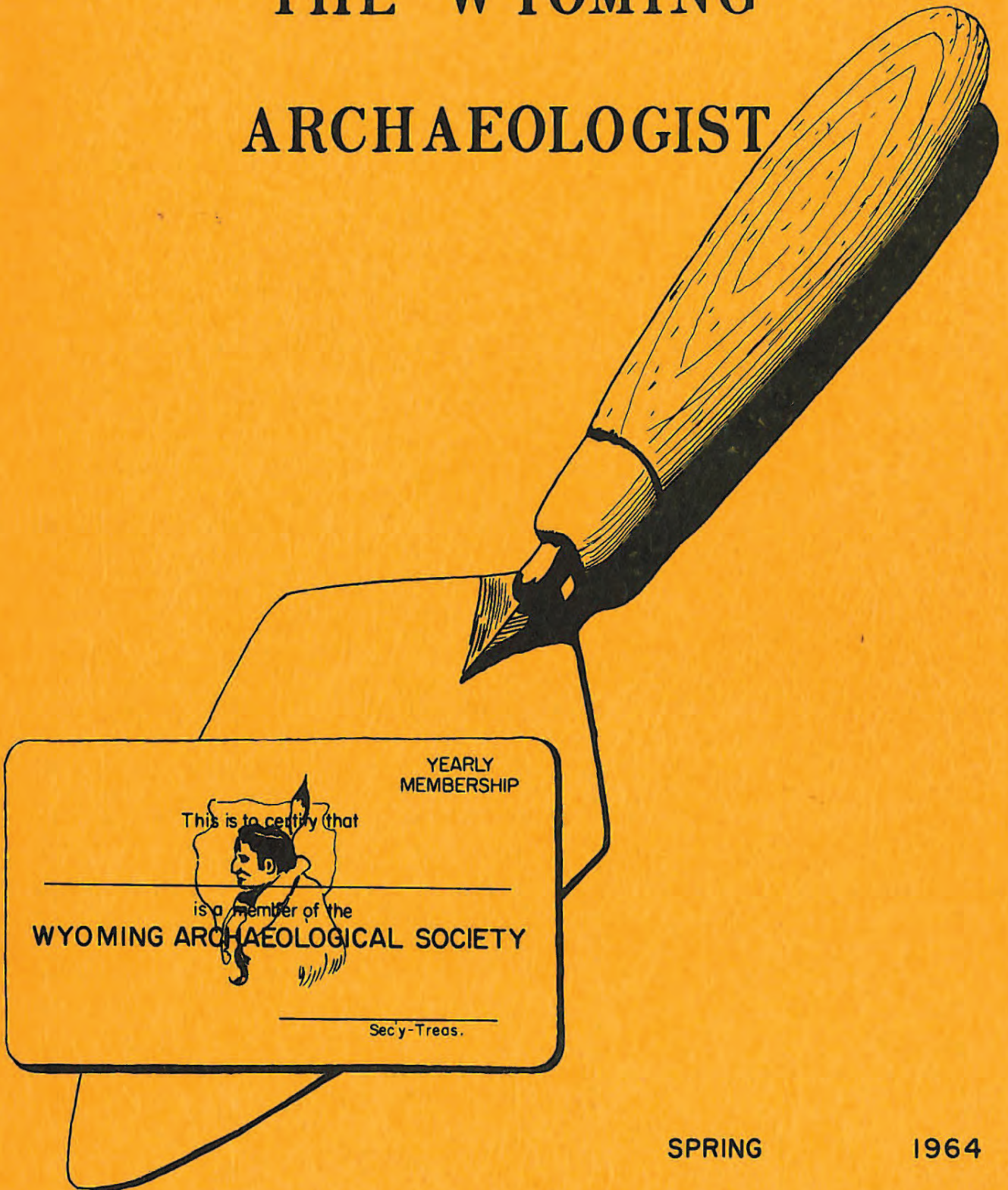


WYOMING  
ARCHAEOLOGICAL  
SOCIETY

# THE WYOMING ARCHAEOLOGIST



SPRING

1964

VOL. VII

NO. I

WINTER ISSUE CONTENTS

	<u>Page</u>
President's Letter . . . . .	1
Wyoming Archaeological Society Annual Meeting . . . . .	2
Dr. Mulloy Speaks at Annual Meeting . . . . .	5
Chapter News . . . . .	6
Swallow Artifact Collection . . . . .	8
Maps for Archaeologists . . . . .	12
McKean Site in Northeastern Wyoming . . . . .	16

EDITOR'S NOTE

We were very grateful that permission to reprint the McKean Site was granted by the original publisher THE SOUTHWESTERN JOURNAL OF ANTHROPOLOGY, University of New Mexico, Editors Harry Basehart, and Stanley Newman.

We owe Dr. Mulloy many thanks for his kind permission and for the loan of all pictures from this site. We hope in future issues to republish all pertinent information concerning the important Wyoming Sites, so that our membership will have a very valuable library. As you know, much of this material is out of print and unobtainable except through personal loan. The McKean Site was chosen for the first reprint because it concerns site materials which we uncover most frequently.

The Editor wishes to express the gratitude of all the Society, to Jim Goodwin and the Sheridan and Cody and Casper Chapters who have done so much in the past, and hope that we can do as well in the future.



## PRESIDENT'S LETTER

Dear Fellow Members:

The Sheridan members, directed by chapter president Margaret Powers and her able staff, gave the Society an excellent annual meeting. The arrangements were well planned, the exhibits interesting, the evening program top-notch, and the dinner superb. Many, many thanks to all concerned. It was gratifying to see a good attendance from various chapters.

We were inspired by Dr. William Mulloy's thoughts on the important role of the amateur in the future of Wyoming archaeology. He suggested a system of rotating archaeological exhibits displayed at museums and other strategic locations throughout the state. These would show Wyomingites and visitors the fascinating contributions to our fund of knowledge about man which can come from study of prehistoric sites and artifacts. Undoubtedly this plan could result in securing strong public support for a good program of archaeology throughout Wyoming.

This is the first issue of the Wyoming Archaeologist published under the direction of our new editor, Grant Willson. Grant has some ideas concerning this publication which I am sure will be well received. One is the occasional reprint of important out-of-print papers dealing with plains archaeology. If permission can be obtained in time, this issue will contain the first of these reprints.

Grant advises us that black and white photographs now can be reproduced in our magazine. So don't forget to send in any available clear sharp glossy prints with good contrast, either as illustrations for articles submitted, or as feature pictures accompanied by a brief explanation. Ink sketches can be reproduced similarly.

As an experiment this spring we will award a book prize for the best archaeological papers submitted by students at the University of Wyoming. The contest will be under the direction of Dr. Mulloy. The papers winning prizes or honorable mention will be published in forthcoming issues of the Wyoming Archaeologist.

We are happy to state that we will be able to award the Mulloy Scholarship for the forthcoming school year. This scholarship is given to a worthy and deserving student majoring in the field of archaeology and anthropology at the University of Wyoming. The winner will be announced in the next issue.

The summer activities will soon commence and we shall look forward to hearing the results of the various chapter field investigations. The Society's summer meeting this year will be at the site of a major dig. All chapters will be notified when definite arrangements are complete.

DON'T FORGET --- GET THE PHOTOS AND ARTICLES TO THE EDITOR ! ! !

Dave Baskett  
State President



THE WYOMING ARCHAEOLOGICAL SOCIETY, INC.

11th - ANNUAL MEETING  
Hospitality Room - Bank of Commerce  
Sheridan, Wyoming

February 8, 1964

A short business meeting of members of the State Executive Board was held in the morning to review a BUDGET for 1964, and discuss items on the program of the Annual Meeting.

The Annual Meeting of The Wyoming Archaeological Society, Inc. was called to order at 2:15 P.M. by President Baskett. Members introduced themselves, and minutes of the 10th Annual Meeting held in Casper, Wyoming, February 16, 1963 were read and approved. Minutes of the Summer Meeting at Meadowlark Lake, Wyoming, August 17, 1963 were read and approved.

OLD BUSINESS:

The Resolution proposed at the summer meeting, but not acted upon due to a lack of a quorum, regarding a change in dues, was discussed, and an Amendment to the Resolution was passed to read:

"Single Memberships will be \$3.50 each calendar year, with automatic mailing of the publication, dues split, \$1.50 to be retained by the Chapters, and \$2.00 to be forwarded to the State Society Secretary/Treasurer;

Family Memberships will be \$5.00 each calendar year (2 or more persons in a family), one copy of the publication with automatic mailing, dues split \$2.50 to be retained by the Chapters, and \$2.50 to be forwarded to the State Secretary/Treasurer."

Prior to a vote on the Resolution, a review of the Finances (Expense report period 1960 thru 1963) and a Budget for 1964 was discussed. The membership then voted to Amend the Constitution to read per the Amended Resolution, and correspondingly correct Paragraph 4.B.Fees, 1.a. Active; and paragraph 2.E.1.(remittance); delete paragraph 4.B.4. (50¢ mailing fee); to coincide with the above changes, effective 1-1-65.

NEW BUSINESS:

Jim Goodwin submitted his resignation to be effective following the printing of the December 1963 issue of the WYOMING ARCHAEOLOGIST, and reported on the activities of the publication. It was announced by President Baskett, Grant Willson of the Cheyenne Chapter had accepted the position as Editor, and that the Society publications would now be published in Cheyenne. The importance of assisting the Editor by supplying news and material for the publication was again highly stressed! The Society Secretary was instructed to write a letter of thanks to Bob and Shirley Will of the N.B.H.B. Chapter for their work in publishing the WYOMING ARCHAEOLOGIST the past two years.

RESOLUTION: proposed and carried...The WYOMING ARCHAEOLOGIST will indicate Publishing Dates; "Spring, Summer, Autumn and Winter".

COMMITTEE REPORT:

Audio-Visual Educational Project-Tom Knapp reported on the progress of assembly of the first 35mm slide program. Costs of reproduction, and ways of distribution



THE WYOMING ARCHAEOLOGICAL SOCIETY, INC.  
11th - ANNUAL MEETING

were discussed, and methods will be investigated. Dr. Mulloy suggested obtaining copyrights of the 35mm "strips" once they are assembled, as a safeguard from infringement of the Society's program, and possible duplication of the slides by Educational suppliers. This procedure will be investigated. Also, Dr. Mulloy will investigate the possibility of our working with, and thru the Audio-Visual Department of the University of Wyoming. The 35mm film strip program will be continued and enlarged upon during the coming year. Hila Gilbert reported the possibility of working up, and getting a duplicate of the 16 mm movie recording the Sheridan Group's excavation of 48SH311. A 200 ft. movie was made, but so far not edited.

CHAPTER REPORTS:

N.B.H.B. - Tom Knapp reported on the past year's activities, stating the largest program was the publishing of the WYOMING ARCHAEOLOGIST, but the group found time to investigate the H.A. Taylor Ranch Petroglyphs. Preliminary investigation of a 90 ft. long habitation cave site near Kane, that will be the Chapter's 1964 project, to be accomplished before the waters of the Yellowtail Reservoir inundate the site. The Chapter also has several Oregon Basin sites to investigate.

Casper - Bart Rea reported on the Chapter's project of making and recording the survey of site locations and reports of Natrona County, with an attempt to make as complete a survey coverage as possible. Also reported was the field trip to the Cedar Ridge area northwest of Armino, and investigation of the very large camp area; and the project underway regarding the Ormsby "animal-trap" in Converse County.

Cheyenne - Altho no member was in attendance, a complete and thorough report for the year's activity was reported via letter, (same on record).

Sheridan - Elaine Hilman reported on the various programs for the year, the completion of reports of previous excavations, and investigations of new projects, with more work to continue as the weather improves. For Chapter meetings, collections of members were requested to be brought, and many fine ones were exhibited. Also on exhibit at this meeting were display cards mounted with the Chapters records of artifacts from their Digs. The Chapter is also in the process of working with an 81 year old historian of the Cheyenne tribe, John-Stands-in-Timber.

A discussion ensued regarding the next annual meeting, and it was moved, seconded and passed that: "due to there being a Society Chapter in Casper, and Casper being centrally situated in the State, that the Constitution be amended to read, "under ORGANIZATION, 1.A.6...The annual meeting is to be held in Casper the first Saturday in April... and the State Executive Board will be responsible for organizing the meeting". Also suggested was that the annual meeting dinner should be a "banquet type" and that there should be a charge made for the dinner. This will be investigated by the Executive Board. Effective date, April 1965.

President Baskett made the belated statement, "All conflicting provisions of the Society Constitution are hereby amended".

For the summer meeting it was the consensus of the group that this meeting should be coordinated with a (major) Dig activity, with a tentative date set as the second week in August, 1964.



WYOMING ARCHAEOLOGICAL SOCIETY, INC.  
11th - ANNUAL MEETING

President Baskett reported on progress to date on the Society Handbook, that is to be used in the Educational Program, and reviewed the material to be incorporated into the manual. It will be investigated in any funds can be awarded to its publication and distribution from the National Science Foundation, or other similar agency. The group then passed the following:

RESOLUTION - "The Manual is to be distributed free to Universities, Libraries and Schools, should a grant be awarded to defray the cost of publication".

RESOLUTION - "Each Chapter of the Wyoming Archaeological Society shall obtain a Post Office Box annually, and that said address will be published in the Manual."

It was proposed that should no grant be forthcoming, it will be planned to issue the Manual as a SPECIAL ISSUE OF THE WYOMING ARCHAEOLOGIST, and cost problems to be worked out at the time in connection with general distribution.

Some discussion was held regarding Honorary Memberships, and the following was passed:

RESOLUTION - "Any Honorary Memberships to be granted will be done so before an open session at an Annual Society Meeting, and be voted upon by a quorum; and he must be nominated by a Chapter for reasons based upon significant service to Archeology in Wyoming; one Honorary Life Membership card and a Honorary Membership Certificate will be issued."

It was suggested the Honorary Members be reviewed once a year in the WYOMING ARCHAEOLOGIST; and that the certificate form will be approved by the Chapters via U.S. Mail correspondence.

ELECTION OF OFFICERS:

President, Moved by Gilbert, 2nd by Phelan, President Baskett and Secretary-Treasurer Belz be reelected to their respective offices. Bryant assumed duties of acting President and cast a unanimous ballot for the Offices of President and Secretary-Treasurer.

The last item of business, it was moved, seconded and passed, that:

RESOLUTION - "A statement will be inserted in all issues of the WYOMING ARCHAEOLOGIST that, -"The membership dues period is from January 1, thru December 31, annually, and entitles the member to all back issues of the publication for that year."

The business meeting adjourned at 5:50 P.M.

Following a short recess, the host Chapter served a delicious carry-in dinner, with table decorations following the Archeological theme. Dr. Wm. Mulloy, Professor of Anthropology at the University of Wyoming talked on the relationship of the amature archeologist to the profession, and suggested ways our Society might further the program of informing and educating the general public in the Archeological field, and making them more aware of their part in preserving our historical heritage.

Carlton W. Belz, Secretary-Treasurer



## DR. WM. MULLOY SPEAKS AT ANNUAL STATE MEETING

Members and friends of the Wyoming Archaeological Society attending the Annual State Meeting in Sheridan, Wyoming on February 8, 1964, enjoyed hearing an interesting talk by our State's reknowned archaeologist, Dr. William T. Mulloy. Dr. Mulloy is Professor of Anthropology, University of Wyoming, Laramie, and well known for his excavations of the McKean Sites at the Keyhole Reservoir in north-eastern Wyoming. Dr. Mulloy has also been associated with other excavations in Wyoming and Montana, and has been an associate of Thor Heyerdahl in Easter Island archaeology.

Dr. Mulloy announced that the Sheridan Chapter would have the services of George Frison, who is a student of Anthropology at the University of Wyoming as an aide in the Chapter's field work this coming summer. It was hoped that other students would be able to assist other Chapters in field work, should the opportunity arise.

The main theme of Dr. Mulloy's talk was what the amateur archaeologist can do in Wyoming. Stressed was the importance of the preservation and protection of archaeological materials, and the hope that there would be retained the process of systematic workings for the recording of pre-history. By all means, he suggested, we avoid antagonisms by coercive activity, and proposed several ideas whereby, we as a group, could become better known and bring the story of our purpose before the people of Wyoming. Suggested by Dr. Mulloy was the establishment of museums in many towns, both small and large, in our state. Each unit should portray a story of history in an intellegent and organized way, with constantly exhibits, arranged in such a manner that each exhibit or display would be circulated about in order to keep the historical record ever-moving. By being on a rotating basis, more individuals would enjoy the story, give greater coverage, and not permit the material to become a stagnant display by remaining constantly in the same location. This process in turn could aide the economic outlook in the state, by increasing an interest to the travelers and vacationers who constantly are on the move through Wyoming. It is hoped this would be an inducement to bring people into some of the smaller towns by-passed by major highways, once the museum was established. The thought was expressed that possibly some of our working funds for the project could be derived from donations of those who may be benefiting from this activity, of stimulating an additional interest to the traveler or vacationer.

Naturally some group or Chapter would be required to spearhead such a project, and central workshop would have to be organized in order to prepare the exhibits prior to their distribution.

Another suggested project for our Society was the possibility of establishing a Central Library. One in which many more volumes and papers could be assembled and maintained than a single Society Chapter could hope to accumulate. Dr. Mulloy proposed this be programmed as a rotating type library, in which material could be mailed about the state. This would extend the educational media to a greater number of members, and possibly increase the interest in archaeology. Finally, Dr. Mulloy expressed visions of a greatly increased membership in our Society, and that this would come about from our increased activities. Our journal has the potential of a greater magnitude, and this too could become a unit of more educational value, and greater circulation. Naturally these projects are somewhat long range, but within a potential, and we should begin planning for their inception.



C L U B   N E W S

GREETINGS

From the Casper Chapter

I am supposed to write a nice little resume of meetings of the Casper Chapter and the many plans that are being made by our new officers.

You know, it really does sound like a wonderful summer coming up. Plans are being made for a field trip to Castle Gardens on May 23rd. It would be a good time for other Chapters to join us. We are going to try some small digs this summer for experience as well as information.

The Casper Chapter is rather limited in one way. There are no large camps, because of lack of caves and deep shelters, near, and our wind has eroded out or covered up large prairie camps.

Our new President, Bart Rea is very enthusiastic and, let me say right here, I'm "fer" him. He plans his meetings to be short and to cover much ground. He calls the group to order on time, conducts the business efficiently and then adjourns - this I like! Helen Bryant, our new Secretary-Treasurer, is equally efficient. I'm sure our "Indians" are pleased with our "Chiefs".

Dave Baskett, our State President, is very faithful in attendance and we are proud that he helps where he can.

In the February meeting plans were made that our Chapter contribute some article on the activities of our Chapter to each issue of the Archaeologist.

On my desk, as I write, is a beautiful point I found surface hunting just before the big storm. It has no real significance as far as dating, type, material, etc., but I wonder why each one we find gives such a thrill. I wonder who fired it? Was he desperate to kill the animal he shot at? Was his family cold and hungry and he needed the food desperately? Perhaps he shot at an enemy! We are never so thrilled with a beautiful scraper - it took so much skill to make, the material is as lovely - never-the-less - a beautiful point will stop the breath of even the most sophisticated hunter. It must be that we are aware of it as a deadly killer - an instrument of death. If the warrior's bones, long turned to dust, could rise again, he could pick up my point, fit it on his shaft and fire it again with its old deadly efficiency. It has lost none of its potential in the hundreds of years from his hand to mine. Beautiful, deadly little things. Enough dreaming - snow brings these spells on.

Our March meeting had the distribution of site forms and further details of the summer's activities, especially for the completion of reports on a backlog of sites and the assignment of committees to particular projects to expedite the work to give the Chapter as a group more time to devote to the planned small digs.

We had a film from the New Mexico State Highway Department, HIGHWAY SALVAGE ARCHAEOLOGY, for the April meeting - very formative.

Bart will not be here for the May meeting so our new Vice President, Ross Swigart, will be in charge.

See you all some day.

Juanita Hinthorn, Casper  
Historian - Correspondent



## CHEYENNE CLUB PLANS DIG

The Cheyenne chapter is planning to excavate the Happy Hollow Rock Shelter, a probable Upper Republican Cultural Site.

The Happy Hollow Rock Shelter is located under an overhang in the cemented conglomerate of the Arickaree formation in an extension of the Pawnee Butte Excarpment.

The club plans to start the dig on April 24. The land owner has agreed to the dig but limits the number of people at one time at the site to 12. It is hoped that most of the work can be accomplished in approximately ten working days.

Louis C. Steege will be in charge of the excavation and Dave Paulley will be his assistant.

The site was discovered by Ralph Casner, President of the Cheyenne Club. His original test hole at the site brought forth a small projectile point, an abrader, bone, and jasper chips.

At the January meeting, a preliminary report on the Lissolo Cave excavation was given by Dave Paulley, and it is hoped that the final report can be published in the Summer issue if Dave and Lou Steege can get it done. Lou also showed his colored slides on the stylization and sequence of projectile points of the Northwest Plains.

At the February meeting Lieutenant Conrad Bush from Warren Air Base showed beautiful colored slides on cave explorations in Tennessee and on burial sites found in some of the caves. He displayed two large plywood sheets covered with artifacts and a glass encased mounting of nine steatite pipes.

The March meeting had an attendance of over forty people and members were requested to keep in mind the possibility of making interesting slide programs out of collecting trips. Lou Steege again provided the program consisting of colored slides of the Petroglyphs at the Dinwoody area in the Wind River Indian Reservation. Mrs. Dorothy Roman showed a mounted collection of points accumulated over a period of 35 years from the vicinity of the "Big Hole" near Granite Canyon. Included in the collection were several Eden points and a Scottsbluff "Alberta" point with ground base.



## THE SWALLOW ARTIFACT COLLECTION

Mr. Elmer C. Swallow, 1735 S. Cedar Street, Casper, Wyoming has one of the best known collections of artifacts in the Central Wyoming Area. From his record book, begun in 1944, more than 600 persons are registered as visiting his residence to view the excellently displayed collection. Countless others have seen the framed artifacts at various times, where they have been on display before the general public.

Mr. Swallow began gathering his collection by surface hunting during 1937, altho he is very proud of the first projectal point (a complete one) he picked up in 1898, while a young lad in Colorado. His family has also been involved in amassing this vast collection, which by actual count, totals 2888 pieces. Included in this cataloging are the collections of a son-in-law and grandson, Mr. Harvey Crowe, Sr. and Harvey Jr. In the Crowe collection, there are 637 projectal points, and 76 miscellaneous pieces, all catalogued. These specimens are mounted in a total of fifteen display frames.

The Swallow family collection consists of 37 display frames containing 990 catalogued projectal points, and 747 miscellaneous tools, also catalogued. These are mounted for the most part in 12" x 14" glassed display frames, and artistically arranged for the viewer to more fully appreciate the beauty of workmanship. Added to the above mounted specimens, the collection also contains the following catalogued items that are not in cases. There are many beautiful specimens in various degrees of excellance and sizes, included are 167 manos; 12 metates; nine hand-hammers; fourteen grooved-hammers; 95 large scrapers and knives, and 113 miscellaneous tools. The magnitude of the assemblage is far too great for one to absorb to the fullest by only one visit. One wall of Mr. Swallow's den contains a total of fifteen display frames of mounted scrapers and similar tools. Besides projectal points and knives, there are beautiful bone awls, drills of all sizes, artistic points, tang knives, and items for which no use is known. (refer to drawing labeled "C" following). Mr. Swallow has also gathered additional items still not catalogued, plus many pieces of historical value, some of frontier use that are true museum material.

Mr. Swallow has gathered the majority of his artifacts from habitation areas on the west shores of the North Platte River, in the Pathfinder Reservoir area. The largest number of pieces were amassed during the 1940's, when the reservoir waters were rather low, and access was fairly easy into the area. Almost the entire group of manos and metates is from this area. Mr. Swallow has hunted other habitation areas in the state, and excellent specimens were collected (examples "B" & "C" following). Several unusual items are included in the artifact collection. One intriguing piece, No. 100-X is a small table-smooth slab of what appears to be weathered quartzite, and contains partially drilled holes; the drill cuttings readily discernable. Another is a small hunk of sandstone with grooved lines and a hole drilled thru. Many types of grooved hammers, various sizes of well-worn manos, different sized pestles and choppers are all very interesting to see.

A small library is also part of Mr. Swallow's "museum", and of interest for the amateur archaeologist, a few of the publications are listed below.

Indian Relics And Their Values, by Allen Brown; Lightner Publishing Co. Chicago, 1942;

Indian Relics And Their Story, by Hugh C. Rogers; Frankin Printing Co. Ft. Smith Arkansas, 1954;



## THE SWALLOW ARTIFACT COLLECTION

The Folsom Problem in American Archeology, by Frank H. H. Roberts, Jr.,  
Smithsonian Report for 1938, Pages 531 through 546, U.S. Government Printing  
Office, 1939. (this is a report on the Lindenmier Site.)

Lancelot blade A is one worthy of the display Mr. Swallow has given to it. The blade is mounted in a case with an electric bulb, and when back-lighted, the specimen exhibits an undescrivable beauty. Its translucency emits the various minerals of which the partially tan, partially grey agate, it contains. Dendrites and mineral strips are seen in all their beauty. This large blade is 4.0 inches long by 2.3 inches wide and 0.3 inches thick. It appears to have been fashioned by having huge chips struck from the large agate flake. The edging is rather course but sharp. It was found in May 1955, in the south Pathfinder Reservoir area.

Lancelot blade B, (catalogued K1-44) is the only tang knife specimen, of the several in the collection, that Mr. Swallow personally found. It comes from the Buffalo Creek country of the Big Horn Mountains, and was found in July of 1944. This is a fine-grained light tan quartzite with somewhat casual workmanship. Chipping is not too discernable, and the notches indicate some grinding. Size is 2.8 inches long, 1.6 inches wide and 0.3 inches thick.

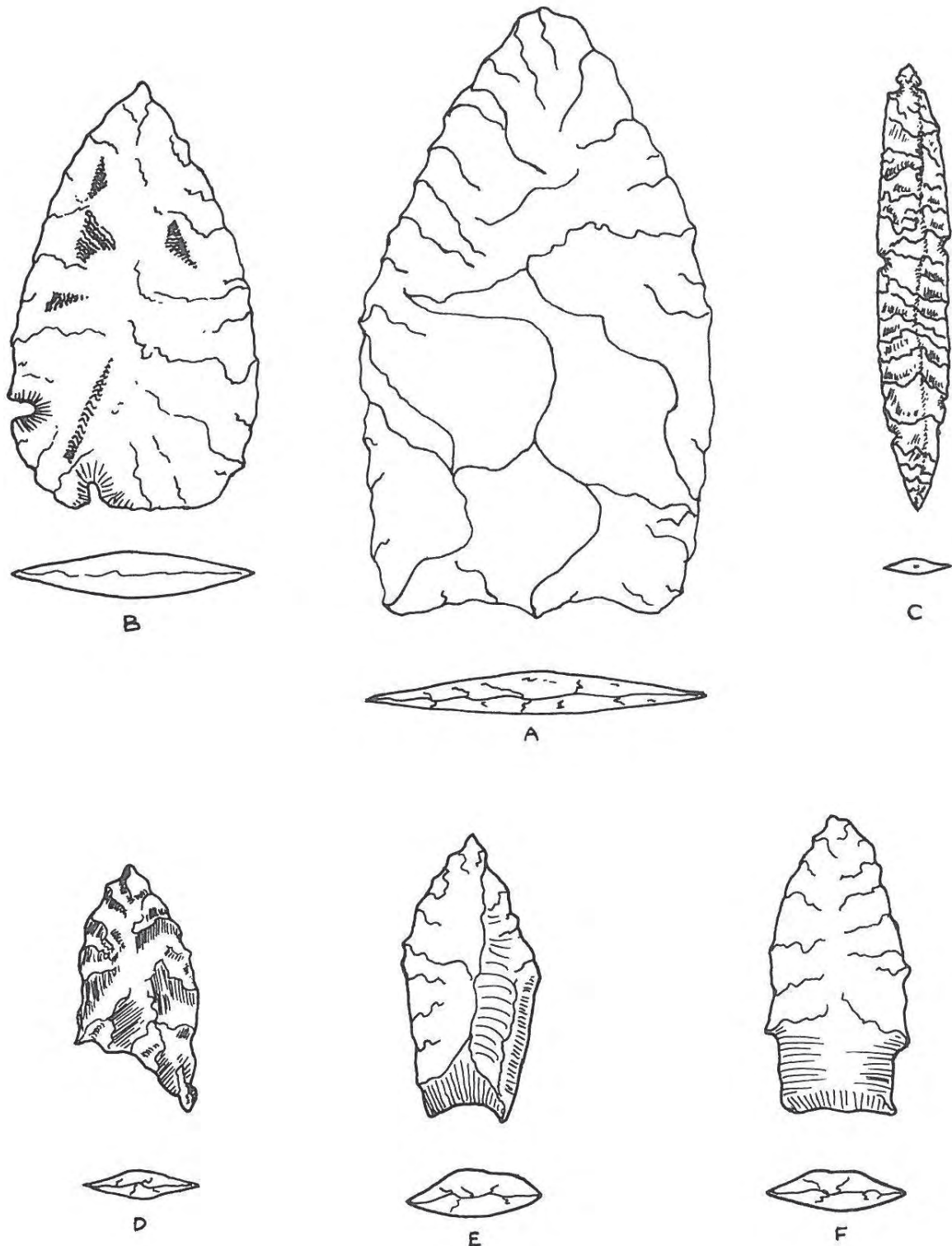
Specimen C, is one of the most intriguing items in Mr. Swallow's collection. It is artifact B, frame 5, and due to its strange shape has caused considerable controversy. So far it has not been positively identified, but under the modern assumption for a practical use, it has been suggested it may possibly have been a "weaver's bobbin". It is a small slim finely worked flake of dark tan agate, and contains a twist at each end. The twist is noticable only on close inspection. It appears to have been manufactured by very minute pressure flaking, for the scars are very small. This item in size is 0.10 inches thick by 0.45 inches wide and 2.9 inches long. It was found in July of 1940, in the Arkansas Draw area along the Sweetwater River.

Projectal point D, (No. 5, frame 4) is from the same general area as lancelot blade A. It was found on the west bank, close to the North Platte River at low water level, in 1941. This specimen is a fine grained pinkish quartzite, mineral speckled, and sharp edged. Size is 1.65 inches long by 0.75 inches wide, diamond shaped profile 0.2 inches thick. Suggested style is a possible Sandia pattern, and Mr. Frank Hibben suggested his article in the 1946 issue of the American Antiquity publication as a reference to its design and age.

Points E and F, (-4 and -7, frame 6), are from the Sand Creek area of Pathfinder Reservoir and were both surface collected in 1941. The bases of each specimen appears to be basal ground, and flaking is not too noticable. Point E is light tan quartzite, and 1.8 inches long by 0.85 inches wide and the irregular diamond shaped profile is 0.375 inches thick. Point F, of tannish rose quartzite is 1.9 inches long by 0.8 inches wide and 0.325 inches thick, and somewhat diamond shaped in profile.

In reviewing the artifacts of Mr. Swallow's museum, an interesting small projectal point was noticed (drawing G.). So far, this is an uncatalogued item in the collection, and was found by Mr. Crowe, Sr. in the Sundance, Wyoming area. It has a similarity to the average McKean style point, except for the narrowness of the body. Workmanship is good, and the base area appears to contain some indications of grinding.



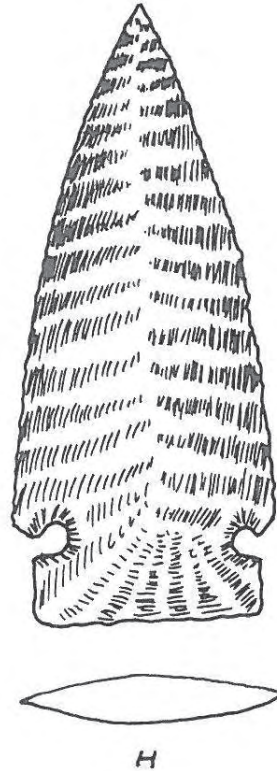


WYOMING ARTIFACTS FROM THE COLLECTION OF ELMER C. SWALLOW, CASPER, WYO.  
 FULLSCALE C. BELZ



THE SWALLOW ARTIFACT COLLECTION

Another artifact, (drawing H), was found in the west side Pathfinder Reservoir area by Harvey Crowe, Jr., and is of dark red chert. The style is very similar to that of a Scottsbluff classification, and contains similar flaking. The questionable oddity is the fashioning in the area of the tangs. There are squared off diagonal tangs, and the notchings are indented beyond the width of the base. Have you seen others of this style?





## MAPS FOR ARCHAEOLOGISTS

by

BAYARD D. REA

One of the most basic and important "tools" of the archaeologist is frequently overlooked by many of us who are amateurs. This "tool" is the map. A good map is absolutely essential for accurately locating archaeological sites.

In the Society files are numerous site reports that are virtually useless due to the fact that the location of the sites are so inadequately described that it is practically impossible for someone not already familiar with a particular site to find it from the description given. Other important sites have never been reported at all. The discoverer isn't quite sure of the location himself, and he isn't able to explain to anyone else how to find it. Both of these unfortunate situations could be overcome if we would all obtain and then use some of the excellent maps that are available.

The information that follows describes some of these maps that are especially helpful to the amateur archaeologist and explains how to obtain them. It is hoped that this information will also encourage the greater use of this vital archaeological "tool".

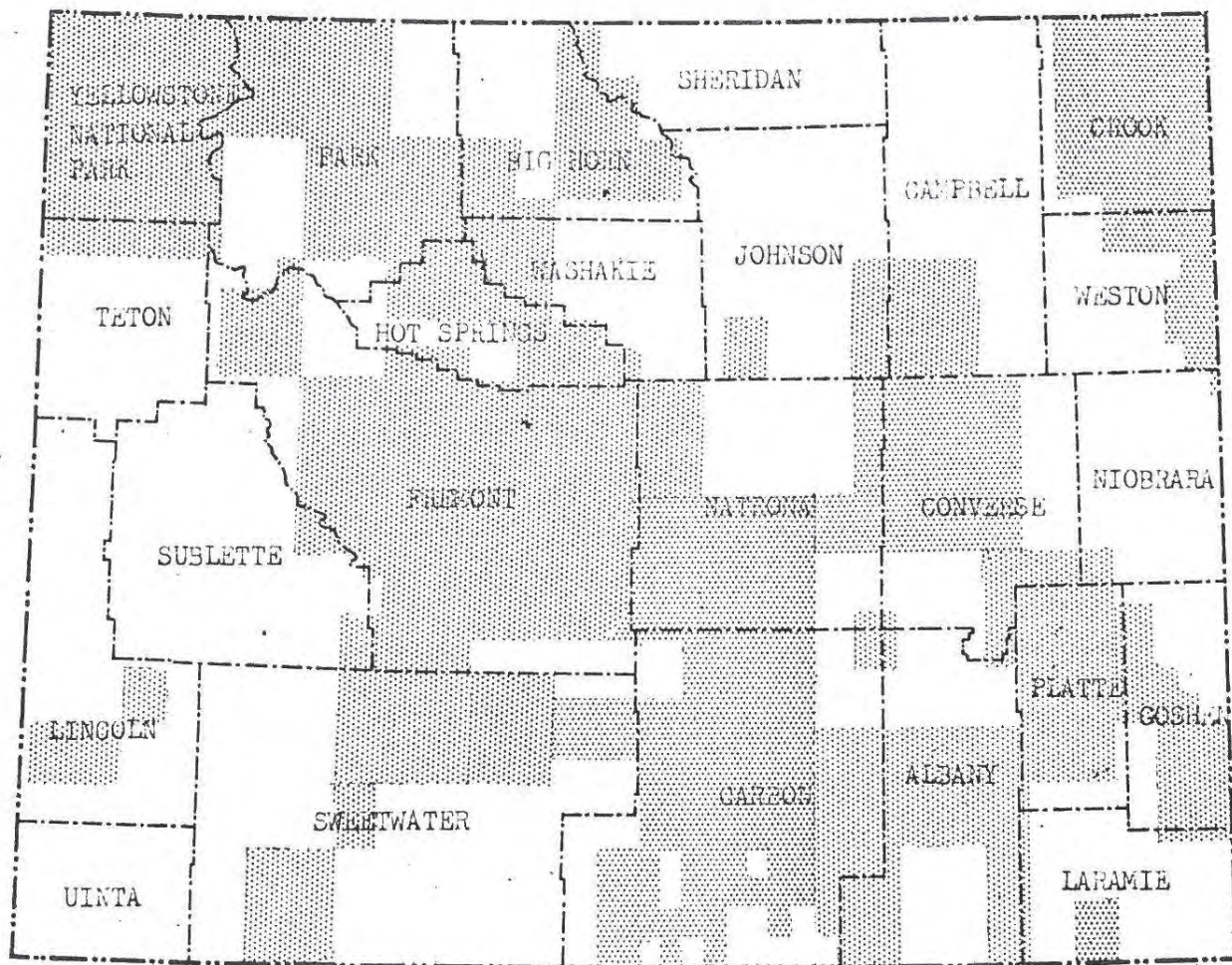
There are three series of maps now on the market that fulfill the need of anyone trying to find his way around the back roads of Wyoming. Two of these series are the topographic maps published by United States Government agencies. "Topography" is a term that scares some people; it merely means "land shape". In other words, these maps not only show the location of towns, rivers and roads; they also show the actual shape of the hills and valleys. With a little practice anyone can become proficient at locating himself on these maps even when he is far from any road.

Of the two series of topographic maps available, by far the better is the Geological Survey 7½ minute and 15 minute quadrangle series. The 7½ minute quadrangles have a scale of about 2½ inches = 1 mile, while the 15 minute quadrangle maps have a scale of 1 inch = 1 mile. Most of these maps have been made from air photographs and show every road, trail, and building. Unfortunately not all of Wyoming is yet covered by this series. Figure 1. shows the areas of the state for which these maps are now available. To obtain maps of this series it is necessary to get an "Index to Topographic Mapping in Wyoming". This index is free upon request to the U.S. Geological Survey, Federal Center, Denver 25, Colorado. The index shows the area covered by each individual quadrangle. The desired maps can then be ordered by name at a cost of 30 cents each.

The second series of topographic maps is the "United States Series of Topographic Maps, Scale 1:250,000". These maps are produced by the Army Map Service and have a scale of 1 inch = 4 miles. Because of their smaller scale, they show less detail than the previously described maps. However, they have the advantage of covering the entire state on 16 separate maps, each of which includes an area of about 60 miles by 100 miles. Each map is named for a prominent town that falls within its area. Figure 2. is an index to this series. These maps may be ordered by name at a price of 50 cents each from the U.S. Geological Survey, Federal Center, Denver 25, Colorado.

The Wyoming State Highway Department has produced an excellent set of road maps for each county in the state. These maps have a scale of 1 inch = 2 miles and show all trails and creeks. Each county is covered by several sheets which are shown on the index map, Figure 3. Each sheet costs \$1.00, and they may be purchased from the Planning and Research Division, Wyoming State Highway Department, Cheyenne, Wyoming.





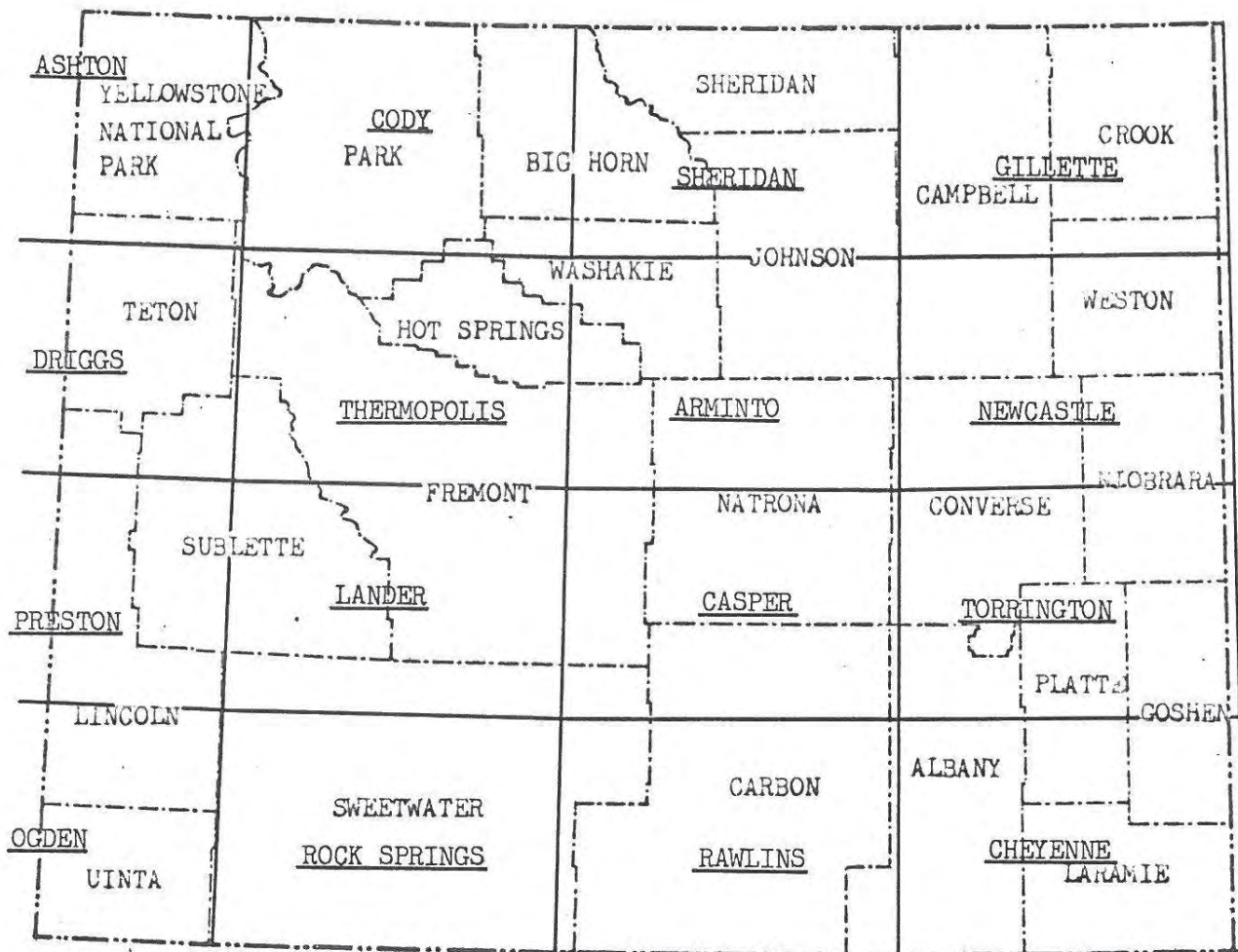
STATE OF WYOMING

Shading indicates area covered by U. S. Geological Survey 7½ minute and 15 minute quadrangle topographic maps.

Detailed index to individual quadrangle maps available upon request to U. S. Geological Survey, Federal Center, Denver 25, Colorado.

Figure 1.





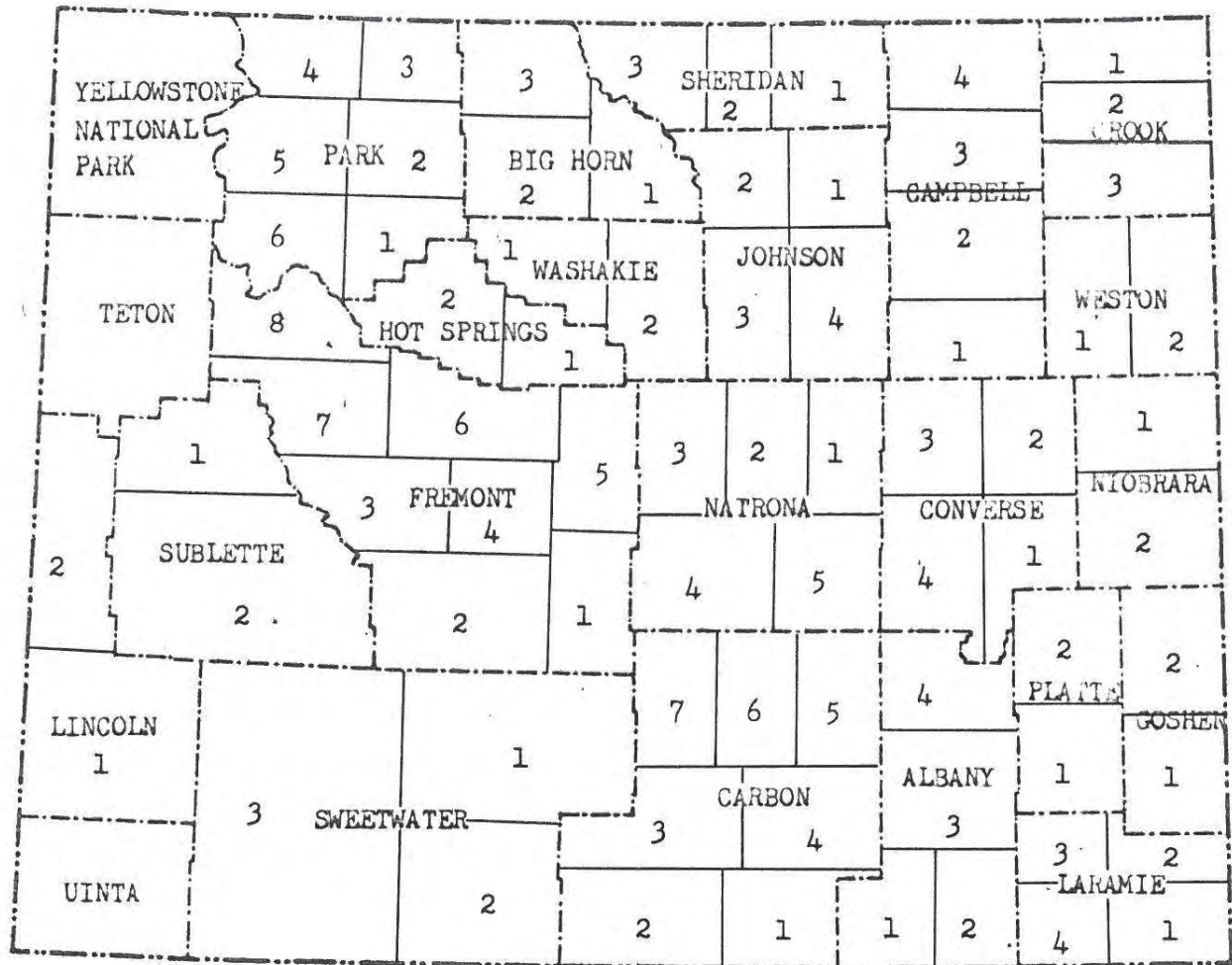
STATE OF WYOMING

INDEX TO "UNITED STATES SERIES OF TOPOGRAPHIC MAPS, SCALE 1:250,000"

Underlined names are names of individual maps. These may be ordered from U. S. Geological Survey, Federal Center, Denver 25, Colorado, at a price of 50 cents each.

Figure 2.





STATE OF WYOMING

INDEX TO WYOMING STATE HIGHWAY DEPARTMENT COUNTY ROAD MAPS

Numbers show individual sheets for each county. These should be ordered by county name and sheet number (Fremont County, Sheet 6) from Planning and Research Division, Wyoming State Highway Department, Cheyenne, Wyoming; price is \$1.00 for each sheet.

Figure 3.



## THE MCKEAN SITE IN NORTHEASTERN WYOMING

WILLIAM MULLOY

THE MCKEAN SITE affords definite evidence for a segment of the sequence of culture horizons in the northwestern Plains which we have presented elsewhere in tentative form.<sup>1</sup> This is a campsite with two well-defined, separated levels containing assemblages of the Middle Prehistoric Period, respectively assignable as Early and Late. A single carbon 14 date for the upper (Late) level reads 3287± 600 years. The assemblages agree with those of horizons of other sites in the general region, in particular with Signal Butte I and II. There are, however, discrepancies of dating for the McKean and Signal Butte analogues. A fragmentary skull from the lower level shows characteristics which have been suggested as belonging to Neumann's Deneid type.

Archaeological investigations at the McKean Site were carried out by the National Park Service and the University of Wyoming in the area now inundated by the pool of the Keyhole Dam recently constructed on the Belle Fourche River in Crook County, northeastern Wyoming. Excavation occupied a three-month period in 1951 and 1952.<sup>2</sup>

Above the Keyhole Dam the Belle Fourche flows generally to the east-northeast. In the approximately eleven mile span of the pool above the dam the lower portions of six intermittent tributaries are included. While the pool area and surroundings are typical of the northwestern plains, the annual precipitation in this locality (15 to 20 inches) provided a lush growth of grass and other vegetation as compared with other parts of Wyoming. Summers are hot with frequent high winds, and winters are cold. In the upper part of the pool the country tends to be open with com-

---

1 Mulloy, A Preliminary Historical Outline for the Northwestern Plains.

2 Members of the 1951 field party in addition to the writer included Lawrence Higby, camp manager, Joseph Palermo, Henry Sexton, William Yates, Jarrold Jayne, and David Ross. The 1952 party, in addition to the writer, included Clifford Higby, camp manager, William Weinrod, Max Rardin, James Vance, Jacques Gruber, and Shafik Alfi, Brainard Mears, John Montaigne, and William McGookey, from the Department of Geology of the University of Wyoming, gave freely of their time to aid in the mapping and the geological assessment of the situation. Paul McGrew and Alan Shaw of the same Department kindly identified respectively the animal bone and shell materials recovered. T.D. Stewart of the United States National Museum provided the report on human skeletal remains which is here appended. W.F. Libby, of the Institute of Nuclear Studies, University of Chicago, provided a carbon 14 date. Fred Goehring, Chief Engineer at the Keyhole Dam, and his staff went far out of their way to provide needed equipment, materials, and other cooperation. The efforts of these gentlemen made the investigations possible. The writer is deeply grateful to them.



## THE MCKEAN SITE

paratively little relief. The Belle Fourche and its tributaries meander in open valleys surrounded by eroded hills and buttes. Vegetation is principally prairie grasses interspersed with sage brush, prickly pear cactus, and a few other small plants. Along the river are groves of cottonwoods as well as patches of wild plums, chokecherries, and buffalo berries. Near the dam relief becomes greater, and the more level terrain gives way to escarpments along the river and tributaries with higher hills in the background. The stream-side cottonwoods and other vegetation remain, but the valley walls and surrounding hill tops are covered with scanty groves of pine and juniper. Here the terrain is similar to that of the Black Hills which lie to the northeast.

In earlier historic times this must have been an excellent game country, including such forms as bison, antelope, deer, elk, bear, wolves, mountain sheep, as well as rodents and prairie birds.

Of sixty sites in this area three selected by the National Park Service for excavation by the University of Wyoming-National Park Service Field Party. These were 48Ck2, 48Ck7, and 48Ck23, according to the Smithsonian Institution-River Basin Surveys nomenclature. The writer selected 48Ck7 (the McKean Site) as the first to be investigated. This proved so large and productive that the total field time was devoted to it. Even so only a small part was excavated, though an adequate sample was obtained.

## THE NORTHWEST PLAINS SEQUENCE

This extensive stratified campsite of unusual importance in that it casts light on one of the least known parts of the sequence of prehistoric occupations of the northwestern Plains. This occupation sequence, which the writer has tentatively outlined in detail elsewhere, is peculiar. Prior to 6000 years ago, in an Early Prehistoric Period, the area seems to have been occupied by small groups of buffalo-hunting nomads among whom the Folsom complex and the various complexes called Yuma were important. Indications are strong that the people of this period were specialists in hunting varieties of buffalo now extinct. Following this is a time span of uncertain length for which evidence is lacking. This may indicate abandonment or partial abandonment of the area or simply that remains of occupants have not yet been discovered. Dating from some time before 3500 years ago evidence appears of people strongly oriented in their economy toward plant gathering and small animal hunting with little or no emphasis on buffalo. Climatic conditions which made the area unsuitable for buffalo and other large game may have been responsible. At this time two similar and wide-spread complexes seem to have developed in succession in the northwestern Plains: the Early Middle and Late Middle Prehistoric Periods. The two superimposed levels at the McKean Site are manifestations of these periods. Subsequently a Late Prehistoric Period seems to have involved still different groups, some of which may represent peoples who were formerly of various ceramic-agricultural traditions to the east and who gradually moved westward, abandoning agriculture and more ceramic complexity and taking over a nomadic buffalo hunting adaptation. It is in the Late Period that the buffalo, now Bison bison, appear to return in large numbers. Some of these groups were ancestral to peoples of the final Historic Period. This outline is based on the scanty evidence now available: it is highly tentative and will probably be revised. Evidence at the McKean Site of manifestations of the Early and Late Middle Prehistoric Periods sheds additional light on two least known parts of the sequence.



## THE TERRAIN AT THE SITE

The site lies on the south side of the Belle Fourche River some three and a quarter miles above the Keyhole Dam and about three-quarters of a mile to the southeast of the river channel, which pursues a general northeasterly course in this immediate locality (Fig. 1). It lies about a mile to the northeast of the mouth of Wind Creek, an intermittent tributary, which follows a general northerly course. Though the site area drains directly into the river, the terrace on which it lies is essentially part of the eastern boundary of the mouth of Wind Creek valley.

The valley within the pool area is open country bounded by low terraces from three to fifteen feet high, most prominent on the east, with rising broken country in the background. The rolling bottoms are almost one and a half miles wide at the junction with the river, from which point they narrow up stream. Considerable meandering of Wind Creek and the river over these bottoms has left frequent old meander scars.

The lower eastern boundary of this valley is formed by a sandstone outcrop (hachured area in Fig. 1), bordered by cliffs up to about twenty-five feet high on the north and west. Other sides of the outcrop merge into high country to the east. To the south is the terrace forming the eastern boundary of Wind Creek's valley, its edge outlined by meander scar No. 1 in Figure 1. Height is somewhat less than twenty feet, with the top somewhat lower than the outcrop, so that a considerable area immediately south of the outcrop is protected from the north wind. This area (Fig. 1, Locality I) was one of the most intensively occupied of the site.

The southeastern part of the outcrop is cut off by a small draw bordered by low escarpments and in which there was no evidence of any modern stream cutting. The protected side of the draw mouth below the low escarpments was also intensively occupied (Fig. 1, Locality II).

Sporadic surface evidence of occupation occurred along the terrace top for at least 3000 feet south of the outcrop. Earlier investigations here (Site 48Ck206)<sup>3</sup> did not prove fruitful beyond indicating that an occupation had existed. This is probably part of the McKean Site.

The meander patterns below the terrace are significant, as part of the culture-bearing material of Locality I was cut away by stream action after the second or final occupation. A drag line excavation (twenty-two feet deep) was made in the filled-in meander scar just below the base of junction of the cliff and eroded terrace. The material--a blue clay somewhat banded with small lenses of sand--appeared to be a gradual swamp bottom accumulation deposited in the course of the filling of an ox-bow lake. No artifacts, cultural debris, or other signs of human activity were revealed on or below the surface of the meander scar. This further suggests that meander cutting and later ox-bow lake filling took place after the final occupation of the site, for it is unlikely that occupants would not have thrown cultural debris over the edge of the cliff. It is probable that debris of the occupation period was carried away by subsequent cutting of the meander.

Brainard Mears, who studied the meander patterns in detail, concluded that the scars indicative of site cutting were early in the series of scars now extant. His conclusions are illustrated in Figure 1, where meander scars are labeled in ascending order from earlier to later. Cutting of the terrace edge was done apparently by Nos.

---

3 Wheeler, Appraisal of the . . . Resources.



THE MCKEAN SITE

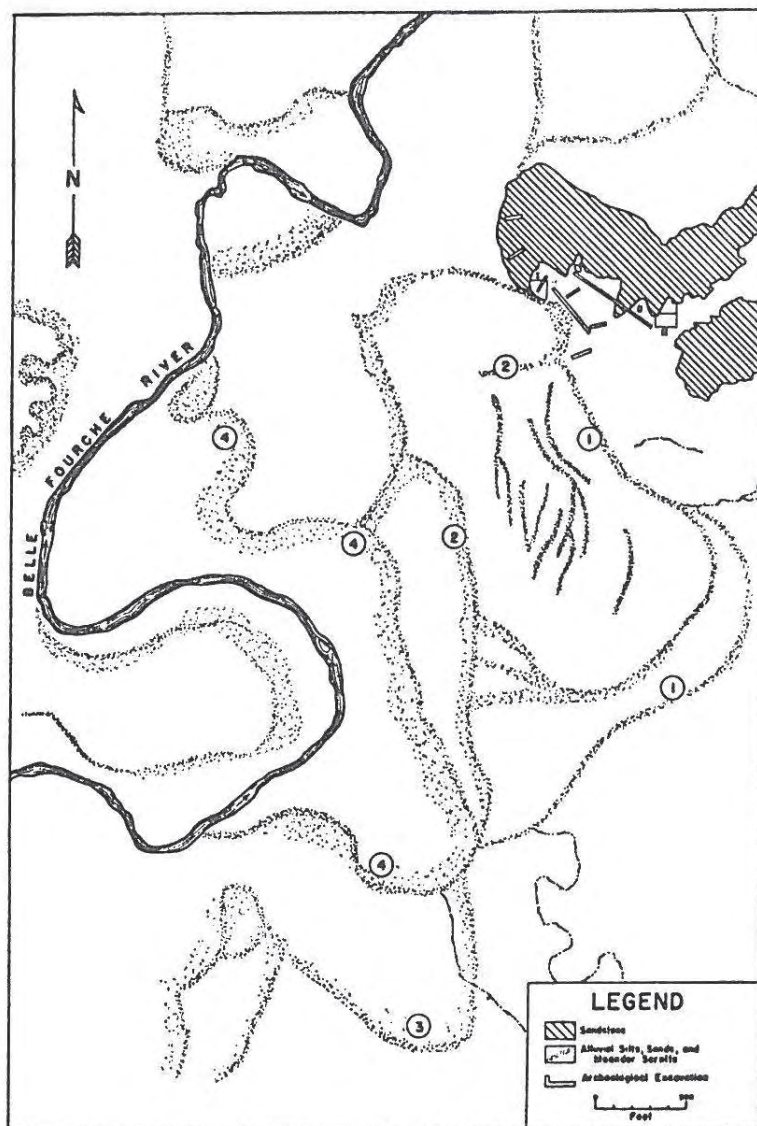


FIG. 1. The McKean site and environs.



## THE McKEAN SITE

1 and 2. As Nos. 1 and 2 occupy the same area at the critical spot, some cutting by No. 1 may have been done prior to, during, or after the occupation of the site, whereas cutting by No. 2 was done definitely after the final occupation. Mears points out that it is impossible to date the scars but that considerable meander activity took place in the valley after the occupation of the site.

Initial exploration consisted of surface investigation, though previous surveys suggested an unrenumerative site. Six exploratory trenches were cut at right angles to the terrace edge (Fig. 1).

The exploratory trenches disclosed that the terrace top was made up principally of sand and small pieces of sandstone. A small amount of human-stained soil was found at all levels. This suggests that the terrace top was formed gradually (principally of sand, probably decomposed sandstone from the outcrop and elsewhere, aided by wind and sporadic wash) and had been fixed in place by plant activity. Other than charcoal-stained strata there was no evidence of buried surface strata, natural or otherwise. The charcoal-stained strata contrasted sharply with the unstained strata in profile, being much darker. Microscopic examination of the stained material proved it to contain very little actual charcoal but to consist of grains of sand darkened apparently by contact with charcoal. It would seem that the stained strata were formed by human activity in the sandy-surfaced camp, by continually churning the top few inches of surface by walking on it and burying bits of charcoal which stained the ground below. It does not appear, then, that the thickness of the stained strata represents the amount of new material deposited during the occupation of the camp.

In order to be sure that no deeper cultural remains had been missed, Trench 4 (fourth from the south) was first deepened to six feet where it reached living rock at its southwestern end. A datum point, selected arbitrarily (Fig. 2), was given a horizontal value of 0 and a vertical value of 100 feet. From this a grid of five-foot interval oriented to magnetic north was established and each coordinate marked with a stake. Elevation of each coordinate was recorded and a contour map of six-inch interval of the immediate vicinity was made. Maximum extent of the first season's excavation is indicated in Figure 2 by the inner broken line and the second season's by the outer broken line.

Excavation began on the terrace and cliff edge, progressing northward. The eastern end was arbitrarily determined by the line of E010; the western end was the irregular edge of the sheltering outcrop. Successive east-west lines of five-foot squares were removed from top down. Overburden was removed with a shovel to within .1 foot of the upper camp level. The upper level was then cleaned with small tools. Features or in situ cultural materials were photographed and recorded by reference to grid lines. Depths were established with a transit. Overburden was then removed to within about .1 foot of the lower level and this similarly treated. Excavation usually continued about one foot below the lower charcoal-stained stratum. All material was screened, and items recovered separated stratigraphically.

During the latter part of the second season operations were removed to Locality II which lay at the sheltered north side of the mouth of the little draw (Figs. 1 and 3). Here at one point erosion had exposed a trace of a charcoal-stained stratum. Elevation and horizontal location of S185 x E645 was established from the original datum, and a grid of five-foot squares laid out. Excavation technique was continued without change.



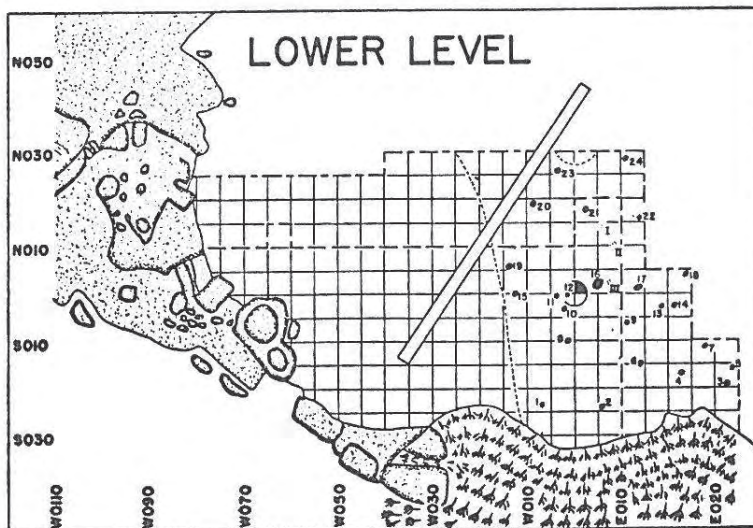
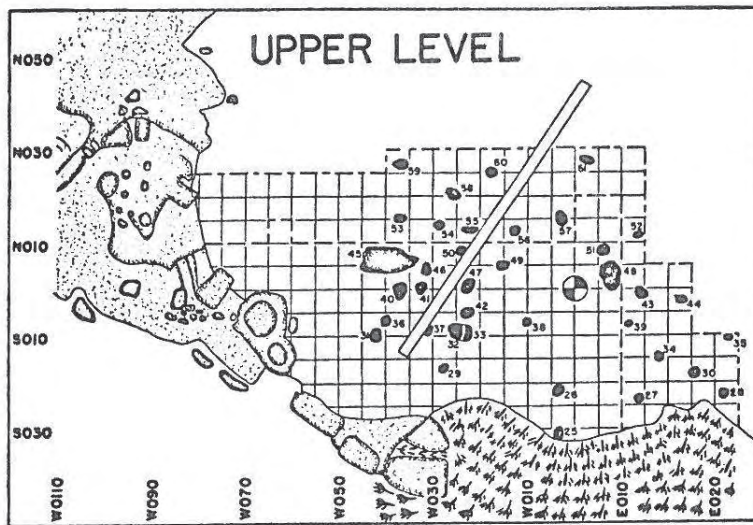


FIG. 2. Locality I at the McKean site.



THE MCKEAN SITE

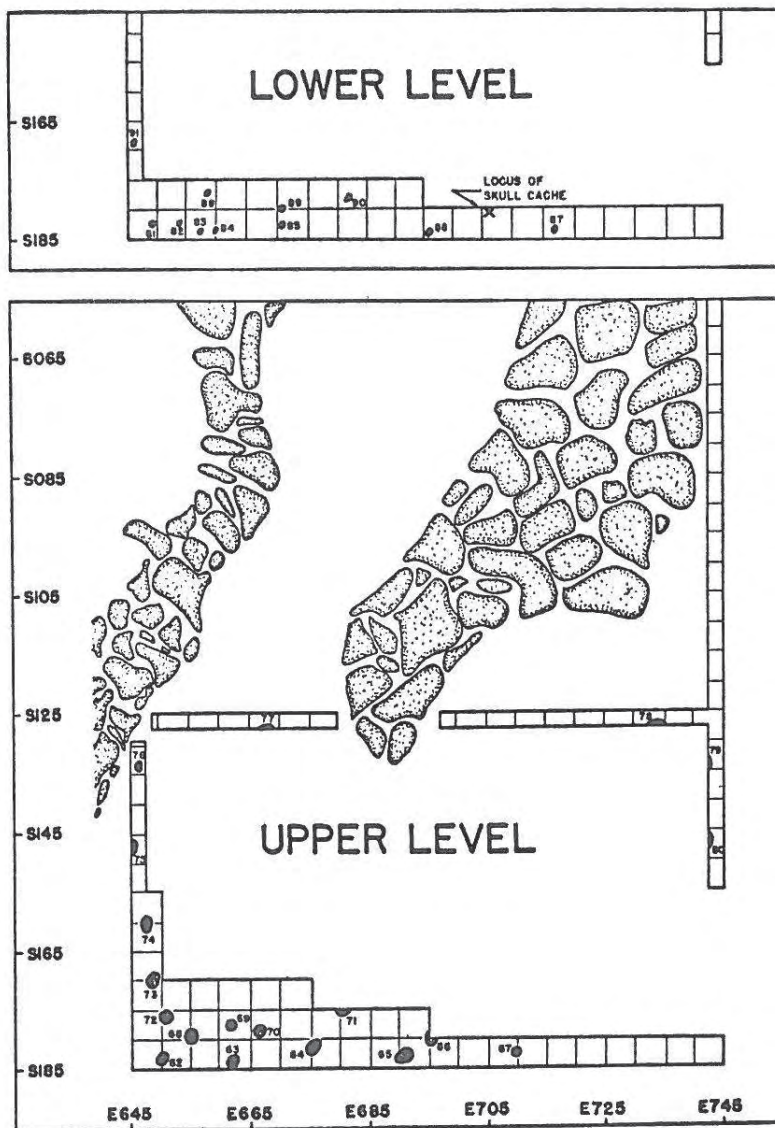


FIG. 3. Locality II at the McKean site.



## THE MCKEAN SITE

Because of limited time remaining the first investigation attempted to determine extent of area of occupation by the trial trenches shown in Figure 3. The situation was similar to that at Locality I. The same two distinctly separated charcoal-stained strata were found; this time thicker, deeper, and more separated, together with similar artifacts, debris, and major features. No differences indicated that this was other than an extension of the camp at Locality I.

During the last week of investigations, because the area would be flooded, an attempt was made to obtain rapidly additional information as to size of the camp. With a bulldozer two profiles were cut across the area between Localities I and II (indicated by the two long trenches in Fig. 1). One along the edge of the terrace revealed that the two stained strata gradually faded out to the southeast, the lower level being barely discernible for about 50 feet, while the upper continued sporadically and attenuated, to fade out at about 180 feet. Nowhere did occupation approach the intensity of Locality I. This further suggests that Locality I was selected for its more effective protection from the north wind.

The second (northern) long profile along the edge of the outcrop to Locality II revealed sporadic stained lenses principally of Level II. They were located wherever the outcrop or a dip in the surface of the ground provided even a slight shelter from the north. To the south of the small finger of the outcrop which intersects the profile, Level I appeared only scantily: nowhere did concentration approach that at Locality II. Small occupation areas are probably to be found scattered here and there over the whole surface of the terrace, gradually fading to the south as the shelter of the outcrop became less effective. The upper level was of considerably greater extent than the lower.

Investigations revealed remains of occupations of two culturally distinct groups of people well separated by physical stratigraphy. Mixture of materials was extremely uncommon except in a few limited areas. Remains of both give evidence of an exceedingly simple economy and cultural life, which in their general features must have been similar to the way of life of such peoples as the Gosiute of the north-eastern Great Basin. Such an economy is generally associated with small nomadic bands or independent family groups. Thus, in spite of the large number of hearths in both levels, it seems unlikely that large permanent camps are represented, but that the spot was one to which small nomadic groups--perhaps not always the same groups--returned intermittently to exploit to exhaustion the economic resources or a particular seasonal economic resource of the vicinity and then move on to allow replenishment. Such resources seem to have included wild vegetable products and principally small game, including Unjos in the upper level. Lack of evidence of shelter may indicate summer occupation without shelter. On the other hand the interest in protection from the north suggests winter occupation, in which case survival under present climatic conditions without some sort of shelter seems almost inconceivable. Possibly shelters were temporary wickiups of sagebrush or similar materials which left no trace in the unstable sand. There seems too little emphasis on large game to suggest skin structures.

This view of successive seasonal occupation must not obscure emphasis on the distinct gap between the two occupations. The picture is one of intermittent use of the area for many years by the first groups, a long period of disuse, similar use by the second group, followed by another long period of disuse. Further, it should be emphasized that while the remains at both levels are probably to be attributed to many small social groups who lived there successively and both represent simple



## THE MCKEAN SITE

gathering economies, the upper and lower levels are significantly different from each other culturally as the following discussion of material culture will reveal.

As Localities I and II demonstrated no significant differences from each other they will be considered together.

### CULTURAL FEATURES OF THE SITE

The lower level consisted of a charcoal-stained stratum covering the eastern portion of Locality I (east of the dotted line, Fig.2) and the southern excavated section of Locality II. It was found to be increasingly thicker and buried deeper to the east, thinning out to the southwest and northward in Locality II (thickness, west to east, .05 to 1.6 feet; depth 1.1 to 4.2 feet). Probably the greater part of the lower occupation level at Locality II lay south of the excavated area.

Its most frequent features were hearths (a total of thirty-four) of three types. Type I, the most common, was a simple irregular surface lense of stained sand and charcoal, with occasional small stones as apparently accidental inclusions. These seem to be the surviving evidences of many such temporary fireplaces--the last made at the site--most of which were obliterated by trampling in the soft sand. Type II--more permanent, but surprisingly small--were uniform semispherical excavations crudely lined with small, irregular sandstone slabs and containing heavily stained sand and finely divided charcoal. Peripheral sand and the slabs were commonly burned red. The slabs had frequently fallen into the pit. Type III--two hearths--may have been like those of the upper level, but a careful check of profiles established their provenience in the lower level with the upper level stratum extending uninterrupted over them. They were elliptical, round-bottomed, basin-like depressions filled with irregular pieces of sandstone mixed with small charcoal fragments and stained sand. Again stones and parts of peripheries were burned red. The only difference between these two and upper level hearths was the larger size of the stones, some up to one foot diameter.

Lower level hearths (except the pair of Type III) suggest a shortage of fuel by reason of their small size and the paucity and finely divided nature of their charcoal. The inference is that these were fires of small plants such as sagebrush and greasewood. In contrast upper level hearths contained much more charcoal, with large pieces, some identifiable as pine. It seems probable that pines were present to the east during the upper level period, but not earlier.

Two cache pits were present in the lower level. One ("Hearth" 4), which may also have contained fire, showed use at two periods. In the bottom of a roughly cylindrical pit (2.4 feet diam., 1.1 feet deep) another circular, round-bottomed excavation (1.4 feet diam., 1.6 feet additional depth) had been made. The diameter increased slightly below the rim of the lower pit. This lower section had been filled (contents stained sand, one plano-convex scraper, and several chips of worked stone), and the upper portion reused. The few evidences of fire near the surface do not suggest much use as a fire pit.

The second cache pit, less definite in outline, lay at the spot marked "Locus of skull cache" (Fig. 3) at a depth of 3.8 feet. No pit outlines were visible on the exposed lower level surface but in the course of horizontal peeling, at a depth of 4.9 feet, the top of a human skull appeared. Sporadic faint pit outlines failed to reveal exact pit shape. It was probably about 1.5 feet in diameter, somewhat more than 2 feet deep, with the top of the pit almost certainly confluent with the lower level surface. Sand surrounding the skull was harder than elsewhere, while



## THE MCKEAN PIT

the bones were soft and friable. The remains were fairly well preserved cranial portions of a human skull minus facial portions, lying face downward with top oriented roughly to the north-northeast. Lying alongside to the east were two fragmentary bison os innominata. Circumstances of deposition suggest, not an ordinary burial, but perhaps a cache for some obscure purpose. The fact that both the skull and the os innominata were each all in one piece and the lack of detached fragments suggest that they were about as fragmentary when deposited as when recovered. Thus they would seem to have been old rather than fresh bones at the time of deposition--perhaps trophies of some sort. There was no indication of artificial alteration. The skull is described by T.D. Stewart in the Appendix.

Resting on the old ground surface of Locality I were three piles of small stones of .8 to 1.1 feet in diameter (Fig.2). No evidence of burning or charcoal accompanied them. They lay within an area about fifteen feet in diameter. It was originally thought that these might have formed part of some sort of structure foundation, but further excavation disclosed no more.

In the vicinity of NO30 X 000 was a small circular depression about ten feet in diameter and about a foot and a half deep (dotted line in Fig.2). Though this may have been a depressed floor of some kind of structure there was nothing to indicate with certainty that it was not of natural origin.

In the vicinity of NO20 X W015 the ground surface was littered with many thin, irregular, flakes of siltstone, apparently rejects struck from a core. The lower level ground surface was littered throughout with small amounts of such debris, as well as a few animal bones and broken and whole artifacts.

The upper level consisted of a similar charcoal-stained stratum almost everywhere clearly separated from the lower by an unstained stratum. This extended over the entire area excavated in both localities. Thickest and deepest in the southeastern sector of Locality I (1.2 ft. thick, 1.1 ft. below present surface), it gradually thinned and approached the surface to the west and also to the southwest of Locality I (respectively: .1 ft. thick, .2 ft. deep; .6 ft. thick, .5 ft. deep). At Locality II it gradually feathered out to the north and generally was of less depth, though unlike the lower level, it probably reached the escarpment.

Here again the most frequent features were the fifty-six hearths--all large, stone-filled basins which contrast sharply with most lower level examples. They might have been roasting pits for Unios or some kind of vegetable products, such as prairie potatoes. It appears as if a pit were first dug, a fire built in it, and the pit probably gradually filled with stones while the fire was maintained. In some cases pits were filled to the brim and in others only partly filled. Stones were principally sandstone fragments (one-half foot in diameter to small peices), usually partly fire-decomposed, and including frequent metate fragments, stone-working debris, and Unio fragments. Such fires would have held considerable heat long after dying, and this may have been the reason for their construction. Alternately, as steaming pits food may have been placed on the hot stones, and covered with earth through which water was poured. Most contained considerable charcoal, much identifiable as pine, in contrast to the lower level. Many samples for carbon 14 analysis were recovered.

Type IV, the common variety, was a round-bottomed pit varying from semispherical to irregularly elliptical. Type V was a flat-bottomed basin with straight sloping sides, an inverted truncated cone. Type VI includes only Hearths 45 and 48. These



THE McKEAN SITE

were contained in large, shallow, irregular, excavations of varying depth. Shapes are best revealed in Figure 2. Of Hearth 45 the largest diameter was 12.2 and greatest depth .9 foot. Of Hearth 48 the largest diameter was 5.9 and greatest depth .5 feet. These may have been special large size hearths for cooking food for unusually large group activity.

Hearths 32 and 33 are significant in that they are superimposed and indicate that not all were used at the same time. Hearth 33 was about half filled with stones and the remainder with sand. It must have been long abandoned before Hearth 32 was dug into part of its area.

The upper level surface was littered with stone-working debris, a few animal bones, many *Unio* shells so badly eroded that usually only the thickest part of the articulation remained, and many whole and broken artifacts. Unlike the lower level the upper level surface was not littered with small pieces of unworked sandstone, these apparently having been used in the hearths.

The complex of artifacts and other cultural debris recovered from both levels is as might be expected for simple cultures economically oriented toward gathering wild products and some hunting, especially of small animals. Most material

---

Lower level hearths:	Diameter	Thickness or depth	Hearth nos.
Type I	.5-1.9 feet	.05-.2 feet	1, 2, 6, 7, 10,11,12,14,15, 18,19,22-24,81,82,84,87,89,90
II	.8-2.6	.4-.8	8, 9,13,16,17,20,21,83,85, 86,88,91
III	Max.3.2, Min. 2.6	1.9	3
	Max.3.4, Min. 2.5	2.0	5
Upper level hearths:			
IV	1.2-3.8	.4-2.9	25,27,28,30-39,41-44,46,47, 49-53,55,57-59, 61-66, 68-72, 74-80
V	2.5-3.6	.9-2.7	26,29,40,54,56,60,67,73

---

recovered is stone. Paucity of bone artifacts might be accounted for by lack of preservation, but this seems unlikely as many unworked animal bones are well preserved.

Of stone artifacts of both levels only projectile points reveal a high degree of stylization. Though there are recognizable types in the rest of the material, much seems nondescript and obviously many tools were improvised.

In both levels numbers of projectile points and hide-working tools seem surprising in view of small numbers of animal bones. This might suggest stronger hunting orientation than is indicated by the rest of the evidence. Possibly most hunting was done while camped elsewhere. All materials used were obtainable locally.



## THE MCKEAN SITE

From the lower level most useful for comparative purposes are 115 whole and broken projectile points. Most common materials are metamorphosed siltstone (48) and quartzite (43).

Projectile points appear to vary around a single norm though the range of variation is so considerable that at least two varieties might be separated. However, all variants appear so closely connected by intergrades that the writer prefers to regard them as variants of a single norm. There is essential unity of type at this site of forms which elsewhere in the Plains are regarded as discrete types. But this is only one of several valid ways in which the material might be conceptualized.

The simplest form is a lanceolate blade, usually with blade edges incurved toward tip and tapering toward base about midway between tip and base. Occasionally sides of the proximal blade-half are parallel. Usually base is sharply concave, though sometimes concavity is slight or absent (Fig. 4, nos. 1-15).

Wheeler has described this variant as it occurs at the McKean Site and elsewhere in the Keyhole area, naming it the McKean Lanceolate Point.<sup>4</sup> In the writer's view this term applies to only a part of a continuous range of variation of shapes.

From strictly lanceolate points the type shades into blades with slight constriction of base sides to form a scarcely perceptible stem defined by a slight shoulder. Sometimes this constriction takes the form of a slight lateral notch, which is to say that the proximal end of the base appears slightly expanded (Fig. 4, nos. 16-30).

Further variation is into specimens with pronounced stem constriction and shoulders. Here again the proximal stem end is sometimes slightly expanded.

All variants have cross-sections usually lenticular, though frequently planoconvex with one side revealing the original flake surface. Blade edges are usually sharp and thin, varying from even and symmetrical to sinuously irregular, with frequent hinge fractures and flakes not commonly extending beyond the blade midpoint. Sharp edges were produced principally by primary flaking and only infrequently has short, secondary, retouch been resorted to along edges. Basalar concavities are produced by short, longitudinal, flakes which sometimes considerably thin proximal ends. Bases and stems or proximal blade edges on lanceolate points are sharp. There is no grinding or other intentional dulling. Largest and smallest points are Nos. 1 and 30 of Figure 4. Thicknesses varied from .3 to .1 inch. It is noteworthy that a few variants of this series (e.g. no. 43) approximate the shape of the peculiar side notched-base notched points which formed a minority type at Signal Butte I<sup>5</sup> and which are somewhat similar to one of the characteristic types of the latest horizons in the northwestern Plains.

There are twenty plano-convex, snub-nosed, end-scrapers (Fig. 5, nos. 10-12, 15-20). Materials are quartzite (5), jasp-agate (5), jasper (2), fossil wood (1), and metamorphosed siltstone (1). It is noteworthy that selection of materials for these tools at both levels seems special, particularly in the minor use of the soft metamorphosed siltstone which is the easiest local material to obtain. Cutting edges of some are rubbed smooth as if they had been used against an abrasive surface,

---

<sup>4</sup> Wheeler, McKean Lanceolate Point.

<sup>5</sup> Strong, Introduction to Nebraska Archeology, Pl. 25, I, e.



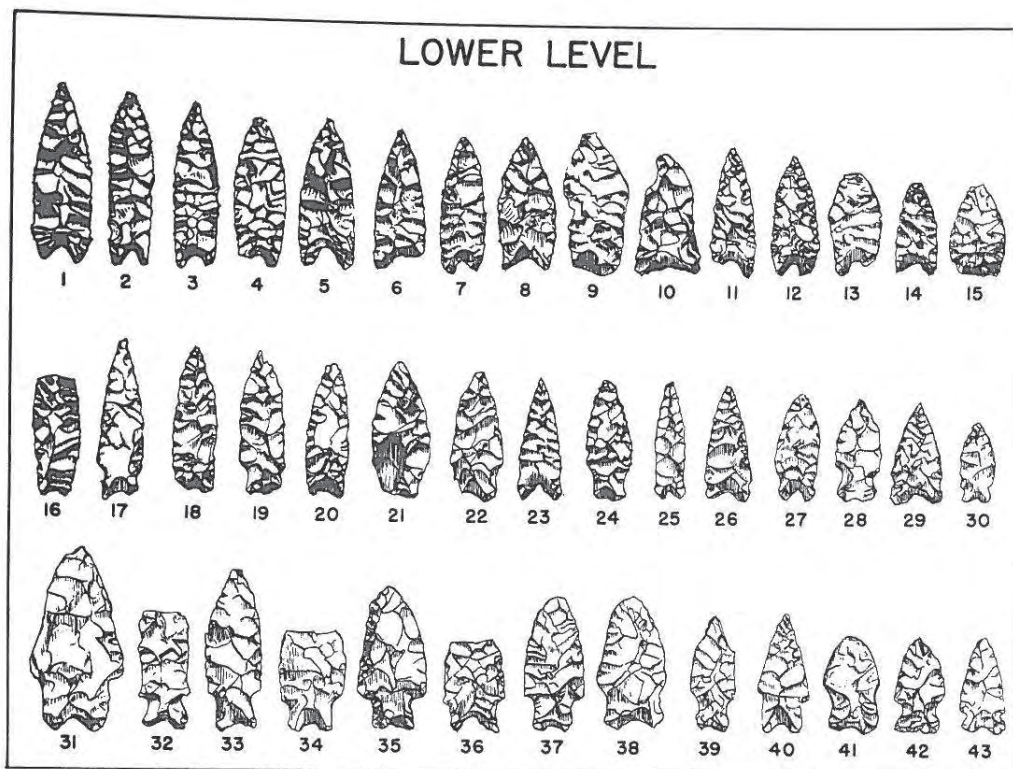
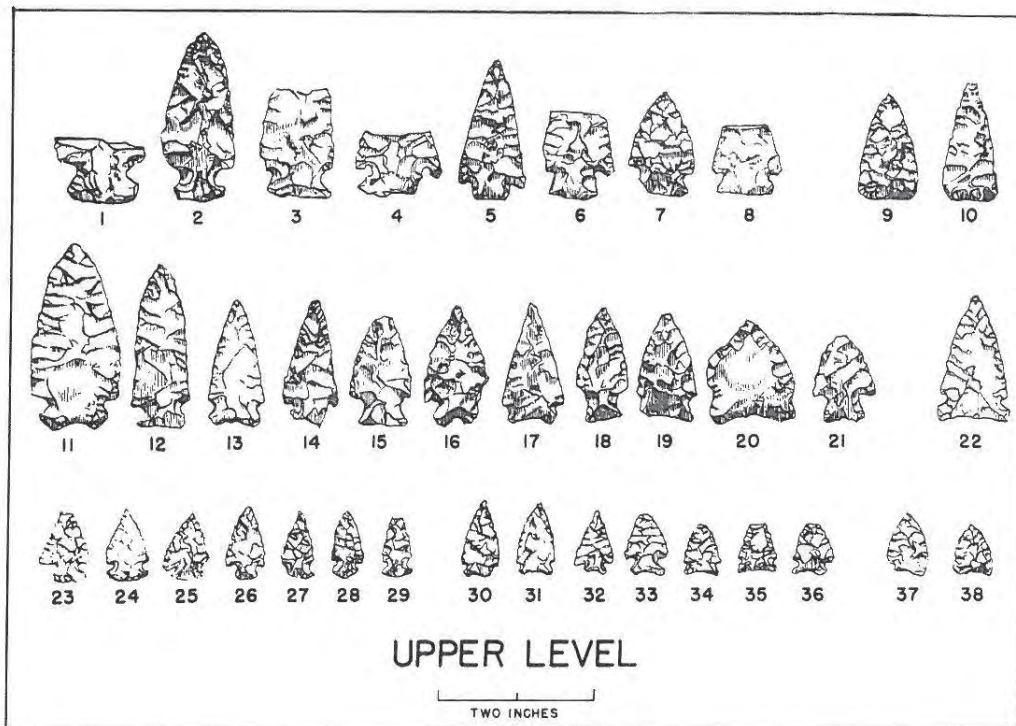


Fig. 4, Projectile points from the McKean site.



THE McKEAN SITE

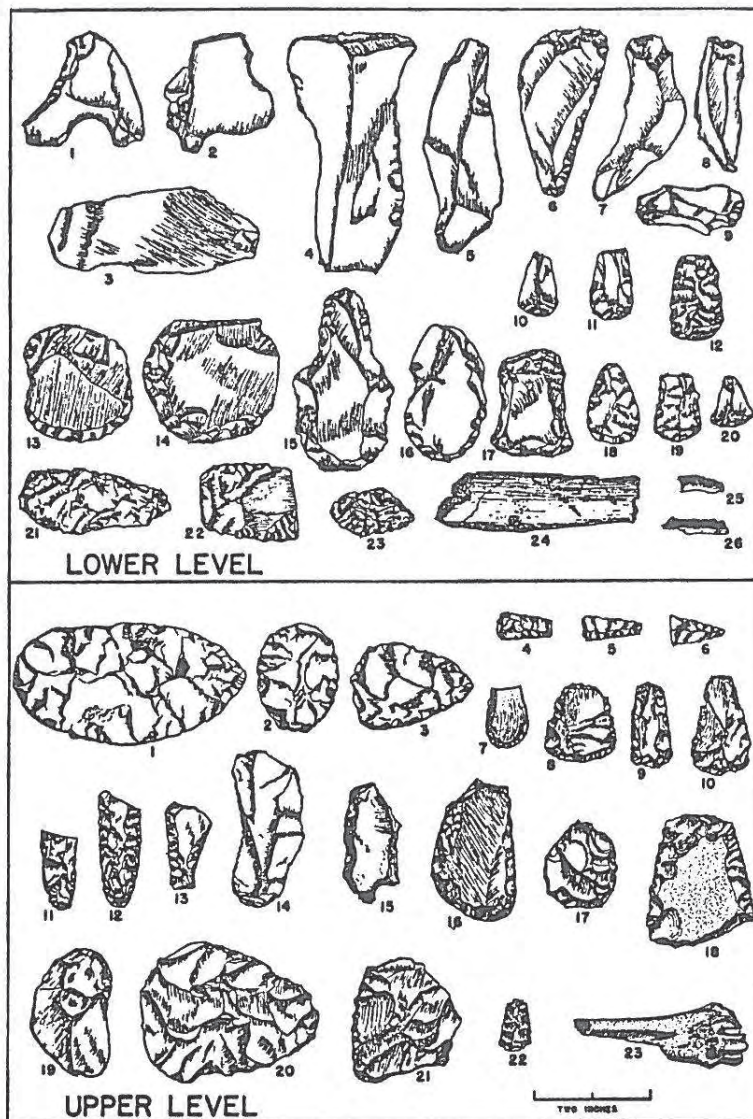


FIG. 5. Other artifacts from the McKean site.



## THE McKEAN SITE

perhaps a dirty hide. With the exception of one tanged specimen (Fig. 5, no. 15), they vary in shape from ovoid to triangular and irregularly rectangular. They are made from flakes with one flat side, the obverse faces modified as shown in Figure 5. Most flakes had bulbs of percussion at their proximal ends, with concavities below the bulbs appearing on their flat sides. Such turned-back working edges were more efficient. Cutting edges are slightly crescentic. There are no central projections on the blade as are frequent on similar later Plains scrapers. Largest and smallest are Nos. 15 and 20 of Figure 5. Thickness varies from .4 to 1.0 inch. In most respects these are typical Plains hide-working tools which were probably hafted to a straight or L-shaped handle.

Another class of plano-convex scraper includes twelve specimens (all metamorphosed siltstone): ovoid to somewhat irregular disks with one flat and one irregular side, unilaterally percussion-retouched around two-thirds of their edges. Retouches are steep and edges sharp, without evidence of smoothing. These would have made useful scrapers, perhaps hide-working tools. Largest and smallest are Figure 5, nos. 13 and 14. Of these three were found together with a slender, retouched lamellar flake on the lower level surface as if they might have been in a bag.

There are five spokeshaves (metamorphosed siltstone): flat flakes with one or more semicircular concavities unilaterally pressure-flaked into their edges. Most definite concavities would serve to dress a shaft upwards of .75 inch diameter, which suggests dart or spear, rather than arrow, shafts. Always some other part of the flake edge is also unilaterally pressure flaked; one has two concavities, others one. Largest and smallest are Figure 5, nos. 3 and 2, with no. 1 the most finished tool. Thickness varies from .2 to .4 inch.

There are forty-three ovoid to piriform bilaterally flaked knives, primarily of metamorphosed siltstone. Most are broken, usually transversely across the middle. Some broken specimens suggest maximum lengths of five inches or more. They were first shaped by percussion and edges finished by pressure. Cross-sections are fairly regularly lenticular. Some have slender points, while others approach ovoid form. Frequently bases tend to be markedly flattened (as in Fig. 5, no. 22). Some were probably projectile points. Largest and smallest whole specimens are Nos. 23 and 21 of Figure 5.

The twenty-six crude bilaterally percussion-flaked cores without retouch vary from ovoid to piriform and irregular, and lenticular to irregular in cross-section. Materials are again principally metamorphosed siltstone. Some may have been supply cores, but most appear deliberately, though crudely, constructed tools. Function is obscure. Edges are not particularly sharp or regular, and their small size suggests ineffective choppers. One of the largest has one end smoothly polished, possibly by digging. Largest is 4.6 and smallest 2.1 inches long.

These people understood the technique of removing quite large, thin, slender, lamellar flakes from at least partially prepared cores. Probably many projectile points and other similar tools were made from such flakes. Ordinarily they are not the very regular blades of triangular or trapezoidal cross-section, such as those of the European Upper Palaeolithic, but some approach this form. No fluted cylindrical cores were recovered. A few cores occurred on which striking platforms had been prepared, from one side of which lamellar flakes had been driven.

There are nineteen identifiable knives or scrapers made from such flakes; probably many of the small fragments are from similar implements (Fig. 5, nos. 4-9; 4 largest; 9 smallest). Materials are metamorphosed siltstone (15), quartzite (3), and agate (1).



## THE MCKEAN SITE

Usually modification consists of unilateral pressure-flaking about the periphery.

There are 116 retouched flakes which suggest knives or scrapers. They appear to be improvised tools, though many have effective edges: stylization seems lacking. Predominant materials are metamorphosed siltstone (69) and quartzite (14). Any flake capable of producing an edge was apparently thought suitable. Pressure retouch is confined to the edge and is almost invariably unilateral, the only departure being a few odd chips on an opposite side to straighten an edge. Pressure-flaked edges are rarely worn smooth as if against an abrasive substance. Length varies from 4.2 to .9 inches.

Manos and metates were used, but numbers indicate lesser emphasis on activities concerned with them than in the upper level. A single metate was recovered: a roughly ovoid slab of local sandstone with slightly squared ends, worked to shape by spalling about the edges and grinding of rough surfaces. Both surfaces have been pecked to roughen them, though only one was used. It bears a longitudinal trough, clearly the result of use of a reciprocating mano. The slab is 17 inches long, 9.6 wide, and .9 in maximum thickness. The clearly defined trough is 5.1 inches wide, 11.4 long, and .2 in maximum depth. There are five metate fragments, all local sandstone. Each shows pecking and use on one side. Thicknesses vary from .3 to .9 inch. Evidently portability was a consideration, for thicker and stronger slabs were available. The two mano fragments are of local sandstone. The first is a section of a completely pecked flat stone 2.9 by 1.1 inches in transverse cross-section. It was probably originally about 4 or 5 inches long. One side is rubbed flat; the other bears two definite planes leaving a longitudinal keel caused by reciprocating rubbing. The second is a small, rough fragment of a slab rubbed smooth on one flat side--evidently an improvised tool.

A sandstone disk (.8 inch thick, and 6.9 inches diameter) is of problematical use. Edges have been double-beveled by spalling.

Worked bone is scarce. Among these a fragment of bison rib bears a design of gouged lines of dots (Fig. 5, no. 24). Three fragments of cylindrical bone beads bearing crude transverse incised lines were made of long bones of rabbits or small rodents (Fig. 5, nos. 25-26).

In the upper level again the most stylized items are ninety-two projectile points. A third are quartzite, a quarter metamorphosed siltstone, with other materials. This complex is more diversified than that of the lower level. Particularly significant is the clustering in two rather distinct sizes. While those of the lower level center around a single size norm--which suggests dart points, though they could have served as arrowheads--those of the upper level center about two size norms the larger of which suggests probable dart points and the smaller rather definitely arrowheads. Possibly both weapons were used.

The characteristic point is triangular, corner-notched, with either a concave or convex base. In the larger size there are twenty-three concave and ten convex bases (Fig. 4, nos. 1-8, 11-22). Notches tend to be large and to approach sides rather than bases so that a few examples out of context might be classified as side-notched points. This is particularly evident in conjunction with concave bases, one (Fig. 4, no. 22) reproducing almost exactly the general contours of the side-notched, concave-based points of the later horizons in this region. It appears so definitely a side-notched point that it may not represent part of this series at all but something intrusive. It was clearly in the upper level matrix. Largest and smallest complete



## THE MCKEAN SITE

points are Figure 4, nos. 2 and 21. Some broken specimens were probably larger. Thickness varies from .1 to .3 inch. Cross-sections vary from lenticular to irregular. The smaller counterparts (Fig. 4, nos. 23-26) are similar except that they tend to be proportionately thinner, notches proportionally narrower, and flaking somewhat more regular. This difference may be simply a function of easier work on smaller points. There are eight convex and ten concave bases. Largest and smallest are Figure 4, nos. 24 and 34. There is no smoothing of bases or notches of these or any other points in the upper level.

Fifteen triangular unnotched points with flat or concave bases fall into two size categories (seven larger, eight smaller: smallest and largest, Figure 4, nos. 9-10, 37-38). These might be thought unfinished projectile points of the previously described type, save that all appear to be completely finished. Of the smaller size two have a shallow notch at one corner reminiscent of obliquely hafted knives (Fig. 4, no. 37).

Flaking on all points tends to be more irregular than that of the lower level. There are more hinge fractures, less reliance on primary flaking to produce the outline, and more emphasis on small peripheral retouching.

At the time of excavation the different size categories suggested the possibility that two successive complexes might be present in the upper level so that special attention was devoted to the problem of stratigraphic differentiation of these points. None could be determined.

There are seven additional points, probably reused, unquestionably of lower level type. Six are lanceolates with unconstricted bases and one has a constricted base.

There are seventeen plano-convex, snub-nosed, end-scrapers (Fig. 5, nos. 7-10, 16-18). Materials are jasp-agate (9), jasper (4), and honey-colored flint (4). They do not differ significantly from those of the lower level except that none shows any vestige of binding constriction. One is pressure flaked over the whole back. Largest and smallest are Nos. 7 and 18 of Figure 5.

Two larger plano-convex end scrapers are similar to those of the lower level--probably reused items.

A spokeshave of metamorphosed siltstone (Fig. 5, no. 15) is a thin lamellar flake with a concavity .4 inch in diameter unilaterally pressure-flaked obliquely at one end. One border has been unilaterally pressure-flaked to a straight edge. This example was clearly designed for a smaller shaft than any of those from the lower level. Several other flakes with indefinite concave edges were probably also spokeshaves.

Ovoid to piriform, bilaterally-flaked knives or scrapers number 34, and are similar to those of the lower level except that the tendency toward flattened bases is not present and there is a greater tendency toward small, ovoid specimens (Fig. 5, nos. 1-3). Materials are primarily quartzite (18) and metamorphosed siltstone (12). Largest and smallest are Nos. 1 and 2 of Figure 5.

The thirty crudely, bilaterally, percussion-flaked cores are similar in every way to those of the lower level. Five-sixths of these are metamorphosed siltstone.

There is some use of lamellar flakes for knives similar to those of the lower level, but they are proportionately fewer and seem more fortuitous. Some or all of the eight may be reused lower level specimens. All bear a short unilateral pressure



## THE MCKEAN SITE

retouch on one or both sides; none flaked all about the periphery. Materials are principally metamorphosed siltstone; lengths, 2.6 to 1.7 inches.

Much more characteristic of the flakes here is the occurrence of very thin, irregularly shaped flakes struck one after the other from the edge of a large striking platform. Their thin edges made them excellent knives (Fig. 5, nos. 19-21). Some bear only a use retouch. Others are flaked either unilaterally or bilaterally. The tendency toward unilateral retouching is not so marked as in the lower level. These merge into a larger category of nondescript, fortuitous, retouched flakes similar to those of the lower level. The 164 flakes are metamorphosed siltstone (77) quartzite (33), jasp-agate (17), flint (10), and other material.

Three broken items of problematical use may have been gouges or chisels; two are metamorphosed siltstone, one jasp-agate. They are made of lamellar flakes, each unilaterally pressure retouched on both sides and about the end (Fig. 5, nos. 11-13).

Probable parts of drill blades (Fig. 5 nos. 4-6) include two of metamorphosed siltstone, one of agate. They are slender, bilaterally pressure-flaked point fragments distinguished by being almost as thick as broad. Cross-section is lozenge shaped: edges are unsmoothed. Another peculiar fragment of quartzite may also be a drill. It is bilaterally pressure-flaked and highly similar in general workmanship to a central section of a small projectile point. It has a small notch in each of its four corners. It suggests a projectile point remodeled into a drill (Fig. 5, no. 22).

A tool of metamorphosed siltstone is apparently a fragment of a serrated scraper of a type known to the writer only from similar cultural materials in the Shoshone Basin of Wyoming.<sup>6</sup> It is apparently half of an ovoid, unilaterally percussion-flaked scraper, originally about 3.5 inches long, with one long edge percussion-serrated to produce rounded teeth about .6 inch apart.

Manos and metates are more frequent than in the lower level. There are sixty-nine fragments of metates; sixty-three are of the local rather soft sandstone and six (possibly fragments of the same metate) are of a hard breccia of small, well-cemented particles. No fragments are large enough to give a clear picture of shape. All could have come from specimens like the complete metate from the lower level. They are thin flat slabs (.6 to 2.1 inches thick) with shallow depressions roughened by pecking and with edges shaped by spalling. All were used on only one surface. Apparently portability was important here too. Fragments are all so small as to suggest deliberate breaking, and many specimens were found in hearths.

Of manos four are complete and three fragmentary; two are compact granite, the others rather soft sandstone. Of these four are sub-rectangular or ovoid, flattish tools which had been reduced by pecking over the whole surface. Pecking is usually partly obscured on the single grinding surface. The others are irregularly ovoid, flattish, fortuitous pebbles which show evidence of grinding on one side. None has a longitudinal keel. The largest is 4.6 inches and the smallest 3.2 inches long.

---

6 Mulloy, Archaeological Investigations in the Shoshone Basin.



## THE MCKEAN SITE

A single fragment of a grooved maul was found in a hearth (material granite: original size uncertain). A complete grooved maul was found on the surface at the site.

The single specimen of worked bone was an awl (original length 3.5 inches) made from the rear metapodial of a small deer. The butt is formed of both halves of the distal articular process: the shaft, broken diagonally, has its most projecting part ground to a point.

Particularly noteworthy in the upper level is the absence of worked Unio in view of the large number of unworked shells found.

A small collection of artifacts was recovered either from the surface of the site or otherwise without provenience. None represented types not found in situ. Among these was a grooved maul known otherwise only from a single fragment from the upper level. This is an irregularly ovoid close-grained granite pebble slightly larger at one end, 6.2 inches long, 5.1 inches in maximum diameter. It is encircled by an interrupted, pecked, groove which averages 1.1 inches wide and .3 inch in depth. The interruption is .7 inch long. In every way it is typical of those frequently found in later horizons in this region.

The scanty collection of animal bones from both the lower and upper levels suggests that hunting may not have been very important. The following lists of animals, kindly identified by Dr. Paul McGrew, gives a somewhat erroneous impression of importance of the larger animals. Actually the bones of animal of rabbit size and smaller were much more common than those of larger animals, but most bones appear as if they had been deliberately pounded into small pieces, perhaps to extract fat. Few whole bones were recovered. With this treatment identifiable fragments of larger bones survived much more commonly than smaller ones. Most fragments could not be identified.

Fragments from lower level:

Antilocapra americana (5), bird (2), Odocoileus sp. (12), Canid (dog or coyote) (1 jaw), rodent (5), frog (1), rabbit (7), Bison sp. (2: with skull cache).

Fragments from upper level:

Bison cf. bison (14), Odocoileus cf. hemionus (11), Sylvilagus sp. (2), frog (2), Canid (dog or coyote) (1), bird (1).

About 1100 fragments of shells identifiable only as Unio were recovered from the upper level. The majority were small portions of the thickest part of the hinge with everything else decomposed. State of decomposition suggests strongly that originally many more shells than this were present and that Unios were an important article of diet. No shells were found in the lower level.

## CULTURAL AFFILIATIONS OF THE MCKEAN SITE

The material and stratigraphy at the McKean Site fit well into the general historical sequence which is gradually appearing for the northwestern Plains, though as might be expected, there are exceedingly puzzling factors involved which cannot now be explained.



## THE MCKEAN SITE

The general cultural sequence outlined in the introduction is now tentatively corroborated in whole or in part by nine different stratigraphic sequences, other than the McKean Site, in widely separated localities. These are Fictograph Cave near Billings, Montana; <sup>7</sup> Signal Butte <sup>8</sup> and Ash Hollow Cave <sup>9</sup> in southwestern Nebraska; Dead Man Cave, <sup>10</sup> Promontory Caves I and II, <sup>11</sup> and Black Rock Cave, <sup>12</sup> all about the shores of the Great Salt Lake in Utah; Billings Bison Trap <sup>13</sup> in central Montana; and Birdshhead Cave <sup>14</sup> in central Wyoming. These sequences illustrate in whole or in part the horizons described in the introduction as Early Middle, Late Middle, Late, and Historic Periods. Evidence for their tentative correlation has been presented elsewhere. <sup>15</sup>

It must be emphasized that this evidence does not argue for cultural identity of levels in the sequences but only for a general similarity of horizons, the groups differing in many elements. In large part the correlation rests on changes in projectile point types because these are clearly the most stylized artifacts available for comparison in the northwestern Plains, but the over-all relationship of these sites is bolstered by parallels of a good many other artifacts.

The particular sequence which seems closest to the McKean material and with which comparisons are most fruitful is Signal Butte I and II. Signal Butte I, pertaining to the Early Middle Period, correlates with McKean's lower level; Signal Butte II, of the Late Middle Period, with McKean's upper level.

Comparison between the stone complexes of Signal Butte I and McKean's lower level is as follows. The projectile points parallel each other almost perfectly though Strong classifies his material into several categories. The concave-based lanceolate points are almost identical; lanceolate points with flat bases of Signal Butte I are present in our lower level in proportionately fewer numbers. This may be due to the writer classifying as knives some of the flat-based blades Strong considered projectile points. So too convex lanceolate points of Signal Butte I which appeared more like piriform knives to the writer were so classified. The stemmed or constricted based points of Signal Butte I are highly similar to the McKean examples, judging from Strong's illustration, except that there appears to be a lesser tendency at Signal Butte I toward parallel-sided stems, though such items appear, and greater tendency toward flared bases. The long puzzling side-notched, concave-based points of Signal Butte I occur at McKean as variants of the major type. The tendency toward plano-convexity at Signal Butte I is also present at McKean.

- 
- 7 Mulloy, Preliminary Historical Outline, pp. 37-200.
  - 8 Strong, Introduction to Nebraska, Archeology, pp. 224-239.
  - 9 Champe, Ash Hollow Cave.
  - 10 Smith, Archaeology of Dead Man Cave.
  - 11 Steward, Ancient Caves, pp. 1-106.
  - 12 Idem, pp. 106-120.
  - 13 Mulloy, Billings Bison Trap.
  - 14 Bliss, Birdshhead Cave.
  - 15 Mulloy, Preliminary Historical Outline, pp. 201-221.



## THE MCKEAN SITE

Plano-convex, snub-nosed, end-scrapers are similar: retouched- and unretouched-based scapers, stemmed, and those with concave sides are present in both complexes. The stemmed scrapers with concave bases of Signal Butte I are not present. The ovoid to piriform knives or scrapers are also present in both complexes. The plano-convex side-scrapers described by Strong may be similar to the group of large plano-convex scrapers in McKean's lower level, but this is not clear. Spokeshaves are present in both complexes and the retouched flake assemblages seem similar, as are the crude, percussion-flaked cores. The manos of McKean's lower level occur at Signal Butte I, but metates were not found in the latter complex.

Items of stone which occur at Signal Butte I but not in McKean's lower level include drills and graters, a spurred and corner-notched knife, pebble hammer-stones, pestle-like objects, grooved mauls (present in McKean's upper level), an axe, shaft polishers, and hematite and limonite paint.

Items at McKean's lower level but not at Signal Butte I include serrated scrapers and the emphasis on a lamellar flake industry.

The bone and shell complexes are not comparable because of the paucity of such items at McKean. The cylindrical bone heads and incised bone fragments of McKean's lower level also occur at Signal Butte I.

Similarities in features include absence of house structures, presence of cache pits, unlined and stone-lined hearths.

Comparison between the stone complexes of McKean's upper level and Signal Butte II is as follows. The projectile point types are again similar, the major type in each case being a corner-notched point with concave or convex base, together with a minor occurrence of unnotched triangular points. The clear differentiation into two sizes was apparently not present at Signal Butte where most points approximate the larger size at McKean. Plano-convex, snub-nosed, end-scrapers with retouched and unretouched backs are similar, as are ovoid and piriform bilaterally-flaked knives and the complex of retouched flakes. Drills are present in McKean's upper level, but it is not clear that they are like those of Signal Butte II. The manos but not the metates of McKean's upper level are present in Signal Butte II.

Items present in Signal Butte II only are plano-convex side-scrapers, graters, oval lapstone, battered hammer-stones, and hematite. Those present only in our upper level are spokeshaves, plano-convex chisel-like tools, and grooved maul (present in Signal Butte I).

The single metapodial awl of McKean's upper level is also present at Signal Butte II but the rest of Signal Butte II's bone and shell complexes is not.

Large stone-filled fire pits do not appear at Signal Butte II, and the cache pits and stone-lined fire pits are absent from McKean's upper level.

The Unios of McKean's upper level appeared in small numbers Signal Butte II.

The nature of the similarities between the Signal Butte and McKean sequences is such as to suggest that artifacts of similar though not identical groups are represented. Further evidence is provided by the identity of stratigraphic relationships at these sites and also by a parallel sequence at the sites previously mentioned wherever they contain similar manifestations.



## THE MCKEAN SITE

The consideration of absolute dates introduces a puzzling factor with regard to which the writer can only state the facts without offering an adequate explanation. The discrepancy is such as to cast considerable doubt upon the relationships suggested above. The single carbon 14 date for McKean's upper level now available was derived from charcoal from Hearth 50 and Locality I. It is  $3287 \pm 600$  years.<sup>16</sup> If this can be thought of as a mean date for the upper level, which may not be warranted, a rather surprising antiquity is suggested for the lower level for which carbon 14 dates are not yet available. An assumption that deposition was constant at the site--which also may be unwarranted--would suggest an antiquity for the lower level roughly twice that of the upper. It is probably a good deal less than that, though certainly considerably older than the upper level.

Signal Butte I bears a beginning carbon 14 date of  $3440 \pm 120$  years and a terminal date of  $2950 \pm 200$  years.<sup>17</sup> This would make the upper level at McKean roughly contemporaneous with Signal Butte I and not Signal Butte II, as the comparative evidence suggests, and the lower level at McKean a good deal older than Signal Butte I to which it shows cultural similarities. Additional dates from the lower level at the McKean Site may be available in the future and may shed additional light on this problem. The writer would be inclined to question the McKean date if it were not for the fact that recent work in the Shoshone Basin of Wyoming has revealed a series of sites apparently belonging to a single horizon which appear to be very close culturally to the upper level at McKean.<sup>18</sup> Three separate sites of this manifestation bear respectively carbon 14 dates of  $3540 \pm 220$  years,  $3350 \pm 250$  years, and  $3506 \pm 220$  years. These fit very well with the McKean Site.

It is clear from this discrepancy that we do not yet have enough excavated sites in the northwestern Plains to make definite formulations of relationships. Because of lack of comparative material it is necessary to point out relationships among sites hundreds of miles apart, with the likelihood of the influence of many factors, such as cultural lag, different ecological influences, time-consuming movements, etc., which are not yet understood. Any understanding of the full significance of the McKean material must await the availability of a greater amount of comparative material.

### APPENDIX: THE LOWER LEVEL HUMAN SKULL

By T. D. Stewart

The subject of this report is quite fragmentary, as Figure 6, nos. 1-4 demonstrate, and for this reason would not deserve extended consideration, were it not for its documented age and cultural associations. Unfortunately, the specimen was badly broken in the course of shipment to Washington and many of the smaller pieces could not be reassembled. Yet nothing essential seems to have been lost. Indeed, it seems likely that a certain amount of restoration would have been required anyway.

Not much can be added by way of descriptive detail to the drawings of the skull given in Figure 6, nos. 1-4. The general gracility and the sharp orbital margins suggest a female, although the moderately developed supraorbital ridges are not typical of this sex. Age is not entirely certain, part of the breakage having taken place along the sutures and destroyed some of the evidence. Certainly there is very little evidence of suture closure, so probably age at death was around thirty years.

---

16 Libby, Chicago Radiocarbon Dates IV, p. 14.

17 Kulp, The Carbon 14 Method, p. 263.

18 Mulloy, Archaeological Investigations in the Shoshone Basin.



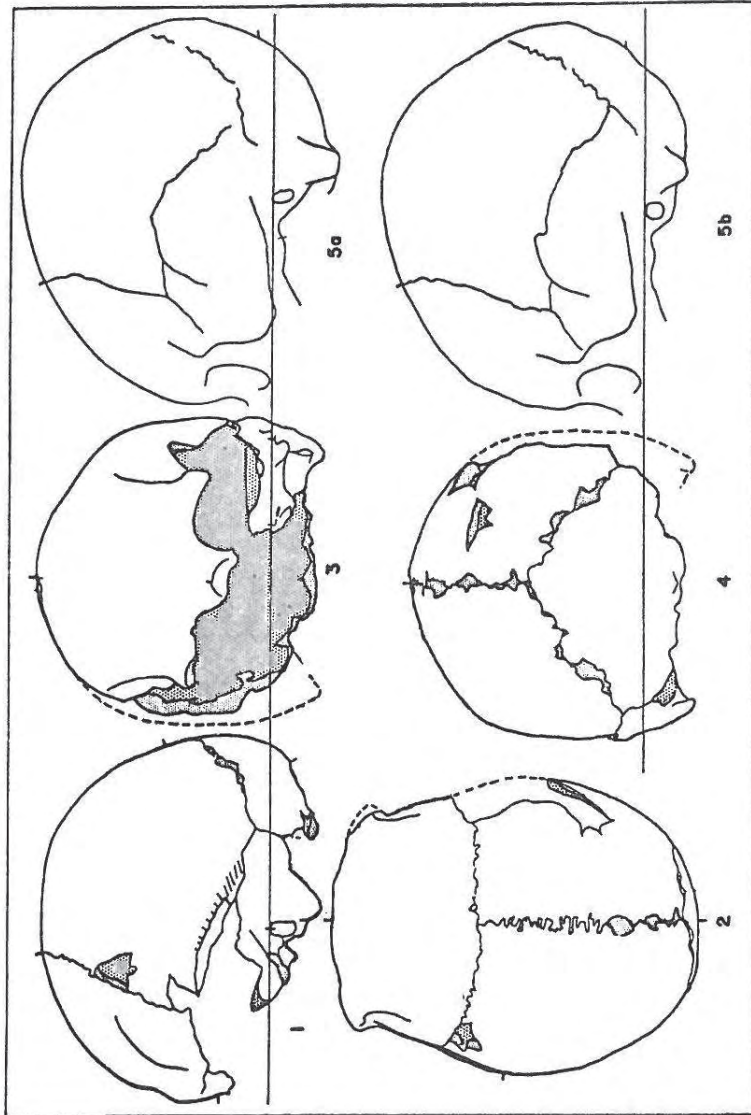


Fig. 6. Nos. 1-4: Simplified stereographic drawing of the McKean skull. (Heavy stippling-interior surface; light stippling-broken edges). Nos. 5a-5b: Tracings from Snow's type male and female skulls from Indian Knoll, Kentucky (Snow, *Indian Knoll Skeletons*, Figs. 10 and 11).



THE MCKEAN SITE

To the trained eye one of the most significant features of this skull appears in the lateral view, namely, the smooth and rather flat curve of the outline between bregma and inion. Note that bregma is practically the apex and that inion is below the Frankfort horizontal. Such an outline is characteristic of skull types with low vaults and stands in contrast to that of the more rounded and better-filled-out skull types with high vaults. Examples of one of the latter types, from Indian Knoll, Kentucky (carbon 14 date 4000-5000 years<sup>19</sup> are shown in Figure 6, nos. 5a, 5b. It is noteworthy that the putatively early Wyoming crania described by Howells<sup>20</sup> seem to have somewhat the same type of low vault. Since the Wyoming crania have no very good claim to antiquity except through their resemblance to "Minnesota Man," it is not surprising that the latter specimen also has a similar profile.<sup>21</sup>

Only a few measurements can be taken on the fragmentary skull under consideration and these are listed, with some comparative data, in the following table:

	McKean female	Wyoming III female	"Minnesota Man" female	Indian Knoll Aver. female
Maximum length	172 mm	181?mm	179 mm	172.1 mm
Maximum breadth	141? "	138? "	138 "	131.5 "
Cranial index	82.0	76.2	77.1	76.3
Auricular height	108 mm	109?mm	116 mm	115.1 mm
Mean auricular ht. index	69.0	68.3	73.2	75.8
Minimum frontal diameter	92 mm	93 mm	93 mm	88.2 mm

The roundness and lowness of the vault (C.I. 82; mean auricular height index 69) in the McKean skull accord with the description of a recognized Indian variety to which Neumann<sup>22</sup> has given the name "Deneid". His description is based on a series of selected specimens of recent date (largely from Athapascan tribes), and yet he sees in the variety the following points of significance: "It represents one of the last of the major migrations to the New World, it is the group that exhibits the most marked Asiatic connections, it exercised profound influences on both North Pacific Coast and Southwestern cultures, and it contributed from perhaps AD 1200 onward to the differentiation of the Lakotid variety in the northern Plains".<sup>23</sup> If such is indeed the case, the McKean skull provides needed evidence on the antiquity of the Deneid variety.

BIBLIOGRAPHY

- Bliss, Wesley Birdshead Cave, a Stratified Site in the Wind River Basin, Wyoming (American Antiquity, vol. 15, pp. 187-196, 1950).
- Champe, John R. Ash Hollow Cave (University of Nebraska Studies, n.s., no. 1, 1946).

---

19 Johnson, Radiocarbon Dating, p.8; Snow, Indian Knoll Skeletons  
 20 Howells, Crania from Wyoming.  
 21 Jenks, Pleistocene Man in Minnesota.  
 22 Neumann, Archaeology and Race in the American Indian  
 23 Idem, p. 28.



THE MCKEAN SITE

- Howells, W. W. Crania from Wyoming Resembling "Minnesota Man" (American Antiquity, vol. 3, pp. 318-326, 1938).
- Jenks, Albert E. Pleistocene Man in Minnesota (Minneapolis, 1936).
- Johnson, Frederick Radiocarbon Dating (Memoirs, Society for American Archaeology, no. 8, 1951).
- Kulp, J. Laurence The Carbon<sup>14</sup> Method of Age Determination (Scientific Monthly, vol. 75, pp. 260-263, 1952).
- Libby, W.F. Chicago Radiocarbon Dates IV (mimeographed supplement, Institute for Nuclear Studies and Department of Chemistry, University of Chicago, Chicago, September 1, 1953).
- Mulloy, William Archaeological Investigations in the Shoshone Basin (University of Wyoming Publications, vol. 18, no. 1, 1954).
- The Billings Bison Trap (ms).
- A Preliminary Historical Outline for the Northwestern Plains (Doctoral Dissertation, Department of Anthropology, University of Chicago, 1953).
- Neumann, Georg K. "Archeology and Race in the American Indian: (In Archeology of Eastern United States, James Griffin, ed, pp. 13-34, Chicago, 1952).
- Smith, Elmer E. The Archeology of Dead Man Cave (Bulletin, University of Utah, vol. 32, no. 4, 1941).
- Snow, Charles E. Indian Knoll Skeletons of Site Oh2, Ohio County, Kentucky (University of Kentucky Reports in Anthropology, Vol. 4, no. 3, pt. 2, pp. 367-532, 1948).
- Steward, Julian H. The Ancient Caves of the Great Salt Lake Region (Bulletin, Bureau of American Ethnology, no. 116, 1937).
- Strong, William D. An Introduction to Nebraska Archeology (Smithsonian Miscellaneous Collections, vol. 93, no. 10, 1935).
- Wheeler, Richard P. A Note on the McKean Lanceolate Point (Plains Archeological News Letter, vol. 4, no. 4, pp. 45-50, 1952).
- Appraisal of the Archaeological and Paleontological Resources of the Keyhole Reservoir, Crook County, Wyoming (Missouri River Basin Survey, Smithsonian Institution, Lincoln, Nebraska, 1951).

National Park Service--University of Wyoming  
Laramie, Wyoming





Basin Type Hearth



Very fragmentary skull of Deneid variety.



Aerial view of site.