

THE WYOMING ARCHAEOLOGIST

VOLUME IV

November, 1961

Number 11

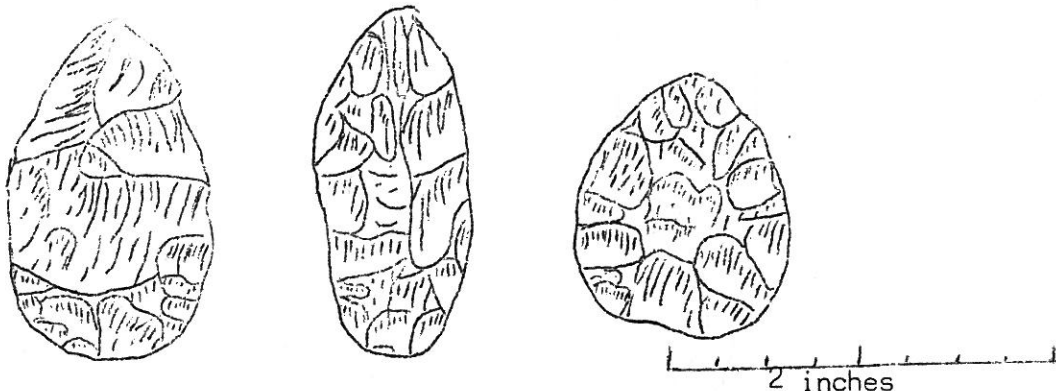
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A CACHE DISCOVERY

In August, Mr. and Mrs. Roger S. Bent of Sheridan made a very unusual discovery. They were exploring near the Spear-O Wigwam on the East Fork of Big Goose Creek in the Big Horn Mountains when they came upon a cache of stone blades. The site was about 3' by 5' and surrounded by large boulders. One blade lay exposed on the surface of the mossy, peat-like cover. A shovel was then used and the first shovel-full produced another blade. Although the mossy layer overlying the rocky sub-soil was only 3 inches in depth, it contained a total of 65 blades, with an absence of other artifacts, chips or flakes. Considerable charcoal was present, but all of the immediate area was in the midst of an old burn or forest fire.

The blades are small, averaging 1" by 1½", and are quite uniform in size and shape, most of them being oval or ellipsoidal and 3/16" in thickness. They are pressure-flaked on all edges and many have diagonal flaking across both faces. The material is altered shale of a very hard variety, and there are two colors, light gray and bluish-black. This material is not native to the Big Horns, but great quantities of it are present in the lowlands East of the mountain.

Apparently, some prehistoric person had gone up on the mountain from the plains to the East, probably for summer hunting, and brought with him a bag of blades which he either cached or left behind for some reason.



DR. MULLOY TO SPEAK IN SHERIDAN

Dr. William Mulloy, Archeologist at the University of Wyoming will speak in Sheridan at the annual banquet of the Sheridan Chapter. Charter members of the Wyoming Archaeological Society Mr. and Mrs. Fred Hilman, Margaret Powers and Dr. Bentzen received their first training in archaeological investigation methods from Dr. Mulloy. He will tell about his work at Easter Island, the little Island that has become of great archaeological importance and mystery.

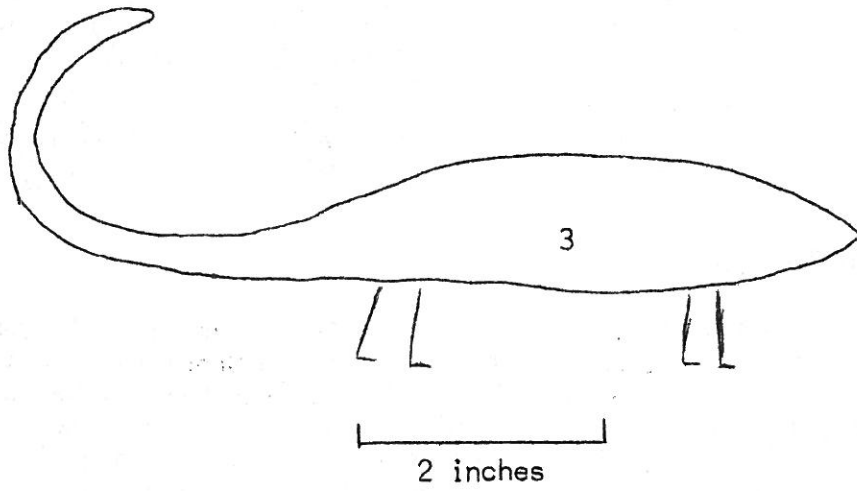
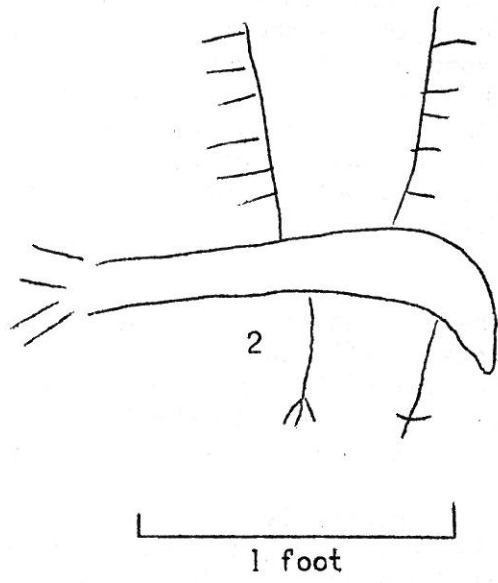
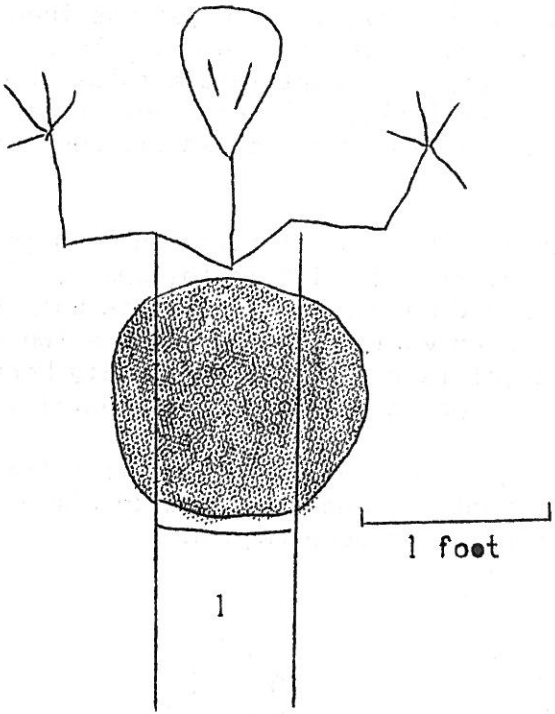
DATE: November 18, 7:00 P.M.

PLACE: Sheridan Inn, Stagecoach Room

TICKETS: \$2.25. Reservations: Mrs. Zane Hilman, Route 1, Sheridan.
by Thursday, November 16.

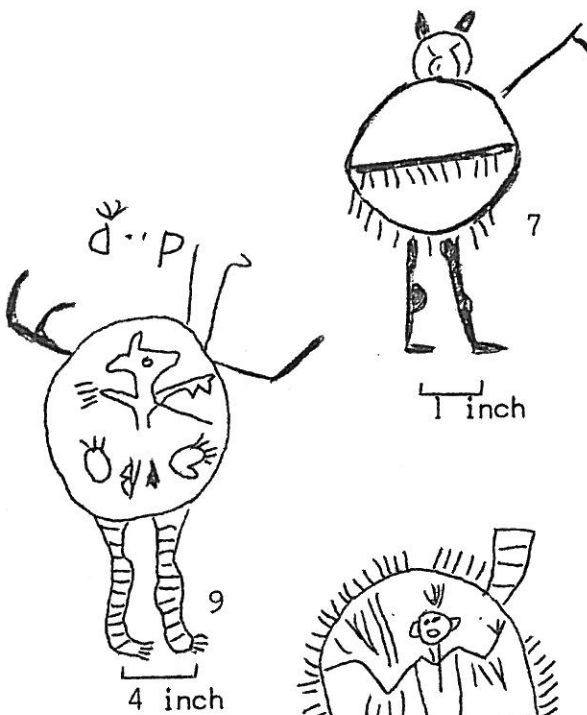
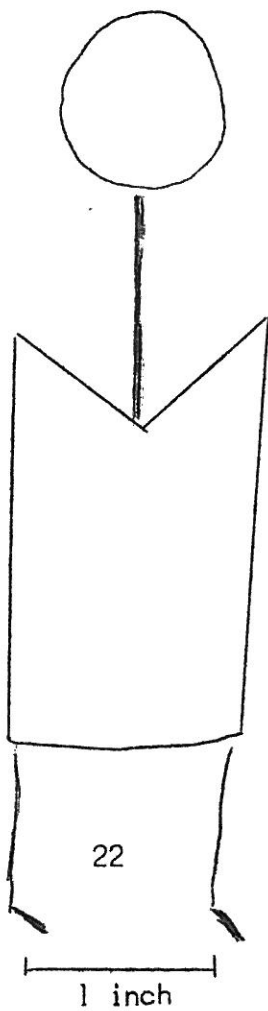
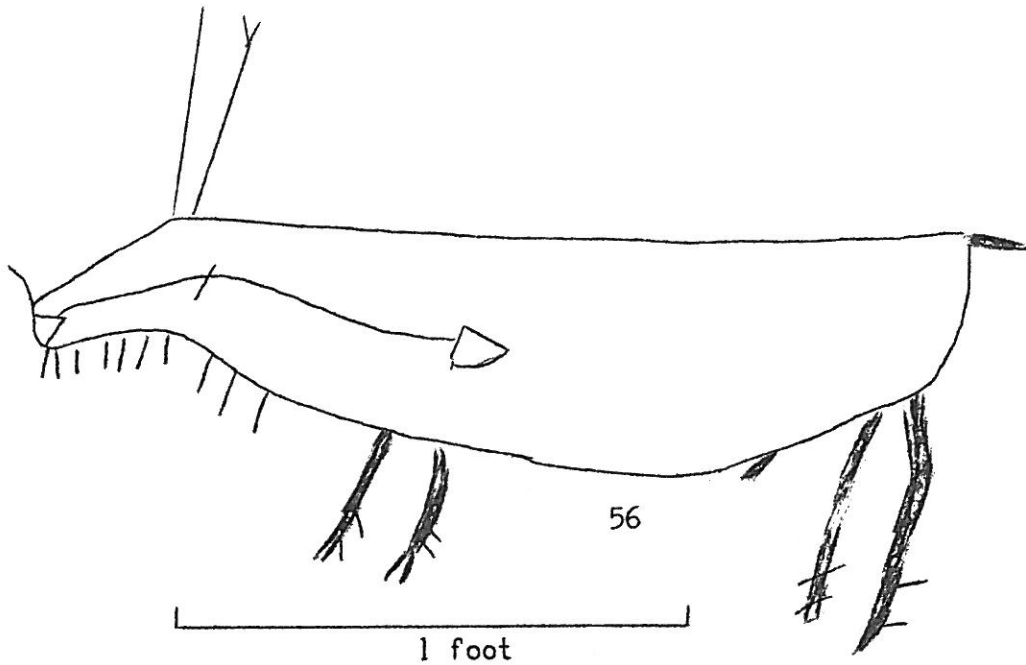
Southern Big Horn Mountains

48 JO 301

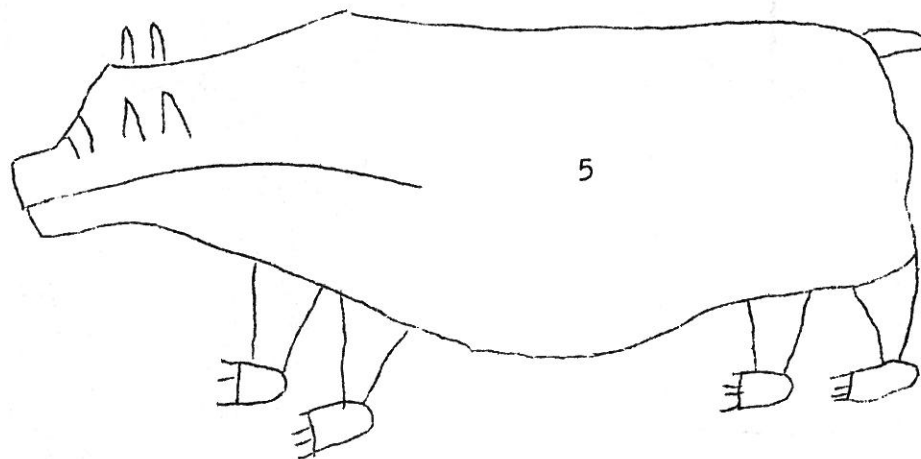
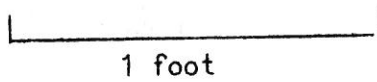
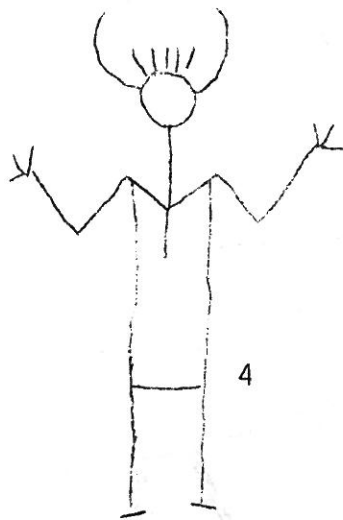
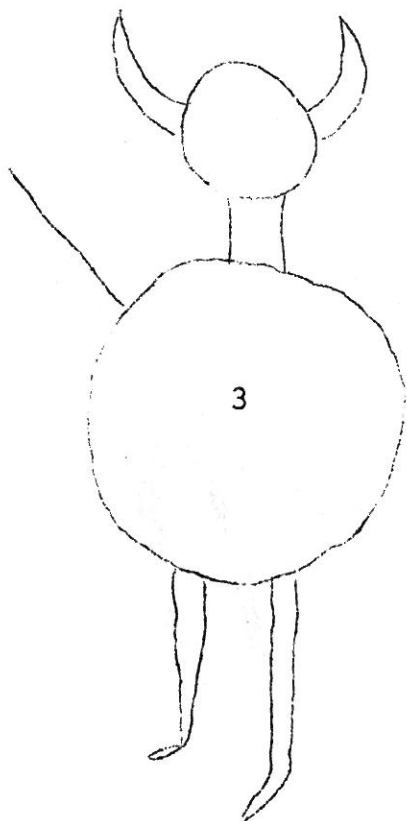


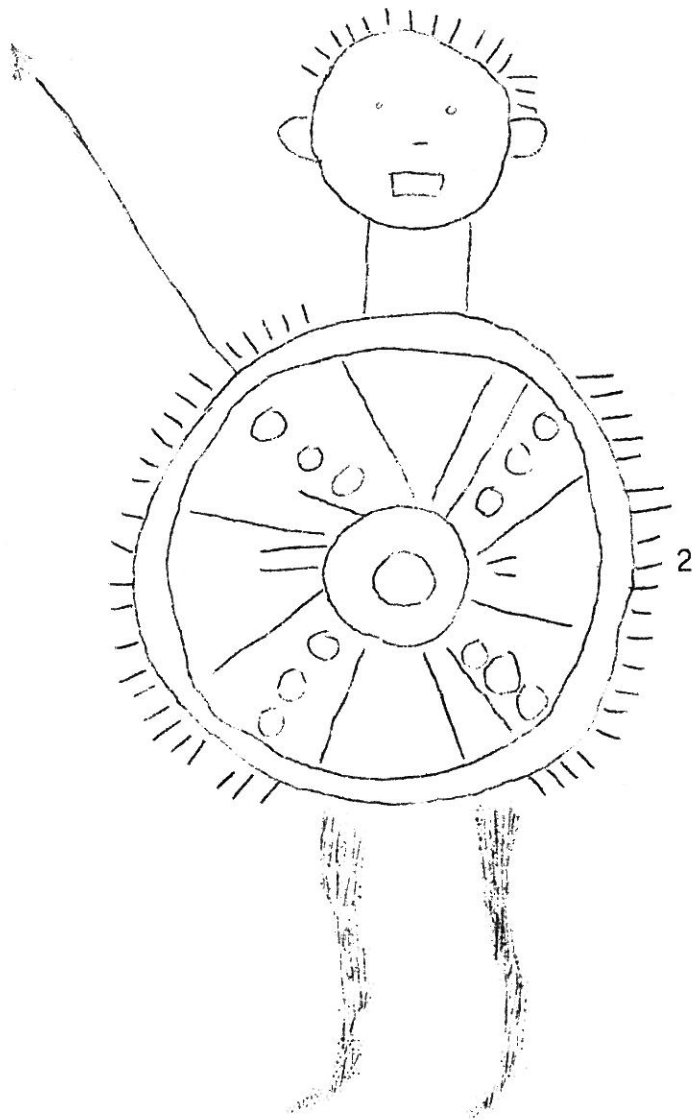
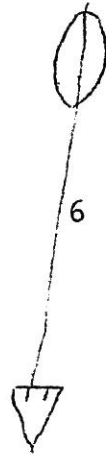
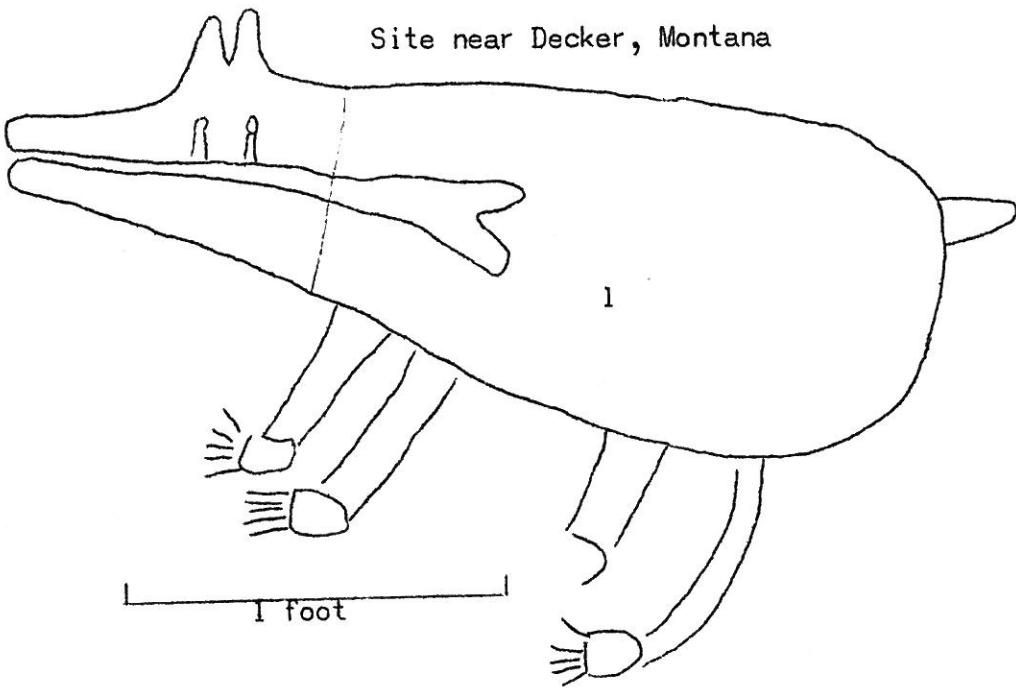
Pictograph Cave

Billings, Mont.

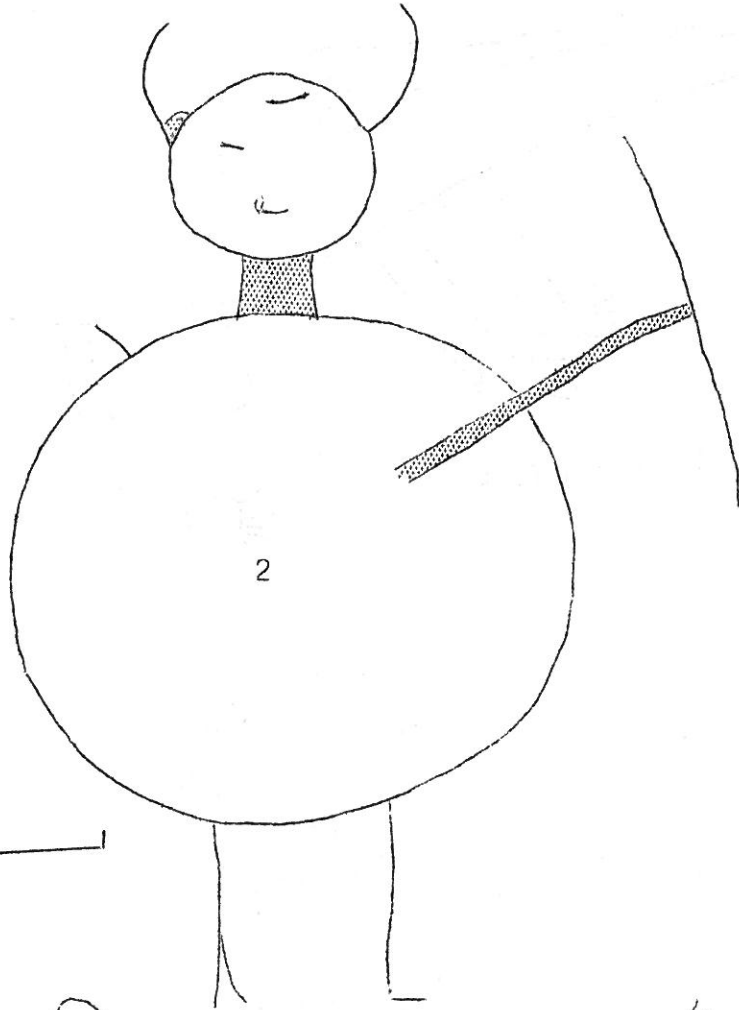
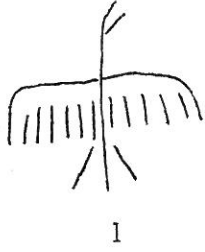


Decker, Montana

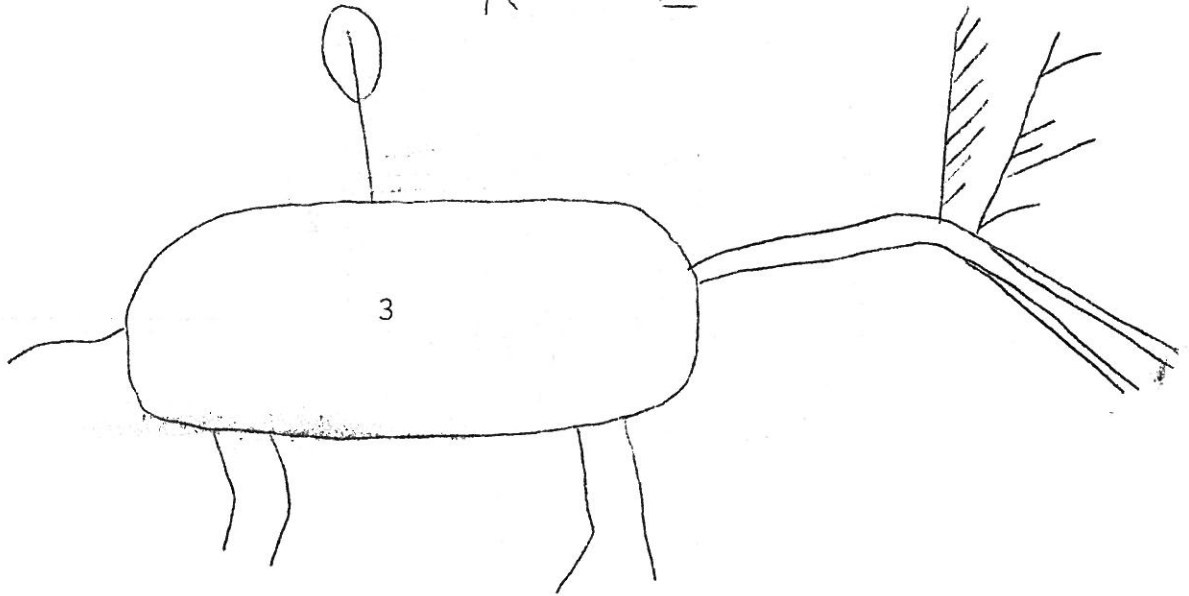




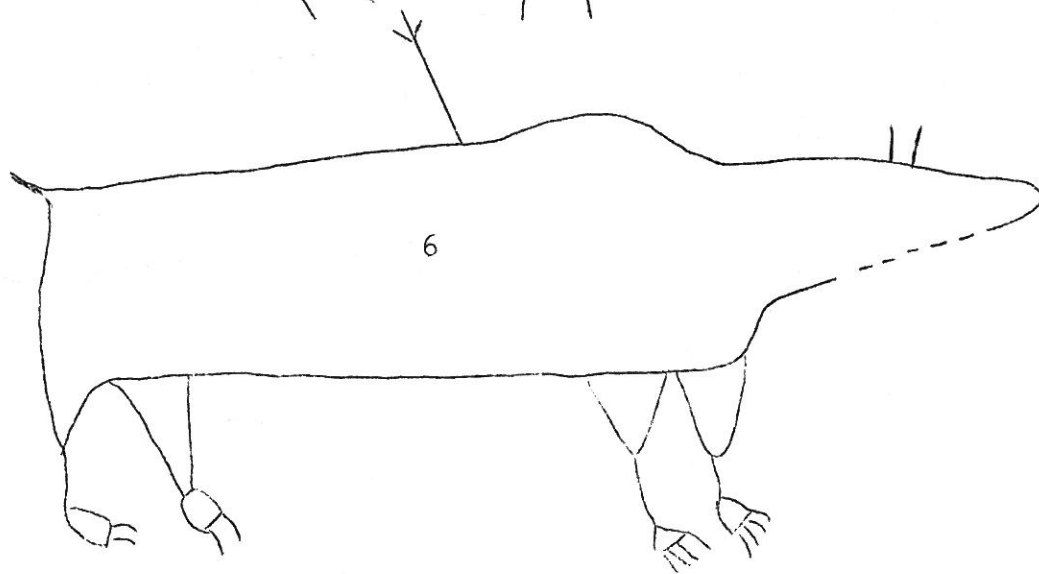
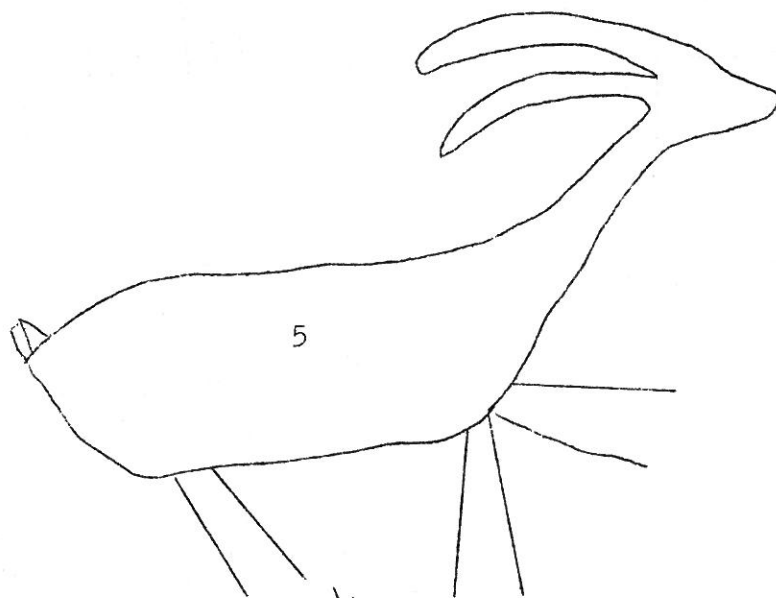
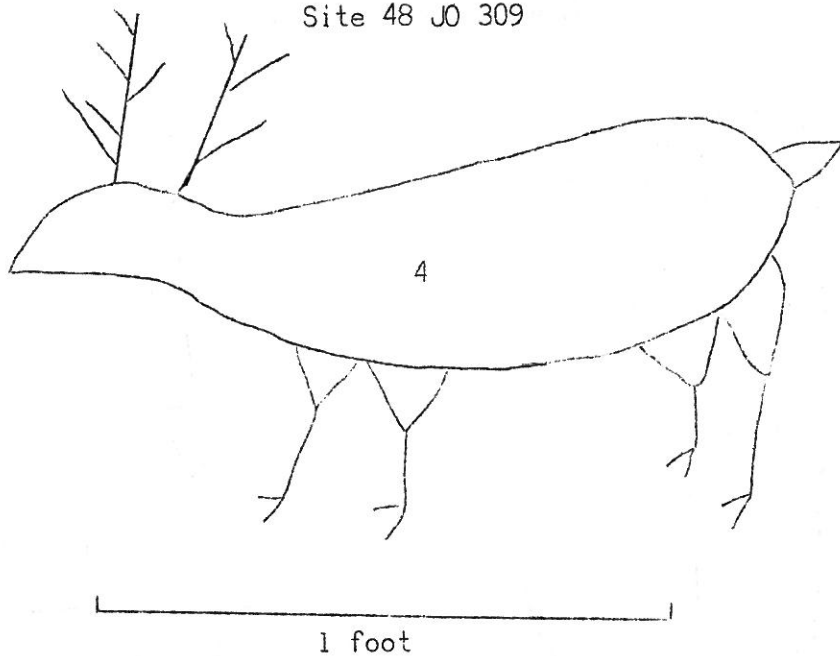
Buffalo Creek, Wyoming
Site 48 JO 309



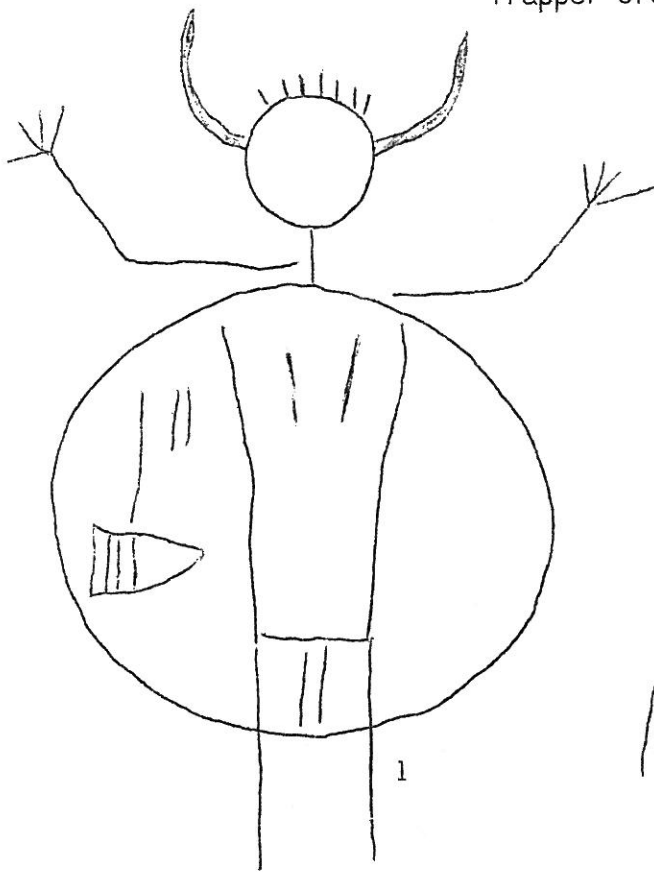
1 foot



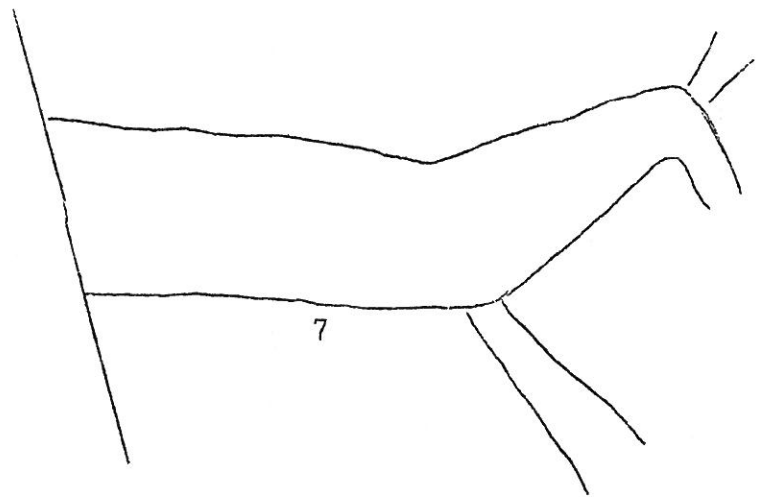
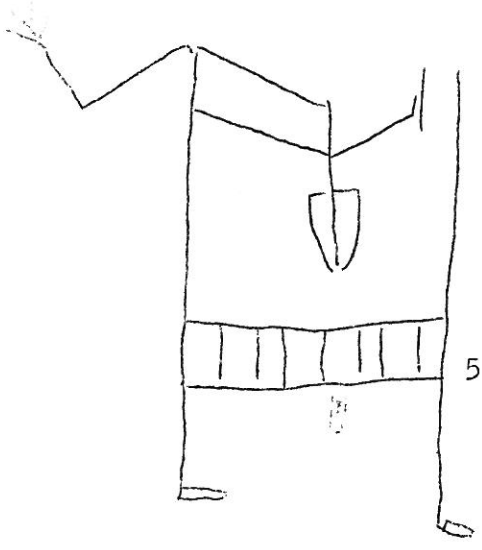
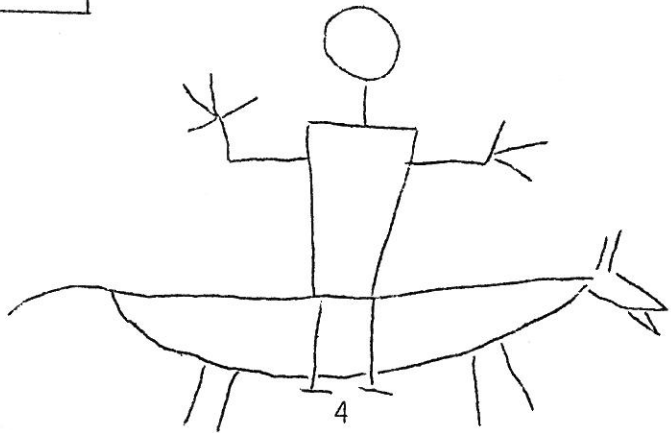
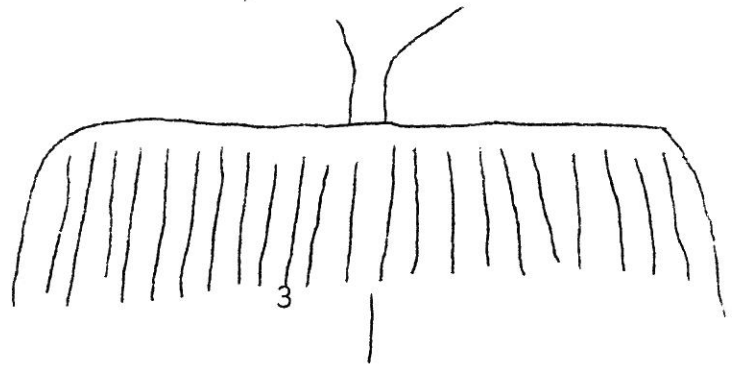
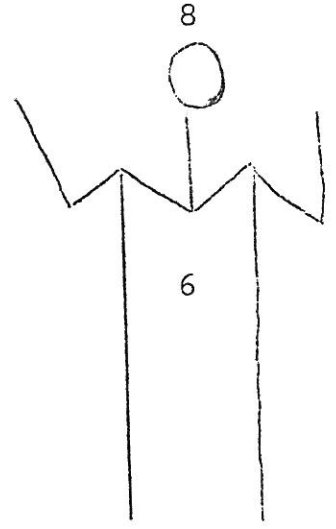
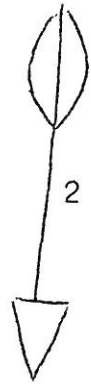
Site 48 JO 309



Trapper Creek, Wyoming



1 foot



8

6

2

1

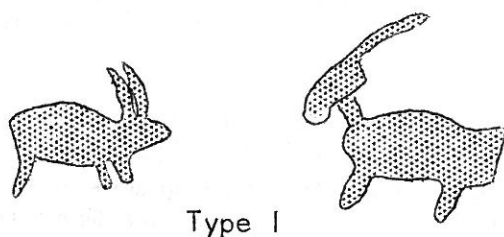
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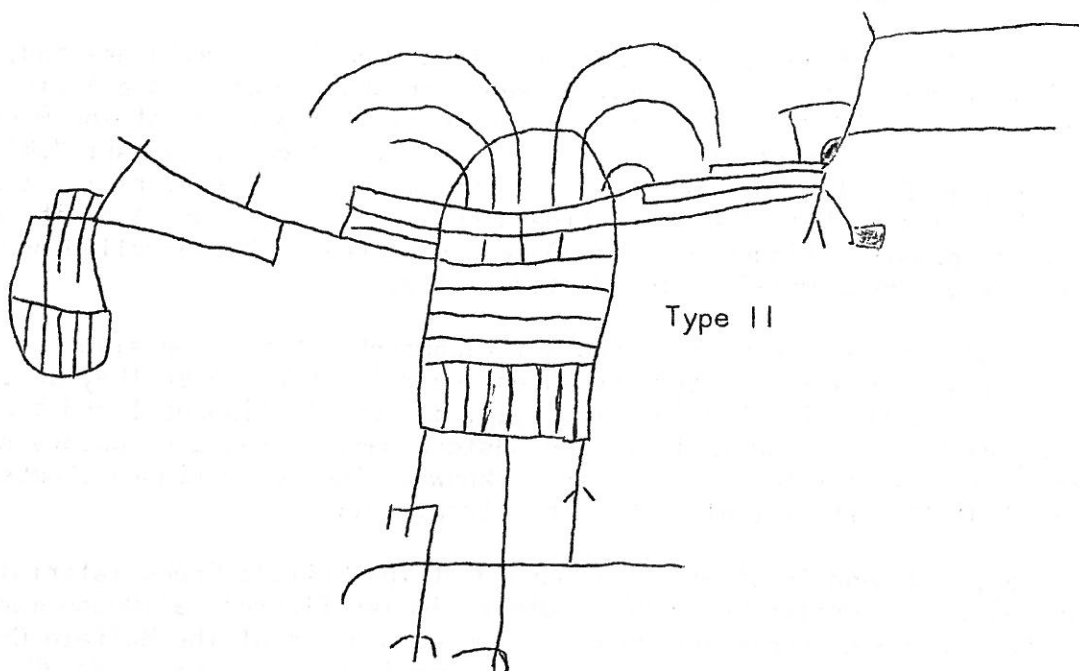
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7

Dinwoody, Wyoming



Type I



Type II

The petroglyphs at Dinwoody, Wyoming, were investigated by Dr. Dave Gebhard and Harold Cahn. Four types were named, of which two are shown above. In various places, these types were superposed, and it was possible to determine some relative ages for the various types.

Type I is solidly pecked, and consists of characteristic small mountain animals. The bison is conspicuously absent. Similar figures are found in the Northwest and in Arizona, and probably elsewhere. Defining the area in which a certain style of figure is found can give a great deal of information about the movements of people and/or culture.

The type II petroglyph shown above is something of a puzzle. It looks like doodling, but represents quite a lot of work for mere pastime.

A WPA project excavated some caves near this site, but the work was so poorly done that much valuable information was destroyed. No records of depth or cultural association were kept.

PICTOGRAPH CLASSIFICATION

The classification of pictographs by some orderly scheme would greatly facilitate communication and analysis of the findings at the large number of sites which produce pictures. Certain common factors can often be traced through these

pictures, and it should be possible to propose a scheme of classification for certain traits in order to make possible a simple literal statement of the picture types at a site.

Among the traits which appear to the writer to be significant are several discussed below. No formal statement of these traits will be attempted at this time, and no classification scheme will be proposed. Many more pictographs will have to be studied before such an attempt could be made. The following are more in the way of casual observations than analyzed descriptions.

In the drawing of animals, some of the more important traits are body shape, treatment of legs, treatment of head, presence or absence of a "heart line", horn treatment, foot treatment, and accessory treatments. Figure 56 of the Pictograph Cave drawings shows a heart line, solid (rather than stick) legs, and "whiskers" below the neck. Dewclaws are apparently shown also. The body form is straight along the back line. Note the heart line also appears in figure 1 of the Decker pictures, and possibly figure 5 of the Decker pictures. The so-called heart line is an extremely common motif in the United States.

Eye treatment in both animals and anthropomorphs is of some significance. In many cases, human or animal facial features are not shown. When they are, the treatment is significant. The "weeping eye", as seen in figures 1 and 5 of the Decker pictures is a common motif in the Western Hemisphere, and appears nowhere else except at Easter Island, as far as is known. The human figure (number 1) from the 48 JO 301 site may also show this treatment.

The body and head treatment of figure 3 of the Buffalo Creek materials is quite unusual. The writer knows of no other similar figures, although many may exist. The triangular upper leg seen in figures 4 and 6 of the Buffalo Creek material is common in that area, and also occurs on human figures at the 48 NA 301 site, several miles distant. Note the treatment of the toes on the antlered animal and on the bear, while figure 3 shows no toes at all. Such details probably have some significance for purposes of classification. Only the study of a large number of figures will assess the importance of such observations.

Note the arrows in the backs of figures 3 and 6 of the Buffalo Creek materials. The fletching appears to be different in the two cases. Note the resemblance of the fletching in figure 3 to that of figure 6 of the Decker material, and to figure 2 of the Trapper Creek pictures. Note also the triangular points in the latter two and in figure 2 from Decker. It is interesting to note that triangular un-notched points were found in one cultural horizon at Trapper Creek. Whether the artist was sufficiently detailed to make this more than coincidence is problematical. Further excavations of sites intimately associated with pictographs is important.

Among the anthropomorphic figures, the shielded figure is outstanding in the plains area. Figures 7, 9, and 12 of the pictograph cave area are examples in point, as are figures 2 and 3 of the Decker pictures, figure 2 at Buffalo Creek, and figure 1 at Trapper Creek. Quite commonly these figures have a weapon or other elongate device at the "ten o'clock position relative to the shield. The illustrations from Pictograph Cave are somewhat unusual in having the device at two o'clock. In a few cases the body lines can be seen within the shield area, as in the Trapper Creek figure, but this is quite possibly a group variation. Horned headdresses are commonly associated with these shielded figures. In some cases, the "horns" may well be hairdos or other decorations rather than horns.

Perhaps quite diagnostic of certain phases is the worked-out leg treatment of some of the shielded figures as at Pictograph Cave and the Decker site. Dr. Wormington, in her Reappraisal of the Fremont Culture, considers this as one of the traits of that culture. It is doubtful that the Fremont Complex per se existed in this area, but it is more than probable that common influences were at play in both areas. The facial treatment of figure 2 of the Decker pictures is unusual. Facial treatment is usually absent or highly generalized. This may be a later addition to the figure.

V-necked figures are common throughout the high plains area. Figures 22 and 12 of the Pictograph Cave section, figure 1 of the 48 JO 301 site, figure 4 of the Decker site, and figures 5 and 6 of the Trapper Creek site are fairly typical. These figures are often associated with the shielded figures and may represent segments of the same cultural complexes or contemporaneous figures of another culture. Horned headdresses sometimes occur with these figures. Figure 1 of the 48 JO 301 site may be a shielded figure with a V-neckline. The presence of the V-necked figure on the shield of figure 12 in the Pictograph material suggests contemporaneity. Often, shields bear figures of animals or animal skins, suggesting that the shield may depict uses or origins of the shield, or events in the life of the user. It is possible that the V-necked figures were enemies, and that the shield-bearers had killed some of them, but this is pure conjecture. Some fortunate circumstance will be necessary to settle the matter.

Figures 1 at Buffalo Creek, and 3 at Trapper Creek depict what are thought to be stylized eagles. The figures at Buffalo Creek are probably quite recent, as the rock here is soft and rapidly disappearing. Even historic initials are scaling away in many places. It is thought that the stylized eagle is quite recent, and may even refer to white men, whose use of the eagle totem in the United States is characteristic. The resemblance of the Buffalo Creek eagle to the U. S. Army insign found on coat buttons is marked.

Characteristically, most of the prehistoric animal and human drawings seem to portray still figures for the most part. Action is seldom depicted. Figure 5 of the Buffalo Creek figures may represent an attempt at action drawing. This use of multiple leg positions is not uncommon in Old World figures, but, to the writer's knowledge, is not common in this area.

Figure 4 at Trapper Creek evidently depicts a man on a horse. This figure is dated as being protohistoric. Unfortunately, the figure is relatively unstylized and does little to help date other figures.

The arrows in the backs of some of the animals in the Buffalo Creek figures suggest that some of the animals may have been killed by ambush from a cliff. A small rock structure on a rimrock overlooking a deer trail was found on one of the tributaries of Buffalo Creek which might have served as a blind for ambushing animals in just such a manner. Eventually, archaeological work, taken in close conjunction with the petroglyphs, may clarify many of the questions which arise from either alone. Conclusion leaping is particularly tempting in connection with pictographs and must be assiduously resisted if real progress is to be made. It should be reiterated here that much of what has been said above is pure conjecture, and must be tested by much additional work.

One thing becomes abundantly clear when a number of pictograph sites are studied. What might first appear to be simple crudeness of technique is more often a definite style. Evidently certain groups drew animals in a particular way---

straight backed, or bottle-shaped bodies, or some other style. When enough sites have been studied, it may be possible to develop a trait list which will distinguish the drawings of various groups and to thereby determine something of their habitats and migration routes. Also, if the area visited by a certain group, as seen from pictographs, coincides with the area of a certain lithic form or other device, some inferences of association might be made.

Because pictographs are rapidly weathering away and being vandalized, it is important to preserve as carefully as possible every last scrap of information about these figures while they are still available. This could very well be one of the most important projects of a group like the Wyoming Archaeological Society.

PETROGLYPH WEATHERING

One of the methods of petroglyph measurement indicates possibilities as a relative dating method based on the weathering of petroglyphs. Generally speaking, the older a petroglyph is, the more weathered it will be. Of several petroglyphs on the same surface, it is quite likely that the degree of weathering will increase with the age of the figures. There is, however, one enormous fly in the ointment--how to tell which figures are more weathered than the others.

The problem is determining the degree of weathering of lines or areas carved in rock is that no two of the lines, or even two parts of the same line, had the same appearance when new. Depth of groove, width of groove, cross section of groove, and other factors vary from line to line, and from part to part of the same line.

In spite of the enormous variations in original appearance, one feels, in looking at panels of petroglyphs, that there are certain signs of age which appear subjectively to the observer. Subjective impressions are very much subject to error, and it is highly desirable that research be done to translate into quantitative or at least monotonically qualitative scales the subjective factors that appear in petroglyphs of different ages.

First of all, it must be understood that weathering consists of a number of phenomena. Different rocks will weather by different methods and in different degrees. Among the many factors that must be taken into account are (1) abrasion by wind or water borne particles, (2) chemical action on the stone by water and solutions, and perhaps by gasses, (3) thermal effects, including differential expansion and exfoliation and such effects as frost cracking due to freezing of moisture, (4) abrasion by animals, or plants, which may be quite appreciable in the case of cattle rubbing against a cliff, (5) other miscellaneous effects.

To study these various effects in a proper manner, it is necessary to do two things: Make periodic measurements on petroglyphs in the sites in which they occur, and perform accelerated laboratory-scale experiments on various analogous situations.

Several observations have been made in the laboratory on experimental analogs. While these are very preliminary, they tend to show some interesting trends which might eventually be of significance. The case of chemical weathering is especially easy to simulate, and yields very useful results.

Chemical weathering is of two types. In one type, the parent rock is chemically eroded from the surface by the action of a solvent. Many sandstones are cemented with lime which is dissolved by water which contains carbonic, humic, or other acids. If the water source is external, the surface weathers away--- if the water source is internal, that is, if the stone is an aquifer, then wholesale sloughing of the softened stone may occur, and this leads to very little useful data in terms of petroglyph dating.

The first type of chemical surface weathering, which might include not only erosion, but also, in rare cases, deposition, is easily simulated and studied. Imagine a V-shaped groove incised in a sandstone which is lime cemented and subject to solvent weathering, on the surface. An analog can be built by cutting a V-shaped notch in a piece of aluminum and simulating the chemical erosion by the action of sodium hydroxide. The important thing to be learned by such analogs is the way in which the shape of the groove changes with age.

Under the effects of chemical weathering alone, the V-shaped groove will become broader and shallower, with the vertex of the groove becoming rounded, and the convex corners where the rock surface meets the V will become rounded at an even rate. This type of weathering leads to a consistent and monotonic change in the shape of the incised lines which can give important clues to the relative ages of the grooves. The original shape of the grooves is unknown, of course, but a study of a large number of groove profiles in a given figure will give a good picture of its shape, and when compared with a set from another figure, will give valid inferences as to the relative ages.

Chemical deposition, such as efflorescence and the deposition of lime from external solutions can cause figures to be obliterated in certain special cases. This can easily be simulated in the laboratory, and shows a consistent pattern also. In the case of efflorescence, where internal solution comes to the surface and evaporates to deposit a residue, the bottom of the groove will fill most rapidly, the sides will fill next most rapidly and the convex corners least rapidly. The result is a groove which rapidly becomes shallower, more sharply angled at the bottom, and somewhat rounded at the convex corners. The groove tends to become shallower and narrower, rather than broader as in the chemical erosion situation.

Another type of weathering that can be simulated in the laboratory is abrasive weathering such as that by windblown sand. A number of variables appear here, such as the coarseness of the available abrasive, the orientation of the surface with respect to the vertical and to the prevailing winds. A large number of experiments are necessary to determine the effect of each of the many variables, and the writer has not yet completed sufficient testing to reach any valid conclusions. It does appear, however, that where there is a strong preference for one wind direction, the weathering is asymmetric, which might be expected. Further work will perhaps elucidate the pattern. Preliminary results seem to indicate that abrasion does not greatly affect the bottom of the groove at first, but rather attacks the convex corners primarily. It is believed that a consistent pattern will be found and that again a set of patterns showing relative ages can be found.

It is hoped that during the coming season, a number of measurements can be made on some petroglyph figures which can then be filed for future reference and compared with future measurements on those same sites. Such in situ study will furnish the most valid sort of information about the combined processes acting on petroglyphs.

Eventually it is hoped that some valid scales of relative age can be established by such studies so that definite criteria can be substituted for the subjective observation that some figures appear to be "more weathered" than others.

WE HAVE AN ANGEL

During the recent hunting season, one of our deer-hunting members stopped at Helen's Cafe in Clearmont for a sandwich and had a nice chat with Helen Worden, the proprietress, who is one of our most avid members and a great booster for our society. She disclosed that she had been selling polished agates to her customers and saving the profit to be used as a contribution to our society. She sent in \$15 to our secretary, via the hunter, for our society to use in any way we choose.

Helen donated ten dollars, similarly obtained, last year to assist with our publication of reports.

CODY CHAPTER REPORT

A brief meeting of the Cody Chapter was held on September 26, 1961, at the Ohio Oil Conference Room. The principal item of business at the meeting was to select a different meeting time to facilitate liaison with other chapters. Eleven members and one guest were present. It was decided to hold regular meetings on the second Tuesday of each month.

A regular meeting of the Cody Chapter was held on October 10th at the Ohio Oil Conference Room. Fifteen members and one guest were present. The guest speaker was Cliff Merithew of Powell. He spoke on his trip to Europe in the summer of 1961.

Main topic at both September and October meetings had to do with how to control digging, by members and non-members, that is not authorized. Some of our questions--as yet unanswered but thoroughly discussed: (1) What would you actually do if you found someone actually ruining a site: How could you prove that you were authorized to "punish" them except through land ownership? (2) What determines an authorized dig? A site report filed? An "invitation" to others in the group to dig? etc. (3) How long are site reports valid? If test holes are dug and reports filed--and then sites are left untouched for years--can no one else obtain permission to finish them? Are there any references to this in the National Antiquities Law? (4) If someone finds a potentially good site and digs a "test hole" that turns out to be a complete "dig". isn't this just as bad as someone outside who accidentally (or otherwise) stumbles onto a site and digs it? Does a published report of the dig make it legitimate?

These are things that we actually can't answer for ourselves and would like to have discussed at the February meeting.

In his talk about his trip to Europe, Mr. Merithew mentioned seeing the ruins of Stonehenge and showed us some excellent restoration pictures of it. He mentioned that although the government protects it, as does our government maintain our national parks and monuments, it still doesn't prevent people from climbing over the rocks, defacing them, and allowing children to play on them. I guess people are the same all over the world.

SHERIDAN CHAPTER NEWS

Mr. Louis Allen, Engineering Instructor at Sheridan College, talked on surveying and mapping archaeological sites at the October meeting of the Sheridan Chapter.

Discussion indicated a need for study of proposals to submit to the State Legislative Committee on new legislation for burial investigations and jurisdiction over materials recovered from a site.

Mr. Hans Kleiber donated a three page article from THE RAWLINS DAILY PRESS, August 22, 1961 to the Society Library. WYOMING SCENE OF MORE RESEARCH ON EARLY MAN THAN ANY OTHER STATE is the headline of the interview with Dr. George Agogino, University of Wyoming Archaeologist. Five photographs by C. M. Schaap illustrate the article on the mammoth site southwest of Rawlins and Hells Gap site near Guernsey. Guests were Margot Liberty and Harry Reed, Dayton.

Mr. Joe Medicine Crow, Anthropologist, has accepted an invitation to speak to the Sheridan Chapter early in December. Members who attended the Montana Archaeological Conference in Billings last spring were very much interested in Mr. Medicine Crow's talk on buffalo jumps and animal traps. In relating the history and folklore of hunting by early man, Mr. Medicine Crow vividly portrays the real reason for archaeology--the study of the development of man.

CASPER CHAPTER REPORT

The October meeting of the Casper Chapter was held on October 17th at the auditorium of the new Arts and Sciences Building at Casper College. Fifteen members and four guests were present.

The program for the evening consisted of a film from the Great Plains Trilogy, entitled "Pawnees, Men of Men."

Much of the evening's discussion centered on the possibility that the triangular unnotched points from the Brown-Weiser site are Harrell and Washita types. These types, listed in Bell's Selected Artifact Types, are known primarily from the south and southwest, and the occurrence here, while common, is not known to be associated with these southern occurrences. Generally speaking, the points appear later in this area than the dates given for the Harrell and Washita types.

The next meeting will be on the 14th of November at the same place, with the principal business being the formation of a nominating committee for next year's chapter officers.

OVER THE CAMPFIRE

Dr. Bentzen is planning to attend the Plains Conference to present a talk on the Yonkee Bison Kill. He also plans to take some of the Mouat Cliff Burial materials to the conference for Stu Conner of the Billings Society. Dr. Stephenson of the River Basin Surveys feels that these materials are among the most interesting produced in this area, and looks forward to having them displayed at the conference.

Your editor had a pleasant few hours with Dr. Mulloy a couple of weeks ago, and was completely fascinated by stories of the work on Pascua. Time was altogether too short for the many things that were to be discussed, but that's

life. Your editor also took a few minutes to look at the Rawlins mammoth in the museum and to look at George Frison's Spring Creek Cave material. The latter is absolutely fascinating.

Dr. Ray Bentzen, Field Supervisor, Margaret Powers and Hila Gilbert investigated a rock shelter reported at the Archaeological Exhibition held in August. The shelter shows no sign of occupation. As so often happens, the trip revealed other interesting evidence of Indian history. The owner of the ranch guided the group to some tipi rings which were measured and recorded by Dr. Bentzen.

Dr. Bentzen reports that one Saturday in September, Marvin Ewoldsen and he drove up the Soldier Creek trail as far as possible with a 4-wheel-drive vehicle, then climbed on foot up the face of the mountain to a cave which Mr. Ewoldsen had discovered while hunting several years ago. Two test pits were dug and screened, but the floor was sterile.

The two men then climbed over the top of the mountain to the head of Soldier Creek and tested a couple of prospective sites, one of which gave promise of productivity with a large number of chips, flakes, a core-stone, and a fire-pit. This site will be filed for future investigation, although its inaccessibility will place it at the bottom of the list, the reconnaissance alone requiring eight hours of the toughest type of hoofing. Perhaps, in future years, helicopters may provide easy access to sites like this.

EMBERS OUT!