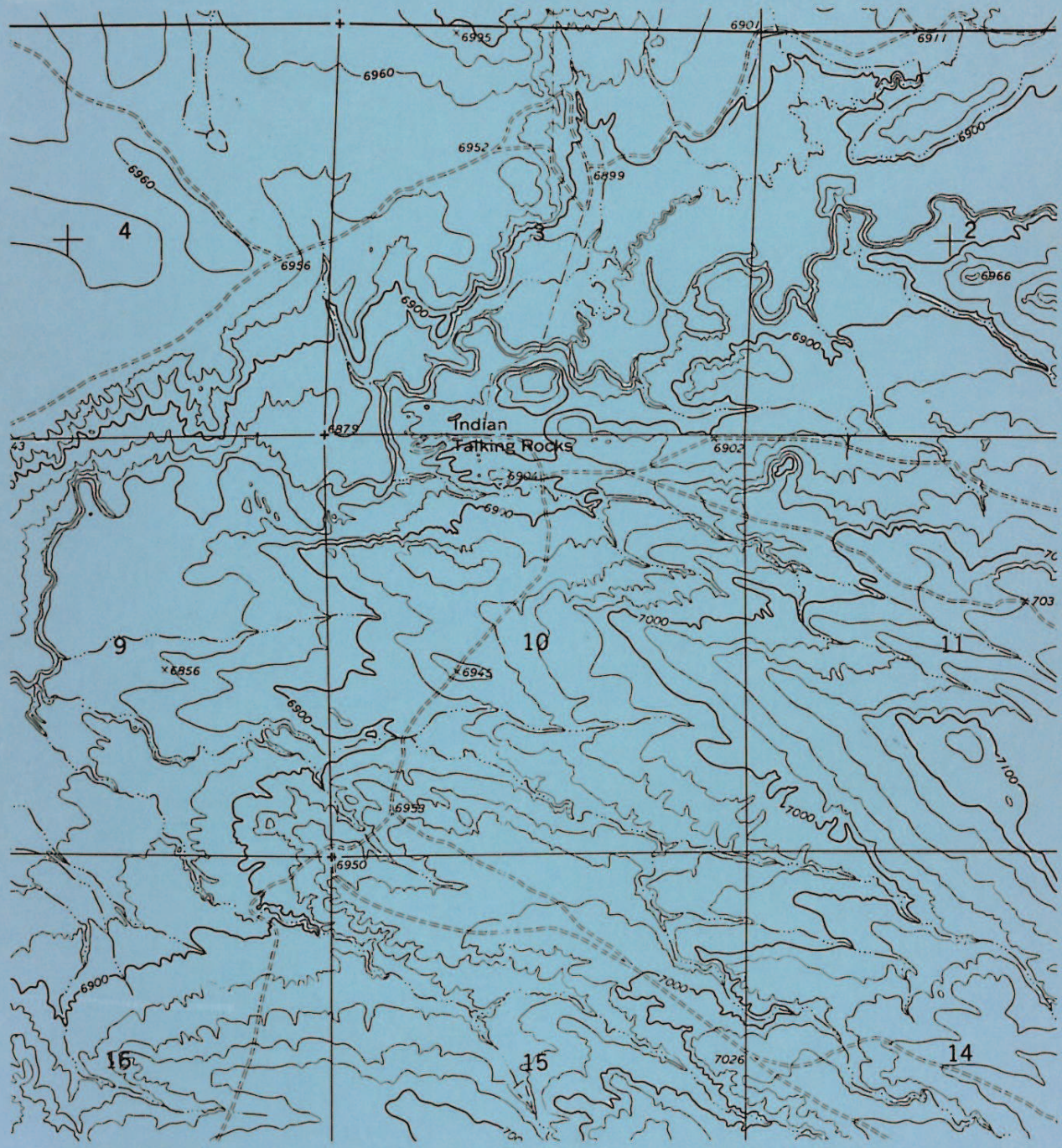
WYOMING
ARCHAEOLOGICAL
SOCIETY

THE WYOMING ARCHAEOLOGIST



SEPTEMBER 1971 VOL. XIV NO. 3

THE WYOMING ARCHAEOLOGIST is published quarterly by the Wyoming State Archaeological Society, Grant H. Willson, Editor. Address manuscripts and news items for publication to: The Editor, 1915 East 15th Street, Cheyenne, Wyoming 82001.

NOTE: Membership period is from January through December and includes all issues published during current year regardless of the month the subscription commences. All subscriptions expire with the Winter issue and renewals are due the first of January each year.

NOTE: If you move or have a change of address, please notify the Executive Secretary, P. O. Box 122, Cheyenne, Wyoming 82001. Your WYOMING ARCHAEOLOGIST will not be forwarded unless a payment of 50¢ is received for return and forwarding postage.

NOTE: Checks for Chapter subscriptions and renewals should be sent to the Chapter Secretary involved. All other checks, subscriptions and renewals should be addressed to: Milford Hanson, Route #1 - Box 171, Cody, Wyoming 82414. Correspondence and orders for back issues should be addressed to Lou Steege, P. O. Box 122, Cheyenne, Wyoming 82001.

. . . . . .

1972 MEMBERSHIP NOTICE
WYOMING ARCHAEOLOGICAL SOCIETY, INC.

_____ Individual Associate Membership @ $6.00 per year.

_____ Single Active Membership @ $5.00 per year. _____ Chapter Name.

_____ Family Active Membership @ $7.50 per year. _____ Chapter Name.

_____ Institutional Membership @ $7.50 per year.

_____ Other Membership, including: $10.00 Supporting, Yearly
(Circle One) $20.00 Contributing, Yearly

Please make your checks payable to WYOMING ARCHAEOLOGICAL SOCIETY, INC.

Name _____

Address _____

City _____ State _____ Zip Code _____

APPENDIX III

SEPTEMBER, 1971 ISSUE CONTENTS

EDITOR'S NOTES

We missed a lot of you at the Summer Meeting at the Vore Site near Sundance. Therefore, we included an article from the Highwayman on the status of this site, and the last pictures taken by Dr. Frison as the test pit was closed up. Mr. Bill Sutton will contact the necessary Bureau of Roads officials as to feasibility of further interpretative development. The pictures clearly show the efficiency of this kill site.

Of the recovered tool assembly were some one hundred Late Prehistoric Period projectile points, side and base notched, along with stone bifaced choppers, and retouched flakes.

The University crew comprised the following students:

Chuck and Sandy Reher	Lee Tierney
Ross Hilman	Roger Garling
Barbara Lore	Charles Jefferson
Cathy Mahan	Tim Karnes
George Zeimens	

A short business session on Saturday night left lots of time for visiting. The site being over forty feet deep in the bottom of a sink hole was hot. Society members pitched in and removed skulls for transport to the "Frison Bone Yard", and on Sunday laid bridge timbers thus closing the site.

WYOMING ARCHAEOLOGICAL SOCIETY

September 29, 1971

Dear Fellow Members:

Dr. Frison sounds the call for the Annual Fall Workshop, which will be hosted by the Anthropology Department during Homecoming, October 23 and 24, 1971. We think this will be the ideal time for such a gathering weatherwise, and with the excitement of Homecoming you cannot afford to miss this meeting.

Registration is from 8:00 A.M. to 9:30 A.M., Saturday, the 23rd, in the Classroom Building. If you get lost, directions will be posted on Anthropology Department doors.

The session will run all day, but you may break for the game. The evening banquet will be held at 7:00 P.M. at the Whirl Inn, just off campus to the east. A very interesting speaker is planned for the event. George and June Frison will host an open house "among the bones" after the banquet. Banquet fee is $4.00 per person, and you must make room reservations early, as Laramie will be crowded.

The Cheyenne Chapter volunteered to assist in setting up, registration and keeping order at the Open House. Frankly, they aren't up to it, so I would like you, you and you to volunteer.

If everyone would bring displays or items needing interpretation, the meeting would be more meaningful.

Also, there is so much more to add to the story of Wyoming Archaeology since the summer digs. The petroglyph survey, under Helen Shuster, has turned up so much that is new and exciting. The Vore Site excavations were so overwhelmingly abundant that you won't believe it until you see the "buffalo bone yard".

Sincerely,

Grant H. Willson

Grant H. Willson

TALKING ROCKS
SITE: 48 AL 303

By Grant Willson

Early in June a convocation was held at a petroglyph site in Shirley Basin, approximately 25 miles north northeast of Medicine Bow. That word convocation lends a real air of dignity to what was truly a rather rowdy affair. Some wag having suggested that we assemble in the Sheepherder's Room of the old Virginian Hotel before braving the trip into the wilderness. The faithful guide was a little dubious of the location having been there eight years previously. But anyway, we found in Section 10, T25N, R76W, on the Boot Heel Quadrangle, a wind eroded outcrop of Lakota sandstone which contained a few petroglyphs but was literally covered with thousands of shallow to deep grooves which for lack of any better term will call "tool grooves". The tan-colored, fine-grained cretaceous sandstone outcrop formed a series of parallel walls from a few feet to twenty feet high with a level space forty to sixty feet wide between walls. This formation made it easy to merely fence the narrow open ends in order to make the excellent sheep corrals that existed. That these walls created choice camp sites, by lying at an angle against the prevailing northwest wind, was evidenced by many burned hearth stones, charcoal, and flake debitage. That's the erudite term for chippings being all over the place. It was also sadly evident that the choicest camp site had been screened and the landowner, the late Merle Atkinson stated that for several consecutive years some schoolmarms from Denver had gotten permission to camp at the site. The late Mr. Felix Atkinson homesteaded on Sheep Creek just north of this site in 1898 and by working bands of sheep on shares managed to build a large spread which is now in the hands of his surviving sons, whom we thank for permission to bring in the Society members.

Rumors of the "Talking Rocks" were common knowledge throughout the Basin but until I met the landowner, then Merle Atkinson, I could find no one who had been there. The name was probably bestowed by the original township surveyors early in the 1880's.

While the group fanned out looking for artifacts which were quickly found, Dr. Helen Schuster (Cultural Anthropologist), Joanne Mack, Dr. Tom Brockman (Social Anthropologist), and Mary Helen Hendry took the following excellent photographs.

We are enclosing a petroglyph site report form to show all the desired information needed by Dr. Schuster. If you know of any out of the way sites that might have escaped notice of the survey, please send a report to the University.

Shield-bearing, pecked figure with arms visible behind shield.

Leaf shaped designs deeply incised below ruler.

Lanceotate shaped designs just above ruler.

Horizontal stick figures with square shoulders. Delicate 3 toed bird tracks were found on one panel.

In foreground is the campsite area which has been extensively screened.

Bird Tracks

The unique feature of "Talking Rocks" was of course the tool grooves. In the absence of polished stone tools, we may suppose that bone was used here.

Here is an ecology puzzle. In this area were three dead skunks and this fully articulated skeleton of a skinned rabbit.

SITE REPORT FORM FOR PETROGLYPHS AND PICTOGRAPHS
DEPARTMENT OF ANTHROPOLOGY, UNIVERSITY OF WYOMING

C/O Helen Schuster

I. REPORTED BY:

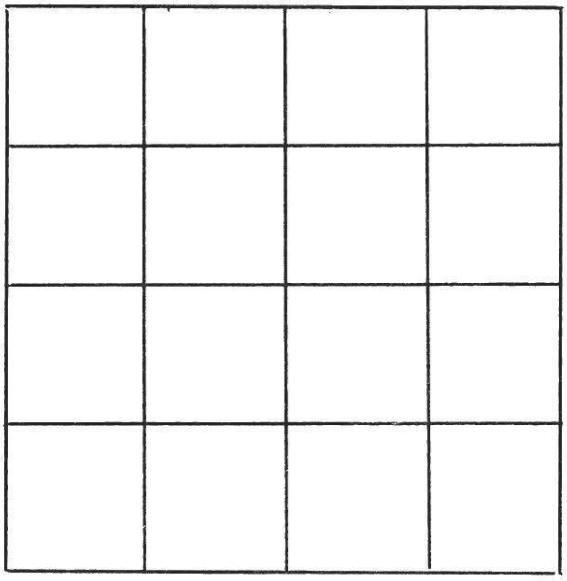
Name _____ Date _____

Address _____ Site Name _____

_____ Site Number (if known) _____

Telephone _____

II. LOCATION: County _____ State _____



Section _____ 1/4 of 1/4 _____

Township _____ Topo. Map Quadrangle _____

Range _____

Directions for reaching site: (towns, roads, creeks, etc.) _____

_____

_____

(Use separate sheet for maps, sketches, etc.)

Nearby landmarks (including drainage, if known): _____

_____

Rock art is: on cliff _____ in cave _____ other _____

III. DESCRIPTION:

Rock: Kind _____

Approximate dimensions of decorated area: _____

Method of decoration: Pecked ____ Incised ____ Painted ____ Other ____

If painted, state color or colors used _____

Design Elements: (Use separate sheet for sketches, etc., showing approximate scale.)

Animal or bird-like _____ Human-like _____ Geometric _____

Unidentifiable _____ Other _____

Do all pictures appear to be of same age? _____

Are some designs drawn over others? _____

Are some designs better preserved than others? _____

Natural defacement _____

Vandalism: Defacement _____ Removal _____

Possibility of destruction of the site _____ How? _____

IV. ASSOCIATED FEATURES: Other known archaeological sites in the area ____

_____

_____

Knowledge of previous archaeological work _____

_____

V. ADDITIONAL REMARKS: _____

_____

_____

VI. PHOTOGRAPHS TAKEN: _____

By whom? _____ When? _____ Where filed? _____

VII. PUBLISHED REFERENCES: _____

_____

VIII. OWNERSHIP: Federal _____ State _____ Private _____

If private: Present occupants _____

Address _____

Present landowner _____

Address _____

Attitude of owner toward photographic investigation of Indian rock art.

_____

(This report will be kept confidential.)

CAN YOU DIG IT?

(Reprinted from THE HIGHWAYMAN, Vol. 21, #3, 1971)

Buffalo bones and centuries-old artifacts aren't usually associated with Highway Department operations, but they're fast becoming important considerations in Wyoming's highway construction program.

Over the years, there have been several sites of interest to archaeology and history buffs uncovered in connection with proposed highway construction. And with every highway-related discovery, the Department goes out of its way to insure that the site is preserved for Wyoming residents and others who, both literally and figuratively, can really "dig" them.

CUE FOR ACTION

The Department has no specific procedures for dealing with these archaeological finds, but rather handles each new discovery on its own merits. However, the Department usually takes its cue for action from Dr. George Frison, state archaeologist, who is called in to investigate when a discovery is made. After careful examination, Dr. Frison reports his findings and makes recommendations to the Department.

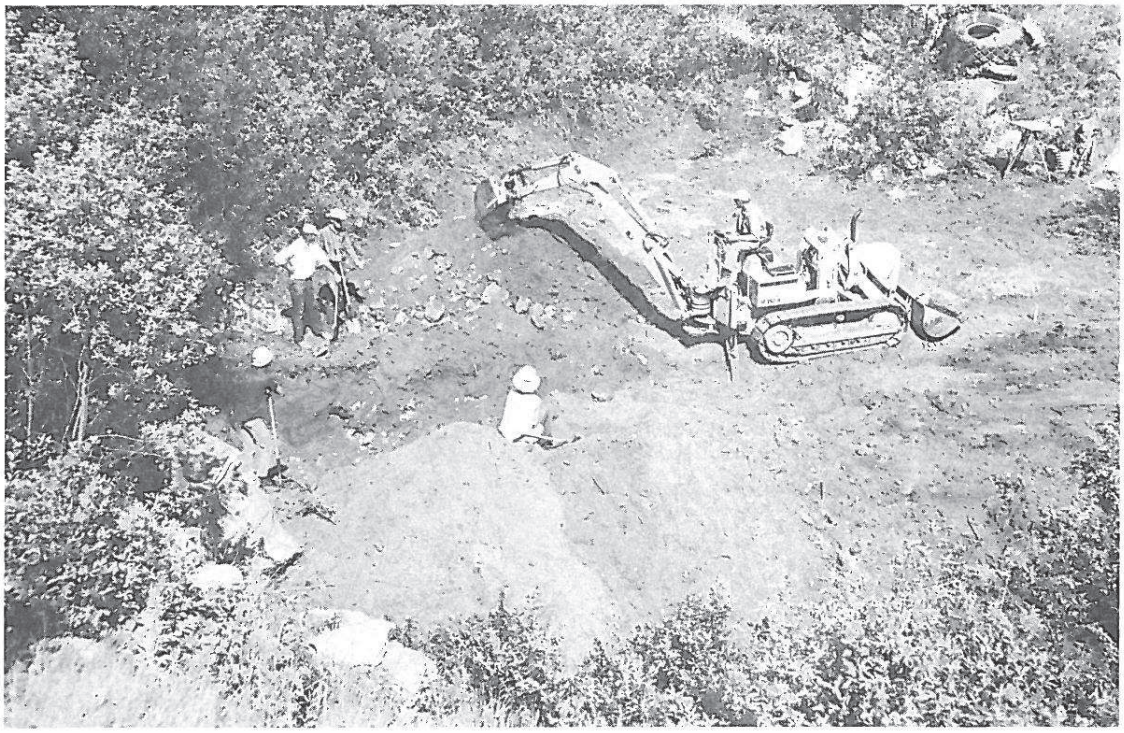
According to Dr. Frison, "The Highway Department always has been very cooperative in handling these discoveries. In addition to the Department as a whole, several of its employees, including Bill Sutton (retired), Bill Sherman, Grant Willson, and Lou Steege, have been especially helpful".

Dr. Frison and a small group of workers, often members of chapters of the State Archaeological Society who donate their time, excavate these sites as soon as possible after they have been discovered. Sites located in areas scheduled for construction or development, of course, are given priority in excavation. Nearly all excavation must be done by hand to avoid destroying bones and artifacts. Equipment used generally consists of brushes, small backhoes and sifters.

To facilitate identification of items removed from the dig areas, each site is laid out in a grid-type pattern before any excavation begins. The locations of remains are noted according to letters on the grid pattern as the remains are removed from the site. Usually, the items then are placed in labeled containers and transported to the University of Wyoming for further study. Through this identification procedure, it is later possible to reconstruct the original excavation site at the University. After studies have been completed, bones and artifacts usually are put on display.

DELAYS TO A MINIMUM

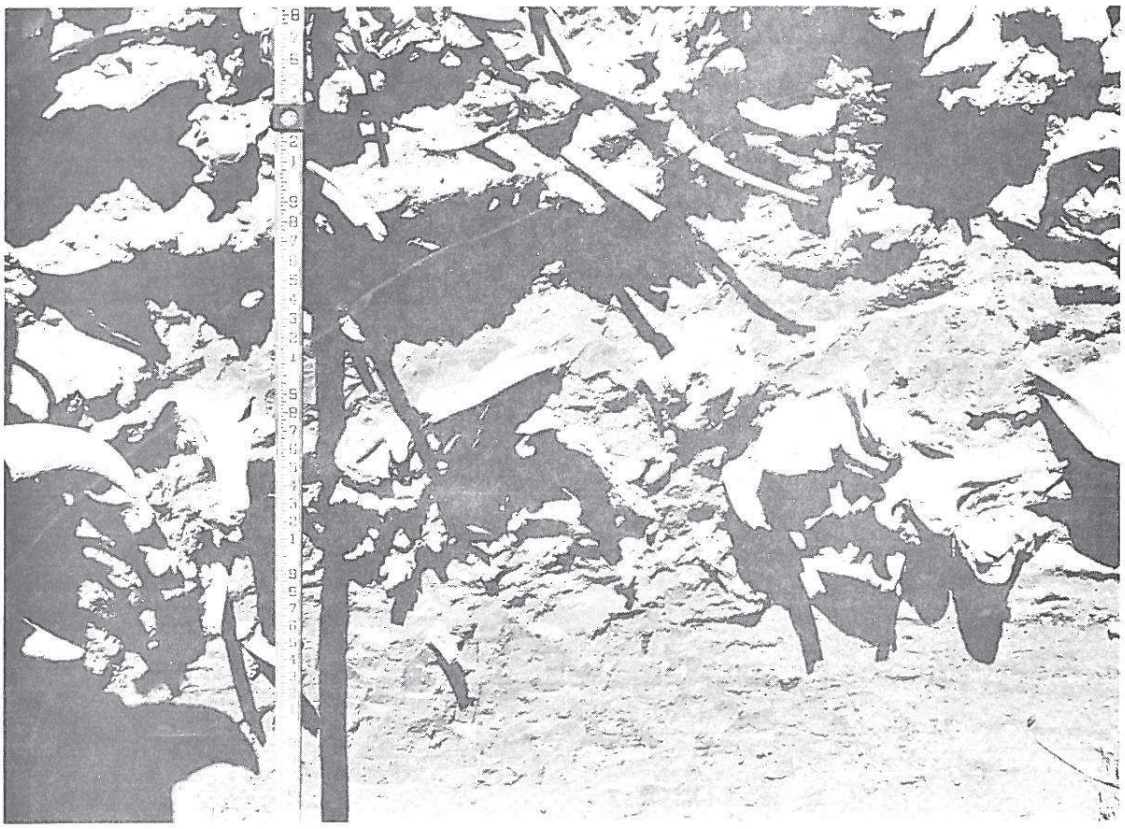
As the Department conducts a thorough investigation of any areas to be used



Early in July 1971, work was begun to clear the sterile overburden, and to prepare for test trenches and test pit which would show the total depth of this bison kill site. See July issue of Wyoming Archaeologist for surface picture of Vore Site.

After stripping sterile overburden the time-consuming, hand-trowling work begins.

Profile of upper portion of test pit.



Profile of lower portion of test pit. Main prolific bone layer was approximately 9 feet thick.

Looking down at the thinner layers of bone as test pit nears bedrock at approximately 15 feet below surface level of test pit.

Heavy bone concentration thinning out and preservation of bone not as good.

for a highway months before construction begins, discoveries generally are made well in advance of any actual construction. In most instances, a site either can be excavated during the interval between its discovery and when construction is scheduled to get underway, or the alignment of a proposed road can be changed to avoid the area. It has not, as yet, been necessary to delay actual construction on any proposed project because of an archaeological discovery.

If it is ultimately decided to alter the alignment of a proposed highway, the new alignment must be resubmitted to the Federal Highway Administration for approval. Additional Department time also is required for redesigning the section of the road involved in the realignment. However, as all this takes place relatively early in the planning stages for the proposed road, delays are kept to a minimum.

RECENT FIND

One of the most recent archaeological finds in connection with highway construction in Wyoming was uncovered along a proposed new section of Interstate 90 between Sundance and the South Dakota line. While drilling a profile of the area for foundation investigation, a Highway Department geology crew brought up chips of bone and teeth in the samples.

The drill crew, which sonsisted of Bart Olson, Jim Elliott and Don Corso, all from the geology division at the headquarters office in Cheyenne, first believed the area to be a burial ground for stock which died in a hoof and mouth disease epidemic which swept the area some 50 years ago. This theory, however, was discounted and the area was identified as a buffalo trap.

According to Olson, "We weren't surprised to come up with the bones, but we were surprised at the size of our find. You never know what you're going to come up with when you start drilling."

Bill Lesco and Max Alworth , also part of the Department's geology field crew out of Cheyenne, later explored the site further, uncovering a bison skull and other bones.

Following additional Department investigation, it was determined that the remains were concentrated in a 10-foot-deep layer about two-thirds the size of a football field, located approximately five feet below the bottom of a 40-foot-deep sink hole. The sink hole was created by water acting against limestone in the area. Eventually, this dissolving action caused the limestone to collapse, resulting in the sink hole.

After Dr. Frison was called in to investigate the site, it was decided to change the proposed alignment of a 1.8-mile-long section of the Interstate to preserve the site. According to original plans for the road, the sink hole would have been located in the

median strip of the Interstate. This would have required completely filling in the sink hole and covering up the site.

As of this writing, Dr. Frison and his associates are in the process of excavating the site, and no estimate as to the age of the find has been made. Excavation of this one site was expected to require more than a month of work.

Several divisions within the Highway Department - geology, road design, route location and right-of-way - worked together in saving the site. Approximately $1,500 also was required in additional Department design time to make the necessary changes in alignment of the road.

As a result, however, the Interstate will run well south of the site of the sink hole, which will be located in an area between new Interstate and old US 14. Access to the site will be provided by way of US 14, which will remain as a service road through the area.

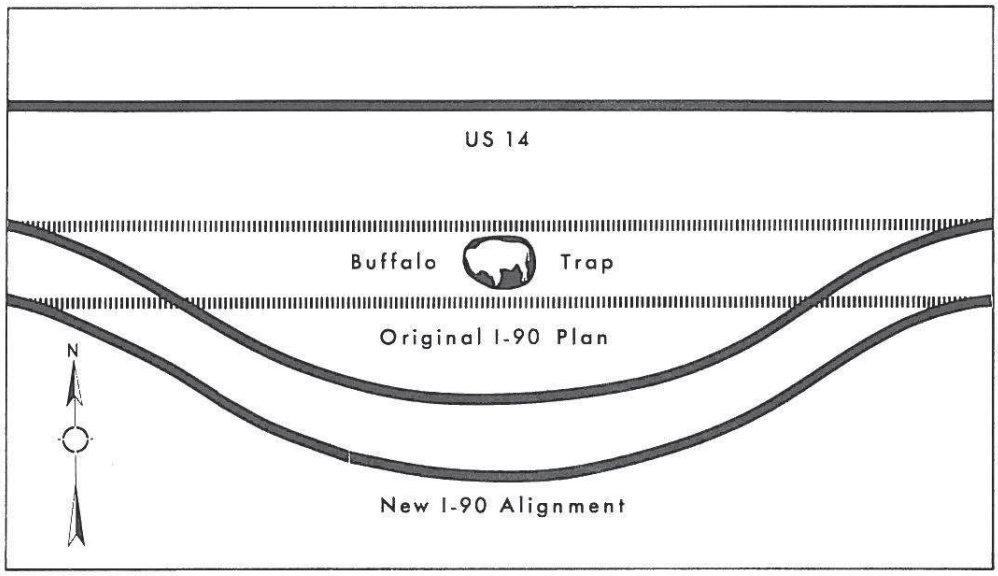
FIRST EXCAVATION

The first archaeological excavation in connection with highway construction took place more than three years ago, in 1968, southeast of Cheyenne. This excavation involved a campsite dating back to 500 B.C. The site was uncovered near the Cheyenne marginal route along Interstate 80. After investigating the area, an agreement for excavation was reached between the Highway Department and the Cheyenne Chapter of the State Archaeological Society.

In this instance, it was not necessary to change the alignment of the highway. Lou Steege, chief clerk in the mailroom at the headquarters office, was in charge of excavating the campsite, under the supervision of Dr. Frison.

The Department also currently is considering construction of a rest area at the site of a buffalo jump between Glenrock and Casper, The site is located just off the highway near the West Glenrock interchange on Interstate 25. Although excavation of the site was accomplished by the University of Wyoming under a science foundation grant in 1969, it is believed that the area continues to hold great interest for Wyoming residents and visitors alike.

Whenever anyone digs, as the Highway Department does continually in connection with its highway construction program, history is likely to be uncovered. Whether these remnants of the past are preserved for the future or lost forever depends upon the diggers. Although the Department constantly looks to the future in constructing a modern network of roads and highways, it also has an eye for protecting the past. The Highway Department really knows how to "dig" it!



The area of the sink hole was directly in the path of the original alignment for Interstate 90. The new alignment will run well south of the sink hole, which will be accessible by way of old US 14.

REPORT OF LIBRARY COMMITTEE

April 3, 1971

This report concerns a study of possible ways of increasing the use of the Wyoming Archaeological Society Library, located in Riverton, Wyoming. The study was done at the request of President John Albanese, with Bob Randall of The Cherokee Trail Chapter, Saratoga designated as the person in charge of the study.

The first part of the report is a commendation to Mrs. Helen Lockingbill, the state librarian. She has been very cooperative, is doing a fine job as the librarian, and has indicated a concern and willingness to do whatever is necessary to make the library materials more accessible and used throughout the state. We can ask no more than that!

The second part of the report concerns the local chapters. As a part of the study, The Cherokee Trail Chapter was supplied with 25 different publications from the state library, and these were then checked out by the members. It became quite evident that the members will utilize the materials if they are available. Therefore, it would seem logical to say that each chapter needs a vital, active member as its librarian. One who is willing to obtain books, and other publications from the state library and then check them out to the members. It would seem that a great increase in library circulation would occur if each chapter would check out from the state library a number of the publications on a monthly basis, and in turn check these out to the chapter members. Also, each chapter would then need to set aside a period of time at each of their indoor meetings to be devoted to library activities. This could include reviews, reports, announcements of materials available etc. As is true in all activities, the state organization can be only as active and vital as are the local chapters, and the library is no exception.

The third part of the report concerns the state library collection itself. If increased use of the library is our goal, and it certainly should be, the library collection needs to be organized along standard library procedures. That is, the entire collection needs to be subject indexed, and a card file system used. Any good library has to do this. Under present conditions, it is extremely difficult to locate information on a specific subject except by going through all of the publications available. For example, how much information is contained in the state library on Radiocarbon dating? It is virtually impossible to know, and yet under a subject indexing system, the information would be readily available. Not only should the state library be subject indexed, but also each local chapter should have a copy of the card file. A difficult task? YES! an impossible task? NO! If we can organize a dig site workshop each summer, it would seem that the same approach could be utilized to work a weekend with the library materials in Riverton, subject indexing the entire collection and typing the cards. If time did not allow, the typing of cards for all of the chapters, then a master list could

be published in Wyoming Archaeologist so that each chapter could then type its own cards. The Sears List of Subject Headings, 9th Edition, has a subject indexing for Anthropology and another for Archaeology, both of which would seem to fit quite well for the indexing system. One the collection had been indexed, it would be possible for the state librarian to keep up with the new material and the subject indexing.

In conclusion, it must be stressed that the use of library can be greatly increased, but that it is going to require effort from all chapters, not only in terms of local organization, but also helping in the cataloging of the state collection. I strongly recommend that the state organization take the initiative and organize such a workshop.

Respectfully submitted,

Robert D. Randall
Cherokee Trail Chapter
Saratoga, Wyoming

Editor's Note: I think it is up to each chapter to make use of these publications.

CHAPTER NEWS

Fremont County

WHEN MARGARET HINEMAN FOUND HER ARTIFACT

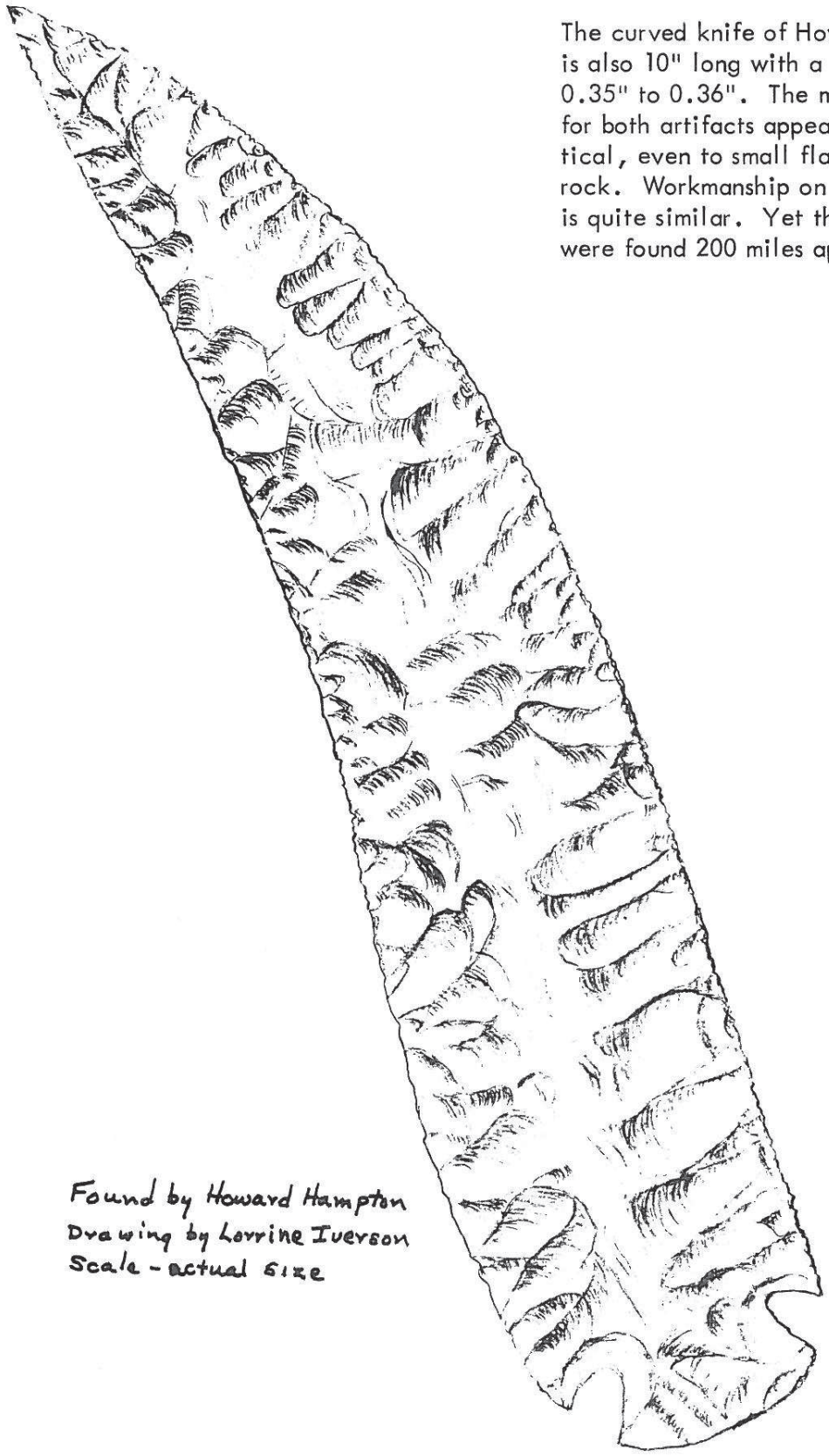
My husband, Wes, was up at seven the morning of July 6th, wanting to go "Rock Hunting". That was the last thing I wanted to do that Sunday morning. I was tired and one of the children was sick, but when Wes became a bit angry with me, I got ready and went with him.

Wes was up on a ridge looking for points while I was wearily walking around the side of the hill. He called me to come see a lovely point he had just found. Slowly, I started up the hill. The ground was still damp from a rainstorm during the night. I had only taken a few steps when I saw a bit of shiny, dark rock about the size of a 50 cent piece lying on the ground. I started to push the grass and moss away and saw large notches, then I knew I had really found something. I never pick up a nice point until Wes also has the thrill of seeing it lying on the ground. We even enjoy the imprint the point has made on the ground. I screamed for Wes, louder and louder; screams that could have meant "a rattlesnake" instead of a "perfect point". When Wes reached me I could only point to the uncovered middle section of my find. Carefully, we uncovered more and more, gazing in astonishment at its beauty and perfection. When I picked it up, I just went numb, and my legs nearly gave out. Wes was near tears with joy. I held this beautiful artifact in my hands until I got home. Just couldn't believe it!

The story Howard Hampton tells of his "find" is equally dramatic:

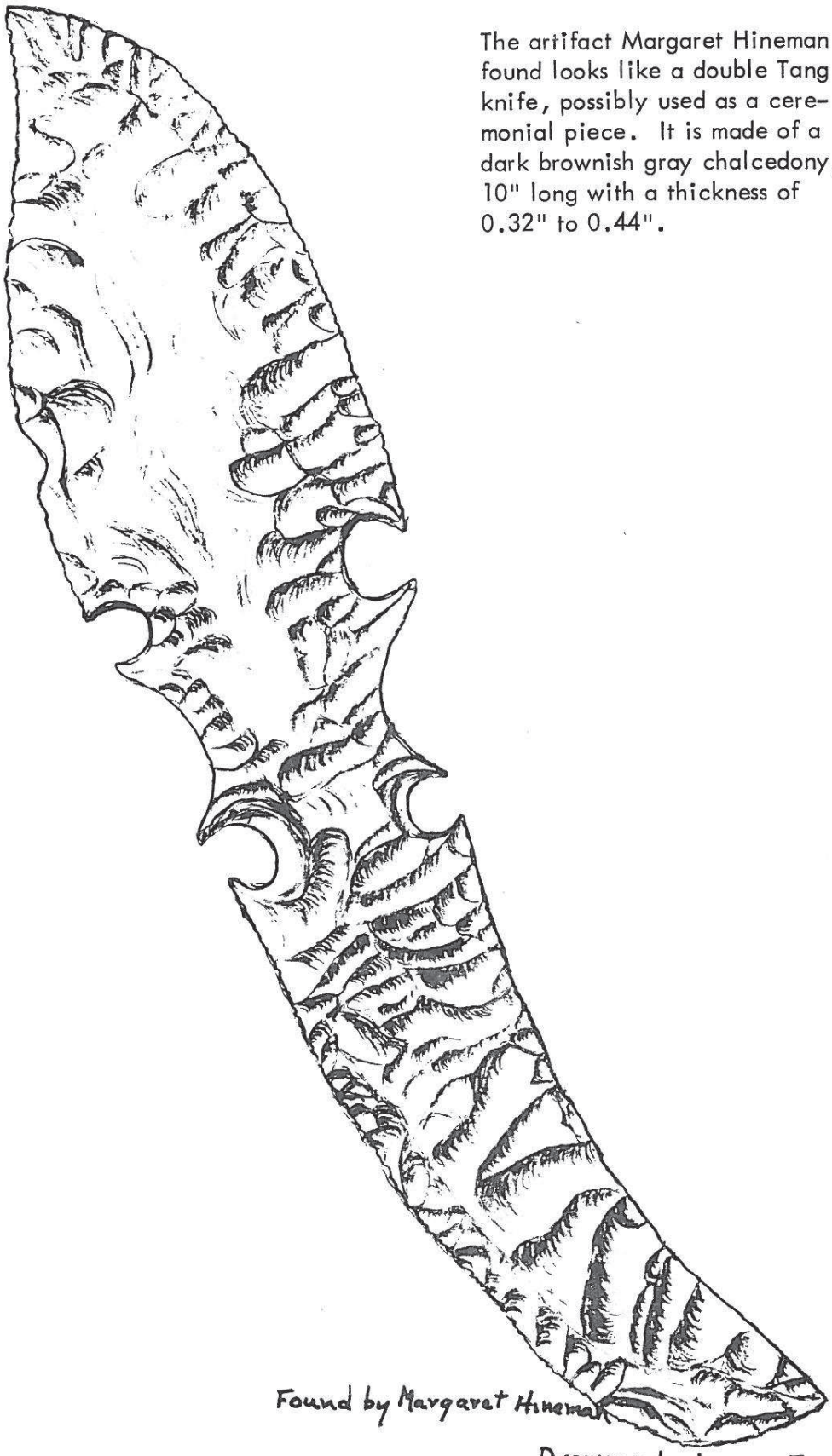
"We all have our favorite times for hunting artifacts. Some prefer cloudy, overcast days, some like to hunt when the sun is low in the sky so flaking will show up to differentiate an artifact from a shiny rock. My "lucky time" is a sunny day between the hours of ten and two. And such was the June day in 1968 when my wife and I were hunting in the South Pass area.

I had found many chippings and a few broken points in an old campsite near a stream. Then I saw a 1/2 inch tip of dark rock pointing skyward. Hoping for a perfect point, I reached down to pick it up. It didn't budge, so I gently scraped the hard soil from around it with my pocket knife. The deeper I dug, the more excited I became. My wife came over to see what was happening, so we shared the thrill of uncovering the beautiful, perfect 10 inch long knife."



Found by Howard Hampton
Drawing by Lorrine Iverson
Scale - actual size

The curved knife of Howard Hampton's is also 10" long with a thickness of 0.35" to 0.36". The material used for both artifacts appears to be identical, even to small flaws in the rock. Workmanship on the two pieces is quite similar. Yet these two pieces were found 200 miles apart in Wyoming.



The artifact Margaret Hineman found looks like a double Tang knife, possibly used as a ceremonial piece. It is made of a dark brownish gray chalcedony, 10" long with a thickness of 0.32" to 0.44".

Found by Margaret Hineman

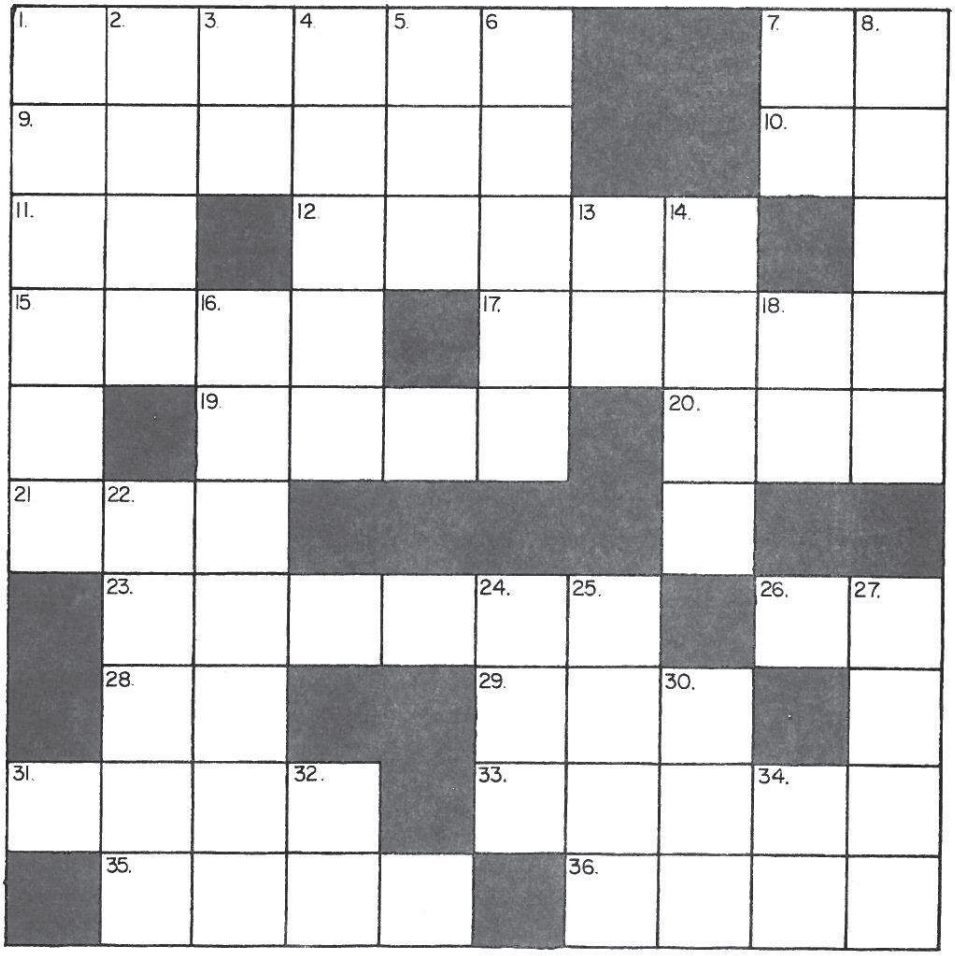
Drawing by Lorrine Iverson
Scale - actual size

ACROSS

1. Spear thrower
7. And (Latin)
9. Infertile greyish soil
10. Sumerian city
11. Silver (chem.)
12. Small ducks
15. Hole in cliff
17. Wanderer
19. Prefix, "external"
20. Colo. mountain tribe
21. Long time
23. Relating to ancestors
26. Common preposition
28. Senior
29. Gold (Span.)
31. Prejudice
33. Prefix, "dead" or "corpse"
35. Blackthorn fruit
36. And elsewhere (Latin)

DOWN

1. Fierce S.W. tribe
2. Roman garment
3. Low Dutch (Abb.)
4. Kingdom Cortez defeated
5. Foot digit
6. Clovis
7. Prefix, "good" or "well"
8. Commerce
13. "Look!"
14. Sooty matter
16. Underneath or belly side
18. Common preposition
22. A spring
24. Charged atom
25. Canadian Indian tribe
27. Implement
30. October
32. South
34. Egyptian sun god



Here is an example of a dangerous mentality. When he runs out of old pots to put together Bill Barlow will put together a crossword puzzle. No use confounding just the good people from Gillette - let's all be confused. Many thanks Bill Barlow.....

CONTINUATION OF THESIS BY JOANNE MACK

TITLED

ARCHAEOLOGICAL INVESTIGATIONS IN THE BIGHORN BASIN

PAGES 34 to 75

CHAPTER IV
TESTED AND EXCAVATED SITES

Of the 110 sites recorded in the process of surveying, four were excavated. All four were in the Canyon Creek drainage system. Sites 12, 14 and 54 each had one test pit. Site 2 had been partially excavated the summer of 1969 by a Girl Scout crew under the direction of Mrs. Caroline Adams. The pits which had been begun in 1969 were completed for the most part this season. Sites 2, 12 and 14 are rockshelters; Site 54 is an open site overlooking a deep-cut canyon. All four sites were excavated through the efforts of the writer, various camp staff members and hundreds of Senior Girl Scouts.

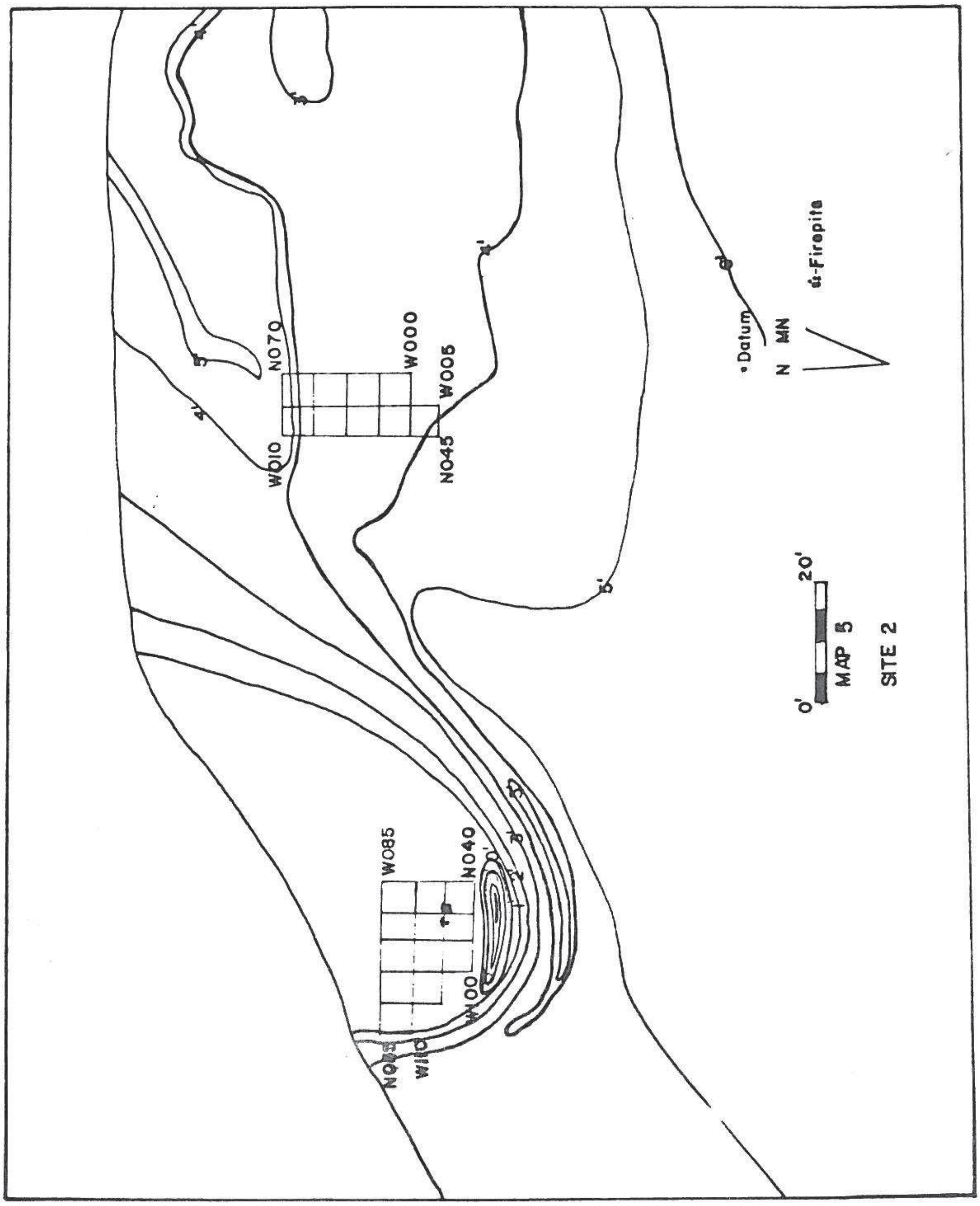
SITE 2

Site 2, Powwow Cavern or the Amphitheater, is a rockshelter cut by Canyon Creek into Ten Sleep Sandstone. It is located in the NW1/4 of the SE1/4 of section 27, T47N, R87W. It is on the north side of Canyon Creek just below its confluence with Cook's Canyon. The floor of the rockshelter is approximately five to ten feet above the creek during the summer months. At high-water in early spring it is quite possible for the water level to rise and wash over a portion of the shelter's floor.

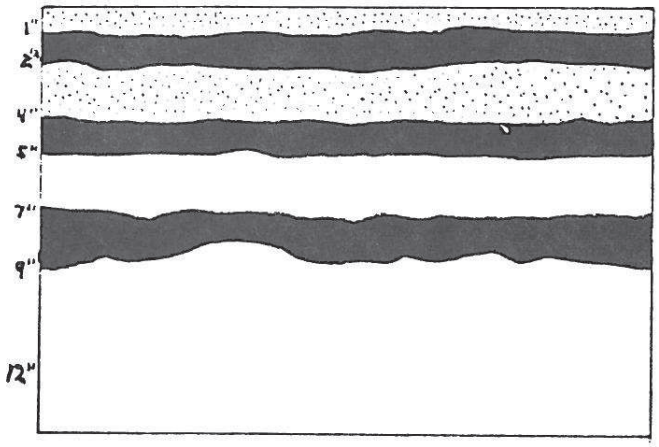
Much of the vegetation of the immediate area is capable of providing food and raw materials for other uses. Two charred chokecherry seeds (Prunus virginiana) were recovered in the unit north of the datum. Horsetail (Equisetum sp.) stems were found in both excavation units. The bark from pine, probably Limber Pine (Pinus flexilis), was also found in the excavation units. Other food plants noticed in the widened valley floor just west of the shelter are wild currant (Ribes americanum), wild rose (Rosa woodsii), snowberries (Symphoricarpus sp.) and Oregon grape (Berberis aquifolium) which would have provided fruit; sego lily (Calcohortus gunnisoni) and wild onion (Allium sp.) which would have provided bulbs. Grasses are also prominent in the open areas along Canyon Creek; their seeds being a possible source of food (Yanovsky 1936).

The shelter is about 5040 feet above sea level. The floor area is approximately 200 feet north-south and 700 feet east-west. The floor rises slightly with a low gradient from west to east (Map 5). Ceiling height varies to as much as 160 feet (Plate 1b).

The floor of the shelter is sand with occasional large chunks of sandstone rockfall from the roof scattered over its surface. There are two very large rockfalls: one at the eastern end of the shelter and the other in the western area near the excavated area. One large pit was dug by a bulldozer before the property was acquired by the Girl Scouts. It is 30 feet east-west, 23 feet north-south and 6 feet deep. The backdirt from the hole was piled south and east of the pit (Map 5); this is the backdirt sifted by crew members at different times during the summer. Evidence of human occupation is found in the west central part of the shelter in the form of artifactual debris and along the walls from the center to the eastern extreme of the shelter in the form of pictographs.


N070
W000
W005
W010
N045
W085
N040
W100
W110
Datum
N
MN
Firepits
0'
20'
MAP 5
SITE 2

N055
W110



W105

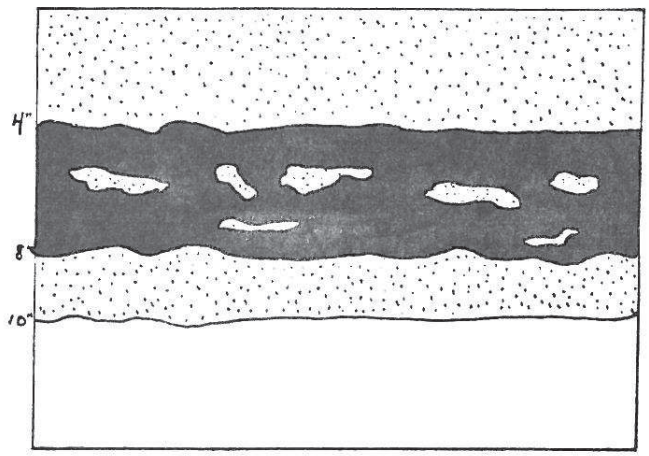
FIG. 5 Site 2

Artifacts and Sand

Charcoal

Sterile

N050
W010



W005

FIG. 6 Site 2

STRATIGRAPHY

The site is a Late Prehistoric Period manifestation (Mulloy 1958). In the excavated area north and west of the datum there are two or three charred layers with artifact material separated by sand containing artifact material, with a sterile layer between 11 and 15 inches in the south, between ten and twelve inches in the central pits and between 6 and 8 inches in the north. The units directly north of the datum seem to be one continuous level of charred wood and sand. Therefore, it would seem that the unit directly north of the datum is a single component site, and the unit north and west of the datum is a two component site. The cultural material in the unit north of the datum concludes at about 10 inches. In the unit north and west of the datum the depth of cultural material is 18 inches in the extreme northwestern pit to 10 inches in the northeastern pit. It ends at 12 inches in the southwestern pit and 25 inches in the southeastern pit. In the unit as a whole, small pieces of charcoal are found below the artifact level but with no associations. Land snails are scattered throughout the two units at all levels with apparently no association with human activity. Both may well have been washed in from upstream.

The stratigraphy of the site varies with some predictability from east to west and north to south. The first layer is of clay, silt and both domestic and wild animal dung mixed with sand. It varies in thickness from 2 inches in the west to 8 inches in the east; cultural material is found in this level. At four inches in the northeastn unit there is a layer of charred soil about an inch thick with artifacts. Below it is a layer of sand with some artifact material, about 2 inches thick. Then another charred layer of about an inch thick with artifacts is found. In this unit the sequence ends with several inches of sand, the upper inch of which contains cultural material. From 9 inches to 33 inches it is sterile. On the northwestern edge of the units west of the datum, the first charred level is one inch below the surface. Below the second charred layer is 2 inches of sterile sand, then a third charred layer varying from 1 to 2 inches in thickness, containing cultural material. This is followed by two feet of sand, the upper foot of which contained cultural material (Fig. 5).

In the southwestern pit the upper layer is 2 inches thick; it is followed by the first charred level, then 2 inches of sand and the second charred layer, 2 inches in thickness. From 7 to 35 inches is sand, sterile below 10 inches. The southeastern pit's stratigraphy differs also. The first layer is 3 inches thick, followed by one inch of charred soil, 2 inches of sand and 1 inch of a second charred layer, then 4 inches of cultural material in sand. It is followed by 4 inches of sterile sand, then a third charred level about 1 inch thick with artifactural material to 24 inches where sterile sand begins again.

At 25 inches in the whole unit north and west of the datum an inch layer of gravel is found. Ripple marks in the sand below this layer are common. The gravel layer is undoubtedly water deposited. The gravel is a mixture of quartz and chert

material, water-worn into pebbles varying in size from 1/4 to 1/2 inch in diameter. The rippling of the sand is also probably due to water deposit and not wind deposit.

The units directly north of the datum were excavated irregularly. One pit was tested to 4 feet 7 inches; others were taken down to only 8 inches.

The top layer is the same as in the units west of the datum, but it is usually deeper going in some pits to 8 inches in thickness. It contains some cultural material. An ill-defined charred level occurs below it and varies in thickness from 1 to 5 inches. This also contains some cultural material. Below this level is sand which from the two pits excavated below 10 inches indicates sterile conditions (Fig. 6).

The variation in the thickness of the top soil level may be due to wind movement through the shelter. Rockfalls and the curve of the back wall also may have contributed to the differentiated thickness of that layer.

FEATURES

Two firepits were found in the unit north and west of the datum. They were within one foot of each other in units: N045-050, W085-090; NO45-050, W090-095; N040-045, W085-090; and N040-045, W090-095. Firepit I was almost a complete circle of river cobbles and grinding tools, stained black and cracked from their contact with fire. Firepit II was only partially present. It also appeared to be made from river cobbles which were stained and cracked by fire (Map 5). Both were found about 5 inches below the surface. They were about 3 inches thick which put their base at 8 inches. They appeared to be directly associated with the second charcoal layer found in the units west of the datum.

ARTIFACTS

CHIPPED STONE

The most numerous chipped stone tools are retouched flake tools. Most are of red chert; 5 are of jasper, 3 of obsidian, 2 of flint and 2 of a fine-grained, yellow quartzite. Most of these are produced by a deliberate pressure unilateral flaking along one edge of a percussion flake. A few are flaked on more than one edge, and even fewer are flaked bilaterially. Others are use retouched flake tools in which the use of a flake for cutting or scraping causes small flakes to be broken out of the edge of the tool. These are found on retouch flakes and manufacturing flakes; one is on a cortex flake (Fig. 7a).

These tools as a group had several different possible uses. The worked edges are straight, concave and convex. Some of the flakes have worked edges of irregular outline. Those flakes with convex or straight edges were probably used either as cutting or scraping tools. Twenty of these 34 tools are use-retouched flake tools. Some of

the deliberately retouched flakes are flaked on all edges. Four of the five are broken on one or more edges, which may be the reason they were discarded (Fig. 7b,c). Two straight sided retouched flakes were used in a manner that caused the cutting edges to be worn to a polish almost obliterating the retouch flake scars. One small, straight sided tool is chipped on both sides of one edge. It may well have been a graving tool (Fig. 7d).

The retouched flake tools with concave edges fall into two categories: deep-angle spoke-shaves and low-angle concave tools. Only one of the spoke-shaves appears to be a use retouched flake tool. The other five are deliberately retouched (Fig. 7e,f). Those with a low angle could have been cutting, scraping or spokeshaving tools. Two are use retouched; the other four demonstrate a deliberate retouch (Fig. 7g). One use retouched flake may have been used as an engraving tool and bears use marks on both sides of a fortuitous, sharp-pointed break (Fig. 7h).

Seven end scrapers were recovered from the site. They are all plano-convex tools on percussion flakes. All specimens have the triangular or trapezoidal outline, providing a hafting point on the end opposite the working edge of the tool. Five are of jasper, the other two of a light cream agate. Two of the seven are composite tools in that they have a graver hook on one side of the forward scraping edge. One is on the right side (Fig. 7i), and one on the left side (Fig. 7j). The other five scrapers are similar, except that one is flaked all over the upper surface as well as the edges (Fig. 7k). One of the agate scrapers is flaked only on the front and right edges (Fig. 7l). Three of the scrapers are flaked on all edges but not on the upper surface (Fig. 7mno). The bulb of percussion has been thinned on faces of the specimens by removing two or three thin flakes, probably for easier hafting. The bulb has been completely removed on a fourth specimen (Fig. 7m).

Two complete bifacial tools were found. One is a relatively thin blade with a slightly concave base and rounded tip probably used as a knife (Fig. 7p). The other is thick; it has a slight constriction and a notch at one end, and it was probably hafted. The edges are flaked in a very irregular manner. It may have been used as a side scraper or a knife. It is made of a fine-grained yellow quartzite (Fig. 7q). Two pieces of a red chert tool fragment were found to fit together making an incomplete bifacial tool. It appears to have been shattered in the process of resharpening. It was probably used as a knife (Fig. 7r). Fragments of seven other biface tools were found. Five are of a coarse-grained quartzite, one of a fine-grained yellow quartzite and one of chert (Fig. 7s). All bifaces are rather crudely flaked with a fine retouch flaking on the edges.

Two unifacial tools were recovered. One of yellow jasper has two retouched, sharpened edges: one concave, the opposite convex (Fig. 8a). It may have been used as a knife and/or a scraper. The other tool is of red jasper. The retouched edge has a steep angle for most of its length; however, toward the base of the flake and the opposite edge, it has been retouched on both sides of the edge, giving it the biface edge of a cutting

tool. It may be that the tool broke in the process of being made (Fig. 8b).

A problematical chert tool was also recovered. It seems to be a composite tool with three uses (Fig. 8c). The bulb end of the flake has been retouched to form the edge of an end scraper. One edge is straight with retouch flakes having been taken off of both sides. It may have been used as a knife. On the left edge the tool bulges out, forming a rounded projection. The edge of the projection has been retouched, and this is the area of the tool which shows the most polish resulting from use.

One fragment of a scraper was also found that appears to be plano-convex in cross-section.

Two whole projectile points and one broken projectile point were found. The two whole, one quartzite and one chert, are side-notched with slightly concave bases (Fig. 8d,e). The agate one is broken across the base as well as across the middle and also appears to have been side-notched (Fig. 8f).

Two flaked tool fragments were found. Both are too small to discern what type of tool they came from, though one seems to be a projectile point fragment.

Five unusual sharpening flakes were recovered from the units west of the datum. Each has a high degree of polish and striations on the former tool edge. They are from the same, fine-grained, yellow, quartzite tool. The polish suggests a tool used to dig in soil. The tool was not recovered; however, a tool showing the same high polish and striations on its edges was found at a site in Shirley Basin at NE1/4 section 23, T27N, R77W in 1969. It is a large quartzite biface whose edges are ground down to a smooth polish with fine striations.

PECKED STONE TOOLS

One broken fragment of a possible lavender, sandstone tool was recovered. One flattened surface appears smoother than the rest of the object. It is postulated that the tool may have been used as an abrader (Fig. 8g).

Two grinding tool fragments and one composite tool were found as part of the stones used to construct Firepit 1. One is a complete metate (Fig. 9a). It is possible that the metate was placed on the fire ring for easier grinding and preparing seeds or because it was not useful as a grinding tool any longer (Mulloy 1954). The tool fragments are too indistinct to determine the type of grinding tool present.

FLAKES

Most of the flakes recovered were manufacturing debitage rather than sharpening flakes. The few retouch flakes were determined to be from bifaces and side scrapers.

Table 1-Site 2 Flakes

Material	Number	Percent
Chert*	1603	.82
Jasper	227	.12
Quartzite	111	.06
Obsidian	1	.0001
Total	1942	1.00

Table 2-Site 10 Flakes

Material	Number	Percent
Chert*	194	.97
Quartzite	4	.02
Jasper	1	.005
Slate	1	.005
Total	200	1.00

Table 3-Site 12 Flakes

Material	Number	Percent
Chert*	164	.96
Quartzie	7	.04
Total	171	1.00

*Chert includes in these tables flint, agate, chert and chalcedony.

The flakes give an idea of the preferred or most utilized material. Chert is the most often used material, but flint, agate, jasper, obsidian and quartzite were also used. (Table 1) The purple to maroon quartzite comes from the Flathead Formation in the southern Bighorns. Some of the chert is from the nodules found scattered throughout the area. It is recognizeable by its blue to maroon to purple matrix with small areas of a white or cream or green color.

PERISHABLE MATERIAL

Shell

One piece of ground shell (Unio sp.) was recovered. It has been cut and had its edges and both surfaces ground to give it a rounded, rectangular shape. It has no hole drilled in it, but may have been intended as a pendant (Fig. 8h).

Bone

Several fragments of polished bone were recovered. Some give the appearance of use as a tool. Others may be in preparation of being decorative elements. One fragment of long bone from Bison bison had been highly polished with some kind of abrasive material, probably sandstone, on four edges and both surfaces. It has the appearance of a pendant in process of manufacture (Fig. 8i). Six other bone fragments also have a high polish on all edges and surfaces.

Other pieces of bone have some polish on the edges or one surface indicating possible use as a tool. One highly polished proximal end of a humerus with a natural curve may have been used as a gouge (Fig. 8j). There is a fragment of a tibia of a bison with a flattened, sharp edge that must have been used as a scraper (Fig. 8k). One piece of bison bone has polish on one edge and striations and polish on the outer surface of the bone. It may have been used as a scraper also (Fig. 8l). A fragment of a radius from either elk, bighorn sheep or deer has a polished outer surface and end (Fig. 8m). Nine other bone fragments are too small or fragmentary to determine a plausible reason for the polish (Fig.8n).

Unmodified Bone

A few whole and hundreds of fragments of unmodified bone were recovered from the site. Most bone has been broken-up. It is suggested that the bones must have been boiled for their fat and marrow content; for several pieces of charred bone show a connection between the bones and fire. Also a high concentration of bone fragments were found in the area of Firepits I and II. Many of the bone fragments bear butchering marks, particularly cut marks. However, most bone fragments are unidentifiable and thus the significance of the marks is not possible to ascertain.

Several animals are represented by identifiable bone. Bison bone is not abundant;

however, an astragulus and a second phalange were recovered. The phalange has a cut mark on the medial area of the anterior surface of the bone. The proximal 2/3 of a bison femur was also recovered. The trocanter major has been chopped off as is common in butchering bison (Frison 1971). The 8th and 9th thoracics were recovered with both the spine and the rib articular surfaces chopped off. Several bison ribs were recovered, and all are broken about 1/3 of the way from the proximal end. A fragment of a bison skull and nasal bone were also recovered. Bighorn sheep was represented by a butchered mandible (Olsen 1964). The ascending ramus is gone, but the tooth row was still present. It indicates a young individual for there was little wear on the 1st and 2nd molars and the 3rd molar may or may not have completed eruption as that part of the tooth row was missing. The mandible demonstrates cut marks on its ventral side just forward of the tooth row. From observations this is a common location for cut marks used in butchering both bison and antelope mandibles. A cervical from a carnivore was also recovered. It appears to be butchered and seems to be either a small coyote or a large fox. The only other whole bone recovered was an unidentified ungulate caudal.

CONCLUSIONS

The evidence indicates that this site was used in late summer. The chokecherry seeds point to this season for chokecherry ripens in the late summer. The assemblage also seems to indicate a late summer or early fall camp where hunting is of prime importance. One metate compared to many cutting and scraping tools supports this contention.

This site seems to be a living site and not a butchering or kill site. Several items in the artifact assemblage point to this probability. Most flakes found were manufacturing flakes; very few retouch flakes were found. The reverse is found in butchering and kill sites. There were also two firepits recovered; an item more likely to be found in a living area especially with its association with a good deal of bone fragments. The incomplete shell pendant is also an item most likely to be found in a living area. It seems to have been lost in the process of manufacture.

SITE 10

Site 10 was excavated almost completely by amateur archaeologists several years ago. A two foot by two foot test pit was excavated this season in the undisturbed front area of the rockshelter.

The shelter is cut into Ten Sleep Sandston, overlooking Canyon Creek. It is about 6 feet below the rim of the north canyon wall and about 170 feet above the canyon floor, at 5160 feet above sea level. It is located in the NE1/4 of the SW1/4 of section 27, T47N, R87W about a quarter of a mile downstream from Site 2.

The vegetation in the immediate area is much the same as for Site 2. Growing in the flat area running north from the canyon rim is a mixed growth of juniper (Juniperus sp.) and sagebrush (Artemisia sp.). The juniper grows thickest near the rim and thins out in favor of sagebrush as one goes north away from the canyon. Below the shelter on the 70° talus slope, juniper and grasses predominate with occasional forbes and currant (Ribes americanum). At the base of the cliff along the creek bank is a heavy growth of pine (Pinus ponderosa), maple (Acer glabrum), currant and Oregon grape (Berberis aquifolium). All of these plants would be of use to the people occupying the shelter (Yanovsky 1936).

The shelter is small in comparison to Site 2. The floor area is approximately 10 feet north-south and 15 feet east-west. Because 90% of the site had already been excavated, the gradient of the floor is impossible to determine. The ceiling height is approximately 9 feet; before excavation it was probably 7 feet. Evidence of human occupation is found in all areas of the shelter. The matrix is a gray-tan mixture of silt, sand, and human debris. The excavators were forced to use protective masks against dust while working. There is evidence of a rockfall from the ceiling of the shelter near the entrance.

STRATIGRAPHY

From one test pit the following stratigraphy was found: sand mixed with silt and artifact material from zero to sixteen inches, from sixteen to twenty inches sand without artifacts, from 20 to 24 inches the artifacts and sand appear again. Below 24 inches there seems to be sterile sand. Bedrock was at 28 inches. The shelter is a possible two component site.

ARTIFACTS

First Level

Chipped Stone

One retouched flake tool was recovered from the first level, along with three flakes and charcoal. The tool has a use retouch as well as polish from use on one edge, and it is of an agate material (Fig. 10a). All four flakes are small and could have been either retouch or manufacturing flakes. The three flakes are of chert, one of which seems to be a side scraper, resharpening flake. The other two have no visible bulb of percussion.

Second Level

Chipped Stone

Fourteen retouched flake tools were recovered; 9 are use retouched flakes. Chert and agate are the only materials used for these tools. Most of it appears to have

come from the local nodule chert. All the use retouched flakes have straight or convex working edges (Fig. 10b). One of the retouched flakes has a saw-tooth edge, possibly used to separate vegetable fibers (Fig. 10c). The other four deliberately retouched flakes are straight or convex edge tools (Fig. 10d). Aside from the saw-tooth tool, the retouched flakes were probably either cutting or scraping tools.

Three scrapers were recovered from the site. Two are plano-convex end scrapers and the third is an irregularly made side scraper. One end scraper of chert is on a cortex flake. It appears to be incomplete as the sharpened edge does not run the entire length of the forward scraping edge. It is of a general triangular shape. One small flake has been removed from the back side of the flake to thin the bulb of percussion, probably preparing it for hafting (Fig. 10e). The other end scraper was recovered from a packrat nest in the shelter several years ago by Dr. G. Frison. It is of a light agate, triangular shaped with the area opposite the scraping edge coming to a point. The back side of the tool has been thinned at the hafting end. Several small flakes have also been removed from the back side along part of the edge. This seems to have been done in the process of resharpening the tool. All edges of the tool have been flaked, and the hafting end has been ground on both edges (Fig. 10f). The side scraper is quartzite. Along one convex edge it has had many sharpening flakes removed. The back side of the flake is irregular, but next to the cutting edge there is a plano-convex outline (Fig. 10g).

There are three bifacial tools found by Frison in the previously mentioned packrat nest. One is a complete, yellow jasper, triangular blade. The two edges near the base have been ground, probably for hafting. This tool is undoubtedly a knife (Fig. 10h). A broken quartzite blade is also probably a knife (Fig. 10i). The third tool is a broken, gray chert cutting tool. It is triangular, coming to a narrow point (Fig. 10j). It is quite thick and thus not a blade, yet cutting is probably its primary function.

Two bifacial fragments were also recovered. They are both of chert and appear to have come from large, crudely flaked bifaces with finely sharpened edges.

One graver recovered by Frison, also from the pack-rat nest, is of agate. Its base is expanded and all its edges but the base edge have been flaked. Both surfaces of the graver projection have been flaked; one surface of the tool has been flaked. The cutting edge itself is in a slight hooked shape (Fig. 10k).

Three projectile points were found in the pack-rat nest. One is a Late Prehistoric Period side and basally notched point of chert (Fig. 10l). The other two are corner notched, convex based, triangular points of jasper. They would fit into the Late Middle Prehistoric Period (Mulloy 1958) (Fig. 10m,n).

Flakes

Flakes from this site indicate again a primary use of chert with quartzite, jasper, and slate being of much less importance (Table 2). These flakes seem to be most often manufacturing debitage.

Pecked Stone

Two grinding tools were recovered from the backdirt of the first excavation. One is a broken mano of sandstone (Fig. 9c). The other, also a mano, is complete and made of a porphyritic basalt (Fig. 9b).

Perishable Material

Bone

Four bone tools were recovered by Frison from the aforementioned pack-rat nest. One whole awl is made from a small ungulate metatarsal (Fig. 11a). A second tool is the apparent base of a bone awl also made from a fragment of a long bone (Fig. 11b). A pointed bone tool fragment may also have been used as an awl but lacks the long tapered and highly polished point of the first awl; it may have had some other use (Fig. 11c). The fourth tool is a deer or Bighorn sheep scapula tool. It is highly polished with several areas of striation marks and is probably a cutting or scraping tool (Fig. 11d).

Wood

Three cut willow (Salix sp.) stems were recovered by Frison from the pack-rat nest. Two have been cut at only one end and appear to be discarded ends of utilized shafts (Fig. 11f). The third stem has been cut on both ends. The branch scars have been removed; otherwise the stem is unmodified (Fig. 11g). Two willow arrow shaft fragments were also recovered by Frison. Both are broken but still have sinew wrapped around one end. One has the quill-tip of a feather still held to the shaft by the sinew (Fig. 11e,h).

Unmodified Bone

From the backdirt two recognizable bones were recovered, an antelope astragulus and an Anseriformes long bone. Several fragments of bone were also found but were too badly broken to be identifiable. Combined with the probably deer or Bighorn sheep scapula, this represents three edible species of animals utilized by the inhabitants of this shelter.

CONCLUSIONS

So little of this site was intact that conclusions are necessarily limited. The two levels represented in the test pit may or may not be connected to the two projectile point types. After looking at the shelter and digging the test pit, I am of the opinion that the first level may not be included in the excavations of previous years. More testing of the disturbed floor would be necessary before this could be proved. If this is true, then both projectile point types would be from the second level. There is still a fairly large area in front of the shelter which might yield as yet marker artifacts in situ.

The people of this site were probably exploiting all aspects of the environment by both hunting and gathering. Because of the incomplete assemblage, it is impossible to know which was the more important of the two activities.

SITE 12

Site 12 is also a rockshelter cut into Ten Sleep Sandstone. It is located in the NW1/4 of the SE1/4 of section 36, T47N, R87W, at 5800 feet above sea level. It is 35 feet north-south and 10 feet east-west, with its entrance facing west and a 10 foot ceiling (Plate 1d). It is found at the head of a small side canyon of Cook's Canyon. The shelter is about 10 feet above the canyon floor. The rim of the canyon is about 30 feet above the shelter floor. Just north of the shelter in the extreme head of the canyon another smaller shelter was found and termed Site 62. It was not excavated, and only one flake was found on its surface. The heavy growth of vegetation in the area indicates an intermittent spring, flowing only during the snow melt-off. It may have been permanent at one time.

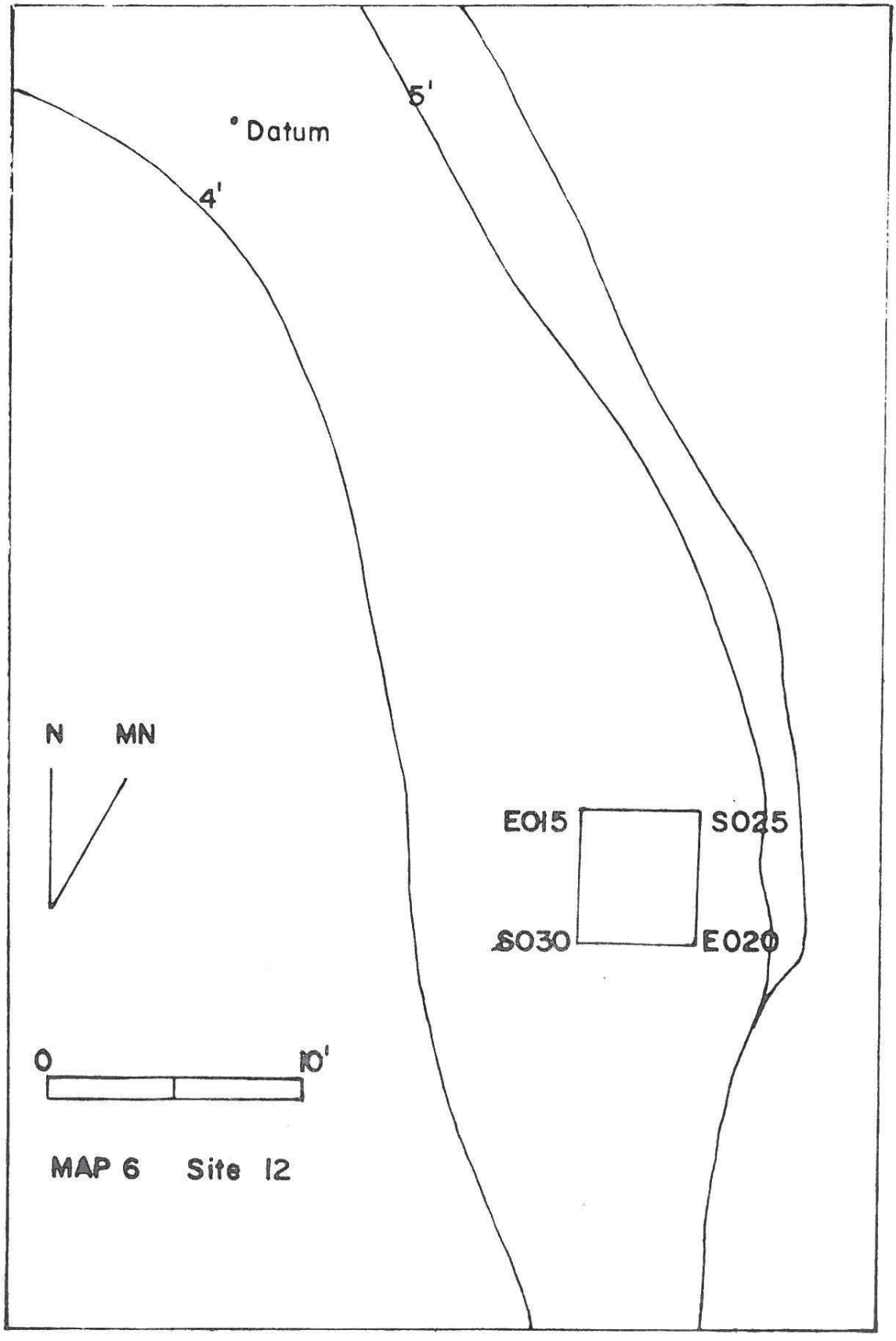
Evidence of human occupation was evident from the pictographs along the back wall as well as a fire-blackened ceiling. A few flakes and a bone tool were found on the surface and in a large, deserted pack-rat nest. One five foot square test pit was excavated in the southern end of the shelter, less than four feet from the back wall (Map 6).

The vegetation of the immediate area is varied. On the flat area running back from the rim of the canyon are sagebrush (Artemisia sp.), juniper (Juniperus sp.), prickly pear cactus (Opuntia polyacantha) and forbes such as lupine (Lupinus sp.), growing fairly thick. Along the sloping walls of the canyon and along its floor are pine (Pinus ponderosa), Douglas fir (Pseudotsuga taxifolia), currant (Ribes americanum), chokecherry (Prunus virginiana), thistles (Cirsium sp.), forbes and grasses. Most of these plants would provide food, and all have some possible use for man (Yanovsky 1936). The wild currant grows particularly abundant and provided a temporary source of currant syrup for the camp staff.

ARTIFACTS

Chipped Stone

Few tools were recovered from the test pit. As usual retouched flakes are the most numerous tools. There are eleven of these, eight being use retouched and three deliberately retouched. One of the use retouched flakes has a high polish on both the face and back of the flake. The use retouch is along the edge opposite the bulb of percussion. It is of a brown, fine-grain quartzite much like the material found so highly polished in Site 2 (Fig. 12a). The three deliberately retouched flake tools are of chert. One is a straight sided tool chipped on one side of one edge; used probably for cutting (Fig. 12b).



MAP 6 Site 12

The other comes to a blunt point showing polish. It may have been used as a graver (Fig. 12c).

Two side scrapers were found. One is large and crudely made of chert (Fig. 12d). The other is a composite tool of red jasper (Fig. 12e). One edge is a side scraper and the opposite is retouched on both sides of the edge, making it a cutting edge. There is a concave edge opposite the bulb of percussion that could have been used as a spoke shaver.

One projectile point base was found at about two feet below the surface (Fig. 12f). It is made of chert. It is corner notched with a slightly concave base typical of the Late Middle Prehistoric Period point (Mulloy 1958).

One core was recovered of the probable local nodule chert. Its size, 5.0 mm x 4.0 mm x 2.3 mm, indicates it is probably a spent core (Fig. 12g). One very small chert biface fragment was recovered. It seems to be from a finely flaked tool with fine retouch sharpening on the edge (Fig. 12h).

Flakes

The flakes all are of a fairly small size. They may have come from both a manufacturing and resharpening process. Again chert is the most common material followed by flint and quartzite. A white chert was concentrated around the two foot level, otherwise the same materials seemed to be used throughout (Table 3).

Perishable Material

Bone

One bone tool was found on the surface of the shelter floor near the pack-rat nest. It is the medial portion of a number 10 bison rib, with the working edge on the distal end. The tool edge is a rounded point on the dorsal surface, with some rounding on the ventral surface. The tool edge of the rib appears to have been modified into a narrower point before use began (Fig. 12i).

Unmodified Bone

Some unmodified bone was also found during excavation. Most of it was broken into unidentifiable fragments. However, two large pieces of bone have been identified by the writer as Bighorn sheep (Olsen 1964). One is a broken and charred hoof core. The other is a butchered mandible. The ascending ramus is gone and the ventral portion of the mandible has been broken open to reveal the base of the tooth row. The third molar is missing, but tooth wear indicates a young but mature animal. The bison rib would seem to indicate bison as a food source as well.

CONCLUSIONS

The site seems to be one of promise for future excavation. Because of the small area excavated it is difficult to draw any conclusive statements from the material. Certainly the tool and bone evidence indicates that hunting was important. However, other activities cannot be discounted. The site can be assumed to be Late Middle Prehistoric Period with possible recent use. The only indication of the more recent use is the overlap of black line pictographs over solid red ones on the back wall.

SITE 54

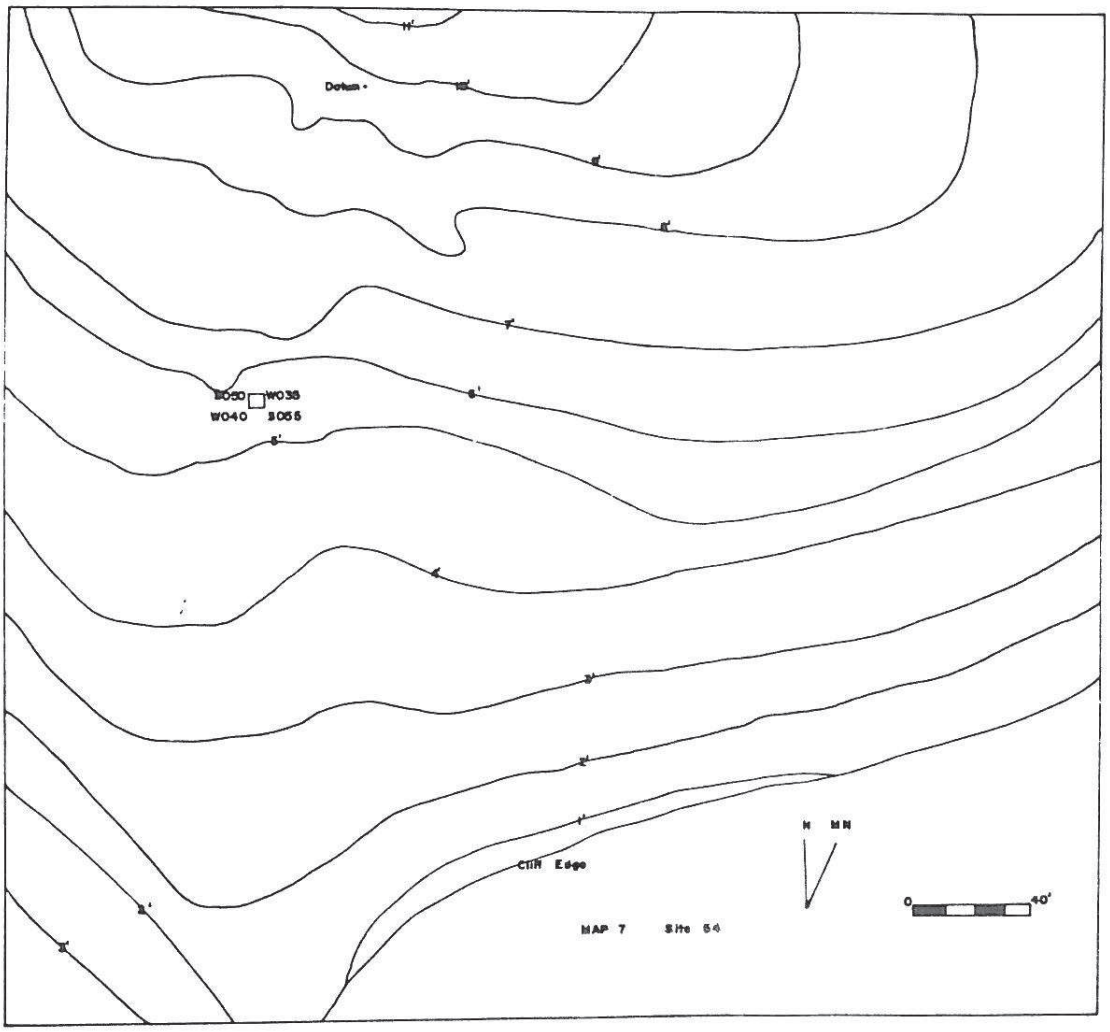
This is the only open site that was excavated this season. It is located on the top of the Ten Sleep Sandstone Formation above Cook's Canyon in the NW1/4 of the SE1/4 of section 36, T47N, R87W, at 5880 feet above sea level. The site area covers an area 136 feet north-south and 142 feet east-west (Plate 1c). The site slopes down from north to south on a low gradient of about one foot of elevation per 19 feet of surface distance. The site lies near a canyon rim and is bounded on the west by an outcrop of sandstone and an intermittent rill. To the north of the site are cliffs of sandstone about 10 feet high, then another flat area continues north from that rim. To the south is Cook's Canyon with the stream approximately 200 feet below. To the east the flat area narrows as the northern cliff comes closer to the canyon rim (Map 7).

The site area is strewn with artifact material in a sandy soil. One test pit was begun toward the middle of the site. It was never completed due to lack of time.

The vegetation surrounding the site on the east and west is pine (Pinus ponderosa). The site itself is covered with grasses and forbes, particularly lupine (Lupinus sp.). In the area above the canyon rim are juniper (Juniperus sp.), sagebrush (Artemisia sp.), prickly pear cactus (Opuntia polyacantha) and forbes such as sego lily (Calochortus gunnisoni) and prickly poppy (Agemone sp.). On the slope of Cook's Canyon below the site are pine and Douglas Fir (Pseudotsuga taxifolia). Along the canyon floor are currant (Ribes americanum), chokecherry (Prunus virginiana) and many forbes and grasses. The area is rich in plant resources utilizable by man (Yanovsky 1936). The closest water source at the present time is at the bottom of Cook's Canyon. It is doubtful that this was the water source during the site's occupation. Springs are common in the area in the Ten Sleep Formation; therefore, it is possible that one of these springs has in the past flowed in more immediate proximity to the site.

STRATIGRAPHY

The test pit was only excavated to one foot. The first four inches from the surface was loose sand mixed with plant roots and artifacts. The soil from four to twelve inches was hard, compacted sand mixed with artifacts.


Datum
E050
W038
W040
E055
CliN Edge
N MN
0
40'
MAP 7 Site 54

ARTIFACTS

Chipped Stone

This was the only artifact material found on the surface or in the five-by-five test pit. All of the tools were made of chert, most of it the nodule chert of the local area.

The retouched flake is the most prevalent tool. The largest per cent are use retouched flakes. Out of twenty retouched flakes two are deliberately retouched, straight edged (Fig. 13a,b). Thirteen of the tools are straight or convex work edges and could have been used as cutting or scraping tools. The other seven are concave edged. They may have been used as spoke shaves or cutting tools (Fig. 13c).

Bifacial tools are also very common. All those found are broken or fragmentary. One bifacial blade is probably a knife (Fig. 13d). Others are much thicker bifaces with finely flaked edges (Fig. 13e). Three beface fragments from thinner, probably blade, bifaces were also recovered (Fig. 13f). Two cores were found; both are of a roughly triangular shape (Fig. 13g).

CONCLUSIONS

This site is difficult to classify as the information is not complete. Most of the flakes seem to be manufacturing debitages (Table 4). The test area seems to be one of tool making. There was very little charcoal found, and it is widely scattered. The site as a whole may represent several kinds of use within an occupation area.

SUMMARY

In comparing these four sites with those already investigated in the Bighorn Basin, there are several similarities. These four sites are all within the Transition Life Zone (Carey 1917) and thus are best compared to other sites in that zone.

There are several open sites from this area of the Bighorn Basin which are Transition Zone sites. Site 54 does not compare well with any of them. Two were surface sites with stone circles, the Seven Springs Site (48 JO 317) and the Canyon Creek Butte Site (48 WA 306). Their assemblages included few bifacial tools in comparison to projectile points, scrapers and knives (Frison 1967). Site 54 though not completely tested was intensively surface surveyed. It produced no projectile points or scrapers and only one knife. Bifaces and retouched flakes were the most numerous. The material at the Ten Sleep Creek Site (48 WA 305) was similar in that the one complete and two fragmentary bifaces found did not show use and appeared to be broken in manufacture (Frison 1967).

The assemblage from Site 2 is Late Prehistoric Period and as such compares to

Table 4–Site 54 Flakes

Material	Number	Percent
Chert*	761	.97
Quartzite	12	.02
Jasper	5	.01
Obsidian	1	.001
Total	779	1.00

*Chert includes in this table flint, agate, chert and chalcedony.

various sites in the Bighorn Basin. Level IV of Wedding-of-the-Waters Cave has not only similar projectile points but the one end scraper found there is almost exactly the same in form and flaking pattern as one of the end scrapers from Site 2 (Fig. 7m) (Frison 1962). It also compares to the material from the upper level of Mummy Cave (Wedel, Husted and Moss 1968) and the upper level of Pictograph Cave (Mulloy 1958). The two hooked composite end scrapers from Site 2 have been a common type recovered from Paleo-Indian sites in the Plains (Irwin and Wormington 1970). However, this type must have carried through other periods, for Site 2 is definitely a Late Prehistoric site.

Sites 10 and 12 both seem to be Late Middle Prehistoric Period sites. The lack of grinding tools in Site 12 compares to the assemblage from Spring Creek Cave (Frison 1965). This same comparison can be made with Level III of Wedding-of-the-Waters Cave (Frison 1962) and Level I of Daugherty Cave (Frison 1968). The assemblage from Site 10 did produce two manos. Its assemblage though incomplete, may compare more closely to Leigh Cave (Frison and Huseas 1968).

All these sites represent a nomadic population which appears to be exploiting animal resources more consistantly than plant resources. They were probably moving in microbands and even single nuclear families. Site 10 is too small to have been useful to a group larger than a nuclear family. Site 12 is also restricted by size in usefulness to groups the size of an extended family or microband. Both Sites 2 and 54 are large enough to accommodate larger groups, but it is doubtful if they did. The cultural debris in Site 2 is restricted to the western half of the shelter and is concentrated in yet a smaller area near the entrance. Therefore, small groups, primarily hunting but also taking advantage of some plant foods, are most likely the type using these sites.

Archaeological Investigations in the Big Horn Basin, Wyoming will be continued in December, 1971 issue of the Wyoming Archaeologist.