding, lg. lanceolate midsection
4	" 95753	18	16.5	5	1 _{th}	dark metamorph. shale, base of Cody Complex point
5	" 95754	14	19.5	5	1 _{th}	red chert, base of Cody Complex point
6	" 95755	32	18	6.4	1	grey metamorph. shale, slight lateral constriction, concave base
7	" 95756	27.5	18	5	1	yellow quartzite, shoulder, straight base
8	" 95757	30	21	5		red chert, corner notched, base slightly convex
9	" 95758	17	5.5	3.5		purple chert, small unnotched triangulate
10	" 95759	36.5	30	6	1	grey metamorph. shale, large base, deep basal concavity
11	" 95765	22.5	20	7	1	grey quartzite, reworked apparent Late Paleo. lanceolate
12	" 95768	16	22	5.5	1 _{w,th}	grey chert, undiagnostic midsection
13	" 95769	20	15.5	4	1 _{w,th}	purple chert, tip
14	" 95770	26.5	21	6	1	grey metamorph. shale, "fish-tailed" lanceolate, concave base
15	" 95771	25	23	6	1 _{th}	red-grey quartzite, slight shoulder remnant, parallel stem, concave base
16	" 95772	18.5	19.5	5.5	1 _{w,th}	red metamorph. shale, basal thinning, slight grinding similar to 95767
17	" 95773	14.5	20.5	5	1 _{w,th}	"Knife River flint", tapered slightly concave base, lateral grinding
18	" 95774	26	21	6.5	1 _{th}	purple metamorph. shale, straight base, parallel stem, slight shoulders
19	" 95775	16.5	20.5	5	1	purple chert, thick side notched, straight base, Altiternal

Measurements given to nearest .5mm

* Fragmentary Measurements; l=length, w=width, th=thickness

Table 1
Projectile Points (continued)

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.	Notes
20	BH701	18.5	14.5	3	1, w, th	red quartzite, tip
21	"	14	15	4		red chert, reworked, side to corner notched, blunt tip
22	"	19.5	12	3	1	red chert, notched midsection, collateral flaking
23	"	11	14	2	1, w, th	purple chert, corner notched, straight base
24	"	18.5	22	6	1	red metamorph. shale, shouldered flared stem, basal notch
25	"	13	20	5.5	1, w, th	purple-brown chert, corner notched, concave base
26	"	29	20	4.5	1	purple chert, corner notched, ears broken off base, concave base
27	"	32	23.5	4.5	1	grey chert, corner notched, flared haft element, straight base
28	"	36	22.5	4.5	1, w, th	"Knife River flint", reworked, basal thinning
29	"	20.5	21	6.5	1, w, th	purple chert, fragment
30	"	20	18	3.5	1, w, th	red chert, portion of reworked point, poss. into knife
31	BH704	16	13.5	2.5	1	purple chert, side and base notched, tip gone
32	BH709	25.5	24.5	5	1	red chert, reworked side notched, slight concave base
33	"	23.5	15	5.5	1	grainy-quartzite-brown, midsection
34	"	20.5	16.5	4	1	red chert, corner notched, slight concave base
35	"	13.5	11.5	2.5	1, w	grey metamorph. shale, side notched, concave base
36	"	19.5	12.5	2.5	1	red chert, corner notched, tip and portion of base broken
37	"	20.5	15	3.5	1	white quartzite, side notched, concave base
38	"	17	15	2	1, w	red chert, fragment, only edges and tip worked
39	"	13	16	5	1, w	red chert, shoulders, deep concave base, hinged break reworked
40	"	13	16	4	1, w, th	clear chalcedony, concave base, slightly convex edges
41	"	21	10	3.5	w	red chert, side notched, base broken
42	"	24	14.5	4	1	white chert, corner notched, small concave base

Table 1
Projectile Points (continued)

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.	Notes
43	BH709	16.5	17	4	1,w	red chert, midsection
44	"	15.5	16.5	3	1	red chert, deeply corner notched, small irregular base
45	"	17	16	5	1,w	red chert, corner notched, wide concave base
46	"	29.5	19.5	5	1	green-brown chert, large corner notched, slightly concave base
47	"	24	24	20.5	1,w	purple chert, midsection
48	"	18	19	3.5	1,w	pink chert, unifacially worked fragment
49	"	14.5	13	3	1,w	purple chert, fragment
50	BH710	23	21.5	5	1,w,th	clear chalcedony, tip only
51	"	21	18	5	1,w	purple chert, deep corner notched, convex base
52	"	17	12	2	1	red chert, unnotched, fine flaking
53	"	22.5	18	4	1,w,th	red chert, reworked midsection
54	"	23	17	6	1,w,th	green chert, midsection, collateral flaking
55	"	35	23	4.5	1	purple chert, corner notched, convex blade edges, convex base
56	"	10	10.5	2.5	1,w	obsidian, small side notched
57	"	22	18	5	1	red chert, corner notched
58	"	17.5	23.5	4	1	purple chert, corner notched
59	"	20	13.5	3	1	red chert, unnotched, unifacially worked
60	"	17	16	2	1,w,th	pink chalcedony, unifacially worked tip
61	BH712	21	14	3.5	1	purple chert, corner notched
62	"	15	18	4	1	red chert, corner notched, slightly concave base
63	"	15	12	4	1,w,th	white chalcedony, midsection
64	BH713	27	24	4.5	1,w	tan quartzite, corner notched
65	"	26.5	14	4	1	white chalcedony, side notched, straight base, serrated
66	"	23.5	14	4	1,w	grey quartzite, corner notched, convex base
67	BH714	17	13.5	3.5	1	red chert, corner notched, concave base

Table 1
Projectile Points (continued)

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.	Notes
68	BH714 95562	13	18	3	1,w	red chert, corner notched, reworked base
69	" 95563	17	18	4.5	1,w	grey metamorph. shale, stemmed, convex base
70	BH715 95565	31	16	5.5		grey metamorph. shale, side notched
71	BH722 95572	16.5	15	3.5	1	purple chert, side notched, base notched
72	" 95573	19	13.5	4		purple chert, side notched, concave base
73	" 95574	24	17.5	5	1	purple chert, slightly side notched
74	" 95575	16	15.5	3.5	1,w	red chert, midsection
75	BH725 95857	35	19.5	6	1	black metamorph. shale, side notched to shouldered, concave base
76	" 95858	28	15	3	1	grey metamorph. shale, corner notched
77	" 95859	29	19	4.5	1	white chalcedony, corner notched, convex base
78	" 95887	38	22	7	1	yellow-black chert, midsection and tip
79	" 95890	30	20	6		red chert, point preform, convex base
80	" 95889	15	8.5	2.5	1,w	obsidian, side notched, indented straight base
81	" 95893	25.5	25.5	5		yellow-white chalcedony, corner notched, concave reworked base
82	" 95891	32	18	6	1	white chalcedony, corner notched, serrated edges, concave base
83	" 95888	10.5	15.5	4.5	1,w,th	brown metamorph. shale, corner notched, convex base
84	BH727 95877	24	14	5	1,w	red chert, fragment, break worked into cutting tool
85	" 95878	21	16	4.5	1,w	red chert, side notched
86	" 95879	17	14	3	1	grey chalcedony, small corner notched, convex base, mostly unifacially worked
87	" 95880	30	15	4.5	1	yellow chert, shouldered, convex base
88	" 95881	21	11.5	4.5	1,w	grey Morrison quartzite, blade edges battered
89	" 95882	21	20	4	1,w	red chert, corner, fragment

Table 1
Projectile Points (continued)

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.	Notes	
90	BH727	19	11	3	1,w	grey metamorph. shale, midsection	
91	"	95884			1,w,th	red chert, fragment of base or midsection	
92	BH728	27	16	3.5	1,w	red chert, fragment, mostly unifacially flaked	
93	"	95978	17.5	3.5	1,w	red chert, fragment, mostly unifacially flaked	
94	BH729	14.5	19	4.5	1,w,th	red chert, corner notched, convex base	
95	"	95682	26	5	1	red-purple chert, corner notched, concave base	
96	"	95683	31.5	5	1	green chert, poss. lancolate, reworked base	
97	"	95684	9	4	1,w,th	yellow chert, corner notched, straight base	
98	"	95685	7.5	3.5	1,w,th	red chert, corner notched, straight base	
99	"	95686	16.5	3.5	1	obsidian, midsection	
100	"	95687	12.5	3	1	obsidian, small corner notched fragment	
101	"	95688	11	2	1,w,th	obsidian, midsection	
102	"	95689	13	6	1,w,th	obsidian, corner notched, convex base	
103	BH731	32	23	6.5	1,w	purple chert, Late Paleo, lancolate, concave base	
104	BH732	29	20	5.5	1	brown chert, McKean variant, slight lateral notching	
105	"	95962	30	5.5	1	grey chert, McKean variant, concave base, stem formed by deep corner notching	
106	"	95963	26.5	11	5	pink chert, side notched preform, straight base, poss. heat treated	
107	"	95964	29.5	17.5	4	1	red chert, corner notched, ears & tip broken
108	"	95965	36	20	5	1	purple chert, corner notched, concave base
109	"	95966	19	20	5	1	brown metamorph. shale, corner notched, midsection
110	"	95967	25.5	23.5	6	1	grey metamorph. shale, corner notched, large midsection
111	"	95968	36	26	5	1	tan Morrison quartzite, fragment of midsection
112	"	05072	20	19	5	1	pink chert, side notched, Altitheamal, slightly concave base
113	BH733	95931	16	19	3	1	red metamorph. shale, corner notched, concave base

Table 1
Projectile Points (continued)

Site No.	Cat. No.	Length	Width	Thickness	Frag. Meas.	Notes	
114	BH733	95932	11.5	18.5	4.5	1,w	red chert, corner notched, concave base
115	"	95933	10	17	5	1,w	red chert, corner notched, concave base
116	"	95934	35	19	5	1,w	white chert, corner notched, concave base
117	"	95935	18	18	3	w	red chert, small side notched
118	BH734	95943	12	14	4.5	1,w,th	brown metamorph. shale, midsection
119	"	95944	28	16	4.5	1	grey chert, side notched, concave base, serrated edge
120	"	95945	22.5	18	4	1	grey Morrison quartzite, corner notched, fragment
121	"	95946	20	11.5	4.5	1,w	red chert, corner notched, fragment

TABLE 2 - Amounts of Debitage by Weight

Site No.	Site Elev.	Enviro. Zone*	Chert		Morrison Quartz		Agate		Basalt		Obsidian	
			Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%
BH701	5700	1										
**1	"	"	520	60	9	1	55	7	24	2	4	1
2	"	"	657	69	44	5	112	12	11	1	2	0
3	"	"	66	80	0	0	3	3	0	0	0	0
4	"	"	8	61	0	0	3	23	0	0	0	2
Total	"	"	1252	73	53	3	172	10	25	2	6	0
BH702	3800	2	23	7	0	0	0	0	0	0	0	0
BH703	3780	2	542	91	0	0	0	0	0	0	0	0
BH704	5560	1										
**sc1	"	"	9	100	0	0	0	0	0	0	0	0
sc2	"	"	24		0	0	0	0	0	0	0	0
sc3	"	"	3	100	0	0	0	0	0	0	0	0
sc4	"	"	3	100	0	0	0	0	0	0	0	0
sc5	"	"	10	63	6	37	0	0	0	0	0	0
sc6	"	"	12	100	0	0	0	0	0	0	0	0
os.	"	"	80	64	0	0	11	9	0	0	0	0
Total	"	"	140	70	6	3	11	6	0	0	0	0
BH705	4050	2	124	39	7	2	0	0	0	0	0	0
BH706	4100	2	45	90	0	0	0	0	0	0	0	0
BH707	5760	1	108	100	0	0	0	0	0	0	0	0
BH709	5200	1	914	81	193	13	51	3	117	8	12	1
BH710	5000	1	335	50	1	0	47	7	34	5	7	1
BH711	5600	1	41	63	2	3	5	8	0	0	0	0
BH712	5460	1	71	67	0	0	11	10	10	10	1	1
BH713	5430	1	72	50	8	5	13	9	28	20	6	4
BH715	5320	1	42	88	6	12	0	0	0	0	0	0
BH716	4800	1	464	75	0	0	62	10	10	2	7	1
BH718	4720	1	265	96	0	0	3	1	0	0	3	1
BH719	4760	1	72	74	0	0	1	1	16	16	0	0
BH720	5960	1	31	100	0	0	0	0	0	0	0	0
BH725	4000	2	181	56	13	4	23	7	0	0	8	3
BH727	4760	1	338	69	3	1	35	7	18	4	3	1
BH729	5480	1	243	54	28	6	82	18	18	4	5	1
BH731	5400	1	163	85	4	2	15	8	0	0	0	0
BH732	5720	1	164	65	0	0	41	16	0	0	4	2
BH733	5300	1	73	54	17	13	34	25	0	0	0	0
BH734	4840	1	262	78	6	2	10	3	3	1	5	1
BH738	4960	1	254	73	12	3	42	12	2	1	2	1
BH304	4680	1	278	75	16	4	26	7	30	8	2	1

(weight in grams, weights and percentages rounded off to nearest whole number)

1 = Transition Zone; 2 = Upper Sonoran Zone; ** sc = stone circle; os = outside area around the stone circle; ** 1 thru 6 = collection areas of 48BH701

TABLE 2 - Amounts of Debitage by Weight (continued)

Site No.	Yellow Jasper		Metamorph. Shale		River Quartz		Miscl.		Total Weight (both pages)
	Wt.	%	Wt.	%	Wt.	%	Wt.	%	
BH701									
**1	6	1	26	3	24	3	0	0	658
2	1	0	39	4	84	9	12	1	950
3	0	0	4	5	10	12	0	0	83
4	0	0	2	15	0	0	0	0	12
Total	6	0	71	4	119	7	12	1	1716
BH702	0	0	0	0	306	93	0	0	329
BH703	0	0	0	0	51	9	0	0	592
BH704									
**sc1	0	0	0	0	0	0	0	0	9
sc2	0	0	0	0	7		0	0	31
sc3	0	0	0	0	0	0	0	0	3
sc4	0	0	0	0	0	0	0	0	3
sc5	0	0	0	0	0	0	0	0	16
sc6	0	0	0	0	0	0	0	0	12
os.	0	0	0	0	35	27	0	0	126
Total	0	0	0	0	42	21	0	0	200
BH705	0	0	0	0	138	43	44	14	329
BH706	0	0	0	0	5	9	0	0	50
BH707	0	0	0	0	0	0	0	0	108
BH709	25	2	28	2	152	10	0	0	1492
BH710	0	0	9	1	220	33	14	2	666
BH711	0	0	0	0	22	34	0	0	65
BH712	2	2	1	1	9	9	0	0	105
BH713	0	0	5	4	12	8	0	0	143
BH715	1	1	0	0	0	0	0	0	48
BH716	0	0	10	2	34	6	29	5	614
BH718	0	0	0	0	5	2	0	0	276
BH719	0	0	0	0	9	9	0	0	97
BH720	0	0	0	0	0	0	0	0	31
BH725	2	1	2	1	78	24	15	5	322
BH727	17	4	0	0	110	22	4	1	494
BH729	6	1	8	2	30	7	35	8	454
BH731	2	1	0	0	7	4	0	0	192
BH732	9	4	9	4	19	8	7	3	253
BH733	0	0	10	8	0	0	0	0	135
BH734	2	1	8	3	36	11	3	1	334
BH738	9	3	13	4	15	4	3	1	349
BH304	2	1	0	0	20	5	0	0	373

TABLE 3 - SITE RECOMMENDATIONS

Site No.	Site Type	Cultural Affiliation	Mapping	Recommendations	Definitely Nominate to Natl. Register
48BH700	occupation	undetermined		X	
48BH701	occupation	Pleco, Altihermal, Middle, Late		X	
48BH702	quarry	undetermined			
48BH703	quarry	undetermined			
48BH704	stone circle	Late		X	
48BH705	quarry	undetermined			
48BH706	quarry	undetermined			
48BH707	quarry	undetermined			
48BH708	rock cairns	undetermined			
48BH709	stone circle	Middle	X	X	
48BH710	occupation	Middle, Late		X	
48BH711	occupation	undetermined		X	
48BH712	occupation	Late		X	
48BH713	occupation	Late			
48BH714	occupation	Late		X	
48BH715	quarry	Late			
48BH716	occupation	undetermined			
48BH717	quarry	undetermined			
48BH718	occupation	undetermined			
48BH719	rockshelter	undetermined		X	X
48BH720	rock cairns	undetermined			
48BH721	stone circle	undetermined	X	X	
48BH722	occupation	Middle, Late			

TABLE 3 - SITE RECOMMENDATIONS (continued)

Site No.	Site Type	Cultural Affiliation	Recommendations		
			Mapping	Testing or Salvage Possible Nomination to Natl. Register	Definitely Nominate to Natl. Register
48BH723	occupation	undetermined			
48BH724	stone circle	undetermined	X		
48BH725	occupation	Middle, Late		X	
48BH727	occupation	Middle, Late		X	
48BH728	occupation	Middle, Late			
48BH729	stone circle	Late		X	
48BH730	rock shelter	Late		X	
48BH731	occupation	Paleo		X	
48BH732	occupation	Paleo, Altithermal, Paleo-Middle		X	
48BH733	rock cairns	undetermined			
48BH734	stone circle	Late	X		
48BH735	rock shelter	Late		X	
48BH736	rock shelter	undetermined		X	
48BH737	rock shelter	undetermined		X	
48BH738	quarry	undetermined			
48BH739	rock shelter	undetermined		X	
48BH740	stone circle	undetermined	X		
48BH741	conical lodge	undetermined			
48BH742	rock shelter	undetermined			
48BH743	stone circle	undetermined	X		
48BH304	rock shelter	undetermined		X	

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PLATES

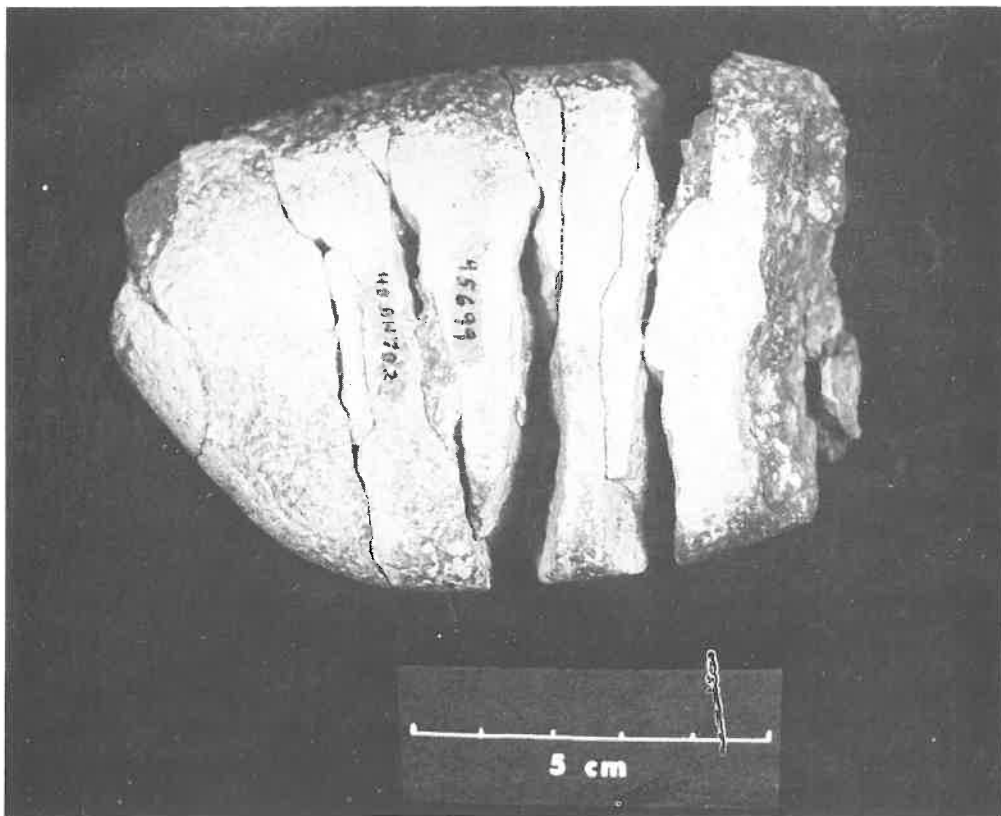


PLATE 1 - Mano from 48BH702 (Cat. #95699).

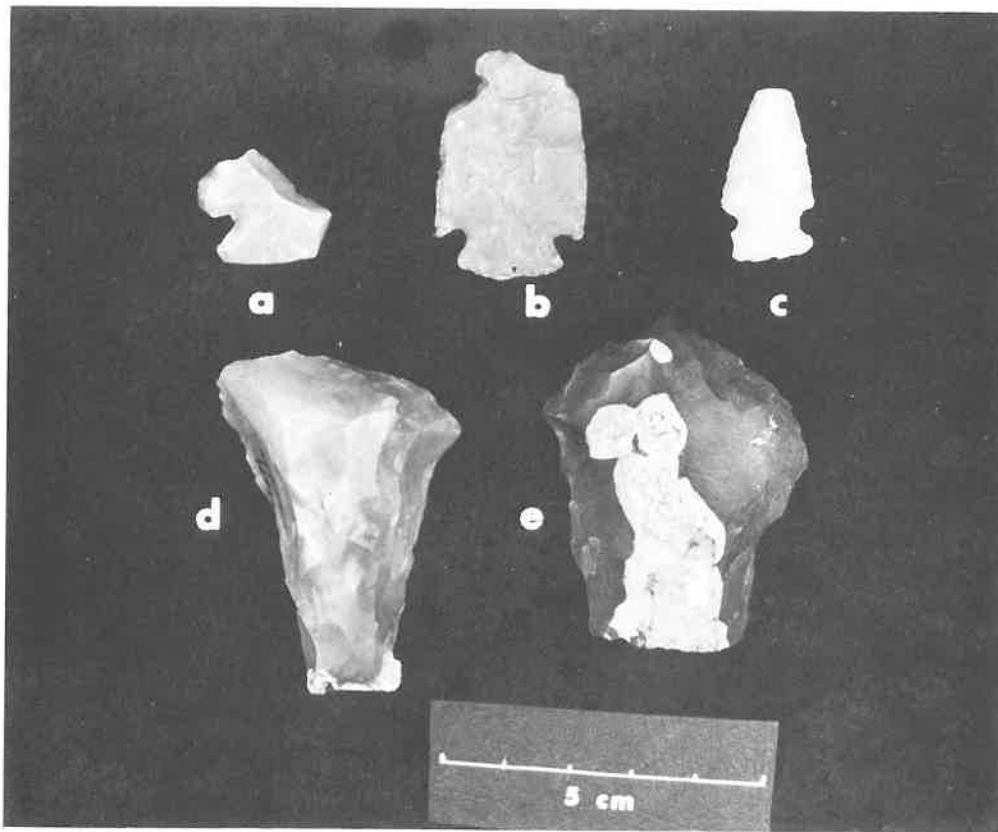


PLATE 2 - Artifacts from 48BH710 and 48BH713: a, b, projectile points from 48BH710; c, projectile point from 48BH713; d, e, end scrapers from 48BH710 (Cat. #'s 95546, 95550, 95560, 95554 and 95555).

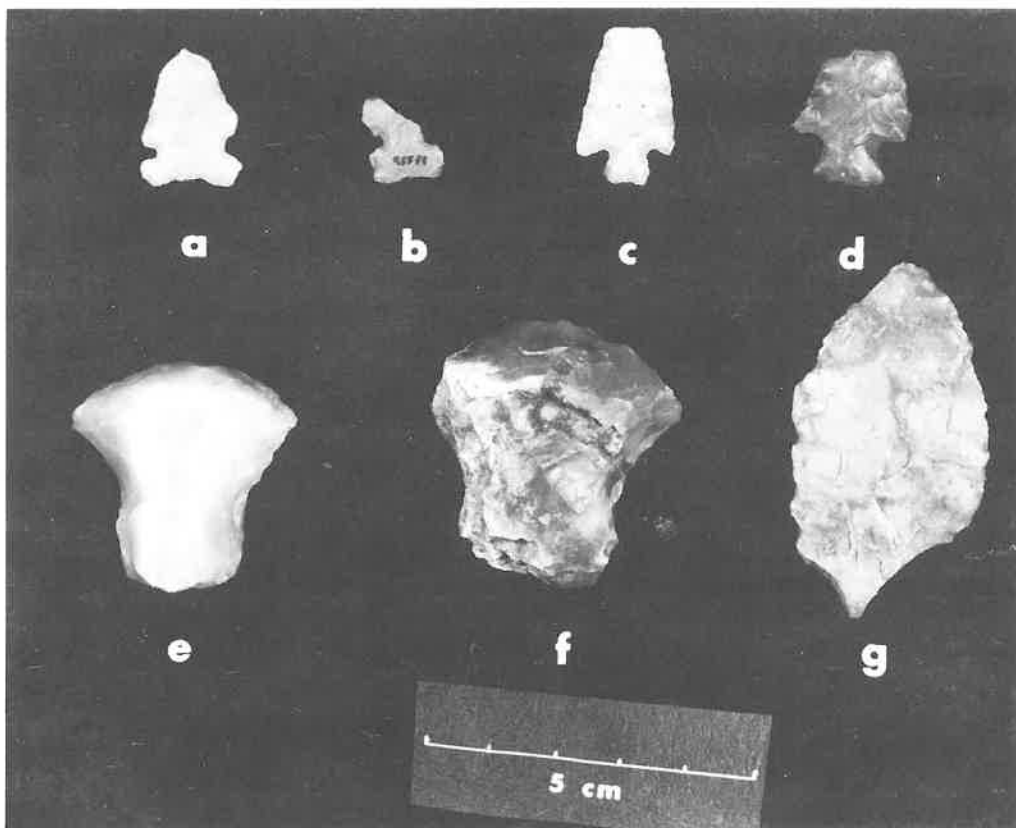


PLATE 3 - Artifacts from 48BH709: a-d, projectile points; e, f, end scrapers; g, bifacial knife (Cat. #'s 95591, 95589, 95597, 95588, 95582, 95583, 95605).

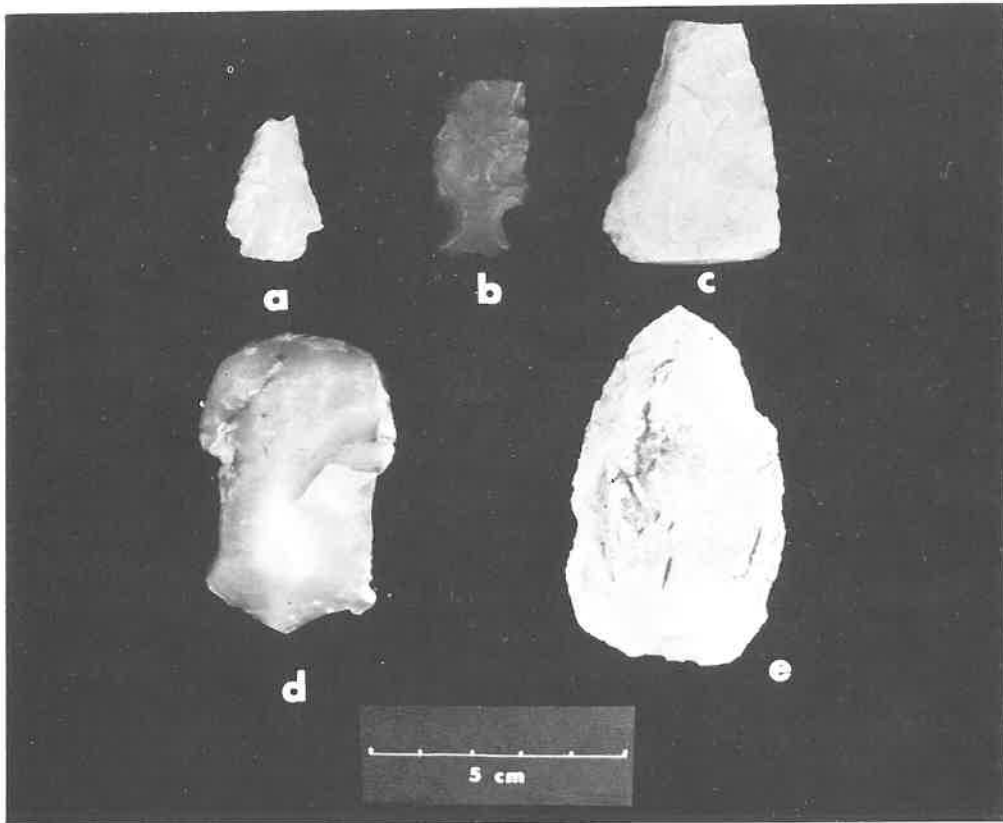


PLATE 4 - Artifacts from 48BH725 and 48BH727: a, b, projectile points from 48BH725; c, beveled knife from 48BH727; d, end scraper from 48BH727; e, biface from 48BH727 (Cat. #'s 95858, 95857, 95871, 95873, 95866).



PLATE 5 - Conical lodge
from 48BH741.



PLATE 6 - Shave pole from 48BH741.



PLATE 7 - Cross pieces of lodge from 48BH741.



PLATE 8 - Rock shelter site 48BH719.



PLATE 9 - Matting from 48BH719.

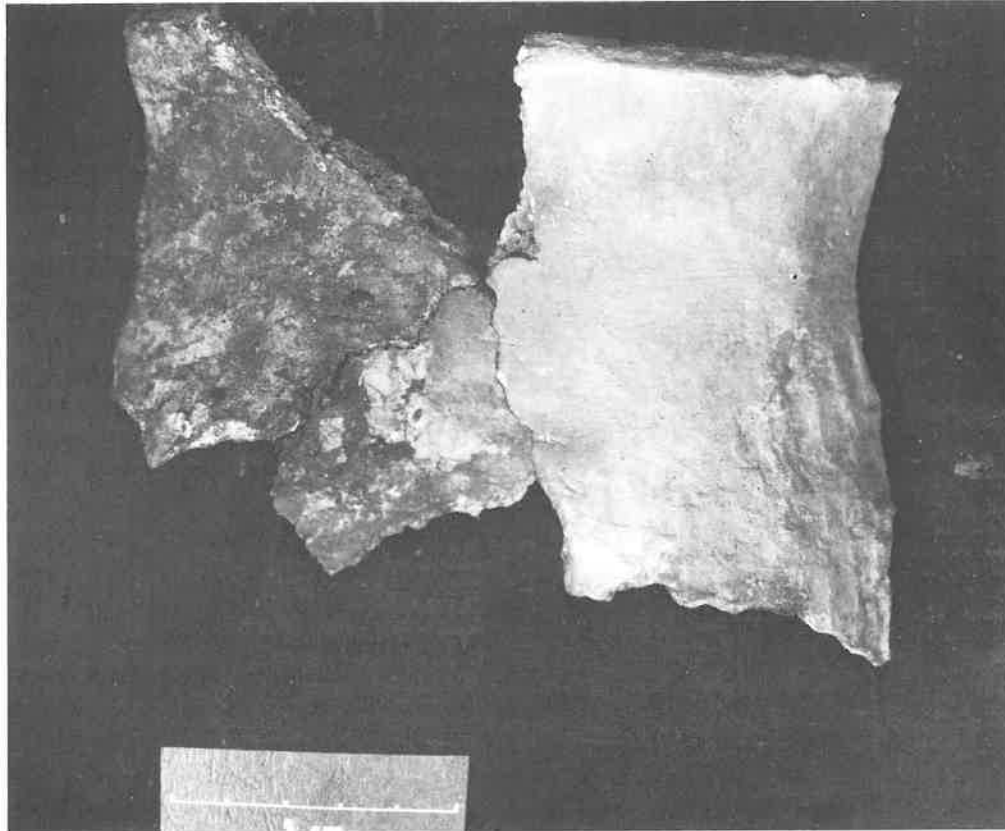


PLATE 10 - Pottery from 48BH735 (Cat. # 95609).

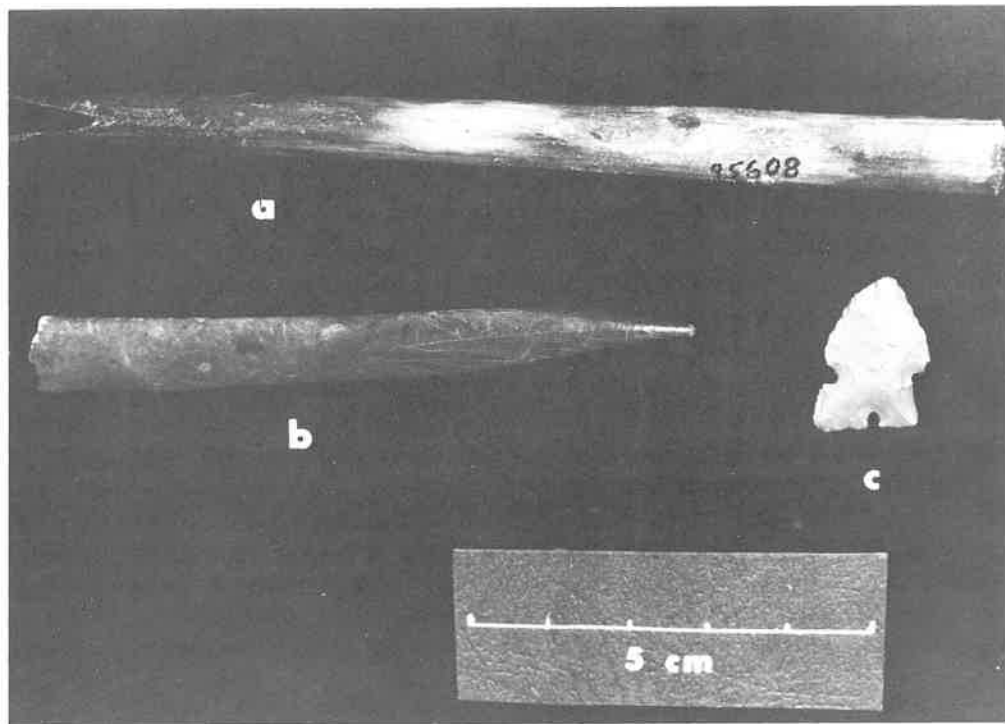


PLATE 11 - Artifacts from 48BH735: a, arrow shaft; b, bone awl; c, projectile point (Cat. #'s 95608, 95611, 95610).



PLATE 12 - Stone circle #3
from 48BH704



PLATE 13 - Stone circle #7
from BH704.

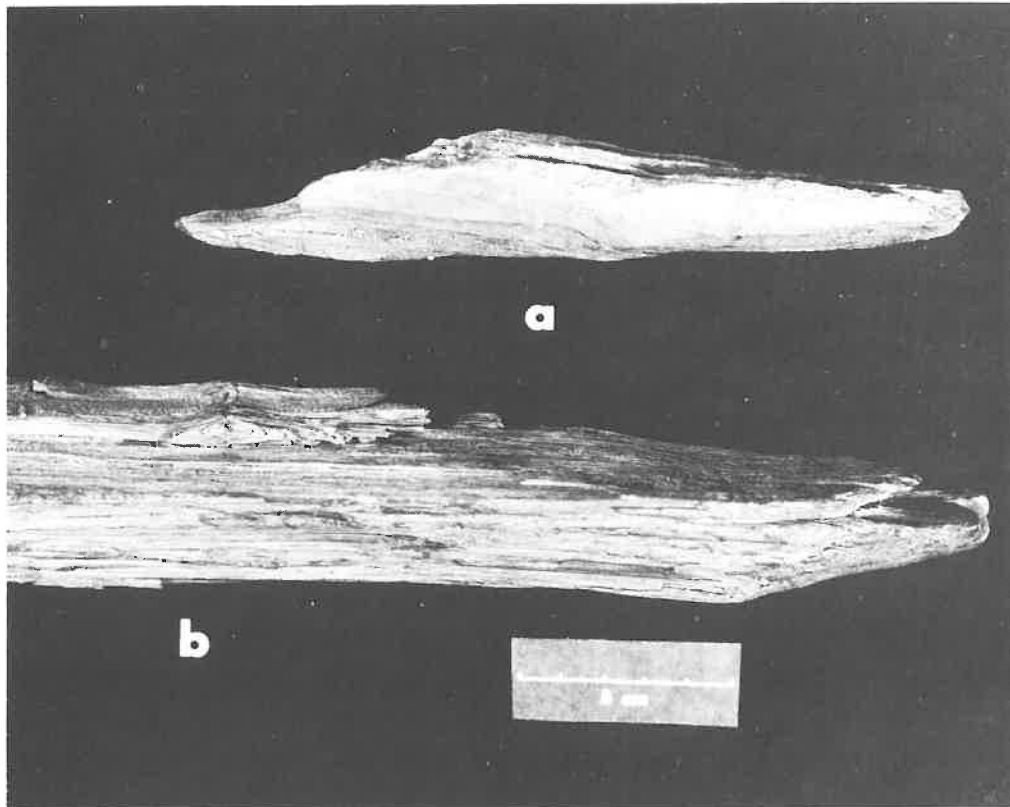


PLATE 14 - Travois poles from 48BH704: a, Cat. #95697; b, Cat. #95698

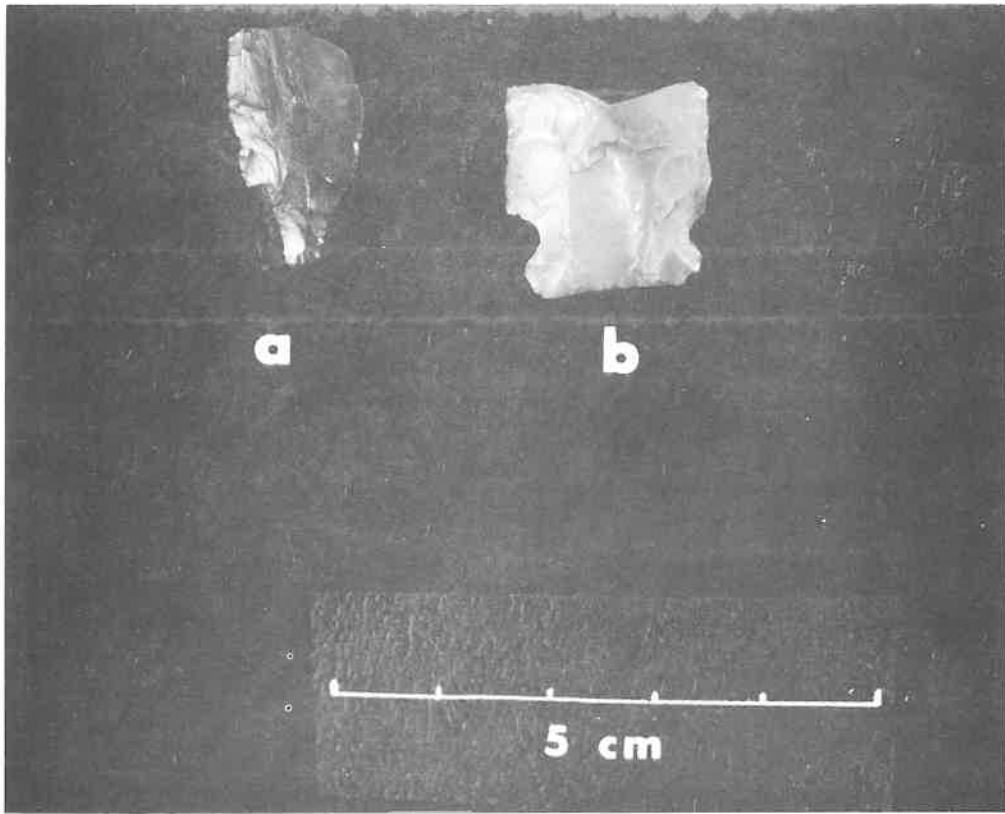


PLATE 15 - Artifacts from 48BH732: a, channel flake; b, projectile point (Cat. #'s 96009, 95972).

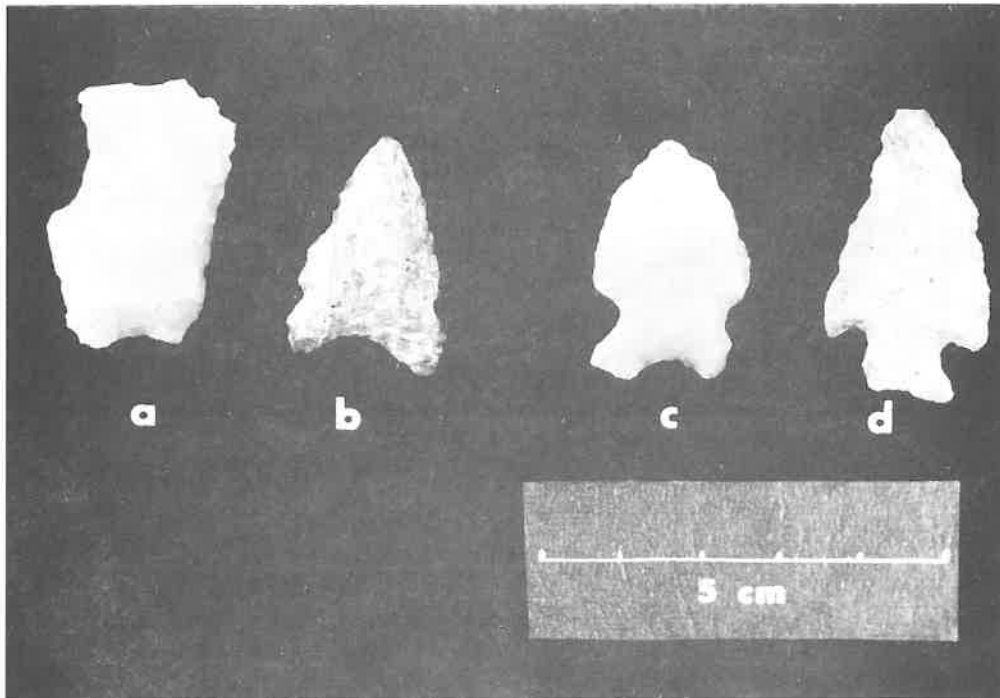


PLATE 16 - Projectile points from 48BH732. Cat. #'s (a-d, respectively): 95895, 95961, 95962, 95965.

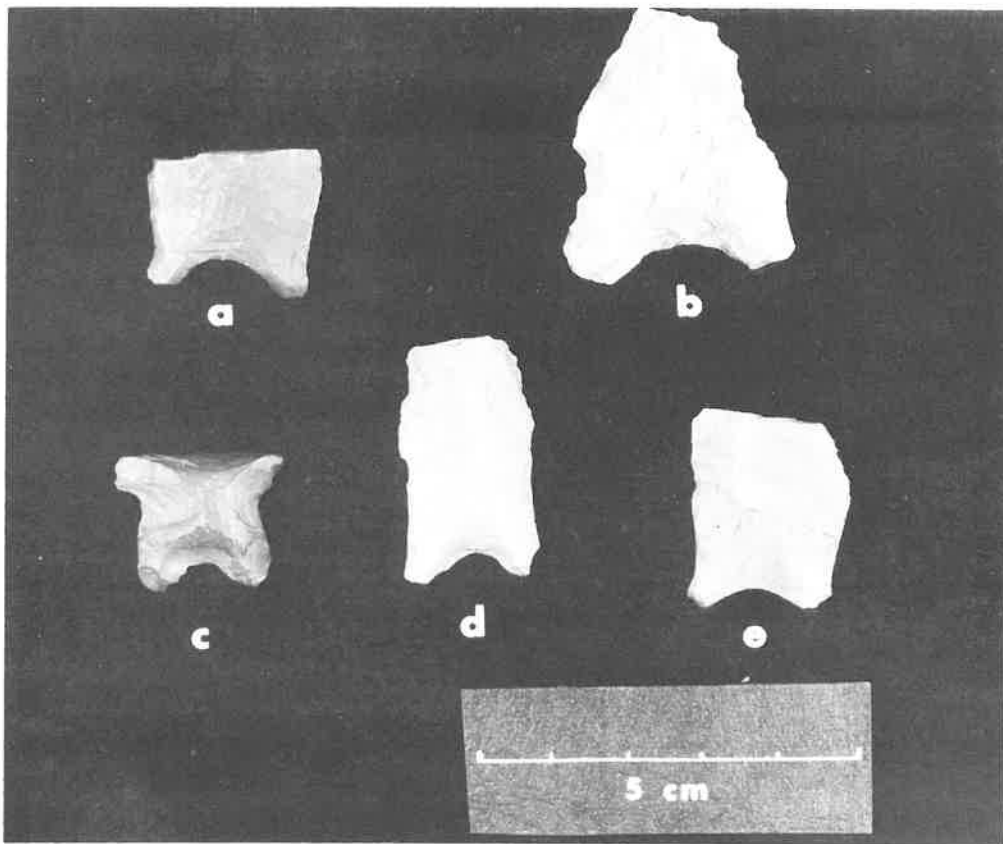


PLATE 17 -Projectile points from 48BH701. Cat. #'s (a-e, respectively):
95751, 95759, 95806, 95755, 95770.

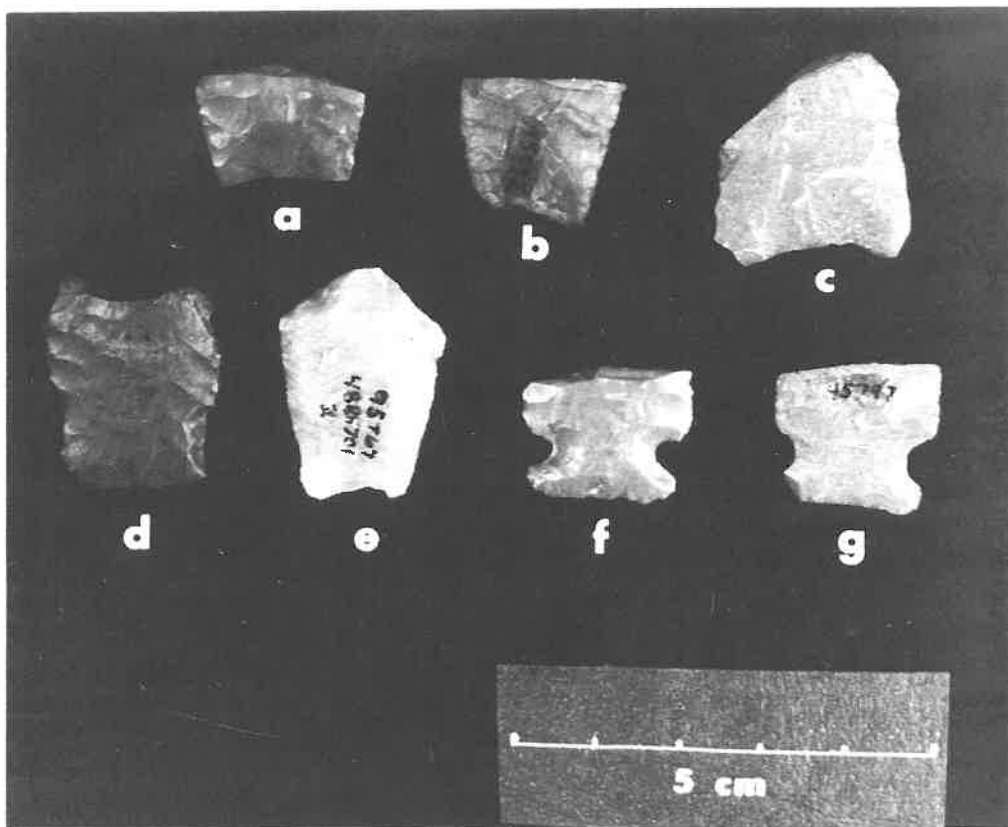


PLATE 18 - Projectile points from 48BH701. Cat. #'s (a-g, respectively):
95773, 95772, 95771, 95734, 95767, 95775, 95797.

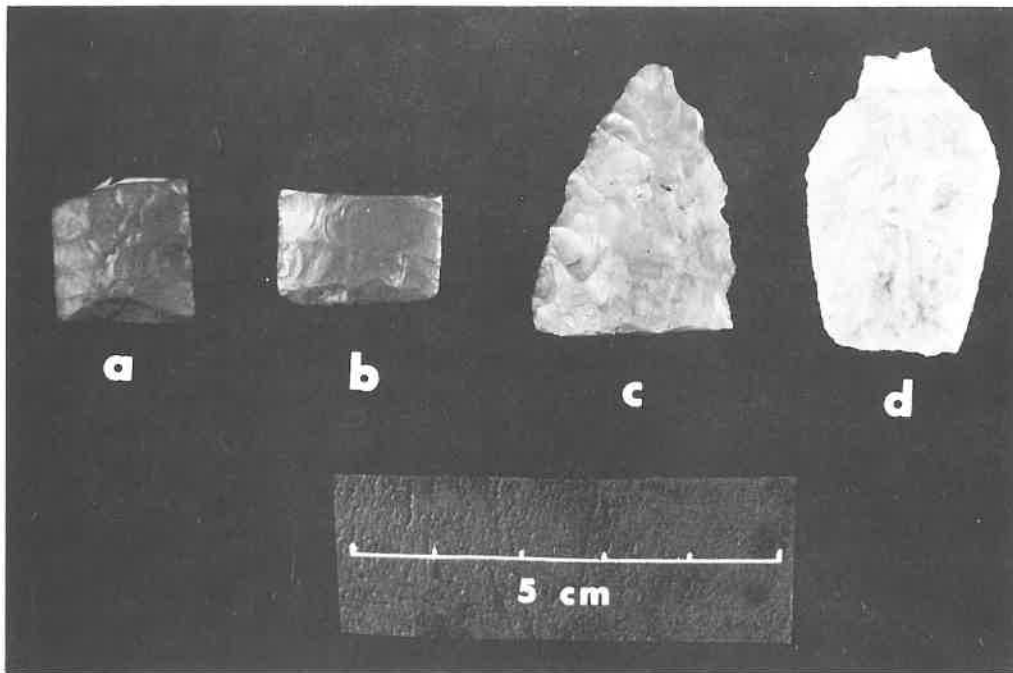


PLATE 19 - Projectile points from 48BH701. Cat. #'s (a-d, respectively) 95754, 95757, 95750, 95701.

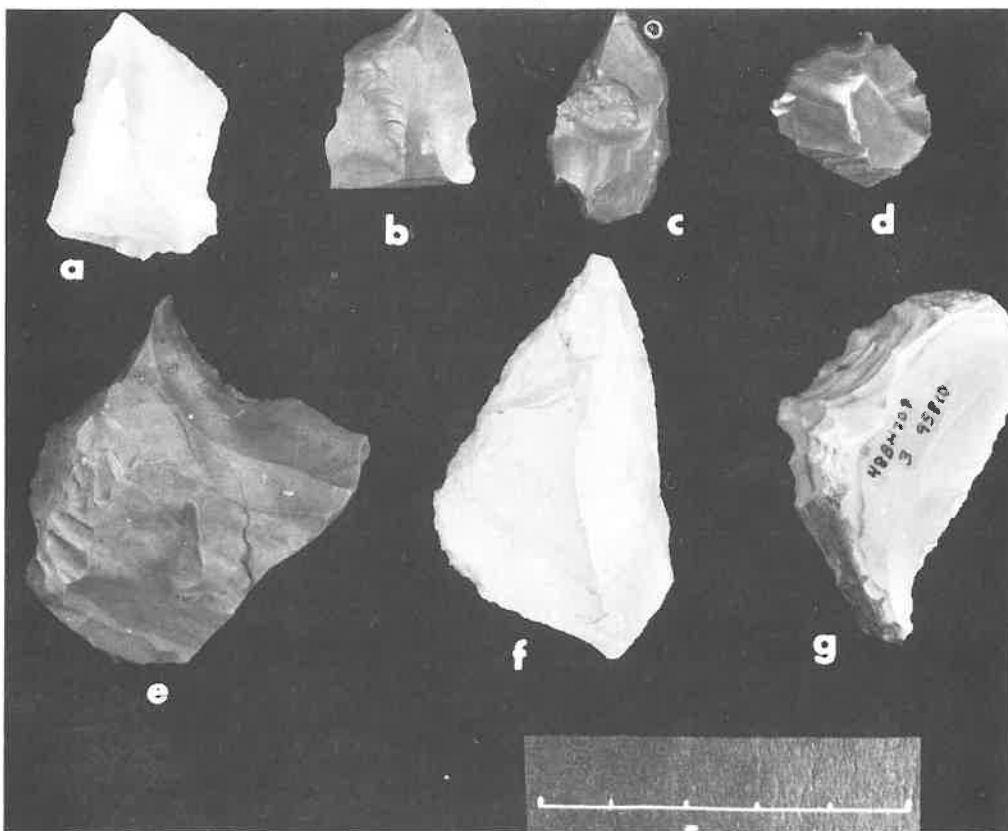


PLATE 20 - Artifacts from 48BH701: a-e, graters; f & g, flake tools (Cat. #'s 95782, 95795, 95963, 95845, 95781, 95801, 95810).

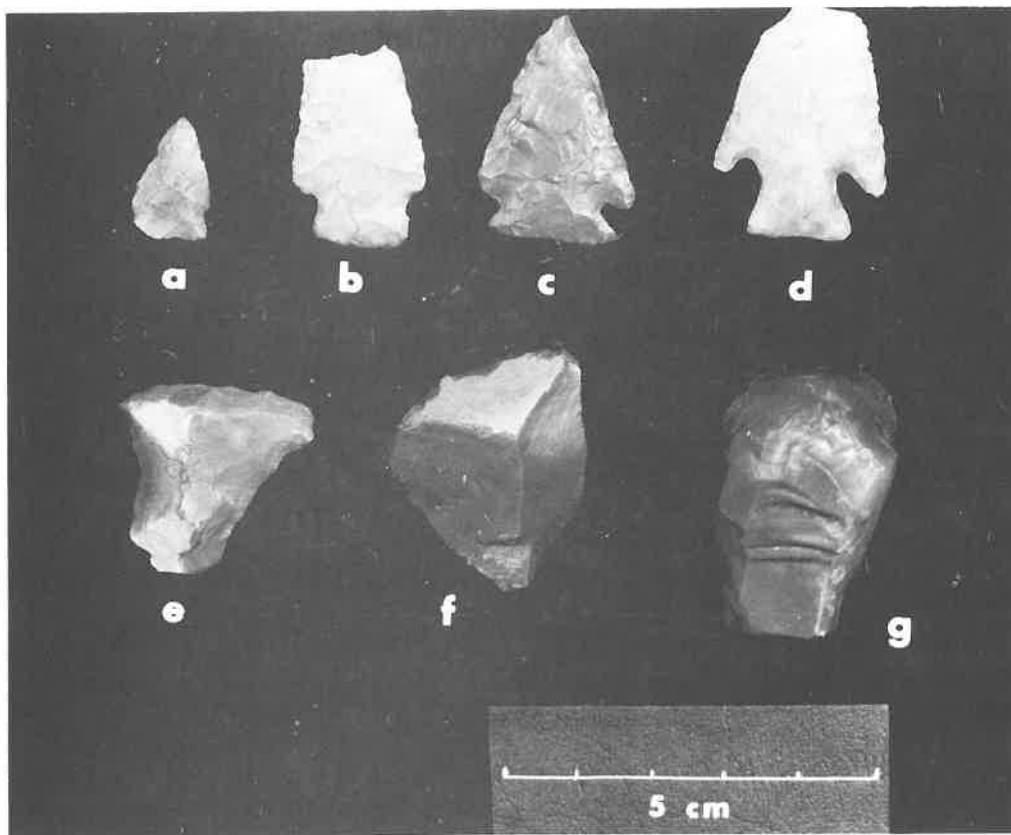


PLATE 21 - Artifacts from 48BH701: a-d, projectile points; e-g, scrapers (Cat. #'s 95758, 95756, 95757, 95788, 95779, 95822, 95777).

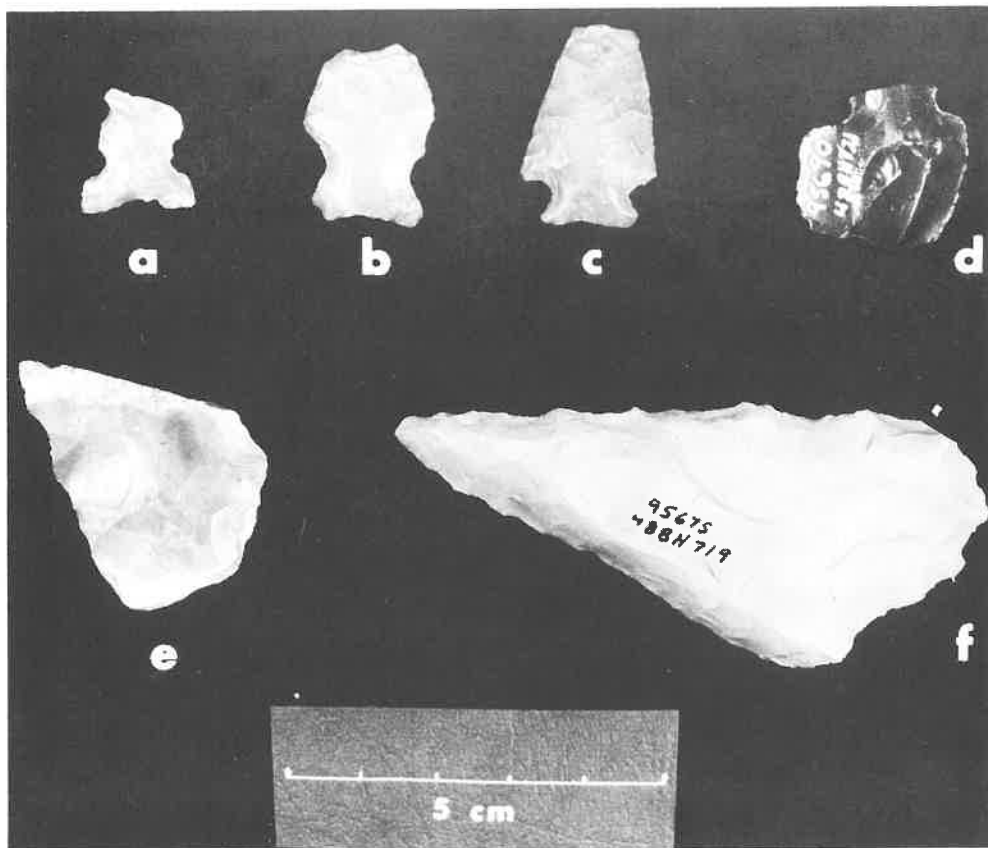


PLATE 22 - Artifacts from 48BH719, 48BH722, and 48BH729: a & b, projectile points from 48BH722; c, projectile point and d, drill base from 48BH729; e, biface from 48BH722; f, unifacial tool from 48BH719 (Cat. #'s 95572, 95574, 95682, 95690, 95577, 95675).