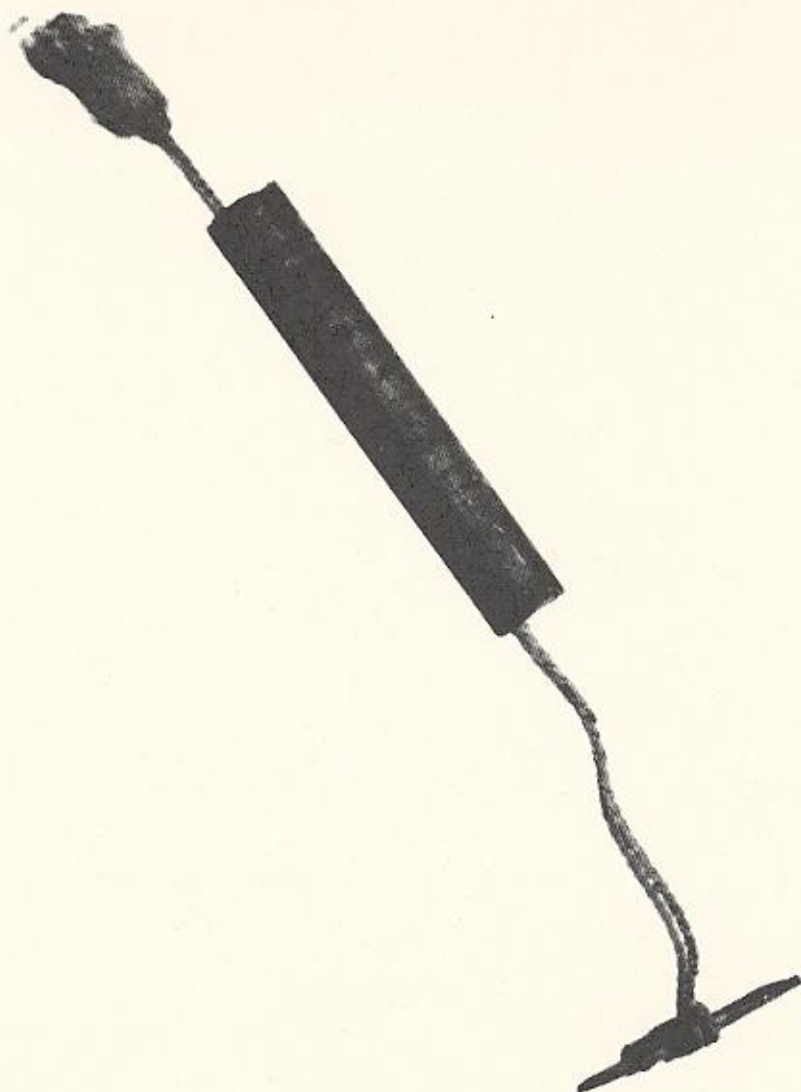


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Cover: Gorge hook device from Aviator's Cave, southeastern Idaho. Photo courtesy E.S. Lohse

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ARTICLES AND REPORTS

AVIATOR'S CAVE

E.S. Lohse

Idaho Museum of Natural History

INTRODUCTION

Aviator's Cave (10-BT-1582) is a collapsed lava tube on the Idaho National Engineering Laboratory, southeastern Idaho. The collapsed roof of the tube has formed a large crater atop a prominent knoll, visible for quite some distance in all directions. There are three arms in the tube system, all feeding off the talus surrounding the collapsed roof (Figure 1). Each chamber is high enough to walk through without stooping. Cave walls appear to be the result of at least two lava flows. The older of these is a dark basalt that produces coarse sand that is widely distributed throughout the cave. A later flow is evident in the southwestern part of the tube system. This basalt is light grey and highly vesicular.

The site was originally discovered by helicopter pilots employed by Aviation for Protection Technology, Idaho. The pilots saw the collapsed chamber of the tube on a cold winter day. On landing, the pilots discovered a light scatter of artifacts about the collapsed tube entrance, and observed cultural materials on the inside of the cave. The cave was reported to the Southeastern Idaho Regional Archaeological Center. The Department of Energy provided funds for survey, mapping, and limited testing. Idaho State University archaeologist Brenda Ringe supervised a field crew of ISU students in mapping and testing from August 23-September 2, 1989.

CULTURAL REMAINS

Aviator's Cave was not intensively used by prehistoric peoples. There is no great time depth for the defined occupations. Two bounded activity episodes and an activity zone probably span less than the last one thousand years. The earliest activity episode may be marked by an Avonlea type side-notched projectile point. An intervening episode has generalized Desert Side-notched points and Rosegate points. The latest episode, which sits at the present surface of the cave floor, has Sierra type Side-notched points and Rosegate points.

Projectile points on the land surface surrounding the collapsed tube are similar: Rosegate series, Avonlea type, generalized Desert Side-notched, and Sierra type Side-notched. Several basal fragments of late Elko Corner-notched series points are also present.

What is unusual at Aviator's Cave is the extraordinary preservation of perishable artifacts and the lack of disturbance of the cultural surfaces. The latest prehistoric activity episode is literally just under the dust of the cave floor. This cultural surface shows no evidence of tampering. Cultural features elsewhere in the cave also lack any evidence of historic disturbance. There is every indication that Aviator is an archaeological site with obvious, patterned, definable activity surfaces. Lack of disturbance of the cultural deposits coupled with the marvelous state of preservation offer the seductive promise that whatever was left behind by the prehistoric occupants is still there.

Robert Whallon noted that a primary aim of archaeologists is to "define tool kits, or clusters of artifacts . . . which occur together in certain activities . . . that inferences concerning patterns of prehistoric human activity can be made by interpreting these tool kits in terms of their contents and their position on the occupation floors" (1973:266). Whallon argued that occupation floors could be defined, and that associations of tools were indicative of discrete activities. Over the intervening fifteen years, however, many archaeologists have questioned the validity of the "tool kit" concept. Thomas (1989:167-168) notes that under *ideal* circumstances tools found in association on an occupation surface may reflect a single task. He goes on to register the proviso that just because the argument sounds plausible is insufficient grounds for accepting the notion of tool kits. Plausibility simply emphasizes the utility of investigating such possibilities (cf. Binford 1983:75). John Yellen's (1977) work among the !Kung Bushmen in Botswana is the classic example used by critics to attack the tool kit concept. Yellen drew plans of !Kung camps, and though there was definite camp organization, the overlapping placement of tasks destroyed any clear patterning on the site surface.

Aviator is the *ideal site* admitted by Thomas and the counter to Yellen's negative results on recognizing patterned activity. Aviator was little used over a limited recent period of time. There are discrete activity surfaces, not occupation levels, and superb preservation has provided all sorts of perishable as well as non-perishable elements of the tool kit. It may not be easy to define

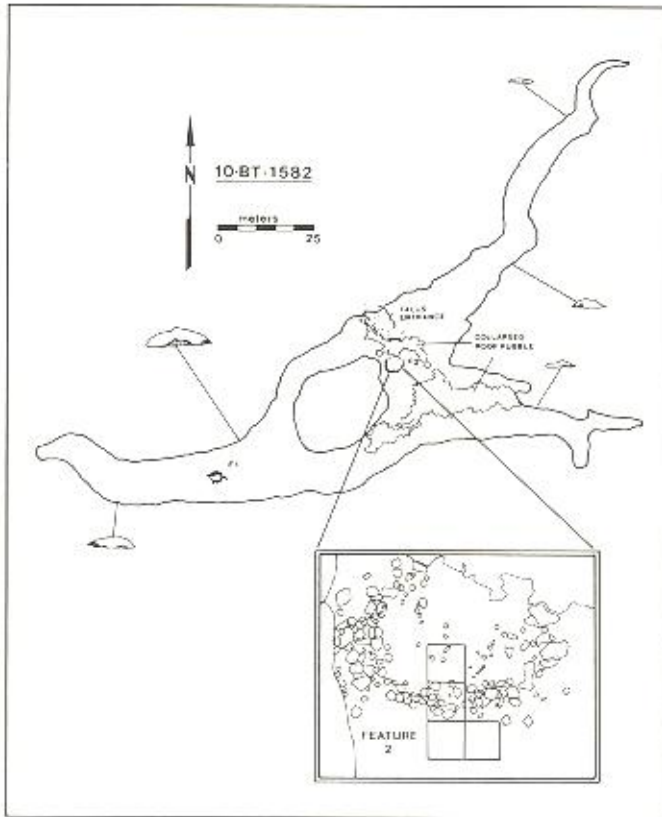


Figure 1. Plan map of the lava tube. Features 1 and 2 were tested. Feature 2 (exploded view) contains the defined prehistoric cultural activities.

activities that occurred at the site, but we have remarkable advantages at Aviator. The activity surfaces are bounded, defined by stone walls and edges of mats laid down by the prehistoric inhabitants. Excellent preservation ensures that whatever was left behind by prehistoric inhabitants may still be there. We cannot, of course, assume that all elements of the tool kits will be found. It is entirely possible that prehistoric passers-by removed elements selectively. It is also probable that desert dwellers would not have left behind usable tools nor would they have left complete tool kits. But we will know after excavation what size area was used by the cave's inhabitants, and by extension, the probable size of the group occupying the cave. We will have a range of tools and materials that were used by these people. Identifications of floral and faunal remains will give us the time of year the cave was used. We will have a unique opportunity to view Shoshonean socioeconomic organization and material inventory in the little-known period preceding contact with Europeans. Aviator constitutes an exercise in ethnoarchaeology in the prehistoric period.

Cultural Features

Two obvious features were observed at Aviator's Cave. Both are roughly circular arrangements of stone. The smaller of the two lies in the west arm of the cave, and upon testing, proved to contain nothing more than fragments of a loosely compacted grass mat. It is likely that this feature was cleaned out by prehistoric inhabitants of the cave.

The larger stone alignment is located just below the

talus entrance to the southern arm of the cave. The ring of loosely stacked stones, the large area enclosed by the ring (diameter of 5 m), and the scatter of artifacts clustered within the bounded area, all suggested that the feature represents some sort of shelter.

A test unit of two 1 x 1 m pits was set just outside the southernmost extent of the stone ring. This unit was excavated down into sterile natural deposits below identifiable cultural activity. Cultural remains were found only in the upper 30-35 cm of the trench.

Once the east-west trench was completed, another 1 x 1 m unit was opened. This pit entered the stone ring proper in an effort to trace cultural levels exposed in the north wall of the initial trench. It became apparent that there were at least two well-defined activity surfaces above and below a 15-20 cm thick cultural level that may contain multiple activity surfaces. The stone ring was clearly associated with the uppermost activity. The lowest activity surface extended out beyond the stone ring visible on the cave floor.

A possible hearth feature was found at the northern end of the test pit dug into the stone ring. Another 1 x 1 m unit was opened to the north to better define the charcoal and ash feature. It appears that the hearth feature is associated with the uppermost activity surface.

Figure 2 shows three profiles drawn from the east, west, and north faces of the test units.

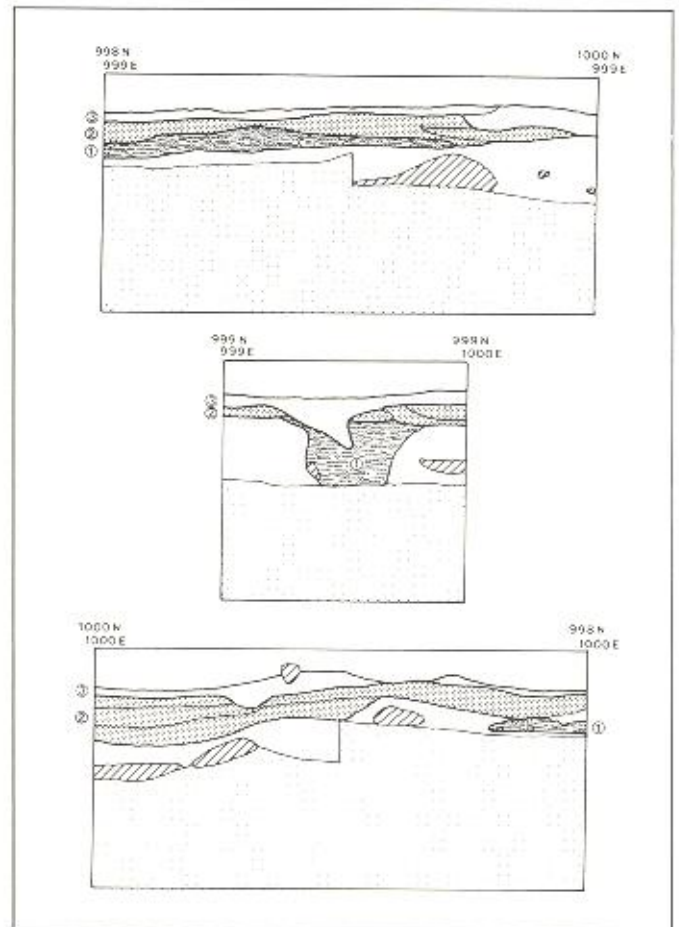


Figure 2. Profiles of test units in Feature 2: 1, Activity Surface No. 1; 2, Activity Zone No. 2; 3, Activity Surface No. 3, Top, west wall; Middle, north wall; Bottom, east wall.

Activity Surface #1

This surface is the earliest at the site, and consists of a thin mat of loosely scattered sagebrush bark. It extends completely across the test pit, well outside the surface ring of stones. It follows the slope of the aeolian deposits at the foot of the talus entrance to the cave. Artifacts, aside from the Avonlea type point mentioned (Figure 3), include fragments of twined fiber, bits of hide, fur, hair, feathers. The twists of rabbit fur, some with bits of twine still attached, may be the remnants of a rabbit-skin robe (Figure 4).



Figure 3. Projectile points found in a dark brown silt layer immediately above Activity Surface No. 1: a, preform; b, generalized Desert Side-notched; c, Avonlea type.

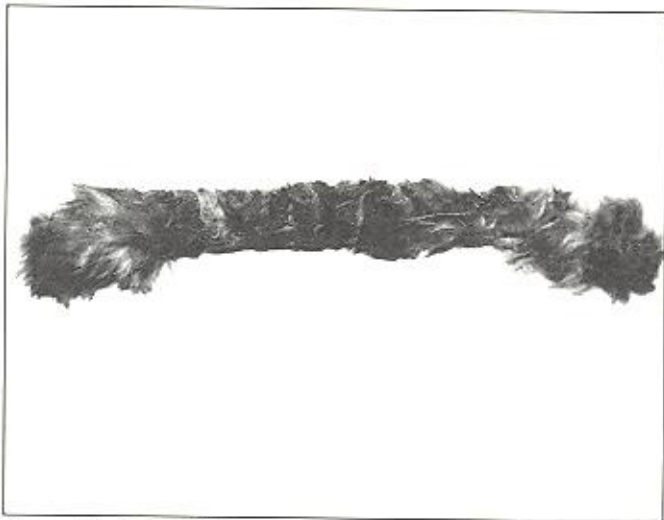


Figure 4. Twist of rabbit fur, probably part of a rabbit fur robe, found immediately above Activity Surface No. 1.

Activity Zone #2

Above the earliest well-defined activity surface is the 15-20 cm thick zone of stained sand, rich in flecks of charcoal and bits of organic material. Several different lenses were discerned within this zone. These, coupled with the relatively rich artifact assemblage, seem to indicate considerable cultural activity. The focus of this activity may not have been cut by the test trench.

There is no evidence of a sagebrush mat as on Activity Surface #1. Artifacts include a problematic gorge

hook device (Figure 5), generalized Desert Side-notched projectile points and Rosegate type corner-notched projectile points, bits of twine, fur, hair, scraps of leather and hide, and an enigmatic toggled cord (Figure 6), fletching feathers, bits of down and quill, and a single dentalium shell. Twists of rabbit fur also occur in the lower part of this zone.

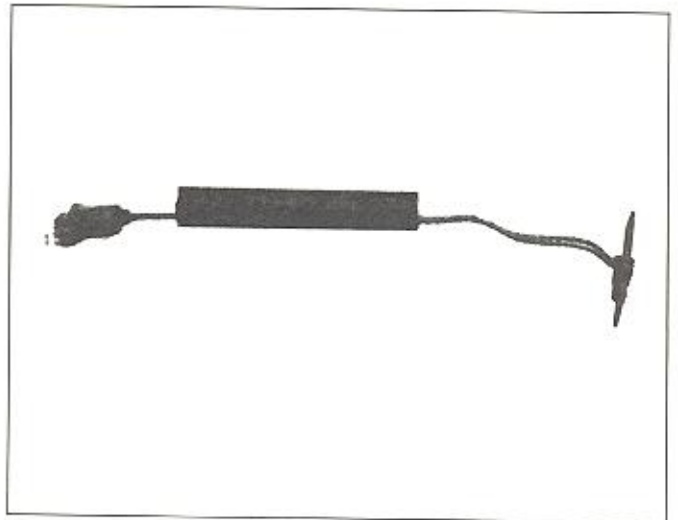


Figure 5. Gorge hook device. A carved wood splinter is attached to a fiber line run through a reed shaft. The opposite end of the line is tied to a tuft of fur, which plugs the end of the tube, preventing the line from pulling out. When found, the fur stop was snugged up into the butt of the tube. The tube is decorated with charred dots and lines, and was found in Activity Zone No. 2.

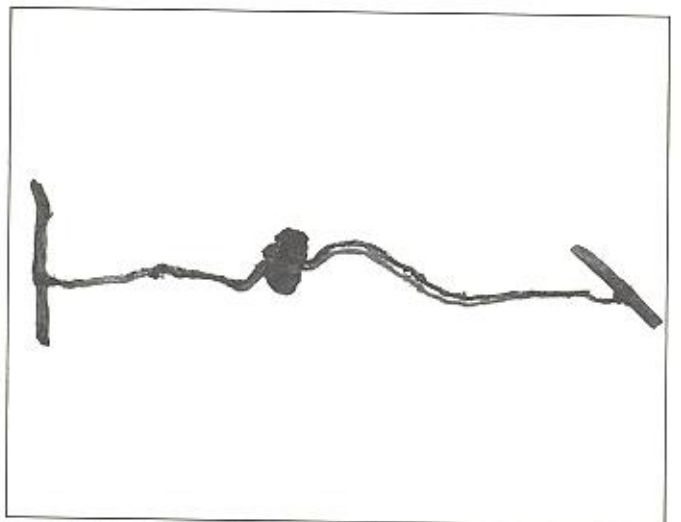


Figure 6. Toggled cord. Two wood splinters are tied to either end of a loosely twisted fiber cord. What may be a natal antelope phalange is tied at the center of the line. It was found in Activity Zone No. 2.

Activity Surface #3

Activity Surface #3 consists of the thick compacted mat of grasses, rushes, and cattail stems. It is clearly associated with the stone ring and a centrally located unprepared hearth area. It is at the surface of the cave floor, barely covered by dust. Charred and broken bison bone, including an articulated section of vertebral column, a mandibular section of a carnivore, a split bone awl, a tiny basketry fragment, utilized flakes, projectile points, pottery fragments, bits of carved wood, hide, fur, a fletching feather (Figure 7), feathers, and

other miscellany littered the mat. Artifacts found within the test trench outside the stone ring, but believed to be associated with Activity Surface #3, include a cylindrical bone bead, a fragment of a scissor snare (Figure 8), and a split quill (Figure 9c).



Figure 7. Fletching feather from Activity Surface No. 3.

Artifacts found elsewhere in the cave are comparable to those removed from the two activity surfaces and activity zone found within and below stones at the talus entrance. These include an arrowshaft with incised "lightning groove" and wrapped hair bundle (Figure 10).

Inhabitants of Aviator's Cave

The recent period of occupation of the lava tube and the diagnostic artifacts found there all point to Shoshonean groups as the occupants of Aviator's Cave. The use of grasses and riverine plants and waterfowl by the inhabitants indicates people were there in the fall or spring when ephemeral lakes filled the nearby pans. The twists of rabbit fur, probably remnants of rabbit-skin robes, in the lower activity zones may indicate occupation in late fall or winter.

Aviator's Cave was a stopover station where people camped briefly on their way to more temperate locations elsewhere. There is no indication that the cave was used often nor by large numbers of people. The occupants were most likely traveling groups composed of extended families or cooperative task units.

It may well be that the lava tubes acted as temporary shelters where people took refuge from storms or inclement conditions, as they passed down from the mountains to the Snake River or up the valleys into the higher elevations to the north. The cave itself is probably not a primary attraction. The cave does not hold water. It does offer a warm, sheltered environment in cool seasons, and a cool, shaded environment in the heat of summer. It functioned prehistorically as a natural shade and windbreak but only if people happened near it on their travel route and required the respite.

As to the nature of activities, we can assume that these were commensurate with ephemeral use of the cave. People were repairing and replacing elements of

their tool kits. We have fiber lines and nooses that are probably parts of snares and traps for small animals. We have evidence of maintenance of archery equipment: cutting of fletching feathers, manufacture of projectile points, carving of wood shafts and bow limbs. Indirect evidence of woodworking includes flaked stone scrapers, flaked stone drills, utilized flakes, and arrowshaft abraders. These artifacts occur within and without the cave, and attest to similar activities outside or inside dependent upon the weather. These are the types of activities we expect of desert dwellers traveling across the desert with light portable possessions. Emphasis on light travel may also explain the perceived lack of caching activity in the cave. Travel across the lava fields was probably brisk and direct.

The two dentalia shells, the porcupine quills, and bundles of hair may indicate the presence of women in the site, in line with our notion of traveling family units or cooperative task groups. The tiny arrowshaft collected from inside the cave and the numerous enigmatic fiber and wood artifacts may evidence children as well.

FUTURE WORK

Aviator's Cave is important because it has well-preserved activity surfaces resulting from episodes of activity widely spaced in time and because the artifactual material consists principally of perishable odds and ends of an everyday desert dweller's tool kit. This presents us with the enviable opportunity of exposing bounded activity surfaces which we postulate were created by task groups of both sexes, adults and children. Our task is to interpret the context and function of the numerous fiber, wood and feather artifacts that are not preserved in most archaeological sites. We must compare these to known archaeological collections and ethnographic collections, and question contemporary Shoshonean elders concerning what these things are.

In terms of sampling the site, we must comb the arms of the lava tube, literally searching out crevices as possible caching spots. Another fruitful sampling program will be to look into pack rat nests in the cave. We also

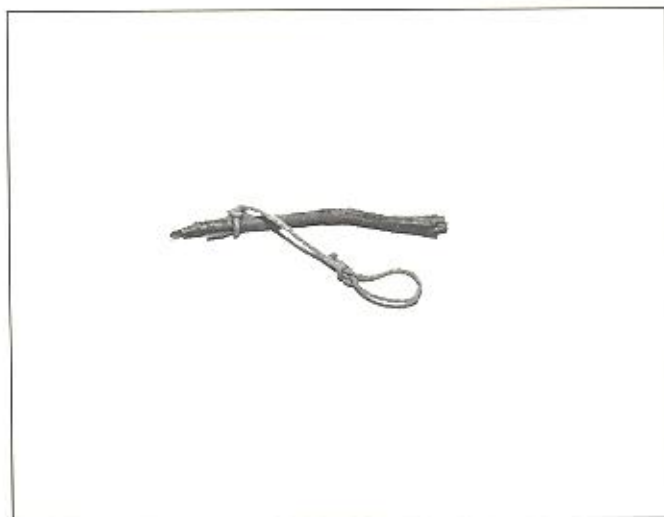


Figure 8. Fragment of what is probably a snare rig, found in the test unit at a depth of 5-10 cm and assigned to Activity Surface No. 3.

must check into aeolian deposits at the back of the arms of the tubes as possible cache areas and human constructions. The cave itself, given the indicated limits of cultural activity, must be viewed as a bounded activity surface and sampled accordingly.

Fiber Arts

Archaeological sites in the northern sections of the Intermountain West with comparable published perishable artifact assemblages include caves excavated by Cressman in the Fort Rock Valley, Oregon (Cressman 1942; Bedwell 1973), Lovelock Cave (Loud and Harrington 1929), Humboldt Cave (Heizer and Kreiger 1956), and Hidden Cave (Goodman 1985) in the Lahonton Basin, northwestern Nevada, Dirty Shame Rockshelter, Owyhee Plateau, southeastern Oregon (Andrews, Adovasio and Carlisle 1986), Danger Cave (Jennings 1957) and Hogup Cave (Aikens 1970), Bonneville Basin, north-eastern Utah, and Cowboy Cave (Hewitt 1980), Canyon Lands Section of the Colorado Plateau, southeastern Utah. The collection from Dirty Shame Rockshelter is the most completely described, with detailed treatment of cordage twist and knot types. The collections from Hidden Cave, Danger Cave, and Cowboy Cave are also published in some detail. Collections from the Fort Rock sites, Lovelock Cave, and Humboldt Cave will have to be re-examined before we can assess their comparability to the perishable assemblage from Aviator's Cave.

We will attempt to characterize diagnostic attributes of these cordage assemblages in an effort to establish the cultural identity of the users of Aviator's Cave. Adovasio, Andrews and Carlisle (1986), in their seminal study of the cordage from Dirty Shame Rockshelter, make the important observation that large collections of cordage from carefully excavated sites exist which have never been adequately described. Cordage has, however, been shown to have great potential in identifying prehistoric populations of artisans and long-term cultural traditions in the manufacture of fiber arts (Adovasio 1970, 1974, 1986).

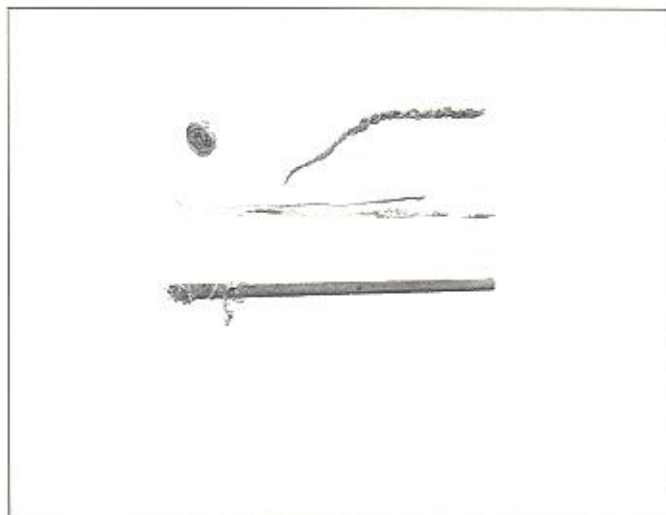


Figure 9. Assorted perishable odds and ends: a, fiber coil; b, rigid fiber twist; c, split quill; d, stick wrapped with fiber. All specimens were recovered at a depth of 0-5 cm in the test unit and assigned to Activity Surface No. 3.



Figure 10. Bundle of hair wrapped in strips of sagebrush bark, found on ledge of ceiling above talus entry near the large stone ring associated with Activity Surface No. 3.

When detailed description of cordage is presented in archaeological reports, it is usually confined to characterization of the direction of twist of the fibers. Seldom are knots considered in any regard. Yet, knots are one of the most distinctive attributes in the manufacture of fiber artifacts (Emery 1966; Hurley 1972; Shaw 1972). Different artisans and different cultural groups will specialize in the making of certain kinds of knots as well as in the direction of twisting fibers and slant of stitch. Aviator's cordage exhibits many knots, and through careful comparisons with knot types from other perishable assemblages, we may be able to establish cultural identity.

Materials Analysis

Materials used for cordage varies somewhat, though *Apocynum* and *Asclepius* (for fine twine) and *Artemesia* (for rough twine) were preferred throughout the Intermountain West. It is imperative that we identify the materials being used in the cordage at Aviator's Cave.

Aside from cordage, we will also have to run all types of perishable materials from Aviator's Cave through species-identification analyses. All feathers, fur and hair will be identified. All plants will be identified. We want to place the activities at Aviator's Cave securely into season of the year and to isolate, if at all possible, areas of exploitation. Identification of plant and animal species present in the assemblage will allow us to gauge the nature of these people's economy.

At present, from very cursory analysis, we know that the inhabitants of the cave processed bison, rabbit, and probably deer and squirrel. Remains of waterfowl and raptors, including hawks and eagles, and probably buzzards, are present in the assemblage. Plant use included sagebrush bark, bunch grass, and riverine species like rushes. With thorough identification of species we can tightly pin down the economic organization of the short-term users of Aviator's Cave.

CONCLUSIONS

Aviator's Cave is exceptional because it was not looted by avocational archaeologists or collectors.

When found, the cave was reported to the proper state and federal agencies. Thoughtful discoverers have ensured that a maximum amount of information will be preserved from this unique site. The archaeologist's job

only now begins. Any future excavation will be with dental pick, paint brush, and air brush. Aviator's Cave will be preserved as a rare insight into the lives of Idaho's desert residents some one thousand years ago.

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SHORT CONTRIBUTIONS

ABSTRACTS OF THE XVITH ANNUAL IDAHO ARCHAEOLOGICAL SOCIETY CONFERENCE

William A. Akersten, Idaho Museum of Natural History

JAGUAR CAVE (SOUTHERN LEMHI COUNTY, IDAHO) REVISITED AND RE-EVALUATED

Thousands of fossil bones and teeth, primarily from small mammals but also including birds, lizards, and extinct Pleistocene megafauna, resulted from a 1989 two-cubic-meter excavation at the mouth of Jaguar Cave. All but the uppermost portion of the excavation appears to be in sediments which predate the advent of man in the area. Even though processing, sorting, and identification have barely begun, a number of new taxa have been added to the faunal list. As a whole, the fauna suggests a complex late Pleistocene ecological pattern in the area.

Evidence developed from the literature appears to contradict previous interpretations that Jaguar Cave was an occupation site. The data are more compatible with it having been a denning site for carnivores, especially wild and domestic canids, which dragged bones in from the two adjacent large shelters. The morphology and location of the features previously reported as hearths are not compatible with that interpretation. They are more probably burned packrat middens.

Jeffrey D. Bailey and Ian C. Franck, University of Alberta

1988-89 EXCAVATIONS AT WILSON BUTTE CAVE, JEROME COUNTY

Archaeological excavations at Wilson Butte Cave in 1959-60, under the direction of Dr. Ruth Gruhn, provided a radiocarbon date of $14,500 \pm 500$ yrs. which represents the earliest date for human occupation in the Intermountain West. Further excavations were undertaken in 1988 and 1989, again under the direction of Dr. Ruth Gruhn, to increase the artifact inventory from the lowest occupation levels and to verify the early date from previous research. Despite significant disturbance of the upper levels by relic hunters, undisturbed deposits were excavated which yielded artifacts, charcoal, and faunal remains. The first radiocarbon dates derived from the 1989 excavations indicate human occupation of the cave at 10,200 B.P. and 8,400 years B.P.

Keo Boreson, Eastern Washington University

DOCUMENTATION OF THE ROCK ART AT TREATY ROCK, KOOTENAI COUNTY, IDAHO

Site 10KA44, commonly known as "Treaty Rock," is within the area traditionally occupied by the Coeur d'Alene Indians. A camp of about 15 individuals was located in the vicinity around the turn of the century. Archaeological investigations at Treaty Rock Park recovered a few stone artifacts but concluded the deposits are disturbed. The petroglyphs at Treaty Rock were made with a hammer and chisel, and include a date (June 1, 1871), a name (Frederick Post), and outlined letters (POS). The pictographs made with orange pigment include a circle and a mounted human. The depiction of a horse indicates these paintings were done after A.D. 1730. The figures made with red paint include several dots or tally marks and connected anthropomorphs within an oval connected to an exterior figure. The presence of the encircled forms suggests a cultural affinity with northeastern Washington and south central British Columbia, where rock art sites with similar designs have been recorded.

The question of whether 10KA44 represents the agreement between Frederick Post and the Coeur d'Alene Indians, giving Post the water rights to the falls on the Spokane River, remains unanswered. Inconclusive studies conducted on three rock samples taken from a pictograph and two historic petroglyphs tentatively suggest the petroglyphs were made at the same time, but after the pictographs were painted on the rock outcrop.

Mary Anne Davis, Idaho State Historical Society

IDAHO ARCHAEOLOGISTS IN REVIEW

Archaeology in Idaho dates back more than 70 years with a survey in the Coeur d'Alene region in 1912, and 16 years later with the excavation at Schellbach Cave on the Snake River. Since that time, over 8,000 archaeological undertakings have been documented and 20,000 sites have been recorded. Of course, not all of this number are excavations. Cultural resources management compliance accounts for the majority of these projects. This presentation focuses on the last 30 years

of Idaho archaeology. Instead of the settings, landforms and the techniques and equipment, the changes noted over time are focused on the people: people excavating, surveying, visiting and being themselves.

Mark Druss and Shepard Reale, Bureau of Land Management

***SPRINGTIME ON THE LAVA PLATEAU:
EPHEMERAL LAKES AND SUBSISTENCE-
SETTLEMENT IN SOUTH-CENTRAL IDAHO***

The lava plateau north of the Snake River in south central Idaho has few permanent streams and seems poor in hunter-gatherer subsistence resources. However, there are several shallow depressions among the lavas where snowmelt water creates small, temporary ponds during the early spring. It has long been recognized that these ephemeral lakes contain abundant food resources for hunter-gatherers during the early spring when deer, elk, ducks, and geese frequent the ponds. Marsh plants, including cattails, are also found there. Not surprisingly, there are several recorded pond-side archaeological sites. We predict that there are many more unrecorded pond sites in south-central Idaho. These pond sites are probably part of a subsistence-settlement which includes sites in other areas of the lava plateau. For example, the inhabitants of the Baker and Wilson Butte caves may have exploited the ephemeral lakes. Also, prehistoric hunter-gatherers may have relied on ephemeral lake resources as they traveled from lower to higher elevations during their seasonal round.

Joseph G. Gallagher, Boise National Forest

***STANDING STRUCTURES AND HISTORIC
PRESERVATION IN THE FOREST SERVICE***

Over the past 10 years the Forest Service, beginning in Idaho, has undertaken to preserve that part of the nation's heritage which been neglected, vandalized and destroyed with some regularity. . . that of historic log structures. The source of the destruction has ranged from managerial decisions to firewood collectors to mother nature. This paper briefly surveys the range of deterioration and the actions of the Forest Service to turn the situation around.

Steven Hackenberger, University of Wisconsin Centers

***MEASURES OF SETTLEMENT INTENSITY AND
CORRELATED RESOURCES: MIDDLE FORK
SALMON RIVER, IDAHO***

Archaeological measures of settlement are correlated by river-mile with ranked scores for (1) winter ungulate and (2) spring/summer salmonids and plant resources. Settlement indices include (1) site frequency by type (lithic scatter, house talus pit), (2) site area (square miles), (3) house frequency, and (4) site categories based on surface artifact density. The single significant correlation is between winter ungulates and total site frequency (all types combined). Implications of these results are discussed.

*Lael Suzann Henrikson, Idaho State University, and
Richard Hill, Bureau of Land Management*

***IDAHO FALLS DISTRICT BLM 1989 RESEARCH
PROJECTS: ICE CAVES, ROCK RINGS, AND
CAMP TRAILERS***

During the summer of 1989, the BLM Archies recorded and excavated important archaeological resources in the district. Research continued at Bobcat Cave with the discovery of a sagebrush mat covering the ice in the lower chamber. The data and cultural materials recovered during this year's field work provided further evidence that the ice in Bobcat Cave served a vital function in subsistence strategies 4,000 years ago. A test excavation was conducted at Webb Springs (10BT4) to determine the effects of recent vandalism. Recovered artifacts indicate the site not only served as a reduction workshop for processing locally quarried volcanic glass, but also may have served as a hunting camp. Preliminary documentation and investigation of a recently discovered rock ring and ice cave complex on the eastern edge of the Craters of the Moon Flow provides a potential opportunity to view lifeways during the Late Prehistoric Period.

James L. Huntley, Idaho Archaeological Society

***ANTHROPOLOGICALLY SPEAKING,
RHYTHMICALLY PERFORMING***

A paper discussing two characteristic abilities of man (*Homo sapiens*) that set him apart from all other creatures.

Ronald James, University of Idaho

***THE MON-TUNG SITE: CHINESE MINERS IN
THE SNAKE RIVER CANYON***

Gold was discovered in the Snake River Canyon near Shoshone Falls in the fall of 1869, and, over the next two to three years, several hundred miners searched the talus slopes and gravel bars of the Snake River Canyon for flour gold. Chinese miners played a significant role in the Snake River mines, but very little is known about the lifestyle of the Chinese in remote frontier settlements. The remains of Chinese rock-wall shelters are still present in the Snake River Canyon.

The Mon-Tung site is one of the Chinese shelters still remaining. It is located on the north side of the Snake River about one-half mile below Twin Falls. Numerous artifacts found on the surface suggested a site undisturbed by souvenir hunters. The subsequent excavation of the site's interior yielded a rich variety of artifacts that included Chinese pottery, opium paraphernalia, tools, hardware and architectural remains.

Based on the archaeological evidence thus obtained, it appears that the site was a single occupancy site, occupied and worked between 1870 and 1880. The artifacts found at Mon-Tung date to the period of approximately 1870 to 1880 and will be an important contribution to the study of the Chinese experience and lifestyle on the Idaho mining frontier.

Frank Leonhardy, University of Idaho

UNDERWATER ARCHAEOLOGY IN HELLS CANYON

The principal cultural deposits at 35WA286 consisted of shell lenses interbedded with subaqueous beach sand deposits. People harvesting mussels in late winter or early spring disposed of shells, fire-cracked rock, bone, and other debris on sloping beaches. Subsequent high water moved the shells before depositing sand over them. Each shell deposit represents a very short time—as little as a single season and, perhaps, no more than a decade.

E.S. Lohse, Idaho Museum of Natural History

AVIATOR'S CAVE

Remarkable preservation at Aviator's Cave, a lava tube site in the INEL, southeastern Idaho, has produced fiber, feather, wood, bone, shell and stone artifacts from three separable cultural occupations. These occupations occur in less than 25 cm of cultural deposits, and may span a thousand years or less. The earliest level has sagebrush bark spread out as an activity surface, and is marked by a single Avonlea type projectile point. The second level lacks a uniform fiber mat, consisting instead of a thick sandy layer shot through with flecks of charcoal. It is marked by Rose Spring Corner-notched and General Desert Side-notched types. All three levels produced bits of cordage, small nooses, twists of sagebrush bark, feathers, bits of fur, and various other perishable industries. Singular finds include split feathers for fletching arrows, a rodent trap set, a possible sandal fragment, a very small fragment of basketry, and three twists of rabbit fur from a robe. Analysis and detailed comparative study is only now beginning. The site offers a unique opportunity to expose well-preserved living surfaces from the very late prehistoric period that retain the fiber and feather art components of desert dwellers' tool kits.

Lynne MacDonald, Bureau of Reclamation

IN CELEBRATION OF THE CENTENNIAL: BUREAU OF RECLAMATION'S STATE CENTENNIAL PROJECTS IN IDAHO AND WASHINGTON

In 1989 and 1990, the Bureau of Reclamation is sponsoring state centennial projects focused around three cultural resource sites. The paper will describe and illustrate the cultural resources, the activities that occurred in association with the centennial projects, including the cultural resource investigative and interpretive programs, and the public involvement activities. The three projects were 1) public interpretation of the Minidoka Relocation Camp, located near Jerome, Idaho. The camp was one of 10 locations where Japanese-Americans were interned during World War II. The project interpretive program is a joint effort of the Japanese-American Citizens League, the Idaho State Centennial Commission, and the Bureau of Reclamation. 2) Improvement of the recreational facilities at Walcott Park, located near Burley, Idaho, including repair of historic

structural elements and historical interpretation. The park is owned by Reclamation and has been in existence since 1904, with extensive additional landscaping in the 1930s by the Civilian Conservation Corps. The improvements are being made by Reclamation, with cost-sharing contributions by local individuals, cities, companies, and the county historical society. 3) Excavation of a Hudnut-Coyote Creek Phase camp site in central Washington. The site is located on Reclamation land, with excavations funded by Reclamation, with contributions from the contractor. During a six-week period, 150 interested amateurs worked on the excavations, and more than 2,000 visitors toured the site.

Sandi McFarland, Nez Perce Tribe

PROGRAMMATIC ISSUES CONCERNING NATIVE AMERICANS IN CULTURAL RESOURCE MANAGEMENT

This paper discusses the perceptions the United States Forest Service has toward Native Americans and suggests ways to alter patterns of past behavior, to rectify false impressions, and recommends programmatic changes to improve relations. One of the purposes is to identify and prioritize research needed to strengthen relationships with, and promote understanding and appreciation of, contemporary cultural native groups that have links to the past.

Daniel S. Meatte, Archaeological Research, and James C. Woods, College of Southern Idaho

WHAT'S COOKING? EXPERIMENTAL REPLICATION STUDIES WITH SHOSHONI COOKING VESSELS

Flat-bottomed clay pots with flared, tapering sides are a hallmark of Late Prehistoric sites in southern Idaho. This paper reports on preliminary investigations into the efficiency of this vessel form relative to heating liquid with super-heated stones. Two liters of water at 65° F are raised to 220° F in 90 seconds with heated stones. This is contrasted to boiling times of eight minutes using a conventional stove and nearly 30 minutes in a microwave oven. Since not all cooking involved the attainment of boiling temperatures, additional experiments are reported wherein the quantity and sizes of heated stones are varied to maintain uniform cooking temperatures for prolonged lengths of time. Distinctive breakage patterns of stones used for boiling are examined and discussed. Finally, results of these experiments are discussed relative to the association of fire-cracked rock and pottery in southern Idaho sites.

Max G. Pavesic, Boise State University, and James C. Woods, College of Southern Idaho

BACKTRACKING: ANCIENT ART OF SOUTHERN IDAHO

The Backtracking project is designed to explore beyond traditional archaeological emphases of dating, settlement and subsistence. We attempt to minimize mechanistic models and provide an alternative humanistic profile revealed through the creative genius of the

ancient peoples of southern Idaho. The effort assumes archaeologists can make contributions in the reconstruction of ancient symbols, rituals and ideology. Themes of sacred geography, red ochre symbolism, caching and others are addressed through three-dimensional objects and rock art panels. The project is sponsored in part by the Idaho Humanities Council.

Mark G. Plew and James W. Hale, Boise State University

***AN ARCHAEOLOGICAL EVALUATION OF
DANSKIN ROCKSHELTER***

The 1989 Boise State University Field School conducted an archaeological evaluation of the Danskin Rockshelter, southwest Idaho. Tested cooperatively with the Boise National Forest, Danskin is a special use site periodically occupied for 4,000 to 5,000 years. An assemblage consisting primarily of projectiles and battered cobbles is associated with extensive deer and mussel remains. The site appears to have been used as a hunting camp during which time mussels were collected. No evidence of anadromous fishing was recovered.

Ray Tracy and Roderick Sprague, University of Idaho

THE WARREN 1989 CHINESE EXCAVATIONS

The Alfred W. Bowers Laboratory of Anthropology, University of Idaho, in cooperation with the Payette National Forest, conducted a three-week field school at Warren, Idaho, in August 1989. The major effort was directed to the testing of a supposed Chinese store in a remnant of the original soil surface overlooking Warren Meadows. The artifactual materials was in accord with expectations but the preservation of structural evidence was surprisingly good and extensive. The structure may have been on two levels on the slope with the possibility of an unusual wooden floor in at least the upper portion. Additional work is anticipated for next season.

Christopher Lee Webb

***THE PEOPLE, THE GOVERNMENT AND
CULTURAL RESOURCES: THEIR
RELATIONSHIPS AND PERSPECTIVES***

Cultural resources and the relationship between the government and the people will be the thesis of this paper. The result of this should be a clearer understanding of governmental practices pertaining to cultural resources: why it must be done and its importance.

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