

WYOMING
ARCHAEOLOGICAL
SOCIETY

THE WYOMING ARCHAEOLOGIST



JULY ISSUE, 1968

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Editor's Notes

As President Jim announced, THE SUMMER MEETING will be held Saturday and Sunday, August 3 and 4. Gillette Chapter will be the host.

Saturday we will meet on the Buffalo Kill Site south of Gillette. Caravan will leave for the site promptly at 10:00 A.M., leaving Highway 59 at the Durham Meat Company five miles north of Reno Junction or 33 miles south of Gillette. Please be prompt and bring a picnic lunch.

Saturday evening there will be a no host smorgasbord at 7:00 P.M. at the Pleasant Dale Community Hall, 20 miles south of Gillette on State Secondary 30. Cost of the meal will be \$2.00 for Adults and \$1.00 for Children. The program for the evening will be "Sharing our Experiences" - a slide program of chapter activities. Each chapter is requested to bring slides and narrate their activities.

Each chapter secretary will be notified of the schedule for Sunday and will be supplied with details concerning camping facilities. Bill Barlow will help anyone secure reservations if they will contact him.

THE PRESIDENT'S MESSAGE

I'll give you a brief run down on what I have been doing since the April Meeting in Casper.

Late in April, I attended the National Historic Site Preservation Conference in Denver. Under Public Law # 89-665 they are setting up a National Register where all historic and prehistoric sites of importance will be recorded.

Committees have been formed in each state to evaluate and screen proposed sites. Builders of highways, dams, buildings etc. will be able to consult this register and make their plans so that various sites will not be destroyed. The register will be kept in Washington.

In May I visited the Rock Springs Chapter and enjoyed a very nice meeting with them. They have a very full program outlined for the summer, with the possibility of a dig. I showed some slides of petroglyphs and the trip to Dinwoody which we took last year.

George Berger of the Cherokee Chapter in Saratoga invited us to go on a field trip with them early in June. About fifteen vehicles with many members turned out for the trip. Everyone had a nice day, but I couldn't find a thing.

Have also been very busy helping with the State Mineral and Gem show here in Lander. We had lots of good material exhibited, good dealers and a good attendance.

I would like to thank Jim Goodwin and the Sheridan Chapter for the work they did on the new constitution and by laws. We have had a problem come up with Internal Revenue Service about income tax. It seems the way our old constitution and Articles of Incorporation were worded we might have to pay income tax. Lou Steege and a committee are working on another version at this time. We will only be able to discuss it at summer meeting as I doubt if it will be ready in time for any action. Lou will have all the information and be able to explain all the details etc. then.

The summer meeting will be in Gillette, August 3 and 4. Bill Barlow and the Gillette Chapter will host the meeting. Be sure and get reservations early as Gillette is a busy place due to the oil activity there.

Good hunting and I will see you in Gillette.

James K. Adams /s/

MINUTES OF THE ANNUAL STATE MEETING
HELD AT THE HOLIDAY INN
CASPER, WYOMING , APRIL 6, 1968

Meeting was called to order by President Jensen at 10:15 A.M. with 44 persons present and all Chapters were represented.

The following Committee Reports were given:
Scholarship Committee by Helen Bryant.
Site Report by Bart Rea .

The following Chapter activities reports were given:
Casper by John Albanese.
Cheyenne by Dr. A. Schoondermark.
Cherokee Trail by George Berger.
Fremont County by Ken Martinson.
Gillette by William Barlow.
Northern Big Horn Basin by Bob Edgar.
Sheridan by Gary Fry.
Sweetwater by Joe Bozovich.

The following persons were appointed to serve as auditing committee:
William Barlow; Dr. A. Schoondermark, and Carlton Belz .

A colored slide program on various types of outdoor recreation was given by Randy Wagner of the Wyoming Outdoor Recreation Commission.

The meeting was recessed at 11:30 A.M.

The official business meeting was called to order by President Jensen at 1:40 P.M.

Carlton Belz reported the Treasurer's books were in order and suggested that surplus funds be invested for interest.

The minutes of the previous Annual Meeting were read and approved.

The Treasurer's report was given by Mary Garling. A motion was made by George Berger that the Treasurer's report and the auditor's report be accepted. Seconded and carried.

The Executive Secretary reported an operating cost deficit and requested reimbursement. He also stated the need for a filing cabinet. A motion was made by Doctor

Schoondermark that the State Society Treasurer make reimbursement for the deficit and that the State Society purchase a filing cabinet. Seconded and carried. Dr. Schoondermark made a second motion that the Executive Secretary be paid per diem and mileage for official business trips. A discussion followed and a suggestion was made that the per diem and mileage rate be set by the State Executive Committee. Seconded and carried.

Mrs. Helen Lookingbill, State Librarian, reported that the library had not been used too extensively. She suggested that more members use the library volumes which are available. It was also suggested that a list of the books and the exchange volumes available be published from time to time in "The Wyoming Archaeologist". A motion was made by John Albanese that the State Executive Committee authorize the purchase of suitable binders for the exchange publications. Seconded and carried.

The report of the Mulloy Scholarship Committee was given by Helen Bryant. A motion was made by Ken Martinson to accept the report as given. Seconded and carried.

Bart Rea gave the procedures for filling out the new site report forms, and for securing site numbers. William Barlow moved that the new form and procedures be accepted. Seconded and carried.

Helen Bryant, chairman of the nominating committee gave the following dual slate of officers and requested that election be made by written ballot:

For President: Henry Jensen and Jim Adams.
For Vice President: Jo Bozovich and Ward Cook.
For Treasurer: William Barlow and Gary Fry.

Milford Hansen was the only person nominated from the floor. His nomination was for the office of Treasurer. Gary Fry requested that his name be withdrawn from the list of nominees. Dr. Schoondermark made a motion that the nominations be closed. Seconded and carried. Ballots were counted by Bart Rea. The following officers were elected for 1968:

President: Jim Adams
Vice President: Joe Bozovich
Treasurer: Milford Hansen.

The Executive Secretary read a letter from the National Press Books Co., of Palo Alto, California, announcing a sales program for the book "A Guide To Field Methods In Archaeology", by Heizer and Graham. This book sells retail at \$10.00 per copy, and will be sold to members of the Wyoming Archaeological Society at a 35% discount if 15 or more copies are purchased at one time. A motion was made by John Albanese that the Executive Secretary purchase at least 15 copies and sell the same to chapters and members at cost plus postage and handling. Seconded and carried. There were 16 signatures for books.

There were some discussions for the acceptance of the revised Constitution and By-Laws as drawn up by a committee composed of Jim Goodwin, Chairman, with assistance by Sheridan Chapter members. Dr. Schoondermark made the following motion: "A copy of the revised Constitution and By-Laws be sent to the Executive Secretary for printing and mailing to all Chapter members as soon as possible. Each Chapter is to study them for any revisions, additions, or deletions. Any changes suggested by any Chapters must be in writing to the State Editor by June 25th, 1968. The original revised Constitution and By-Laws will be published in the Vol. XI, No. 2., July 1968, issue of the Wyoming Archaeologist with the proposed changes. The changes can then be studied by all the Chapters. The proposed changes will be voted upon at the Summer meeting in August." Seconded and carried.

A motion was made by Dr. Schoondermark that the State Executive Committee be authorized to set aside \$500.00 from the State Treasury as a reserve fund and that it be invested to draw interest. Seconded and carried.

Dr. Schoondermark suggested that the State Society match funds of Chapters for carbon 14 assays. Mrs. Lembke moved that the President appoint a committee to study the feasibility of such a project. Seconded and carried.

The State Executive Committee will set the date and location of the Summer meeting. Possible locations are Gillette and Saratoga.

Comments were made by William Barlow on the possible excavation of a prehistoric bison kill by the Gillette Chapter. An invitation was extended to all members to assist by participating in the excavation of the site.

Mr. Jim Adams, newly elected President, presided and announced that a special meeting is called for the purpose of accepting the revised Constitution and By-Laws at the same time as the Summer meeting. Time and place will be announced in the July 1968 issue of the Wyoming Archaeologist.

Meeting adjourned at 4:20 P.M.

A banquet was enjoyed by members and guests in the evening. A Charter was presented to the Cherokee Trail Chapter and was accepted by the Chapter President, Mr. George Berger. Dr. George Frison, State Archaeologist, was guest speaker of the evening. He presented an informative lecture on Archaeology in Wyoming and the High Plains.

Louis C. Steege,
Executive Secretary

SUMMARY OF ACTIVITIES

SHERIDAN CHAPTER 1967

CHAPTER OFFICERS FOR 1967

Jerry Carbone	President
Margaret Powers	Vice President
Elaine Hilman	Secretary
Gary Fry	Treasurer
Grace Eads	Historian
Virgil Flesher and Zane Hilman	Directors - 2 Year Term

MEMBERS 60

January 2 - Election of officers and directors for the new year was held at the Monday meeting at the Sheridan College. Plans being made to hold future meetings at the Bank of Commerce Hospitality Room. An interesting slide program was given by Jack Manley of the V. A. Hospital, formerly connected with the Bureau of Indian Affairs in Alaska.

February 6 - Book reviews were given by members of Society, subject material, Archaeology. Plans were made to attend the annual meeting in Casper on March 31.

March 7 - Several members attended the annual state meeting in Casper with Margaret Powers presiding. Mrs. Powers presented a charter to William Barlow, President of the newly formed Gillette Chapter.

April 3 - Events of the annual state meeting were reviewed by Jerry Carbone, local President. He described it as being informative and constructive. Fred Hilman showed slides of Archaeology in New Mexico and the past work done by our Chapter.

May 8 - Plans were completed for a field trip to the Tom Adsit Ranch, Decker, Montana, and our program was given by Mrs. Mildred Denson and daughter, Mrs. Pat Calbick of Lybia. The films were of Archaeological sites of the ancient city of Tripoli on the Barbary Coast of North Africa.

June 4 - Twenty-four members and guests visited the Tom Adsit Ranch near Decker, Montana, for a field trip and picnic. Measurements and charting of many Tipi rings was accomplished; some bone tools were found in a fire pit; also several artifacts were found. Mrs. Jim Benedict of Birney displayed a collection of artifacts found on their ranch.

July 10 - Mr. and Mrs. Fred Hilman were hosts for a picnic for our Chapter at their ranch home near Big Horn. Thirty-four members and guests were in attendance and greatly enjoyed the hospitality and fine collections gathered by the Hilmans during the past years.

August 7 - Sheridan Chapter enjoyed a covered dish dinner at the Denson home, the program being a report on the State meeting given by the three members attending - Margaret Powers, Mildred Denson and Grace Eads. We were taken on a field trip to Dinwoodie Lake where many interesting petroglyphs were seen.

Thanks, Lander Chapter, for your gracious hospitality.

September 10 - A trip to Rozet was enjoyed by several members of our chapter. They visited the John Fox Ranch for artifact viewing then toured South of Rozet to view Tipi rings, two Buffalo jumps and then made a crossing of the "Old Texas" and "Lone Star Trail" used by drovers to bring cattle from the Southern Plains through to Montana on the way to the mining camp market in the 1880's.

October 1 - Sixteen members of our Sheridan Chapter excavated and recorded several Tipi rings on the Glen Sheeley Ranch near Dayton, Wyoming. No artifacts were found. During lunch Jerry Carbone announced plans for our annual dinner meeting with a guest speaker for the first Monday in November. Tim Achenbaugh was our guide on this trip.

November 14 - "The Mayans of Yucutan" was the subject of the dinner speech given by Mayor Willard Fraser of Billings, Montana, at the Sheridan College Commons Building. Fraser worked with the Carnegie Institute in Yucutan on this culture. Mrs. Charles (Pat) Hamilton of Parkman, Anthropologist and recognized Geologist, was toastmistress. As this was open to the public, there were 75 in attendance. The dinner theme was carried out in table decorations of small Indian Teepees with place cards of arrow heads of paper with small thumb scrapers and other artifacts attached. A case of Indian pipes was displayed by Fred Hilman and Dioramas also were on display.

December 5 - Slides showing digging activities of the Sheridan Chapter were shown by Margaret Powers, consisting of "Medicine Wheel", "Little Baldy", and "Piney Creek". We have enjoyed many fine programs and have great plans for the coming year. We now have a permanent meeting place in the small banquet room of the Sheridan Inn.

Respectfully submitted,
Grace Eads
Historian

Additional Book List of
THE WYOMING ARCHAEOLOGICAL SOCIETY, INC.
LIBRARY

- All Points Bulletin: Vol. 4, Nos. 1-12, 1967; Vol. 5, Nos. 1-3, 1968;
(Denver Chapter, Colorado Archaeological Society)
- Southwestern Lore: Colorado Archaeological Society
Nos. 1, Vol. 33, Nos. 1 & 2, June 1967; Nos. 2, Vol. 33, Sept. 1967;
Nos. 3 & 4, Vol. 33, December 1967, March 1968.
- The Arkansas Archaeologist: Bulletin of the Arkansas Archaeological Society
Vol. 7, No. 3, Fall 1966; Vol. 7, No. 4, Winter 1966; Vol. 8, No. 1,
Spring 1967; Vol. 8, Nos. 2 & 3, Summer and Fall 1967.
- Field Notes: Monthly newsletter, Arkansas Archaeological Society
1-12, 1967; 1-2, 1968.
- Iowa Archaeological Society: Newsletter Nos. 41-46, 1967;
Archaeology of Rathbun Reservoir, Iowa, Vol. 14.
- The Wyoming Archaeologist: Vol. 10, Nos. 1-4, 1967; Vol. 11, No. 1, 1968.
- University of Wyoming Publications: Nos. 1, 2 & 3, July 1965; Nos. 1, 2 & 3,
July, 1967.
- Stone Artifacts of Northwestern Plains: Louis C. Steege, Warren W. Welch.
- Utah Archaeology: Vol. 13, Nos. 1-4, 1967.
- Report of the Archaeological Investigations at the Arp Site, 1967, Museum News
(University of South Dakota) Vol. 28, Nos. 1-2, 1967.
- Archaeology In Montana: Vol. 8, Nos. 1, 2 & 3, 1967.
- Screenings Oregon Archaeological Society: Vol. 16, Nos. 1-12, 1967.
- Saskatchewan Archaeology Newsletter: Nos. 13 - 14 - 15, 1966; Nos. 16 -
17 - 18 - 19, 1967; No. 20, 1968.
- Katunab: Bulletin on Mesoamerican Anthropology, Vol. 5, 1965; Vol. 6, 1967.
Newsletter Bulletin, March 1967.

MULLOY SCHOLARSHIP AWARD

SCHOLARSHIP COMMITTEE:

Establish a 3 member permanent committee to be composed of the State Archaeologist, the State Society President and the Executive Secretary of the State Society, with a University representative as consultant to the committee.

SCHOLARSHIP AWARD:

A 2/3 approval of the permanent committee must be given before any award is made.

REQUIREMENTS OF ELIGIBILITY FOR THE AWARD:

Student must be at least a Junior at the University of Wyoming (may be waived if the committee believes circumstances warrant) showing serious intent by having a major in Anthropology with a preferred emphasis toward Archaeology as a sub-discipline.

Student must complete a project pertinent to Wyoming Archaeology and/or its associated subjects, furnish periodic progress reports to the State Society, and submit a completed professional paper to the State Society within six months of receiving award. However, a professional paper may be submitted with the student's application for the award.

Student must attain at least "B" average grades in Anthropology courses and a 2.75 grade average to be eligible for the award.

Student must apply through his instructor (or professor) to obtain recommendation and approval of his qualifications for applying for the award.

The award will be made only to students who expect to make the world of Anthropology his (or her) vocation and contribute constructively to any one of its fields.

AMOUNT OF AWARD:

Although the present amount of the award is set at \$100.00, this is subject to increase by action of the Executive Committee, of the Wyoming Archaeological Society, Inc., upon recommendation of the permanent Mulloy Scholarship Committee.

THE WHITE MOUNTAIN PETROGLYPHS

By

Joseph Bozovich and Joseph F. Bozovich

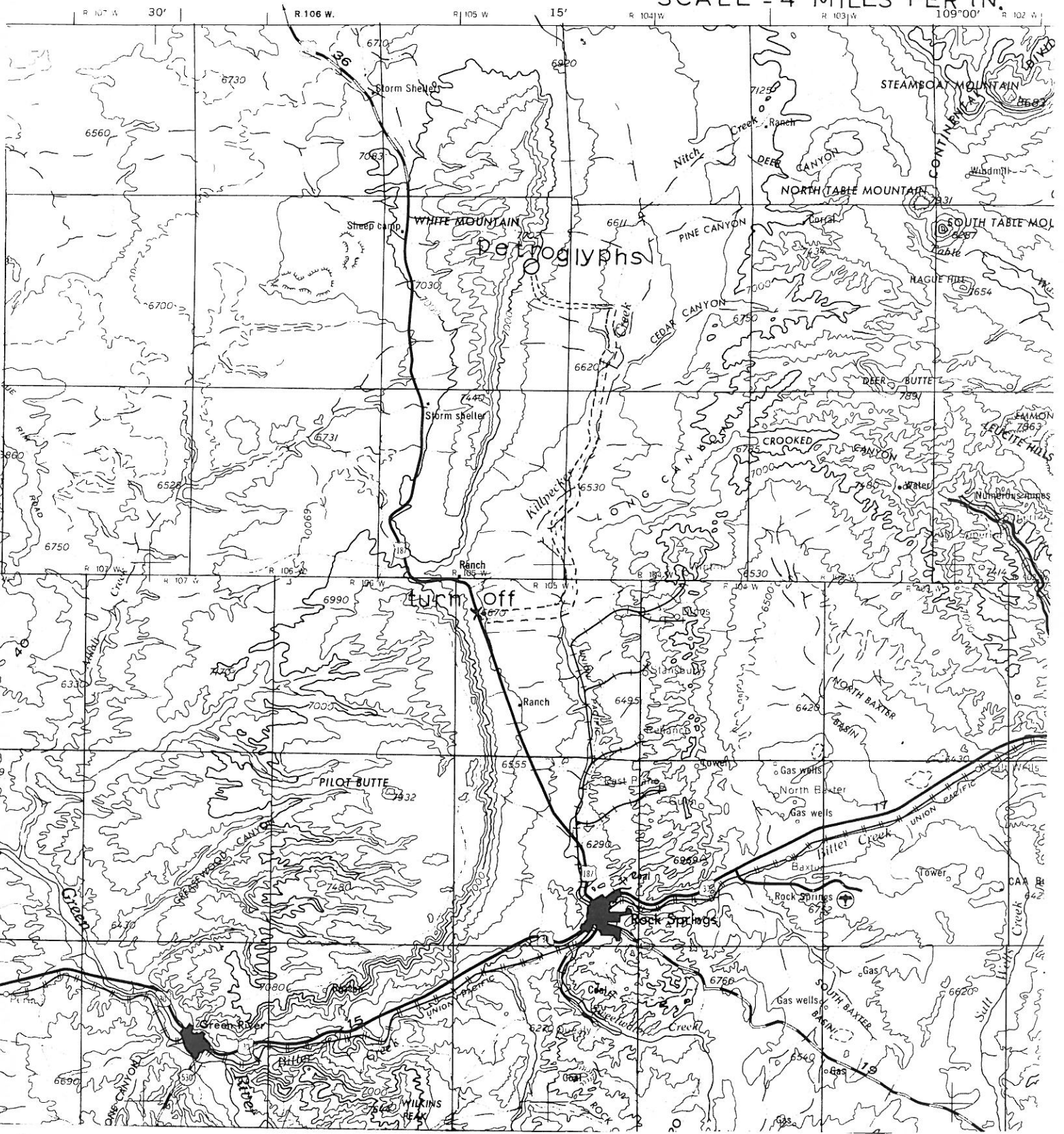
Located 26 miles north (S.E. 1/4 Sec. 11, T. 22 N., R. 105 W.) of Rock Springs, Wyoming, is an interesting set of petroglyphs not previously described in any publication. This set of Indian drawings, known locally as the White Mountain Petroglyphs, do not have characteristics that match exactly any of those described in earlier volumes of *The Wyoming Archaeologist*. As can be seen in Plates 1 to 18, though, the figures represented are what one would expect for the Historic or Late Pre-Historic periods. Common items are the horse, elk, feather headdresses and human stick figures.

The petroglyphs are located on a brown sandstone cliff on White Mountain in the Upper Wasatch formation. The cliff containing the petroglyphs faces south and runs west to east. It is about 300 feet long and varies from a height of 10 feet at the west end to 40 feet at the east end. In general, the figures are 30 to 60 inches above the current ground level. The conditions of wind and water at the cliff do not seem to be the type that has changed the ground level significantly.

Considerable chipping occurs in the general vicinity of the site with the largest identified habitation site located one mile north. This site is characterized by a very good view to all directions except the west. A spring is located about three-quarters of a mile south-southwest of the petroglyphs. This spring is the only one in the general vicinity and it probably furnished water in the time period of the petroglyphs. However, no large campsites are located near the spring. This possibly occurred so that game would have freer access to the spring, thus providing good hunting.

Also of some interest is the occurrence of a fissure cave in the cliff plus other petroglyphs located a few miles to the east. The cave is very narrow and shallow. It does have smoke covered walls but in the very shallow dirt floor no artifacts can be found. Possibly all artifacts were removed by pot hunters many years ago.

Local flora and fauna include: cedar, buckbrush, sage brush, various grasses and wild flowers, deer, rabbit, sage chicken, elk, gophers, prairie dogs and various species of birds. Elk, which are profusely represented in the drawings, exist locally but they were transplanted into the area from the Yellowstone Park herd about 20 years ago. However, during late pre-historic times the elk was a plains animal and might have been in the area of the petroglyphs. Of course, the Indian association with elk could always occur in the Wind River range which is about 90 miles to the north.



No strong associations of the petroglyphs and specific cultures have been identified. The Fremont culture and the Shoshoni represent the most likely affiliations.

All of the petroglyphs were incised except those represented on Plates 17 and 18. The elk on 17 was first incised and then pecked inside the lines and smoothed. These same figures have more patination than the other figures on the cliff. Weathering of these figures has occurred to such a degree that they are barely visible. Such factors suggest that this group is older than the others.

A brief description and discussion of the highlights of each plate follows:

Plate 1: Shown is a human figure holding two loaded, or packed animals. One seems to be a horse but the other animal has antlers and, thus it is a paradox. Since this animal has a long tail the antlers probably represent artists license.

Plate 2: A fairly obvious horse with rider is represented. This figure provides considerable aid in dating the petroglyphs since the horse was introduced in the late part of the 17th century and the Indians were probably well equipped by the early part of the 18th century.

Plate 3: Probably two female figures. Possibly dancing?

Plate 4: The large figure is obviously an elk. The smaller figures could represent unborn elk but the antlers on the large figure lead to questioning of that theory. Also a problem is the pack on one of the interior figures. The incised line that appears below the elk is a mystery. It will be noticed on some of the other plates also. The line runs over a considerable length of the cliff at a height which varies from 36 to 42 inches from the present ground level. The line is 1/4 to 3/8 inches in depth and width.

Plate 5: Represented is an elk apparently about to be shot by a spear or atlatl point.

Plate 6: In a rather hodge-podge there are horses, humans, the incised line and a number of miscellaneous figures. Of some interest is the long line or whip held by one horse rider, the unusual headdress of the rider and a whip held by a standing individual.

Plate 7: Again we see the incised line and a horseman with a whip and a strange head covering.

Plate 8: Items represented for the first time are bear claws, birds and some super positioning among the figures at the right of the plate. No bears have been known to exist in the vicinity during modern times. Several other unrecognizable figures also occur.

PLATE NO 1

scale - $1\frac{1}{4}'' = 8''$

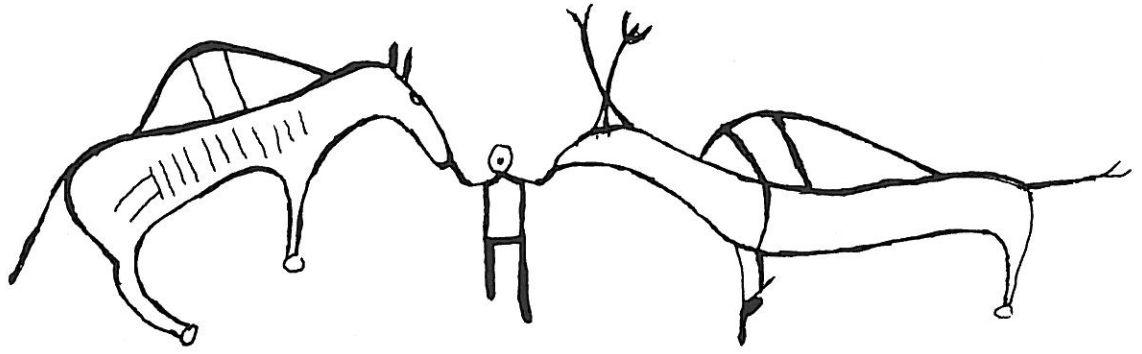
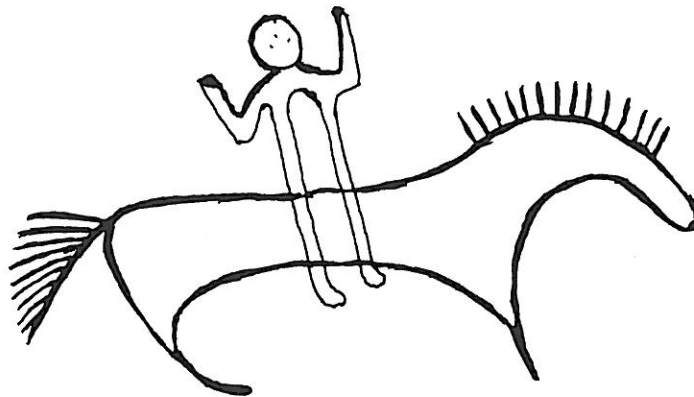
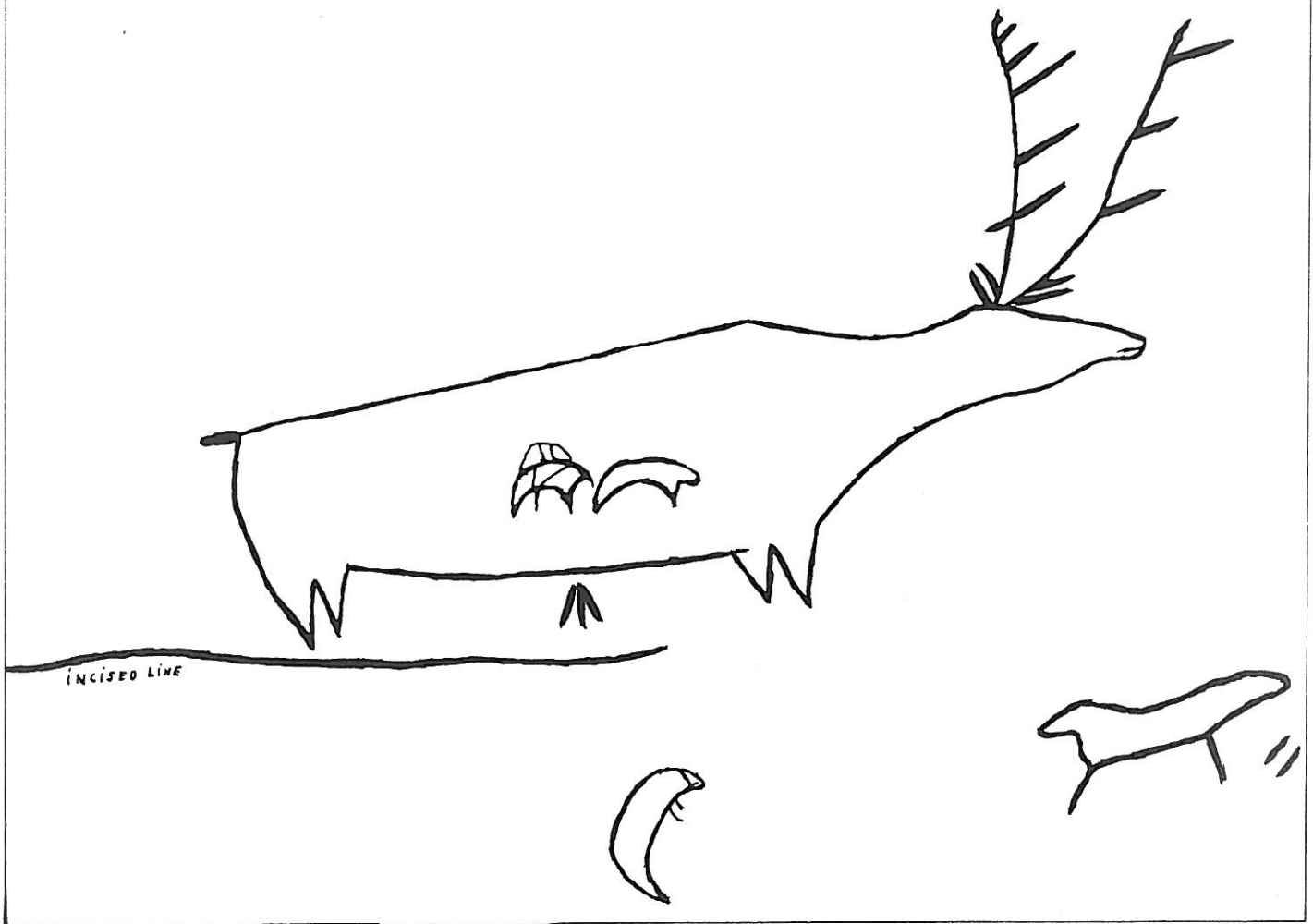
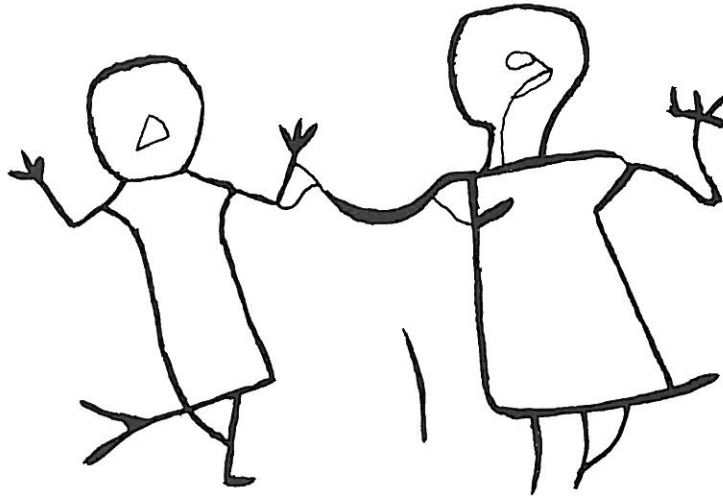
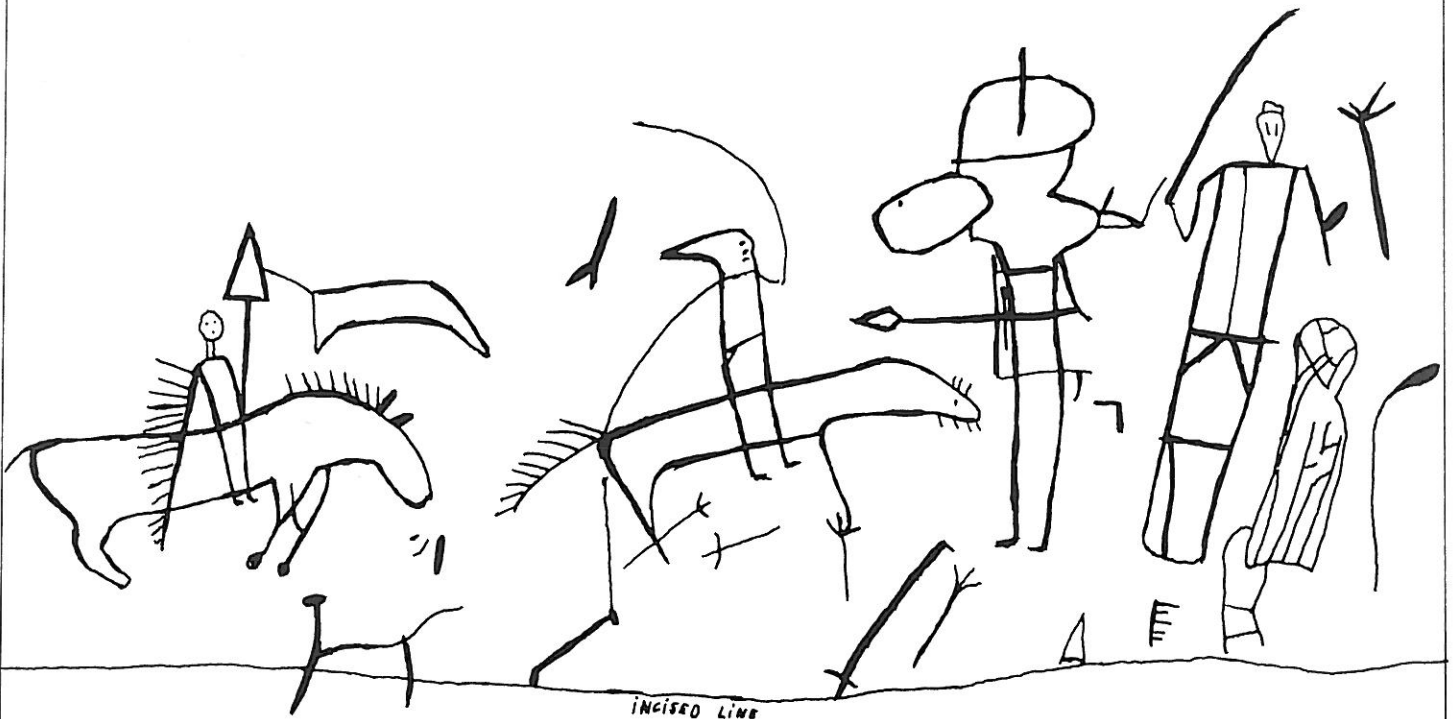
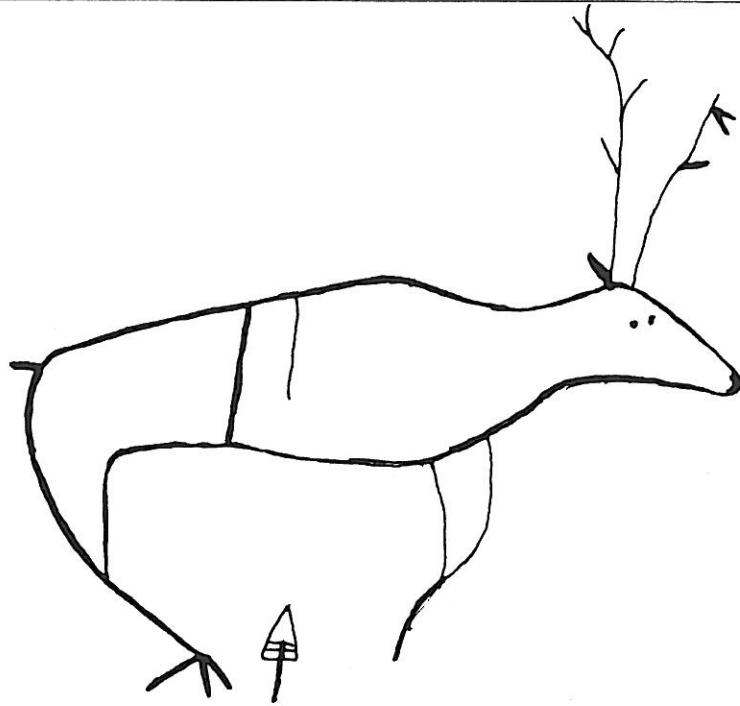


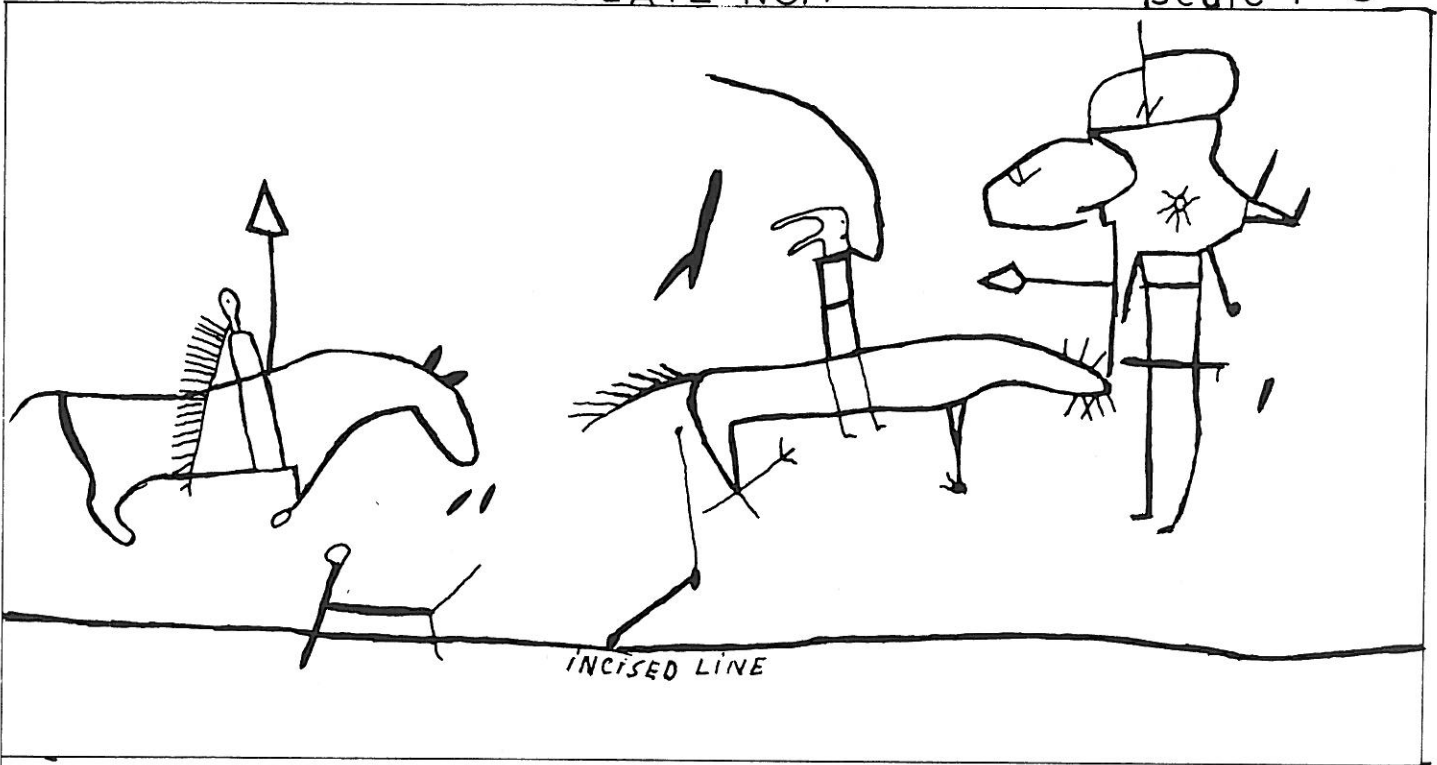
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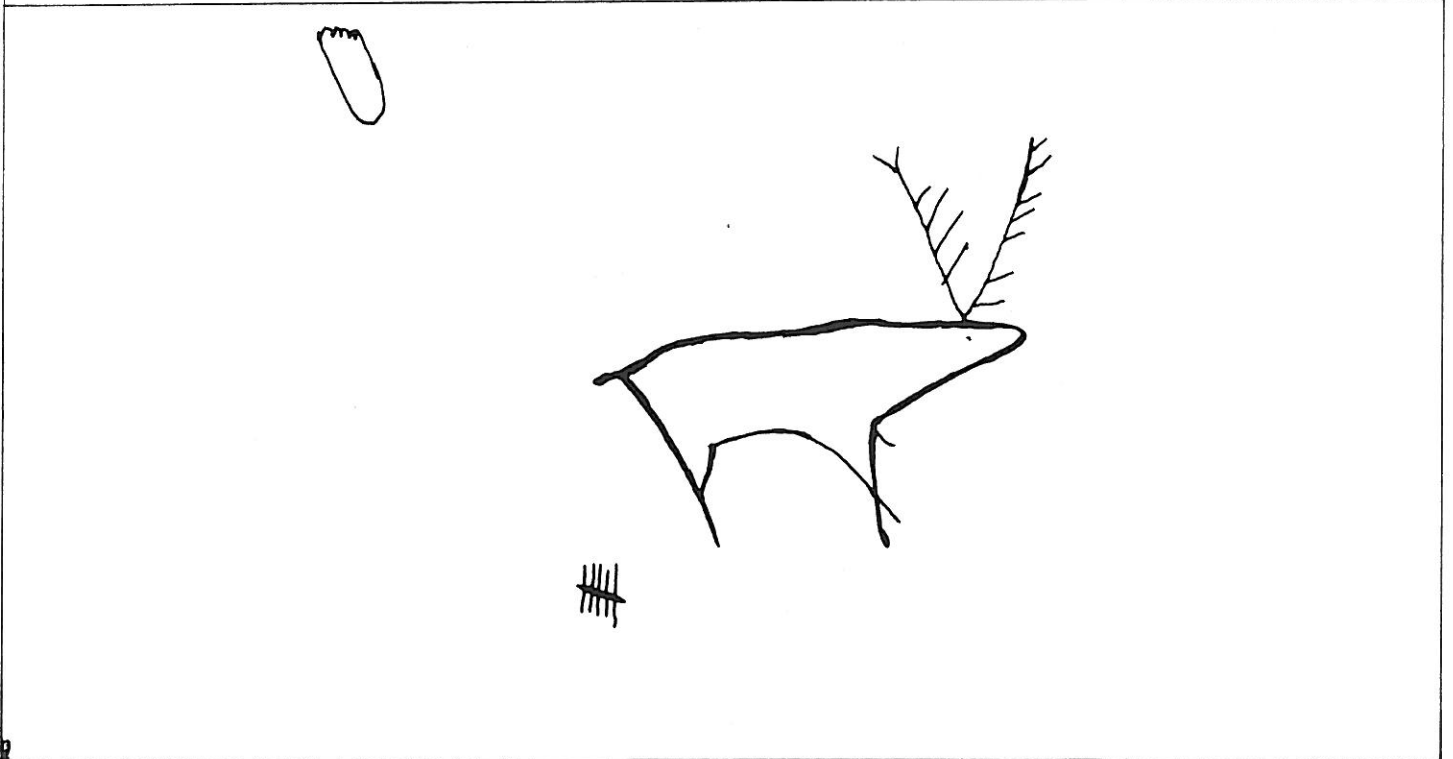
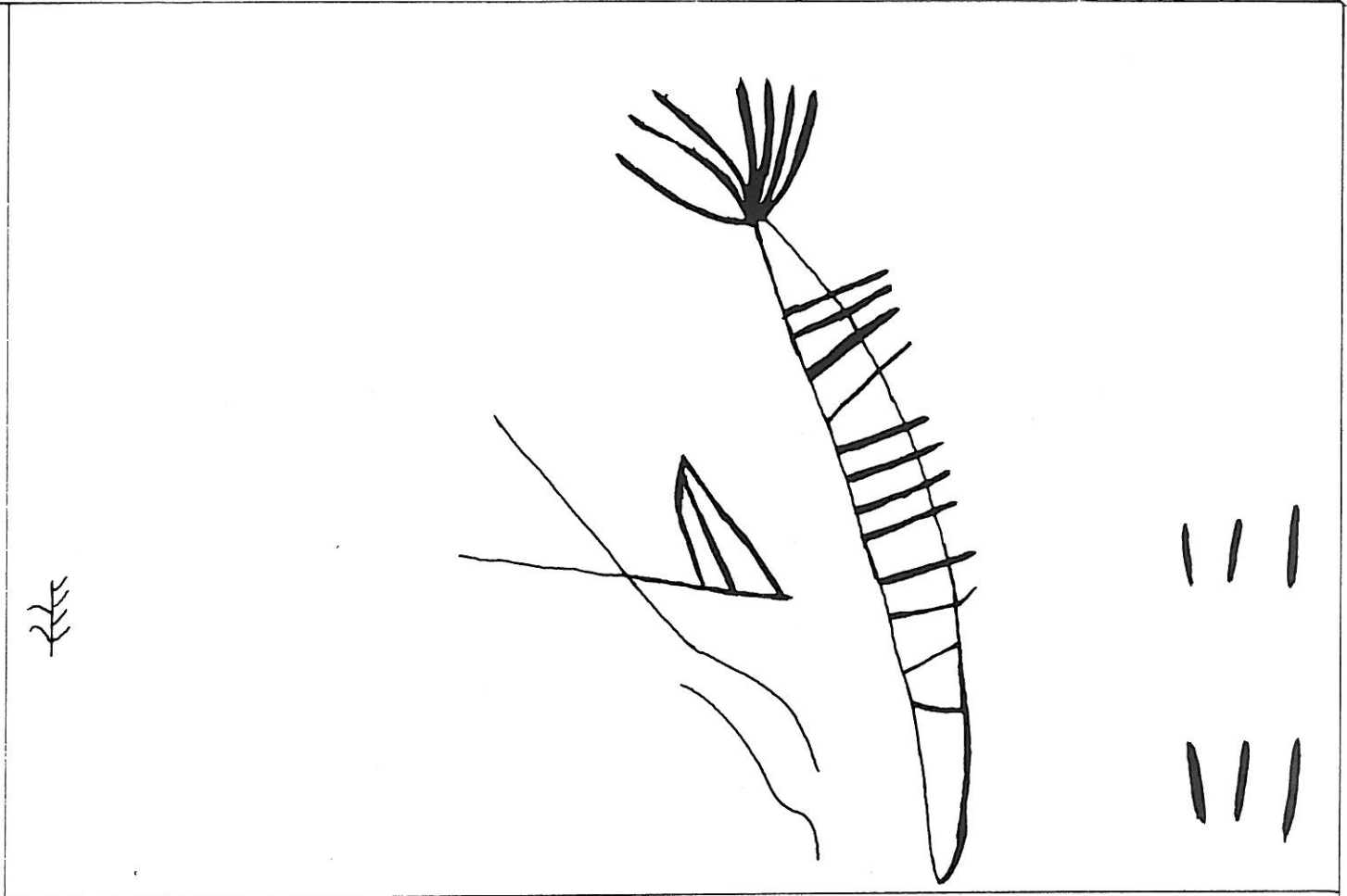
scale. $1'' = 6''$











PLATE, NO.11

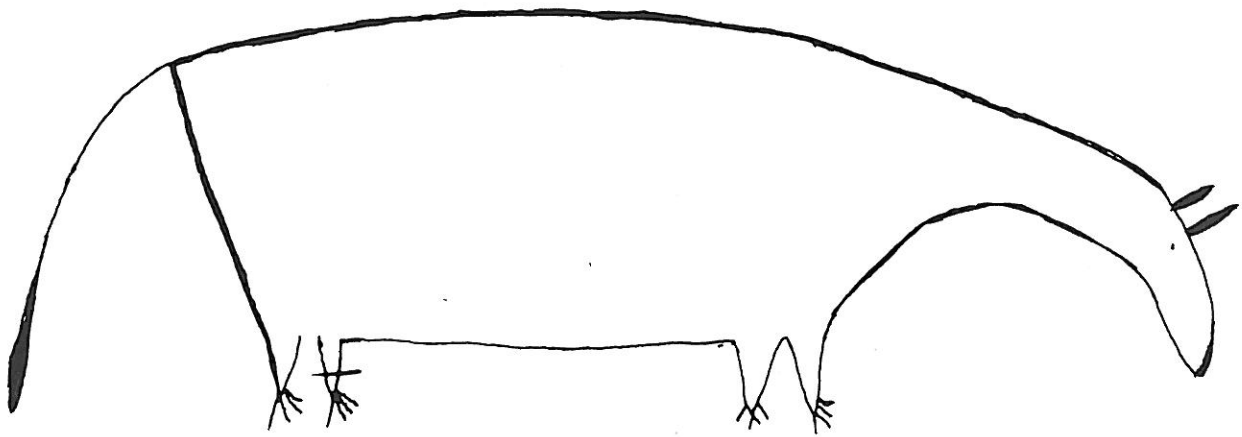
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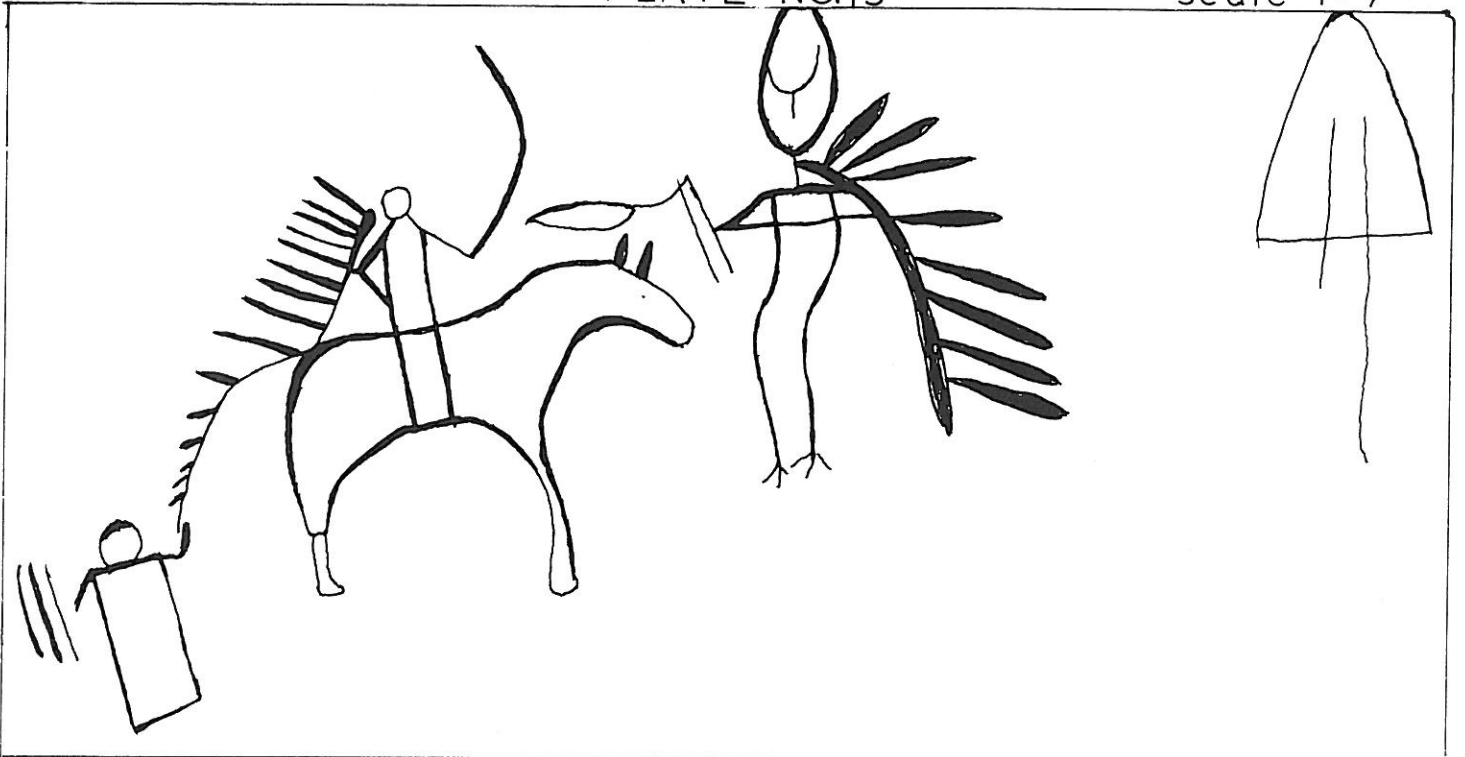


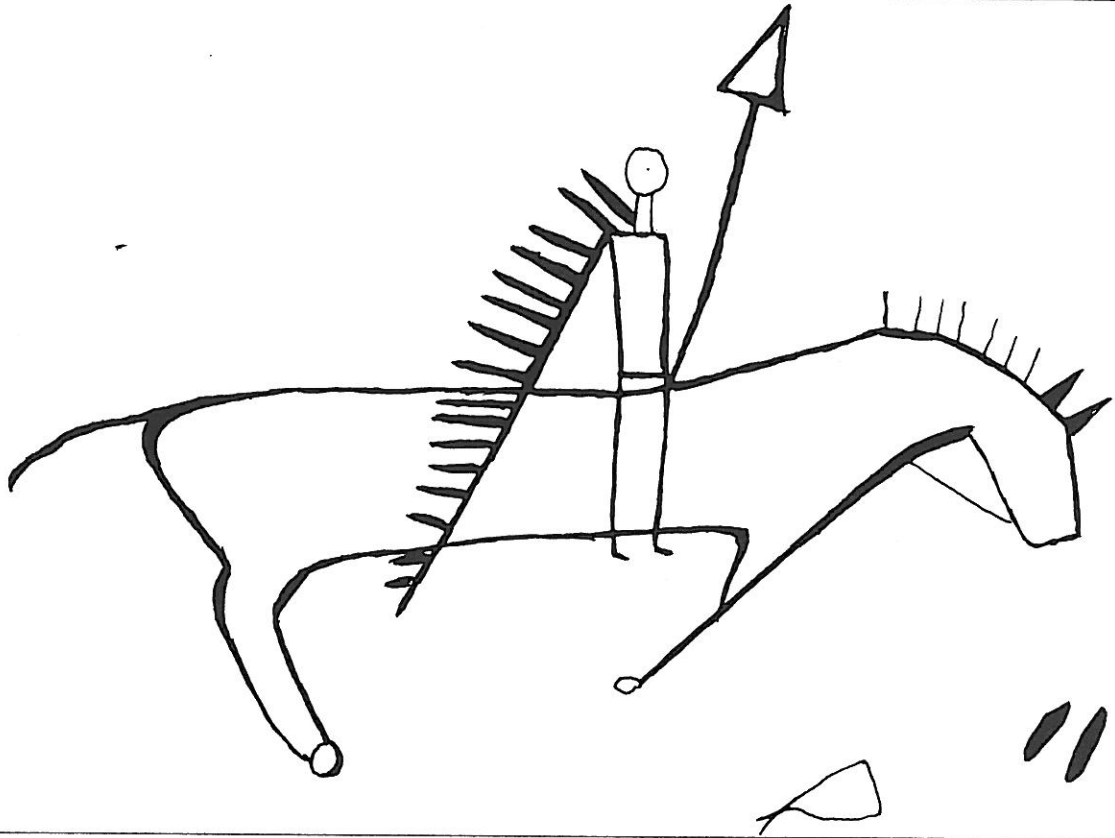
INCISED LINE

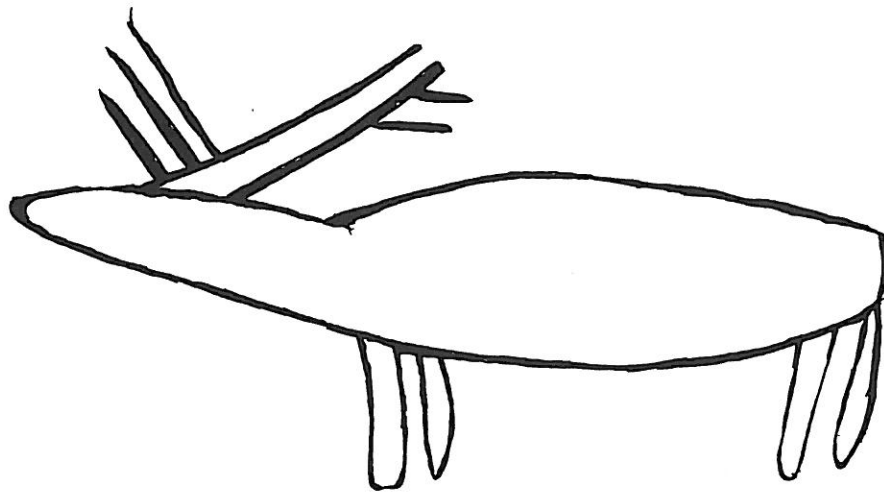
PLATE, NO.12

scale 1"=6"









TYPICAL ARTIFACTS OF THE AREA



A



B



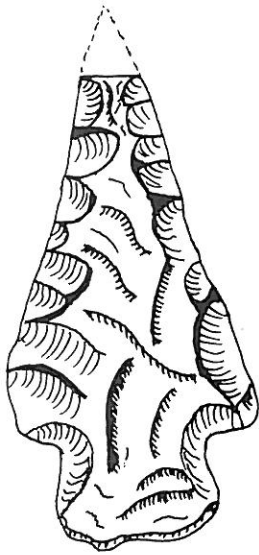
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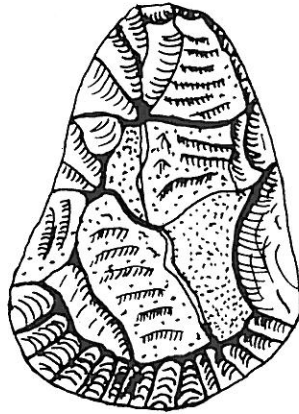
D



E



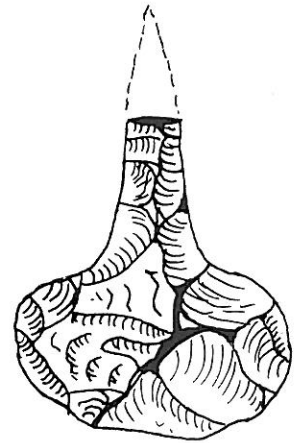
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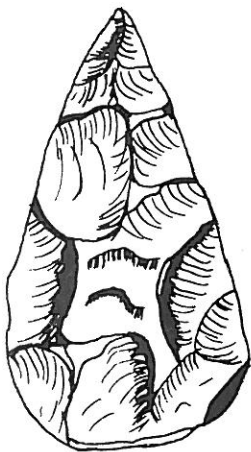
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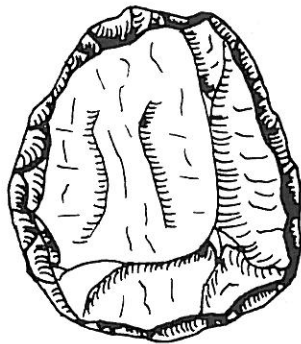
G



H



I



J



J



K

ARTIFACTS ACTUAL SIZE

Plate 9: An unknown figure. Possibly a shield? The figures at the right seem to be tool grooves. Of interest is the number of parallel lines on the figure. Such lines have been suggested by others to be a counting of the number of enemies killed.

Plate 10: A drawing of a human foot now appears. Also shown is a set of tool grooves, or counting lines.

Plate 14: For the first time a figure which could represent a bison occurs. Notice the hump and short tail of the figure in the lower right corner.

Plate 18: A rather unusual representation of what appears to be a bird appears, plus two unusual figures like sticks with toes, or supporting branches.

ARTIFACT MATERIAL SUMMARY:

Artifact A - C - I	Jasper
B	Chert
D	Chalcedony
E - G - J	Flint
F	Oolitic Jasper
H	Quartzite

In summary, the White Mountain Petroglyphs seem to represent a relatively recent time period. The horse and elk are the most common figures but, surprisingly, no firearms could be detected. Of some mystery is the frequent occurrence of a whip-like object in the hands of humans, strange headdresses on two individuals and an incised line running continuously over a considerable length of the cliff. The majority of the figures are incised but a few which appear to be older than the others are pecked.

For those interested in inspection of the petroglyphs the easiest route to reach them is as follows: Take U. S. Highway 187 north from Rock Springs for 12 miles. Then take the Chilton cut-off east and north to Boars Tusk. This is a dirt county road. After about 13 miles on this road a junction will occur with another less traveled road. Turn left and travel about 5 miles to the petroglyphs. This final road crosses a set of railroad tracks.

THE IRVINE SITE,

A Possible Avonlea Site In Eastern Wyoming

By James Otto Duguid ¹

ABSTRACT

The Irvine Site (48 CO 302) is a single component site in eastern Wyoming with possible cultural affiliations to Avonlea. The absence of ceramics suggests the Irvine site may be contemporaneous with Avonlea. It is also suggested that the typological differences between these points and the Avonlea type are due to the geographical separation of the Irvine site from the more northerly areas where Avonlea points are commonly found.

SITE LOCATION

The Irvine quadrangle is located southeast of Douglas, Wyoming, in an area which is characterized by scattered badland topography. These badlands are composed of two formations of Eocene age which are extremely dissected by erosion, leaving scattered buttes and erosional remnants across the entire area. The buttes are composed of the White River formation which is a white, fine-grained, argillaceous, sandstone interbedded with clay units and are capped with the more resistant Arikaree formation which is a granitic conglomerate.

The Irvine Site (Site No. 48 CO 302) is located six miles southeast of Douglas, Wyoming, in the SW 1/4, Sec. 29, T 70 W, R 32 N (Fig. 1). The site is situated on the north side of a small butte which rises forty feet above the site itself. North of the site the area is extremely eroded leaving small remnants of a level, grassy valley which may have existed at the time of occupation. Southward the terrain opens onto a level grassland which is studded with scattered buttes and badlands. This grassland slopes gently southward toward the North Platte River which is four miles south of the site. The Platte River is the only constant source of water in the vicinity of the site. However, the arroyo adjacent to the site seeps a small amount of water in the spring of abnormally wet years.

The location of the Irvine site is unique because it is situated on the north side of a butte, while other sites in this area are predominately located on a southern exposure. The immediate terrain provides little or no protection from the prevailing northwesterly wind.

¹ Instructor of Civil Engineering, University of Wyoming Minuteman School.

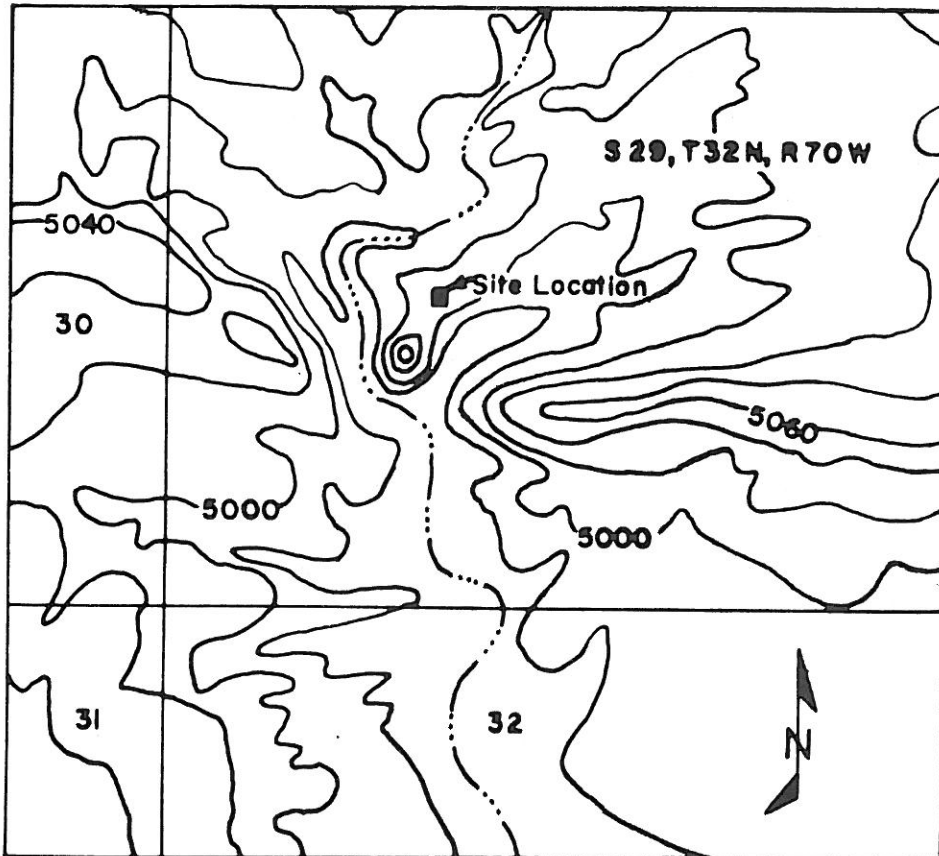
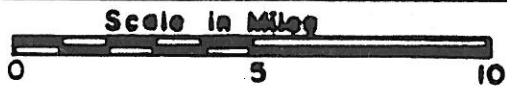
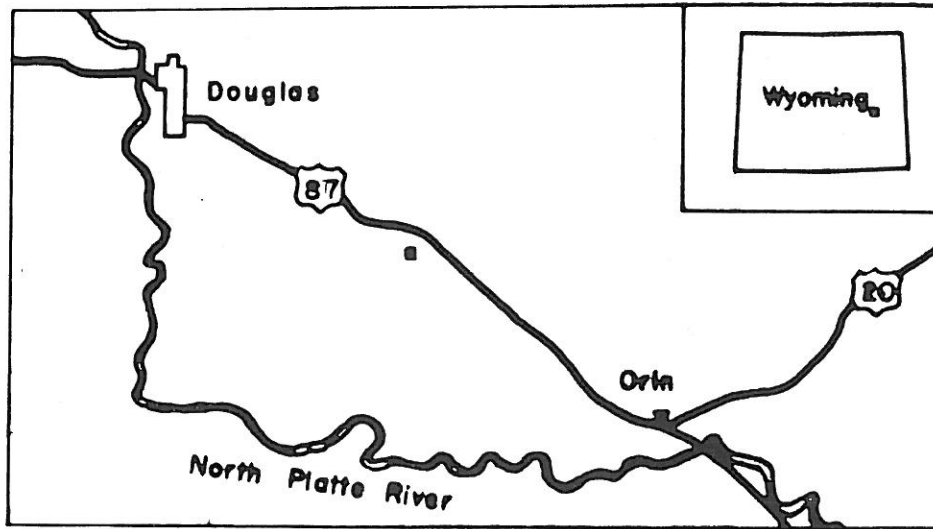


FIGURE 1. Location Of The Irvine Site.

SITE DESCRIPTION

The Irvine site has been extremely dissected by both wind and water erosion leaving an estimated 10% of the site in situ. These remaining areas were excavated in the early spring of 1967. The excavation consisted of two areas; one which was the occupation area of the site and a second area which consisted of site debris or midden (Fig. 2).

The occupation area consisted of four small depressions in which the cultural level was covered with 9 to 12 inches of wind-blown material. These depressions were roughly circular, having a diameter of from 6 to 10 feet and a maximum depth of 15 inches. From observations made during excavation these depressions were probably small wind-blown depressions which existed prior to the time of occupation. The cultural level in this area ranged from 2 to 6 inches in thickness and appeared to have undergone successive cycles of erosion and deposition. The cultural level contained numerous fire-burned rocks but only one well defined hearth which was a pit hearth 24 inches in diameter and approximately 20 inches in depth. All of the stones which are normally found in this type of hearth had been removed and the pit was filled with camp debris.

North of the occupation area on a steep slope was what appeared to be a midden heap. The slope of the bedrock in this area is too steep for occupation and the artifact-bearing level was as much as four feet thick. The midden was roughly circular, having a diameter of 30 feet and a maximum depth of four feet. Outward from the center the thickness decreased to a depth of one inch or less around the perimeter of the debris. The midden contained a large amount of charcoal and fire-burned rock, none of which was in a defined hearth. It also contained numerous bones of bison and smaller animals (primarily antelope and deer). All of the long bones had been split presumably to obtain marrow and the bison scapula recovered had the thin center portions removed. The thin splinters of scapula were probably used for making tools.

LITHIC ARTIFACTS

A total of 209 fragmentary and complete projectile points were recovered from the site, of which 35 may be identified as to type while the remainder are either un-notched bases or portions of the point which can not be identified. The points are well made, triangular, side-notched points with an average length of 2.5 cms. The bases of these points range from flat to slightly concave with the largest percentage concave. The notches which are placed close to the base, are downward-sloping, U-shaped notches which give the point an appearance of a corner-notched projectile point (Fig. 3 v, w, y, z, aa-dd). Of the notched points recovered 31 may be classified as Avonlea points and four points which seem somewhat different, are notched farther from the base (Fig. 3 ee). The largest percentage of the broken points appear to have been broken during manufacture because they are not finished to the extent of the complete points.

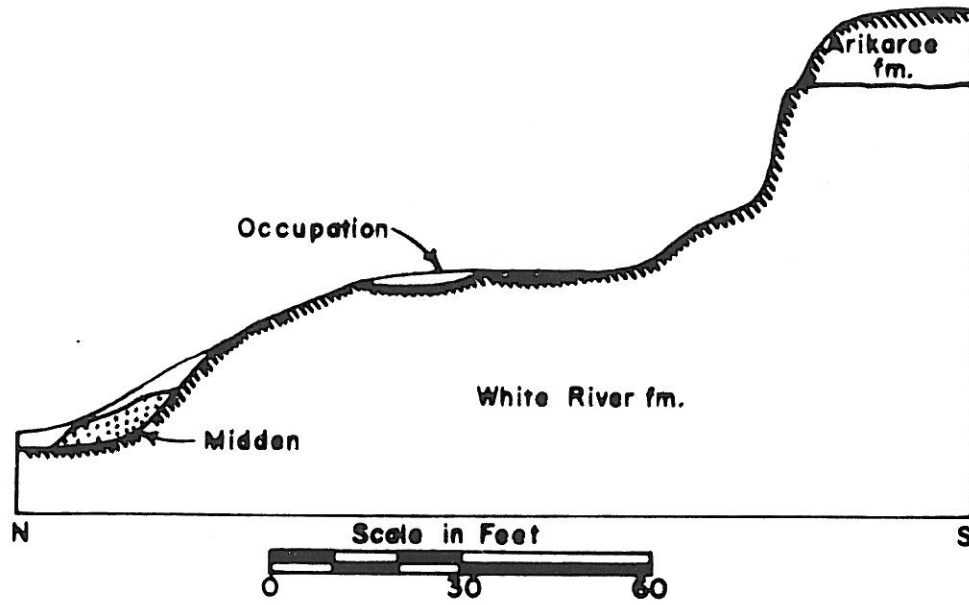


FIGURE 2. Cross Section Through The Irvine Site.

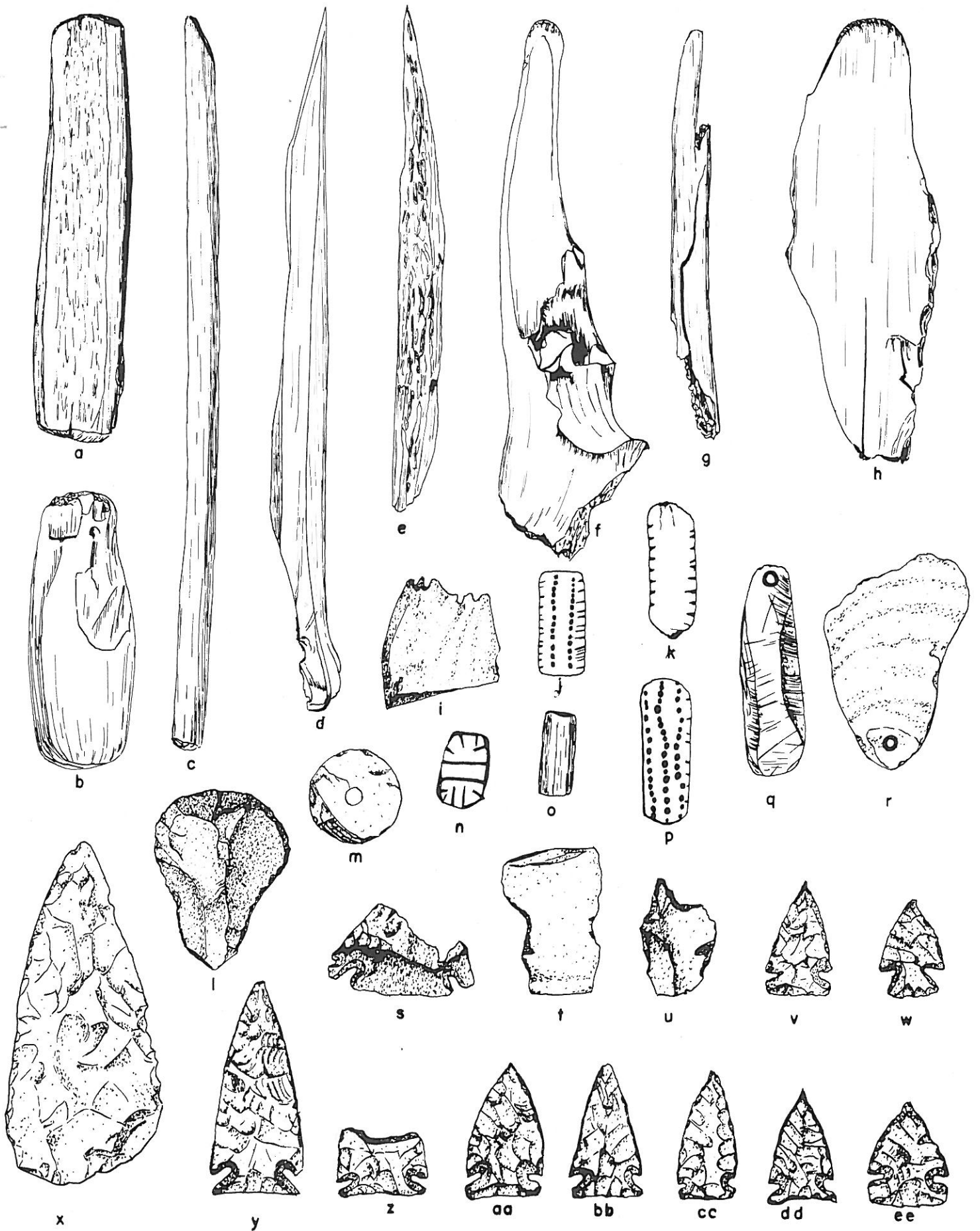


FIGURE 3. Bone, Shell And Flaked-Stone Artifacts From The Irvine Site.

Three plano-convex, snub-nosed end scrapers, which are characterized by the example shown in Fig. 3, 1, were recovered. These are well made with flake face unmodified and back flaked as shown in Fig. 3. There were five spokeshaves or notched scrapers (Fig. 3 t and Pl. 1 i-k) all of which were made from flakes with one or more unilaterally retouched edges.

Other chipped-stone artifacts recovered consisted of one drill (Pl. 1 e) and 9 graters (Fig. 3 u and Pl. 1 a, b, d and p). All graters were made on flakes and have a sharp point, which is unilaterally flaked, on a medial ridge. One of these is a combination grater and spokeshave (Pl. 1 d).

Of the 57 knives recovered, 49 were ovoid to piriform, bilaterally-flaked knives (Fig. 3 x and Pl. 1 f-h) while eight were retouched flakes which suggest use as knives (Pl. 1 c).

MISCELLANEOUS FLAKED STONE

Eight notched or notched and retouched flakes were recovered from the site (Fig. 3 i and s and Pl. 1 l-o, q and r). The use of these artifacts is unknown and may only be theorized. The most probable use of these tools was for shredding or dressing organic and/or animal fibers to a desired size. One of these tools has the appearance of a grater (Pl. 1 l), however, it is too thin to withstand a significant amount of pressure. Two of these very thin notched flakes may have been used as small hafted knives (Pl. 1 o and q).

GROUND STONE

Manos and metates were used but were not found in any great quantity. One complete mano and several fragments were recovered (Pl. 2 q) along with several fragmentary metates. Also a triangular metate-like stone 25 cms. long and 10 cms. wide was found. This stone has been flaked and pecked around the edges which is characteristic of a metate. However, the flat face of this stone is not ground to any great extent with the exception of a few longitudinal scratches.

There were five fragmentary and five complete sandstone shaft abraders. These are roughly rectangular in shape and usually have grooves on both faces (Pl. 2 r). Two of these have scratches or grooves which were not made by smoothing shafts and were possibly made while sharpening bone tools.

Two pieces of ground hematitic sandstone were found. One of these is smoothed on all surfaces (Pl. 2 s) while the other is only ground on one flat side. These stones may have been used as a source of red pigment.

One rectangular calcite crystal has a shallow groove 9 mm wide on one flat face. This crystal is 3.5 cms. in length, 2.5 cms. wide and 2.0 cms. thick. Calcite crystals of this nature are commonly found in the vicinity of the site of the White

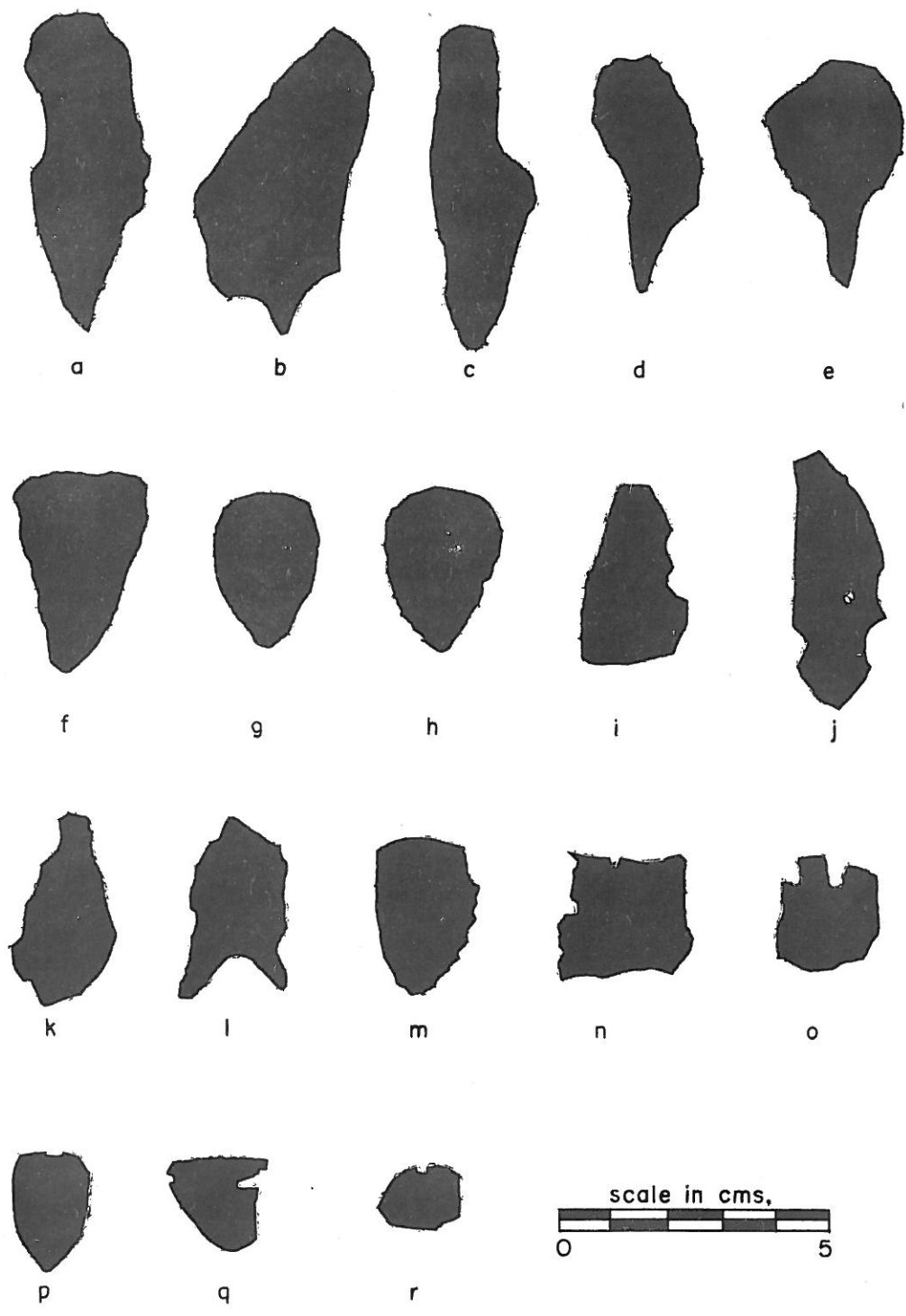
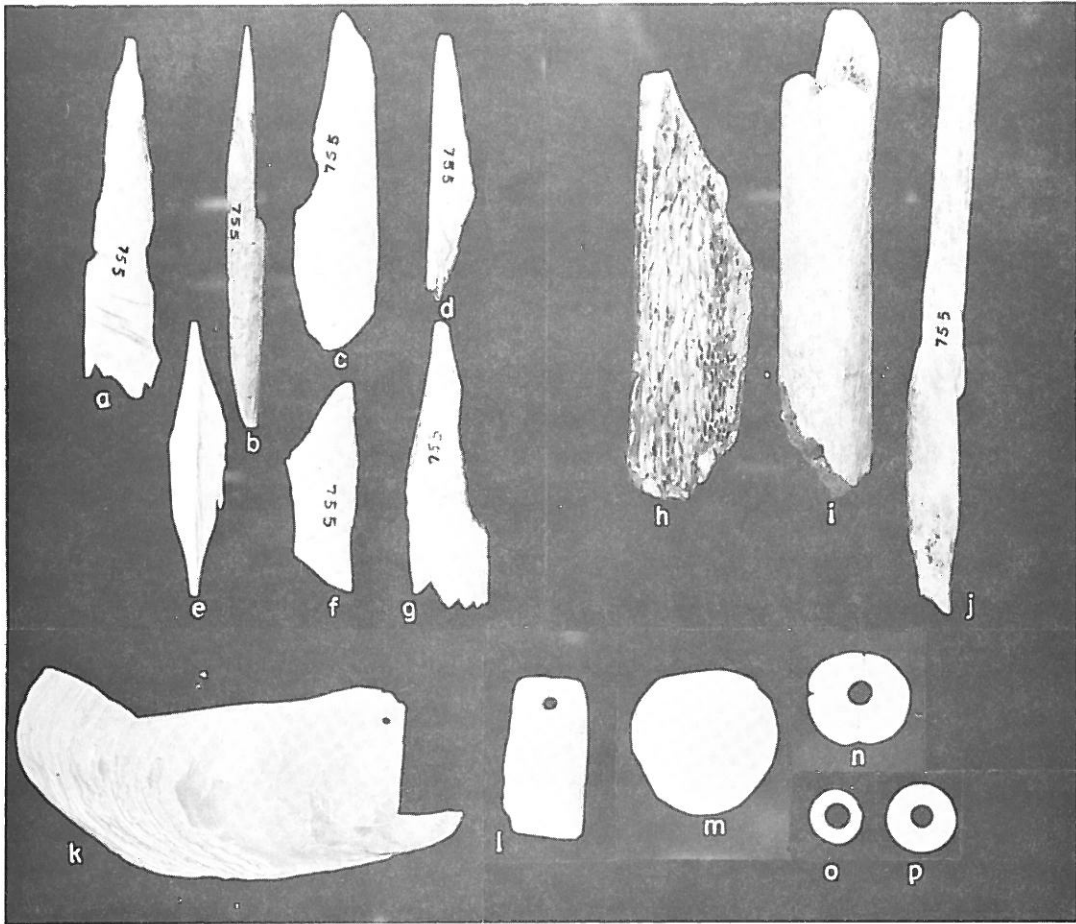
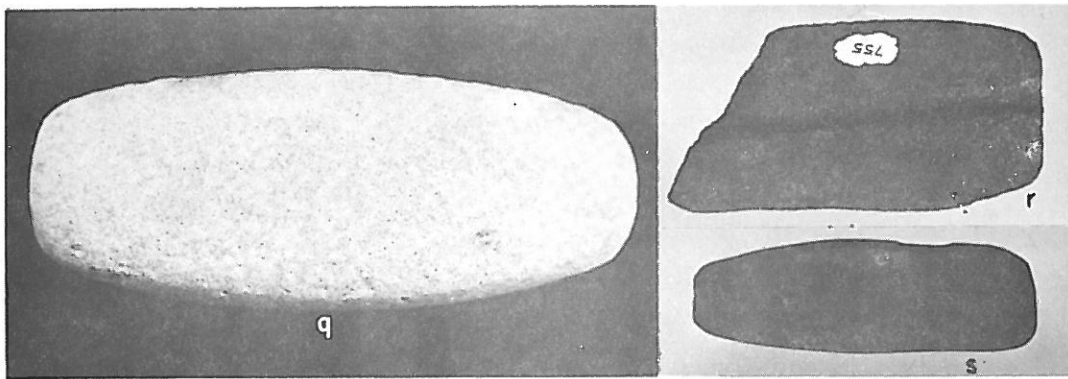


PLATE 1. Flaked-Stone Artifacts From The Irvine Site



scale in cms.
 0 5



scale in cms.
 0 5

PLATE 2. Bone, Shell And Ground-Stone Artifacts From The Irvine Site.

River formation.

BONE ARTIFACTS

There were 64 bone artifacts most of which were in a good state of preservation. There were also several specimens which were questionable showing little or no grinding and were probably splinters of bone which had been used without smoothing rough edges. These questionable tools will not be discussed in this paper.

Twenty-six splinter awls fashioned from splinters of ribs and long bones were recovered (Fig. 3 d and e and Pl. 2 a, b and e). Of these two were fashioned from deer or antelope metapodia (Fig. 3 d), one was sharpened on both ends (Pl. 2 e), and one was a double purpose tool having a sharp tip and a well rounded base (Pl. 2 b).

There were 17 flakers which were fashioned from ribs and splinters of long bones (Fig. 3 g and Pl. 2 d and f-i). Two of these were fashioned from the ulna of antelope (Fig. 3 f) and one was made from a bison metapodial. Two flaking tools were long, slender shafts which were probably ground from splinters of long bone (Fig. 3 e).

Three possible bone knives were recovered (Pl. 2 c). These were made from thin splinters of long bones which were polished from use and one edge demonstrated evidence of sharpening.

One three inch section of bison rib and three splinters of long bone of approximately equal size were polished or ground on either the ends or edges (Fig. 3 h). These were probably used as hide scrapers. One unidentified bone tool resembles a flaking tool in outline but it is too thin to withstand the pressure required for flaking (Pl. 2 j).

Two probable intermediate punches of deer or elk antler were found (Fig. 3 a and b). These are termed punches because of the splitting and fracturing of the ends of both specimens. They were probably used for indirect percussion flaking.

Nine small flat rectangular to ovoid gaming pieces or dice were found (Culin 1907). These have two or three rows of small conical depressions drilled on one surface, a row of small grooves along the longest edges of one surface, or a combination of grooves or drilled depressions on one surface (Fig. 3 j, k and p). One of these has no markings on either surface and appears to be unfinished.

One tubular bone bead and one bone pendant was recovered (Fig. 3 o and q). The tubular bead is fashioned from the metacarpal of a small carnivore, possibly dog. The pendant is ground from a splinter of long bone and has a biconical hole drilled in one end.

WORKED SHELL

All of the worked shell found in the site consisted of fresh water clam (Unio) shell. These shells probably came from the North Platte River where they were likely present at the time of occupation of this site.

Thirteen discoidal beads with conical or biconical holes drilled in the center were recovered (Fig. 3 m and Pl. 2 n-p). Three discoids were found that are probably unfinished beads (Pl. 2 m).

Other worked shell recovered consisted of one gaming piece (Fig. 3 n), four pendants (Fig. 3 r and Pl. 2 l), and one large Unio shell which demonstrates the manufacturing process used in making pendants. This Unio shell shows evidence of having portions of the shell removed by making long V-shaped cuts in the shell. It has a small conical hole drilled in one portion and it may be theorized that this was the next pendant to be removed (Pl. 2 k).

CONCLUSIONS

The projectile points found in the Irvine site resemble a type classified as Avonlea (Davis 1966, Kehoe 1966, Kehoe and McCorquodale 1961, Wormington and Forbis 1965). These points have most characteristics of the Avonlea points with the exception of a few slight typological differences. This slight variation is probably due to the large geographical separation from the area where Avonlea points are commonly found. The Avonlea type points are found in Northern Montana, Saskatchewan and Alberta.

The absence of ceramics in the Irvine site suggest the time of occupation might be roughly contemporaneous with other Avonlea sites. The average age of these sites is approximately 1500 years B.P.

ACKNOWLEDGMENTS

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