CONTRIBUTIONS
OF THE
UNIVERSITY OF CALIFORNIA
ARCHAEOLOGICAL RESEARCH FACILITY

Number 21 June, 1974

FOUR PAPERS ON GREAT BASIN ANTHROPOLOGY

UNIVERSITY OF CALIFORNIA
DEPARTMENT OF ANTHROPOLOGY
BERKELEY, CALIFORNIA

CONTRIBUTIONS

OF THE

UNIVERSITY OF CALIFORNIA

ARCHAEOLOGICAL RESEARCH FACILITY

Number 21 June, 1974

FOUR PAPERS ON GREAT BASIN ANTHROPOLOGY

Partial costs for publication of this number of the Contributions were supplied by the Dean of the Graduate Division, Professor Sanford S. Elberg (1-443822-21543; 1-443822-21569). Part of the fieldwork reported here was supported by the Jon and Francesca Wiig Fund for Archaeological Research in the Great Basin (1-443822-56410). To all of these we express our appreciation.

UNIVERSITY OF CALIFORNIA
Department of Anthropology
Berkeley

TABLE OF CONTENTS

I. ARCHAEOLOGICAL MATERIALS FROM SITE NV-WA-197, WESTERN NEVADA:

ATLATL AND ANIMAL SKIN POUCHES

Thomas R. Hester

A large collection of perishable artifacts from an archaeological site in Western Nevada is currently under analysis by the author. These materials are from site NV-Wa-197 (Archaeological Research Facility, Berkeley), a small vertical shaft cave situated in a tufa stack at the southern end of Winnemucca Lake, north of Reno, Nevada (Fig. 1, Fig. 2). During 1960-1961, over 16 feet of the cave's deposits were removed by artifact-collectors from Reno. Because their digging was uncontrolled, the provenience of most specimens is unknown. However, among the excavated artifacts are several which are unique in the Great Basin area, and it is fortunate that one of the excavators recorded the vertical position of these artifacts on a rough profile which he drew of the site deposits.

The extent of aboriginal utilization of this shaft cave is not clear. Apparently, it was first used as a place for burials and caches. Human bones were scattered throughout the lower deposits; when the writer visited the site in November, 1971, the mouth of the cave was littered with skeletal material discarded by the excavators. The excavators insist that few articulated burials were found during their digging. It may be that corpses were thrown down into the shaft and the remains were subsequently scattered. It also appears that large amounts of wood, including quite sizable branches and limbs of trees were thrown into the cave, possibly connected in some manner with corpse disposal. Near the top of the deposits there is evidence of occupation, indicating that the site was used for habitation once the vertical shaft had become nearly filled with debris.

The collection from NV-Wa-197 remained in the hands of one of the excavators for a number of years. For a brief period during 1972, the collection was loaned to the University of California, Berkeley. It was documented as fully as time allowed, and then returned to the owner. Several months later, the entire collection was sold to a private museum. Although it is of little significance now, it should be noted that the site is located on Federally-owned lands, and was subject to "protection" under the Federal Antiquities Act of 1906. Of course, site NV-Wa-197 is only one of many Nevada sites on government lands which have been destroyed by relic-hunters in the past several decades.

Recorded in this paper are some of the significant cultural remains found at the site: (1) an atlatl or spear-thrower with an attached stone weight; (2) an animal skin pouch containing several hafted stone bifaces; (3) a second

animal skin pouch containing numerous projectile points and other artifacts. Since it may be some time before the collection from NV-Wa-197 can be published in its entirety, it is felt that these artifacts, and the data obtained through their analysis, should be presented.[1]

Atlatl

An atlatl or spearthrower was discovered by the excavators near the base of the cave deposits, approximately 16 feet below the surface. At this approximate depth, lying just above the spearthrower, were several twined baskets. The group of baskets and the spearthrower appear to be two separate caches. A portion of one of the baskets has been radiocarbon-dated at 7980±610 B.P. (6030 B.C.; I-6873).[2] The radiocarbon determination suggests that the atlatl is at least 8000 years old, and given its stratigraphic position below the dated basketry, it is possibly even older.

A photograph of the actual specimen is shown in Figure 3 and an artist's version of the restored artifact is found in Figure 4.[3] The body or shaft of the specimen is fashioned from an unidentified hardwood. The upper surface is flattened and the lower surface, rounded. The atlatl was discovered broken into two pieces, the break occurring 23 cm. from the distal end. The two fragments could be matched, thus permitting a reconstruction of the length of the complete artifact, 58. 1 cm. Near the proximal (grip) end, width is 18 to 18.5 mm., and thickness, 14 mm. At the distal end, width averages 15 mm. and thickness, 12 mm. Overall weight of the specimen is 129.8 grams.

At the proximal or grip end, the body of the atlatl is sub-rectangular in cross-section and its surface is marked by a series of 18 deeply-cut circular grooves. The distal portion of the atlatl is tapered. On the dorsal (upper) surface at the distal end, a hook or engaging spur is attached (see Fig. 3, c). The spur is carved of bone and is 62.5 mm. long and 9.0 mm. high. It was fitted into a shallow longitudinal groove on the dorsal surface and then lashed to the body with strips of sinew. There is a circular groove at the extreme distal end of the body, just below the mid-portion of the spur, and sinew has been wrapped around this groove and over the distal end of the spur (Fig. 4, b).

A large boat-shaped stone is attached to the underside of the atlatl (Fig. 3, Fig. 4). The stone is gray in color, with a slight greenish tint. Robert N. Jack (personal communication) identifies the stone as "slate-like"; positive mineralogical identification would have required a thin-section and this was impossible at the time the specimen was under analysis. The stone can best be described as boat-shaped, with a flat to slightly concave upper surface (flush with the underside of the atlatl body). At the proximal end of the stone, there is a deep, broad groove, while at the distal end, there are four grooves. These are used, of course, to bind the stone to the atlatl.

Overall length of the stone is 18.9 cm. It ranges in height from 16 to 20 mm., and in thickness,from 10-14 mm. Although the stone could not be detached to allow measurement of weight, it is probably between 80-100 grams.

Judging from the available literature, the construction and form of this spearthrower are unique not only in the Great Basin, but in all of North America. There have been several surveys of atlatl types and distribution (Kellar 1955, Driver and Massey 1957; Grant et al, 1968; Mitchell 1970; Hester 1971; Mildner 1974), and in none of these (or in separate publications describing individual specimens) are similar atlatls reported. There are several well-preserved atlatls from North American sites which have attached stones or weights. These include the so-called "McClure" atlatl from southeast Oregon (Strong 1966), a specimen from Hogup Cave, Nevada (Dalley and Peterson 1970), an example from Baylor Rockshelter, Texas (Fenenga and Wheat 1940), and specimens from Southwestern sites (Kidder and Guernsey 1919; Guernsey and Kidder 1921; Guernsey 1931). In all of these published instances, the body or shaft of the atlatl is of a configuration different from that of the specimen from NV-Wa-197, and none of the attached stones is boat-shaped.

Boat-shaped stones of the kind attached to the NV-Wa-197 atlatl have been found in other parts of Nevada and California (Heizer and Elsasser 1953; Mildner 1974). Most of these fit within the "Type II" variety described by Butler and Osborne (1959) for the Northwest. In most cases, the age of these boat-shaped artifacts cannot be firmly fixed. However, it is interesting to note the remarkable similarities between the boatstone from NV-Wa-197 and those collected from the "auriferous Gravels" of El Dorado County, California (Holmes 1919). Additionally, boatstones similar to the "Type II" form are reported from the eastern United States (cf. Patterson 1937).

The presence of the detachable bone engaging spur is also significant. Atlatl spurs or hooks have been found widely in North America and have received considerable attention in the literature (Webb 1950; Riddell and McGeein 1969; Hester 1971; Neuman 1967). However, few have ever been found in place on a preserved spearthrower. In fact, most of the extant atlatls from the western United States have integral hooks carved into one end.

The present data suggest that the atlatl from NV-Wa-197 may be the earliest documented example in the New World. The antiquity of the use of the atlatl in North America is indicated by other kinds of evidence, such as atlatl dart fragments in early contexts (Heizer 1951, reports a radiocarbon date of 5088 B.C. for atlatl foreshafts found at Leonard Rockshelter, Nevada).

In Europe, the earliest known spearthrowers occur in Magdalenian sites of the Upper Paleolithic (roughly, 10,000 to 15,000 years ago; Garrod 1955). None of these bear any resemblance to their later North American counterparts, and none have attached stone weights. However, Garrod (1955:22) used the term

"weighted thrower" in referring to Upper Paleolithic spearthrowers "in which the shaft is topped by a piece of sculpture" (the sculpture usually being an ornate engaging spur or hook). She considered the possibility that these heavy, elaborately carved hooks may have served to add weight in the casting of light spear shafts. The question of whether or not the "atlatl weights" in North America were functionally-important adjuncts to spearthrowers has been the subject of considerable discussion and experiment (cf. Peets 1960; Cole 1972; Grant et al., 1968). Most recently, L. Spencer (1974) has tested the efficiency of boatstone weights, using a replica of the NV-Wa-197 spearthrower.

Animal Skin Pouches

At a depth of approximately 10 feet below the surface, two animal skin pouches were found together, apparently either cached away or placed with a burial. These specimens are described below as "Pouch I" and "Pouch II".

Pouch I (Fig. 5, a)

This pouch is made of practically the entire skin of a small mammal, perhaps a yellow-bellied marmot although this identification should be considered tentative. The skin has been inverted; i e., the interior of the pouch is the exterior, fur-bearing part of the animal skin. The exterior of the pouch was scraped and softened, but the fur was left on the interior. The "flap" which covers the opening of the pouch is composed of the forepart of the animal skin (head, forelegs) and a strand of cordage is attached at about the area of the animal's nasal aperture. Length of the fully-opened pouch is 44 cm. and maximum width is 29 cm.

Pouch I contained six hafted bifaces, two unhafted bifaces, and two wooden handles (Fig. 5). In addition there was a long piece of cordage, with feathers attached at one end.

The hafted bifaces are described below, followed by a discussion of wear patterns and other evidence related to the possible function of these tools.

To haft the chipped stone biface, a V-shaped notch was cut into the distal end of the handle. The biface base was inserted into the notch, and mastic and binding were applied (see Fig. 8).

Measurements of the specimens are found in Table 1.

#1 (Fig. 5, b). This specimen is an obsidian biface with a short contracting stem. There are broad flake scars on both sides of the biface and the lateral edges have been retouched. Black mastic was daubed over the base of the biface and hafting was made secure by wrapping fine sinew around the bottom

of the V-shaped notch in the handle. The surface of the wooden handle is rather rough, and is crudely trimmed to a point at the proximal end.

#2 (Fig. 5, c). The biface is subtriangular and is made of a variegated (red, yellow, orange, white) fine-grained chalcedony. There are broad flake scars on both faces and minimal edge retouch. The biface is secured in notch with considerable mastic, and coarse sinew is wrapped around the base of the notch. The handle surface is very rough, marked by numerous oblique cuts; the proximal end is pointed.[4] The specimen was x-rayed and the resulting radiograph appears in Fig. 9, b.

#3 (Fig. 5, d). The biface is of white translucent chert, quite glossy and possibly heat-treated. There are broad parallel flake scars on both faces, and the edges are retouched. The biface may be stemmed, but the base is hidden by very extensive binding (sinew) and this has been coated with mastic. However, judging from the bulge in these wrappings, the specimen may have a rectangular stem. The handle is smoothed and polished, and is pointed at the proximal end. Whereas the handles on the other specimens are circular to oval in cross-section, this one is trianguloid.

#4 (Fig. 5, e). The specimen has a small biface of translucent variegated chert, with parallel flake scars and minimal edge retouch. The material of manufacture has a pinkish cast (with reds and whites dominant) and is vitreous, these traits suggesting that it is heat-treated chert. There is a substantial amount of residue on the lateral edges of the biface. The specimen is probably stemmed, but this portion of the biface is covered by heavy wrapping and a coating of mastic. The handle is smoothed and the proximal end is pointed.

#5 (Fig. 5, f). The specimen has a long obsidian biface which is perhaps side notched or stemmed, but again the distal portion is obscured by wide strips of sinew overlaying a coat of mastic. The biface has mostly parallel flake scars, and exhibits extensive fine edge retouch. The handle is smooth on the upper half, but the lower part is rough and marked by cuts.

#6 (Fig. 5, g). This artifact is not actually a "hafted biface". Instead, it is a long obsidian biface, the proximal half of which has inset edges and is wrapped with leather strips, 5-13 mm. wide. A leather strip also forms a loop (48 mm. long) at the proximal end. The leather wrapping is heavily worn, no doubt through repeated handling and use of the specimen. The base of the biface is exposed and a short, bifurcated stem is present. The distal end or "blade" of the biface is exposed for 78.5 mm. above the wrapped "handle" area. The blade is characterized by both parallel and randomly-directed flake scars and there is very little secondary retouch along the lateral edges. The obsidian of which this artifact is made has a greenish tint.

Unhafted bifaces. In addition to the six artifacts just described, Pouch I also contained two unhafted bifaces. One (Fig. 5, j) is subtriangular in outline, with convex edges and a convex base. The base has been thinned by the removal of three vertical flakes from one side, and two similar flakes from the other. The second biface (Fig. 8, e) has a short asymmetrical stem and rounded shoulders. The body has broad flake scars, with little secondary retouch of the lateral edges. Deposits of a reddish substance are present on both faces and in bands or strips along the lateral edges. Both of these unhafted bifaces are made of variegated fine-grained chert.

Two wooden handles were also in the pouch, presumably the haft components for the two bifaces just described. One specimen (Fig. 5, h) is roughly dressed, with numerous oblique cut marks and longitudinal scars, and it is pointed at the proximal end. It has a V-shaped notch, with sinew tightly wrapped around the base of the notch. This might indicate that the strips of sinew were applied before the removal of the V-shaped wedge which created the notch. The sinew binding in this instance might have been designed to prevent splitting of the handle at the time the notch was formed. There are some remnants of a mastic on the edges of the notch. The second handle (Fig. 5, i) also has a rough surface marked by oblique cuts. The proximal tip was severed by two cuts made from opposite sides, with the tip then snapped off. The hafting notch is V-shaped, with sinew wrapped around the base of the notch; some splitting occurred below the binding. Both of these wooden handles have ovoid transverse cross sections.

Cordage artifact. The final artifact in Pouch I is a cordage specimen (Fig. 5, k), 60 cm. long, which was made by grouping four strands of fine 2-ply cordage. At one end, two dangling loops are present, while at the other end, there is a large knot and a small loop. About one-half of the specimen was feathered with fine white-brown feathers. The quills of the feathers have been looped around the cord so that the feathers are held firmly in place (see Fig. 8, c).

Evidence of the Function of the Hafted Bifaces

Summarized here are data obtained on the function of the bifaces found in Pouch I. This information is derived from microscopic wear pattern studies and from the analysis of residues found on the specimens.[5]

#1. Microscopic examination revealed dulling and blunting of protrusions along the lateral edges, accompanied by nibbling or step-fracturing. On one edge, three heavy parallel striations were observed near the distal end and perpendicular to the edge. A similar cluster of striations, although of greater number, was observed just above the shoulder on the same edge; these, too, were oriented perpendicular to the edge. The opposite face of this specimen was coated with a light film, obscuring any possible microwear evidence.

#2. Very little use-wear was noted, and this consisted of very light dulling (accompanied by crushing) scattered along both lateral edges.

However, microscopic examination did reveal a tiny fish scale adhering to the lower part of the biface, adjacent to the juncture with the handle. Yet a another fish scale was observed on the handle. The scales have been identified as those of Lahontan Cutthroat Trout (see Appendix).

#3. This specimen, because of its glossy texture (heat-treated?), had an excellent reflective surface under the microscope. However, no striations were observed. Widely scattered areas of edge-dulling were noted, but crushing and minor step-fracturing were present along both lateral edges. Unidentified residues were seen in fissures on the edge of flake scars on both faces of the specimen.

#4. Both lateral edges of the biface were heavily caked with reddish residue, obscuring any wear evidence. Careful scrutiny revealed an area (6 mm. long) of heavy dulling on one edge, near mid-blade. On the opposite lateral edge, another area of dulling, 7 mm. in length, was recorded near the base.

#5. There was an abundance of use-wear on this specimen. One one face, numerous multidirectional striations were seen at the distal tip. Scattered striations, parallel or perpendicular to the side (the "christie striae" of Wylie 1973a), were also noted along one edge of this face. On the opposite face, there were a group of parallel striations, oriented obliquely to the edge, near the distal tip. On the opposite edge, there was an area (4 x 7 mm.) of very heavy wear, wherein the flake scar ridges had been heavily abraded. On the rest of this face, groups of perpendicular and parallel striations were recorded along the lateral edges and near the base.

#6. The wrapped obsidian biface had light crushing and step-fracturing along both lateral edges. One face had a group of numerous multidirectional striations near the juncture with the leather wrapping ("handle"). On the opposite face, near mid-edge, there is an area (6 x 9 mm.) in which the flake scar ridges are abraded.

Both of the unhafted bifaces were also examined for wear pattern evidence:

#1. Reddish residue was noted along both edges, and a particularly heavy deposit of the residue was on the lower half of the specimen. Microwear occurred in the form of an area (7 mm. in length) of heavy dulling on the lower part of one edge.

#2. There was a substantial deposit of reddish residue on both faces of this specimen. In some areas, fibrous materials adhered to the residue. Mr.

Edward Blake, School of Criminology, University of California, Berkeley, took samples of the residue and fibers. Although his studies are incomplete, it is known that the reddish residue is not blood, and may in fact be some type of soil, perhaps clay. The only microwear evidence observed was an area of heavy dulling (5 mm. long) near the distal tip on one edge.

Previous studies of the function of hafted and unhafted bifaces from Great Basin sites have been published by Hester (1970) and, more recently, by Wylie (1973a, 1973b). They have postulated cutting, sawing, and carving functions for subtriangular and lanceolate bifaces from Humboldt and Lovelock Caves (Nevada), and Hogup Cave (Utah).

In examining the hafted specimens from Pouch I at NV-Wa-197, I have noted wear pattern evidence in a variety of forms, including edge dulling, step-fracturing and crushing of the edges, and striations. The kinds of wear vary considerably from specimen to specimen, and none appear to be functionally-specific. However, the combined assortment of wear patterns does indicate the use of these hafted implements as "knives"--tools used primarily in cutting and sawing activities. This interpretation is supported by an examination of the edge angles (see Table 1), all of which are acute (ranging from 23^{o}-40^{o}), and which are less than 30^{o} on most specimens. Such edge angles are characteristic of cutting tools (cf. Wilmsen 1968:156). The presence of fish scales on specimen #2 (and on the hafted biface from Pouch II described later), certainly suggests that at least one function of these tools was fish-processing. If it is possible at some future date to further identify the residues and fibers mentioned earlier, we may obtain additional substantive information on the tasks for which these knives were utilized.

Pouch II (Fig. 6, a-c)

A second animal skin pouch was found adjacent to Pouch I. It is made from the partial skin of what may be marmot, and again the skin is inverted, with the fur-bearing portion forming the interior of the pouch. When opened to its fullest, the pouch is 40 cm. long, and 28 cm. in width across the bottom (see Fig. 6, c).

An amazing array of artifacts was contained in Pouch II. These were: three thin, unhafted bifaces, a hafted biface, a flaking tool, a large decorated bone object, and 101 projectile points.

Unhafted bifaces. All three specimens are lanceolate in outline, have been carefully thinned, and are made of chert (Fig. 6, f-h). Specimen #1 (Fig. 6, g) is made of a variegated fine grained chert, ranging in color from dusky red at the base to a dark yellowish-brown over the rest of the specimen. Broad parallel flake scars are on both faces. There is continuous edge trimming along one side and at the proximal end, and intermittent trimming on the other lateral edge.

Microscopic examination revealed light to moderate dulling of the lower edges. Length, 103 mm., maximum width, 30 mm., basal width, 26 mm., maximum thickness, 5 mm., and weight, 19.9 grams. Specimen #2 (Fig. 6, h) is made of a mottled chert, varying from olive brown to light olive brown, with cortex covering the tip. It, too, has parallel flake scars on both faces, with continuous trimming along the lateral edges. There is light to moderate dulling of the lateral edges, becoming especially pronounced as the edges converge to the distal tip. Length, 93 mm., maximum width, 29 mm., basal width, 26 mm., maximum thickness, 5 mm., weight, 16.8 grams. Specimen #3 (Fig. 6, f) is the largest, and is made of dark gray to grayish-brown chert. The primary flake scars on both faces are broad and flat, and there is trimming along both lateral edges. Wear evidence on this specimen consists of minor blunting or smoothing of protrusions on the lateral edges, accompanied by intermittent step-fractures. The basal edge is lightly dulled. Near the base, on one face, there is an area of scattered reddish residue. Length, 122 mm., maximum width, 38 mm., basal width, 24 mm., maximum thickness, 7 mm., and weight, 7 mm.

An edge angle measurement of 25° was obtained for both lateral edges on all three unhafted bifaces.

Hafted biface. This specimen (Fig. 6, d) is quite similar to the hafted bifaces from Pouch I. The biface is stemmed and is made of variegated chalcedony (the colors gray, pink, brown and tan are represented). It is attached to a wooden handle by numerous strips of sinew and a heavy application of mastic. Since the basal portion of the biface was obscured by the binding, an x-ray was made of the specimen in an effort to obtain additional information on stem configuration (see Fig. 9, c, d).

The handle is smoothed, but not polished, and is oval in cross section.[6] The proximal end is tapered and rounded and there is a hole (8 mm. in diameter) through the handle 15 mm. above the proximal end (see Fig. 6, d). A 2-ply, S-twist cord (made of Apocynum cannabium fibre) goes through the hole and is wrapped three times around the handle.

There is steep marginal retouch along the lower one-third of one edge of the biface, possibly representing resharpening of a dulled area. Three fish scales were embedded in the hafting mastic at the base of the biface, one was noted on the biface base, and eight other scales were observed on the handle. W. I. Follett has identified these scales as Lahontan Cutthroat Trout (see Appendix).

The hafted biface has an overall length of 209 mm. and a total weight of 27.3 grams. Dimensions of the biface are: length (of exposed portion), 87 mm., width, 30 mm., thickness, 4.5 mm. The handle is 122 mm. long, and has a maximum thickness of 14 mm. The edge angle for both lateral edges of the biface is 25°.

Flaking tool. An artifact interpreted as a pressure-flaking tool was found in Pouch II (Fig. 6, c). The specimen has two major components, a section of deer antler tine and a fragmentary (?) wooden shaft, bound together with 2-ply cordage which is wrapped 48 times around the two pieces. For a detailed view of one end of the specimen, see Fig. 8, d.

Both ends of the antler component are heavily worn. In its construction, this artifact bears a striking resemblance to the distal (working) end of a Hupa (northwest California) pressure-flaking tool illustrated by Goddard (1903: Pl. 12, 3). The identification of this specimen from Pouch II as a flaking tool is strengthened by comparing it with known flaking implements from other North American Indian groups (cf. Holmes 1919:Figs. 173, 181).

Overall length of the artifact is 12.9 cm., maximum width is 16 mm., maximum thickness, 20 mm., and it weighs 16.8 grams.

Decorated bone object. A long, trianguloid section of mammal long bone (elk?), concavo-convex in cross section, has been smoothed and polished and is decorated with drilled pits (Fig. 6, e). On the convex face, there are 18 double rows of these tiny depressions, forming chevron-like designs. On the reverse (concave) side, there are eight such rows of punctations. Some very faint lines are also present on the convex surface, but these may be related to grinding and abrading of the surface during the manufacturing process. The artifact appears stained, and has a yellowish color. The maximum length of the specimen is 20.2 cm., maximum width is 32 mm., maximum thickness, 6 mm., (minimum thickness, 2 mm.) and the weight is 25 grams.

The function of this artifact is undetermined. It is quite similar to bone objects termed "sweat scrapers" reported from the central California area (cf. Ragir 1972:Pl. 5, a; Gifford 1940:173-174, describes the use of spatulate bone strigils by California Indians of the Monterey area).

Projectile points. There were 101 small, thin bifaces contained in Pouch II (Fig. 7). Of these, 67 are thought to be completed or finished arrow points, while 34 others are triangular arrow point blanks or preforms. These artifacts were very carefully documented by A. D. Albee, and some of the metrical data are presented in Tables 2 and 3.

Of the 67 complete projectile points, 66 can be typed as Eastgate series points (Hester and Heizer 1973). Sixty-five are of the Eastgate Expanding Stem variety, and one can be classified as Eastgate Split-Stem (Fig. 7, p). Forty-one of the Eastgate series points are made of obsidian of various color phases (black, brown, black and brown, mottled, red-black, light gray, and so forth). The remaining 25 Eastgate points are fashioned of chert, especially varieties of highly translucent gray and brown materials. Three of the chert specimens exhibit a greasy, vitreous quality suggesting they were made from

thermally-alterd chert. Heat-treating of cherts is known ethnographically for some northern Nevada groups (Hester 1973).

While the specimens are carefully made, bifacing is rarely complete, and portions of the original flake surface (usually the ventral side of the flake) are often exposed. On two specimens, the bulb of percussion can be observed at the distal tip; five others have the bulb (or proximal end of the flake) at the stem end.

Two of the Eastgate specimens (Fig. 7, r, s) have narrow strips of sinew wrapped around their stems. This binding covers the entire stem.

One finished projectile point from Pouch II is technologically distinct from the Eastgate series. It is smaller, more roughly flaked, and is made of of basalt. The point (Fig. 7, m) is similar to the Rose Spring series, a type contemporary with Eastgate (Hester and Heizer 1973).. Length of this specimen is 28 mm., width is 17 mm., thickness, 3 mm., and weight, 1.3 grams.

The 34 preforms or blanks are generally triangular in outline, with markedly convex bases (Fig. 7, n'-h''). On many specimens, there is a slight flare or protrusion at one corner of the base (Fig. 7, n', r' are good examples). This same protrusion or recurved edge can be seen on some of the finished Eastgate specimens (see Fig. 7, e, i'). All of these triangular artifacts are technologically identical to the finished Eastgate specimens from the pouch and it seems virtually certain that they are Eastgate preforms, lacking only the two basal notches for completion. In the preform series, 21 specimens are of obsidian and 13, of chert. Thus, in both the Eastgate series and the preform series, roughly 61% of the specimens are of obsidian and approximately 37% are made of chert.

Dating the Two Pouches

We have no radiocarbon dates from NV-Wa-197 that are directly applicable to the two animal skin pouches. However, the contents of Pouch II have provided us with another method of determining the approximate age of these two remarkable artifacts. The Eastgate series points found in Pouch II have been radiocarbon-dated at several Great Basin sites, with the dates clustering between A.D. 600 and A.D. 1100 (Hester and Heizer 1973:7-9). While Pouch I contains no temporally diagnostic artifacts, the similarity of its manufacture and the fact that it occurred with Pouch II indicates that it is contemporary.

Summary

Site NV-Wa-197, a shaft cave in the western Great Basin, was excavated by relic-collectors in 1960-1961. A large collection of perishable artifacts was taken from the site as a result of this uncontrolled digging, and intrasite

provenience was lost for most specimens. However, the vertical position of certain artifacts was recorded; among these were the atlatl and two animal skin pouches reported in this paper.

The atlatl from the base of NV-Wa-197 has been indirectly dated at 8030 radiocarbon years, and it is apparently the oldest known spearthrower in North America. Additionally, the technique of its construction sets it apart from other documented atlatls. While there are other atlatls in the New World with stones or other objects attached to them, this is the first specimen to be found with a "boatstone" still fixed to it. It has long been hypothesized that boat-shaped stones were spearthrower accoutrements, but only in this particular case do we have specific evidence of just how the boatstones were used.

The contents of the two animal skin pouches provide particular insight into a variety of prehistoric activities. As mentioned earlier, these two artifacts date somewhere between A.D. 600-1100. The hafted bifaces in Pouch I had been used as knives, and at least one of them bore direct evidence of service in fishing-related tasks, most probably fish-cutting. The wear pattern data obtained through microscopic scrutiny of the tool edges indicates use of these bifaces as cutting tools or knives. The haft elements of several of the tools are worn and polished, suggesting repeated handling. It is puzzling that the proximal ends of the handles are tapered and pointed, as if designed to be inserted into some larger component. Although these hafted bifaces are too large and heavy to have been effectively used as dart foreshafts, it is conceivable that they might, at times, have been used as foreshafts for hand-held spears. I reiterate, however, that there is abundant evidence that their major function was that of a cutting tool.

Hester (1970) illustrates very similarly-constructed hafted knives from Lovelock and Humboldt Caves in the Humboldt Sink area of western Nevada. These sites were utilized by prehistoric peoples following a lacustrine subsistence pattern (cf. Heizer and Napton 1970). A lacustrine orientation has also been recorded for Winnemucca Lake sites (Shutler 1968), and the fish scales on the knives from Pouches I and II certainly reflect the use of lake resources. The dating of the hafted knives from the Humboldt Sink sites is not clear, and it is tempting to correlate them, on the basis of morphological similarities, with the NV-Wa-197 examples, whose temporal placement is fixed by their apparent association with Eastgate series projectile points. However, Grosscup (1960:30) places the Lovelock hafted knife (found at a depth of 103 inches) in the "Early Lovelock" phase, roughly 2500 B. C. The Humboldt Cave examples, on the other hand, are probably roughly coeval with the specimens from NV-Wa-197. Perhaps we have a type of knife which is directly related to the lacustrine regime, and which was used over a relatively long period of time without significant changes in its construction. I would like to go even further into the realm of speculation and suggest that these were "fish knives", cutting and scaling implements used in fishing activities. Such stone knives are apparently quite effective

for fish-scaling; as an example, the Hupa and Yurok of the northwest California coast were using hafted stone knives for salmon-scaling as late as the first decade of the 20th century, long after metal knives had been introduced into their culture (Kroeber and Barrett 1960; Hester ms.). One must presume that the stone knives were still being used because they worked better than metal knives in salmon-processing tasks.

Pouch II contained one knife which had been used in fish-scaling, and three unhafted bifaces which had seen limited service as knives. However, flint-knapping activities are best represented by the contents of this pouch. There is a pressure-flaking tool, 67 finished arrow points, and 34 arrow point preforms. It is possible that the "sweatscraper" is actually an implement related in some way to the flint-knapper's work, if only to scrape away the perspiration induced by his activities.

We can see in the projectile points (both finished and preforms) a preference for obsidian and for multicolored, highly translucent cherts. In addition, the flint-knapper may have thermally altered some of his chert materials before flaking them. Most importantly, we can see in the careful repetition of the projectile point forms in Pouch II that the arrow point maker was shaping the specimen according to preconceived, and presumably culturally significant, norms ("mental templates"). In essence, the Eastgate entity, originally constructed as a "convenient type" can be demonstrated to have been a "real" or "discovered" type (cf. Hole and Heizer 1973:204). While the flint-knapper was careful to give each Eastgate point a certain shape or outline, it would seem that he was not particular about always repeating certain attributes, such as the squared barbs which are often cited as diagnostic of the Eastgate series. The variation in barb configuration can be seen by examining the illustrated specimens in Figure 7. Judging from the shapes of the preforms found in the pouch, the contour of the barbs would merely reflect the placement of the basal notches. It is also evident that not all of the Eastgate specimens in Pouch II were in pristine condition, having just been made prior to inclusion in the pouch. Instead, some had obviously seen prior use, especially those with binding still adhering to the stems. The owner of the pouch (and maker of the points?) had apparently reclaimed previously-used specimens, and included them in his pouch, along with unused specimens and blanks which could be made into finished points when needed.

It is unfortunate that we do not know the circumstance surrounding the placement of the two pouches (or the atlatl, for that matter) in the shaft cave. Better excavation techniques would have helped with this problem and perhaps we could have determined whether they were caches, or possibly burial offerings placed in a grave. The pouches might have been the personal work-kits of an individual which he stored away in the cave, or which were interred with him at death.

Were work-kits like these pouches common among the peoples who pursued the lacustrine lifeway in western Nevada? We know that other caches and work-kits have been found in Great Basin cave sites, such as a basketmaker's kit from Lovelock Cave (Ambro 1970), but these reported examples are quite rare. Have the vagaries of preservation led us to regard such artifacts as "unique", when in ancient Nevada they may have been common equipment? Whether or not they were unusual in prehistoric times, these well preserved materials are certainly a rarity in the archaeological record. Their fortuitous survival adds new dimensions to the study of prehistoric culture in the Great Basin.

Notes

1 A number of people have helped in the preparation of this paper. Professor Robert F. Heizer aided in many ways; the Archaeological Research Facility, University of California, Berkeley (of which Prof. Heizer is Coordinator) provided funds for radiocarbon dates. Karen Nissen and Alan D. Albee (graduate students in the Department of Anthropology, Berkeley) devoted a good deal of their spare time to the documentation of the NV-Wa-197 collection, and Dr. Fred Stross (Berkeley) took color slides of many specimens. David Herod and Eugene Prince (Lowie Museum of Anthropology) facilitated black and white photography of the collection; Harvey Kohnitz (San Antonio) prepared the prints used in the illustrations for the present paper. W. I. Follett studied fish remains from the site and his analysis appears as an Appendix. Charles W. Chesterman (California Division of Mines and Geology) and Miss Nessly C. Rem (Forest Products Laboratory, Richmond Field Station, University of California) examined two of the hafted bifaces. James E. Gordon (California Academy of Science) x-rayed two of the hafted bifaces and the radiographs and photographs shown in Fig. 9 were prepared by Maurice C. Giles (California Academy of Science). Lawrence Dawson (Lowie Museum) has studied the basketry from the site, and Dr. James Bennyhoff (Lowie Museum) has analyzed the shell beads; their reports will be published at a later date. Jack Nicolarsen and G. H. Favell made the artifacts available for analysis.

2 Since this particular radiocarbon sample had possibly been contaminated by associated tufaceous deposits (i.e., the cave walls), it was pretreated at the Isotopes laboratory to insure removal of carbonates prior to chronometric analysis.

3 The atlatl from NV-Wa-197 has been previously mentioned and illustrated by Strong (1969), Grant, Baird and Pringle (1968) and Mitchell (1970).

4 Miss Nelly C. Rem of the Forest Products Laboratory, University of California, examined the handle of Specimen #2 after completion of the manuscript; she believes the handle is made of Fremont cottonwood (Populus fremontii).

[5] Microscopic wear pattern studies were done by the author, using a binocular microscope (with magnification up to 75X) with an independent light source.

[6] Miss Rem (see note 4) suggests that the handle of this hafted biface may be made of cherry wood (Prunus sp.).

BIBLIOGRAPHY

Abbreviations used:

A Ant	American Antiquity
UC	University of California
-AR	Anthropological Records
-ASR	Archaeological Survey Recorts
-CARF	Contributions, Archaeological Research Facility
-PAAE	Publications in American Archaeology & Ethnology

Ambro, R.
1970 A Basket Making Kit from Lovelock Cave, Nevada. UC-CARF 7:73-79.

Butler, B. R. and D. Osborne
1959 Archaeological Evidence for the Use of Atlatl Weights in the Northwest. A Ant 25(2):215-224.

Cole, G. S.
1972 The Bannerstone as a Spear Weight. Michigan Archaeologist 18(1):1-8.

Dalley, G. F. and K. L. Peterson
1970 Additional Artifacts from Hogup Cave. Appendix X in: Hogup Cave (C.M. Aikens). University of Utah Anthropological Papers 93:283-286.

Driver, H. and W. Massey
1957 Comparative Studies of North American Indians. Transactions, American Philosophical Society 47(2).

Fenenga, F. and J. B. Wheat
1940 An Atlatl from Baylor Rockshelter, Culberson County, Texas. A Ant 5(3):221-223.

Garrod, D.
1955 Palaeolithic Spear-Throwers. Proceedings of the Prehistoric Society 21:21-35.

Gifford, E. W.
1940 California Bone Artifacts. UC-AR 3.

Goddard, P. E.
1903 Life and Culture of the Hupa. UC-PAAE 1(1).

Grant, C., J. W. Baird, and J. K. Pringle
1968 Rock Drawings of the Coso Range. Maturango Press, China Lake, California.

Grosscup, G. L.
1960 The Culture History of Lovelock Cave, Nevada. UC-ASR 52.

Guernsey, S. J.
1931 Explorations in Northeastern Arizona. Peabody Museum of American Archaeology and Ethnology, Papers 8(2).

Guernsey, S. J. and A. V. Kidder
1921 Basket-Maker Caves of Northeastern Arizona. Peabody Museum of American Archaeology and Ethnology, Papers 8(2).

Heizer, R. F.
1951 Preliminary Report on Leonard Rockshelter, Pershing County, Nevada. A Ant 17:89-98.

Heizer, R. F. and A. B. Elsasser
1953 Some Archaeological Sites and Cultures of the Central Sierra Nevada. UC-ASR 21.

Heizer, R. F. and L. K. Napton
1970 Archaeology and the Prehistoric Great Basin Lacustrine Subsistence Regime as Seen from Lovelock Cave, Nevada. UC-CARF 10.

Hester, T. R.
1970 A Study of Wear Patterns on Hafted and Unhafted Bifaces from Two Nevada Caves. UC-CARF 7:44-54.

1971 Possible Atlatl Spurs from the Texas Coastal Plain. Southwest Museum Masterkey 45(1):13-19.

1972 Ethnographic Evidence for the Thermal Alteration of Siliceous Stone. Tebiwa 15(2):63-65.

ms. Microwear Analyses of Ethnographic Hafted Stone Knives from the Northwestern Coast of California (with an appendix by W. I. Follett). Manuscript in preparation.

Hester, T. R. and R. F. Heizer
1973 Review and Discussion of Great Basin Projectile Points: Forms and Chronology. Archaeological Research Facility, University of California, Berkeley.

Hole, F. and R. F. Heizer
1973 An Introduction to Prehistoric Archeology. 3rd Edition. New York: Holt, Rinehart and Winston.

Holmes, W. H.
1919 Handbook of Aboriginal American Antiquities. Part I, Introductory, the Lithic Industries. Bureau of American Ethnology, Bulletin 60.

Kellar, J. H.
1955 The Atlatl in North America. Prehistory Research Series, Indiana Historical Society 3(3).

Kidder, A. V. and S. J. Guernsey
1919 Archeological Explorations in Northeastern Arizona. Bureau of American Ethnology, Bulletin 65.

Kroeber, A., and S. Barrett
1960 Fishing Among the Indians of Northwestern California. UC-AR 21(1).

Mildner, M. P.
1974 Descriptive and Distributional Notes on Atlatls and Atlatl Weights in the Great Basin. Ballena Press, Ramona, California: Publications in Archaeology, Ethnology and History, No. 2.

Mitchell, J. L.
1970 The Atlatl in Ohio. Ohio Archaeologist 20(2):206-211, 216.

Neuman, R.
1967 Atlatl Weights from Certain Sites on the Northern and Central Great Plains. A Ant 32(1):36-53.

Patterson, J. T.
1937 Boat-Shaped Artifacts of the Gulf Southwest States. University of Texas Bulletin 3732.

Peets, O.
1960 Experiments in the Use of Atlatl Weights. A Ant 26(1):108-110.

Ragir, S.
1972 The Early Horizon in Central California Prehistory. UC-CARF 15.

Riddell, F. and D. McGeein
1969 Atlatl Spurs from California. A Ant 34(4):474-478.

Spencer, L.
1974 Replicative Experiments in the Manufacture and Use of a Great Basin Atlatl. Ballena Press, Ramona, California: Publications in Archaeology, Ethnology and History, No. 2.

Strong, E.
1966 The McClure Atlatls. Oregon Archaeological Society Screenings 15(5):1-4.

1969 Stone Age in the Great Basin. Portland: Binford and Mort.

Webb, W. S.
1950 The Carlson Annis Mound, Site 5, Butler County, Kentucky. University of Kentucky Reports in Anthropology 7(4).

Wilmsen, E. N.
1968 Functional Analysis of Flaked Stone Artifacts. A Ant 33:156-161.

Wylie, H. G.
1973a Microanalysis and Functional Typology of the Hogup Cave Chipped Stone Tools. Unpublished MA thesis, University of Utah.

1973b Some Functional Tool Types from Hogup Cave, Utah. Paper presented at the 1973 meeting of the Society for American Archaeology, San Francisco.

I. Hafted bifaces	Overall length	Length-Width-Thickness Biface/Handle	Depth of Notch	Weight (gms.)	Edge Angle right/left (o)
1	230	117-34-4 / 130-13-13	20	28.8	25/25
2	215	100-37-5 / 135-13-14	20.5	32.5	23/25
3	223	85-31-6 / 140-13-15	covered	35.2	30/32
4	201	62-26-5 / 141-13-13	"	24.5	25/27
5	217	93-31-5 / 126-13-13	"	30.0	27/27
6	174	see text	none	69.3	35/40

II. Unhafted bifaces	Length	Maximum width	Basal width	Thickness	Weight	Edge Angle
1	110	46	34	6	33.7	20/25
2	102	46	22	6	27.2	25/25

III. Handles	Length	Maximum	Thickness	Depth of Notch	Weight
1	127	14	12	19	8.4
2	135	14	14	19	11.0

Table 1. Dimensions of artifacts from Pouch I. All linear measurements are expressed in millimeters.

Table 2. Dimensions of Eastgate Series Points from Pouch II. Measurements are in millimeters, and weight is expressed in grams. An asterisk (*) indicates an incomplete measurement. Maximum measurements are shown for each specimen.

Length	Width	Thickness	Stem Length	Stem Width	Weight
42	24	4	4.5	9	3.3
47	23	4	6	9.5	4.0
44	20	4	6	9.5	3.3
43	23	4	6	12	3.2
30	22	3.5	5	11	2.0
34	23	3.5	5	13	2.4
33	23	3	4*	-	2.2
39	29	3	5	11	3.3
41	27	3.5	6	12	3.2
37	22	4	5.5	11	2.6
42	24	4	4.5	9	2.9
45	24	3.5	6	12	3.5
41	25	3.5	5	11.5	3.0
41	27	3.5	5	11	3.8
50	25	4.5	5	8.5	4.1
38	20	4	4.5	8	2.4
36	21	4.5	6	10.5	3.0
43	26	3.5	4	9	3.5
37	27	4	6	11	3.1
38*	26	3.5	-	-	3.0
40	22	3	6	11	2.6
39	19	4.5	3.5	8	2.7
35	24	3.5	5.5	11.5	2.4
36	27	4	5	12	3.1
40	21	4.5	5	11	3.0
39	21	3.5	5.5	9	2.8
36	25	3.5	6	9	2.7
36	19	3.5	5	8	2.1
35	25	4	6	13	2.6
36	24	4	5	11	2.8
50	23	4	5.5	8	4.1
32	24	3.5	5	11	2.1
32	22	3	5	11.5	2.2
50	22	3.5	5.5	7.5	3.5
44	25	4.5	7	10	3.5
52	24	5	5.5	10.5	4.4
50	23	4	5	9	3.0
37	25	3.5	5.5	11	2.7
37	28	4	5	8.5	3.5

Table 2. Dimensions of Eastgate Series Points from Pouch II.

	Length	Width	Thickness	Stem Length	Stem Width	Weight
	35	20	3.5	6	10	1.9
	40	19	4	5	10	2.4
	55	30	6	6.5	11	8.5
	46	22	4	5	9	3.2
	51	22	3.5	4.5	9	3.9
	39	20	4	4.5	8	2.6
	51	22	3.5	4.5	10	3.8
	37	24	3.5	3.5	10	3.0
	37	19*	3.5	3.5	9	2.3
	41	22	3	4.5	6.5	2.6
	34	24	3.5	4.5	8.5	2.5
	46	20	3.5	3.5	8.5	2.7
	62	21	3	4.5	10	3.5
	37	27	4	5	8	2.2
	32	23	3.5	5	10	2.1
	47	27	4.5	5	13	3.9
	45	19	4	4	9	2.7
	35	21	3.5	4.5	10	2.2
	65	19	3.5	4	9	4.3
	41	21	2.5	4	9	2.1
	38	24	3	5	11	2.2
	37	29	3.5	5.5	10.5	2.2
	42	23	3.5	4.5	10	2.9
	40	21	3	4	10	2.7
	35	21	3.5	4	9	2.0
	32	25	3	5	11	1.9
	38	23	4	4.5	9	2.9
SD	6.89	2.68	.54	.76	1.42	.93
Mean	40.83	23.21	3.71	4.99	9.95	2.98
Std Error	.84	.33	.06	.09	.17	.11

Table 3. Dimensions of Eastgate Preforms from Pouch II. Measurements are in millimeters and weight is expressed in grams. An asterisk (*) indicates an incomplete measurement.

	Maximum Length	Maximum Width	Maximum Thickness	Weight
	48	23	3.5	3.7
	42	28	3.5	3.4
	47	24	4	3.5
	32	25	3.5	2.4
	42	20*	4.5	3.1
	35*	25	4	3.3
	47	21	4.5	3.3
	37	19	4	2.2
	39	26	3.5	3.0
	48	31	4	4.6
	43	27	4	3.7
	44	24	4	3.1
	38	25	3.5	2.8
	35	26	4	2.8
	38	26	4	2.7
	35	25	4	2.7
	35	25	4	2.5
	35	23	4	2.6
	43	26	3.5	2.9
	44	24	3.5	3.3
	42	29	3.5	3.6
	45	34	4	6.4
	52	29	5	5.6
	44	19*	4	2.6
	43	27	6	6.9
	47	27	4	4.1
	34	27	4	2.3
	42	31	3.5	3.7
	34	26	3.5	2.8
	34	27	4	3.0
	38	22	4	2.3
	42	22	3	2.6
	38	24	3.5	2.5
	35	22	3.5	2.2
SD	5.08	3.29	.52	1.09
Mean	40.50	25.26	3.91	3.30
Std Error	.87	.56	.08	.18

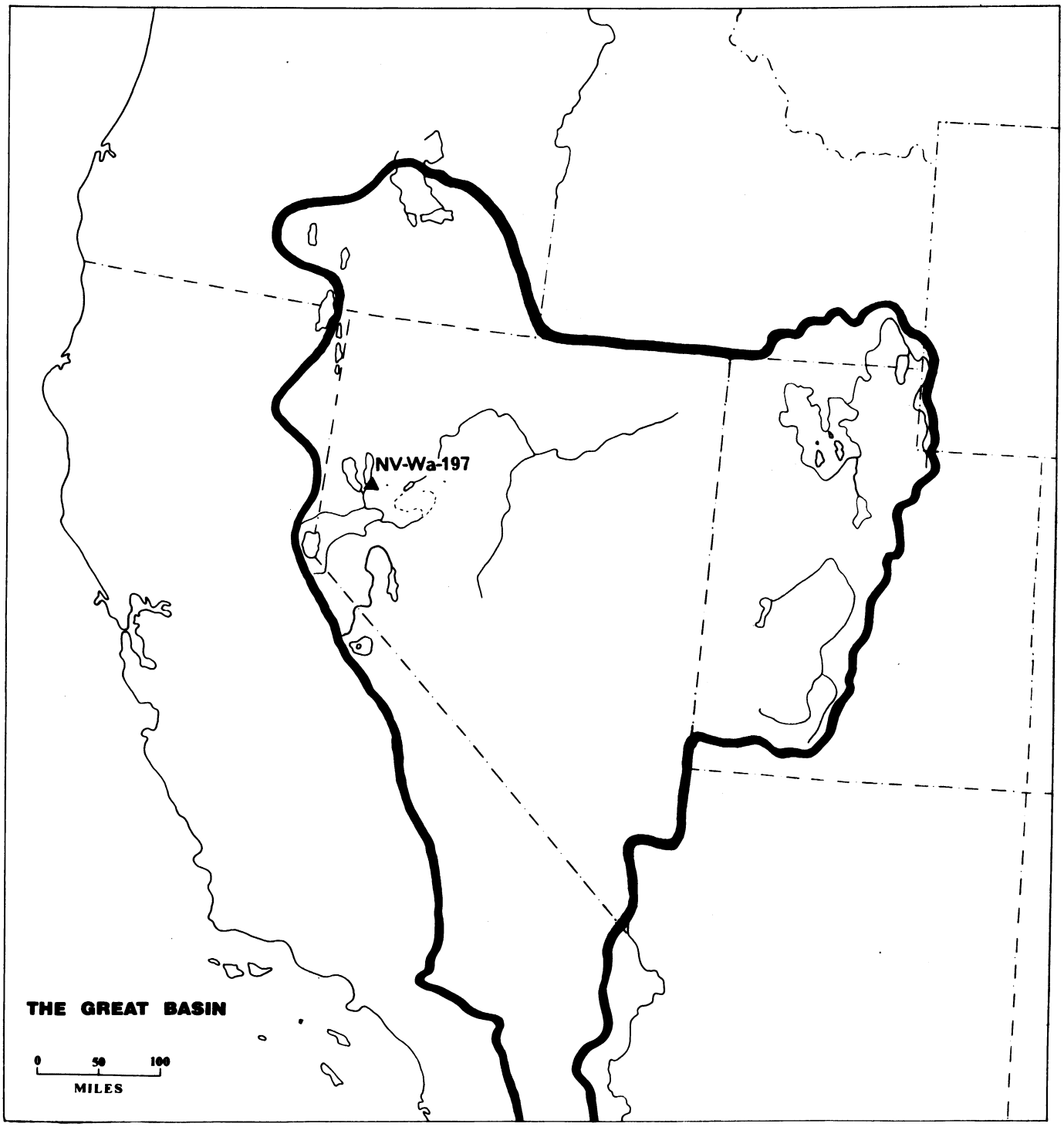


Figure 1. Location of Site NV-Wa-197, Western Nevada.

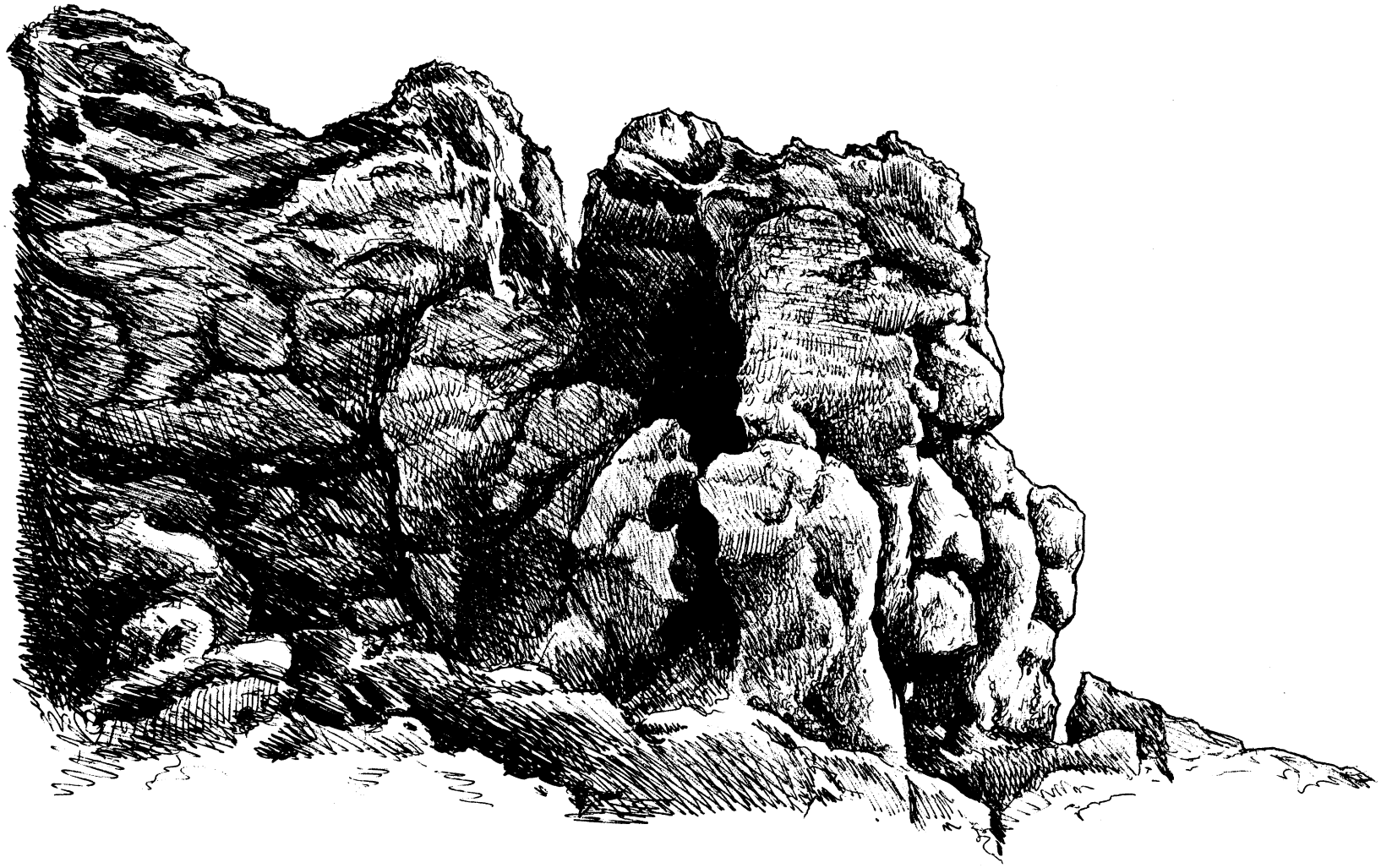


Figure 2. Site NV-Wa-197, Lake Winnemucca, Nevada. Drawn by Joe Singer. Shaft cave is the darkened area in the right half of the drawing.

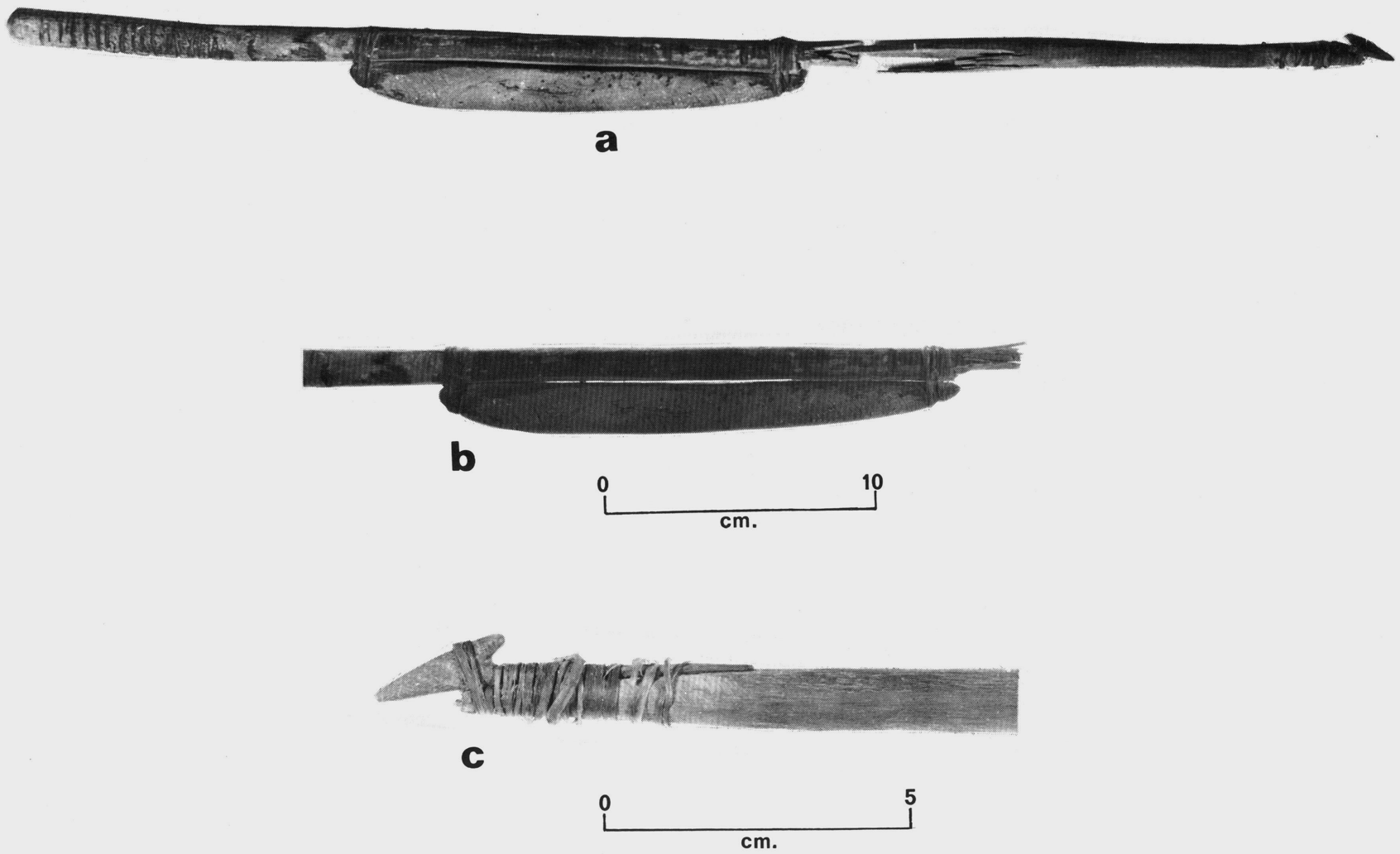


Figure 3. Atlatl from NV-Wa-197. a, view of atlatl; b, detail of medial area, with attached weight; c, detail of distal end, with attached weight; c, detail of distal end, with attached bone spur. Length of a, 58.1 cm.; note separate scales for b and c.

Figure 4. Atlatl from NV-Wa-197. a, artist's reconstruction of the atlatl; b, artist's view of distal end; c, detail view of the proximal end of the boatstone weight; note method of attachment. Length of a, 58.1 cm.; note separate scales for b, c.

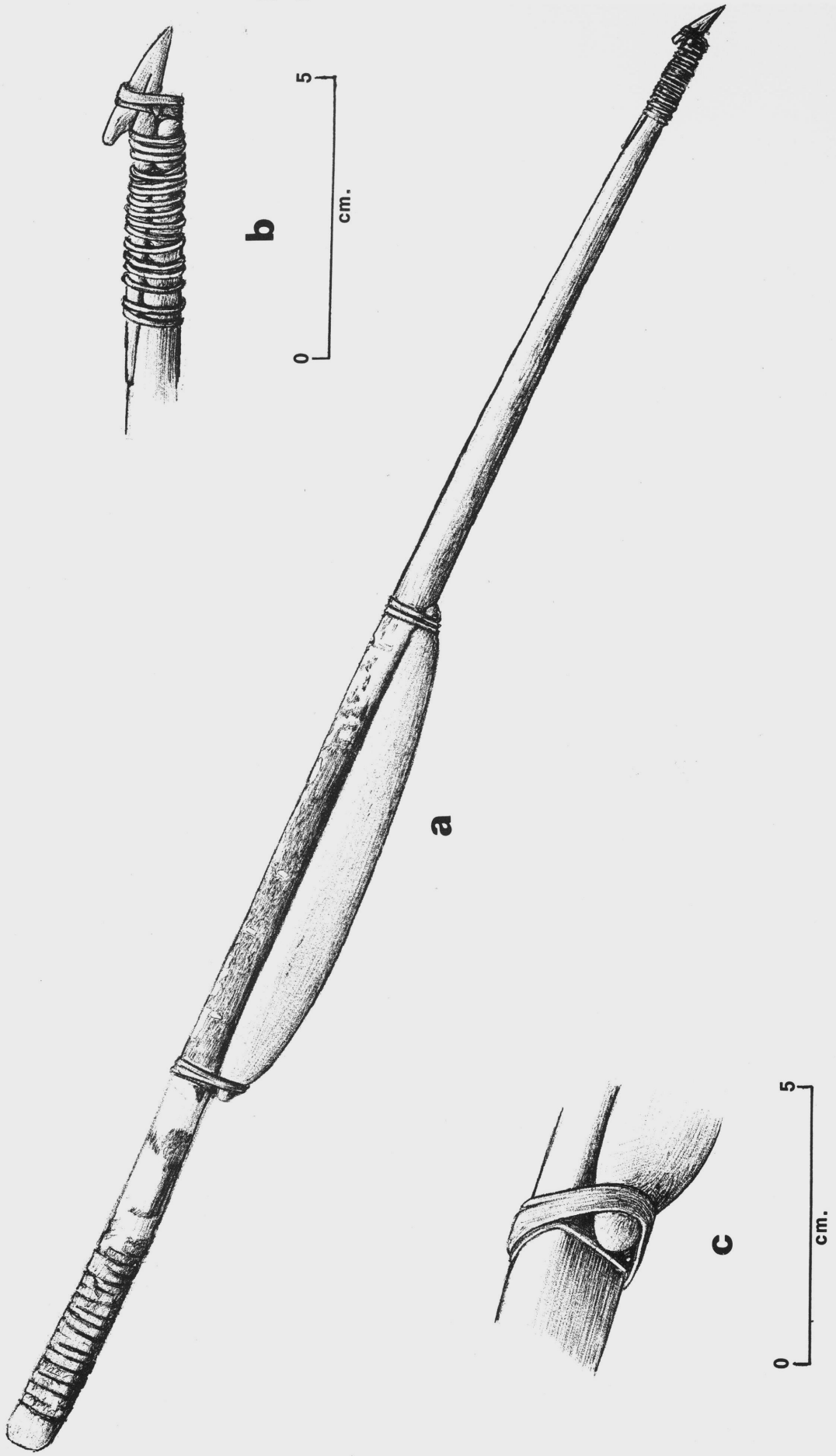


Figure 4

Figure 5. Pouch I and its contents. a, view of Pouch I; b-g, Hafted Knives 1-6; h, i, wooden handles; j, unhafted biface (the other specimen from this pouch is shown in Fig. 7); k, cordage artifact. (note separate scales for a, and for b-k)

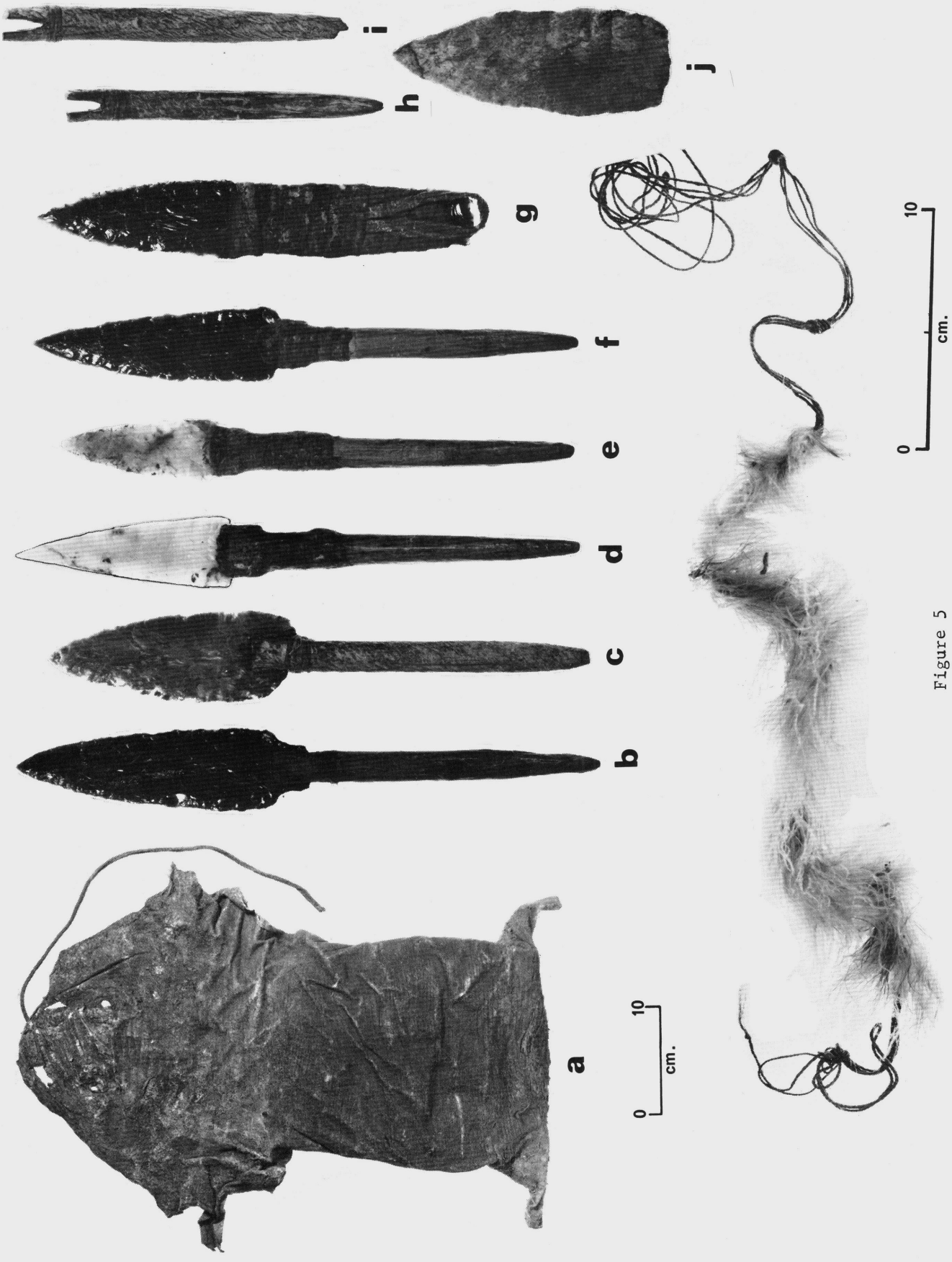


Figure 5

Figure 6. Pouch II and contents. a-b, views of both sides of Pouch II; c, Pouch II as discovered; c, flaking too; d, hafted knife; e, decorated bone object; f-h, unhafted bifaces.

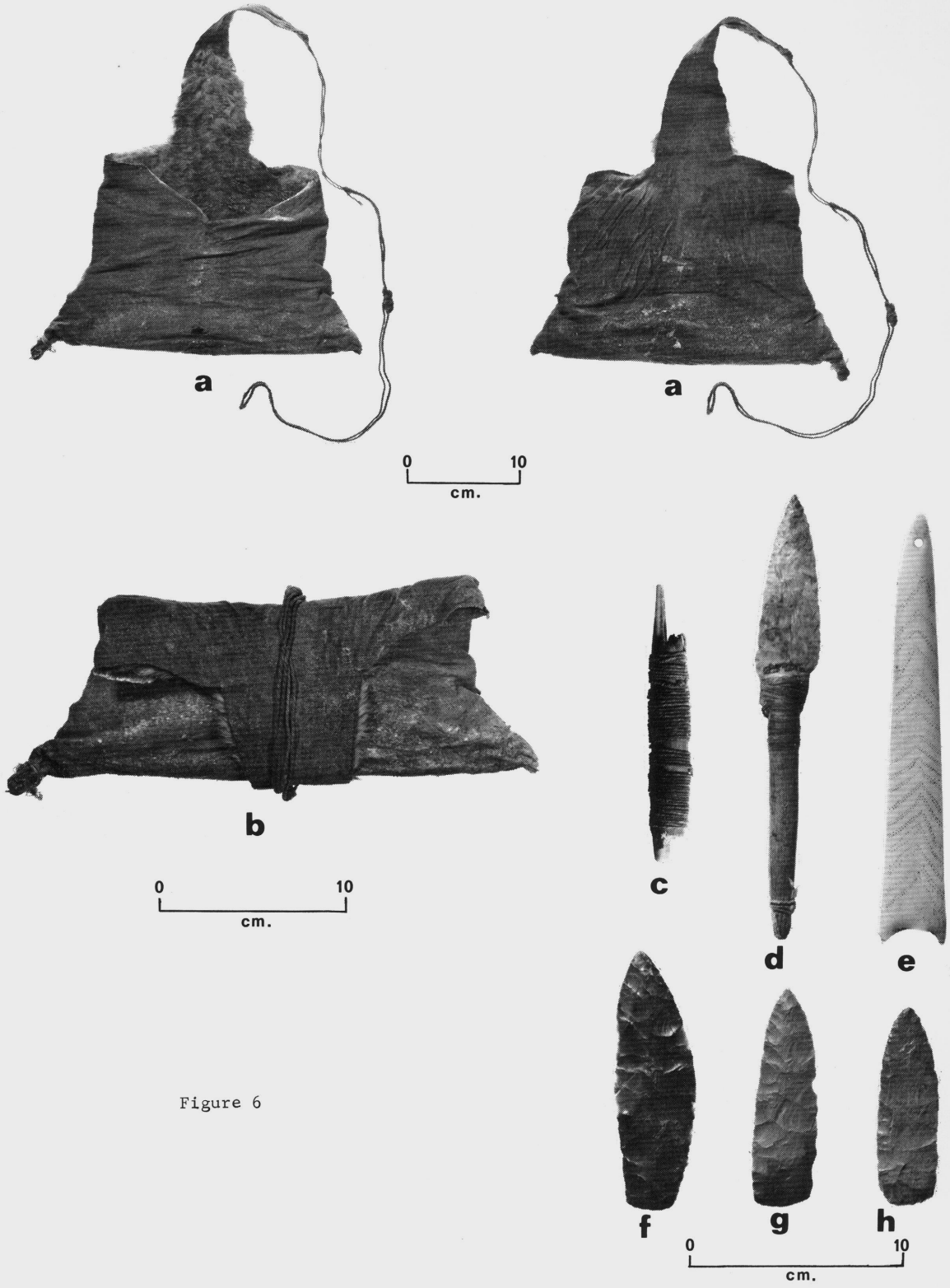


Figure 6

Figure 7. Some of the projectile points from Pouch II. a-l', Eastgate series; m', possible Rose Springs point; n'-h", Eastgate preforms.

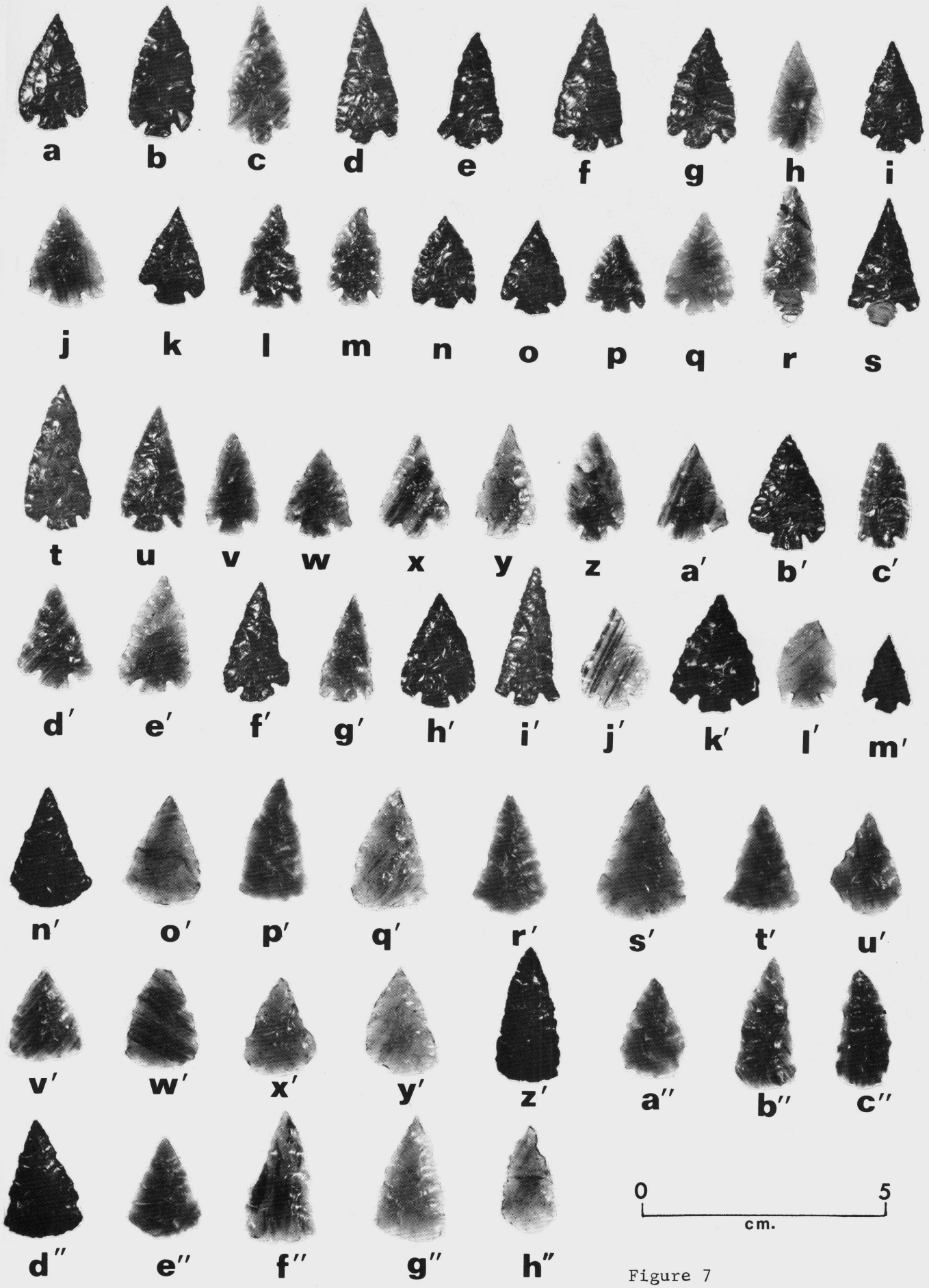


Figure 7

Figure 8. Various Artifacts from NV-Wa-197

a, b, side views of hafted knives from Pouch I; note hafting details.

c, detailed view of end of cordage artifact from Pouch I.

d, detail view of pressure flaking tool from Pouch II.

e, outline of unhafted biface from Pouch I; this specimen was coated with reddish residue (see Figure 4 for other specimens from Pouch I).

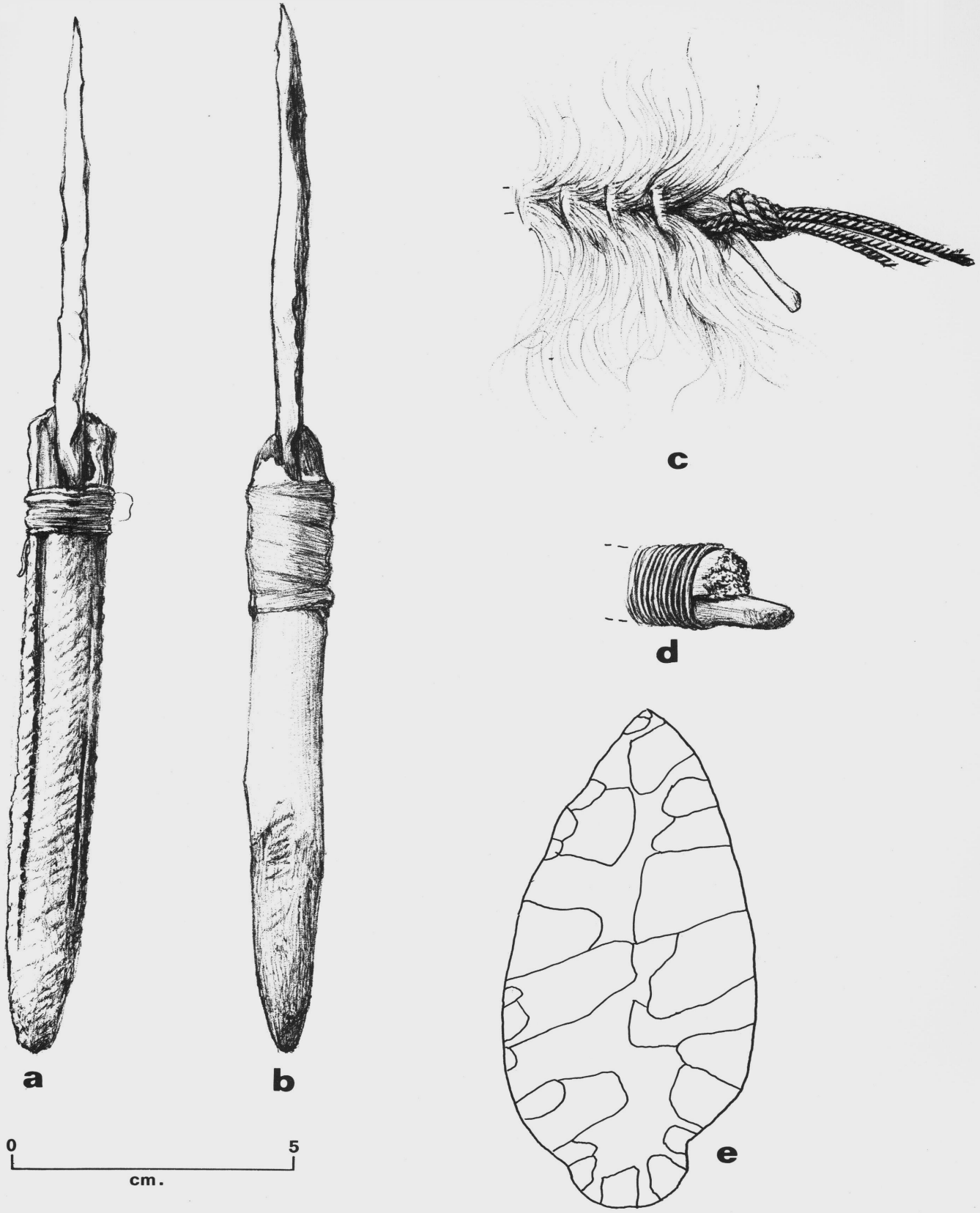


Figure 8

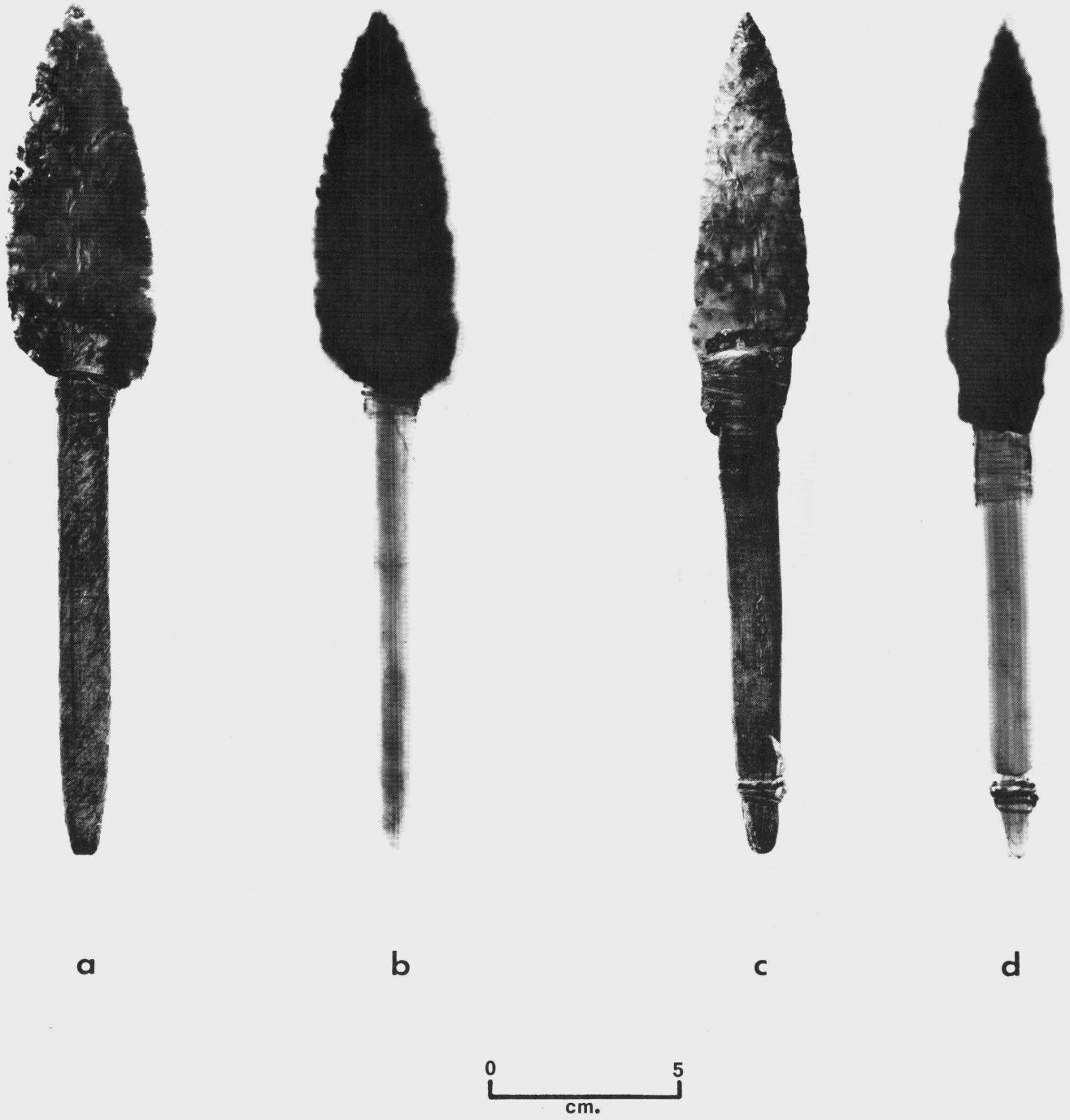


Figure 9. Radiographs of Hafted Bifaces. a, Specimen 2 (Pouch I); b, Radiograph of Specimen 2; c, hafted biface from Pouch II; d, Radiograph of hafted biface from Pouch II.

Appendix

FISH REMAINS FROM SITE NV-WA-197, WINNEMUCCA LAKE, NEVADA

W. I. Follett

Among the archaeological materials found at site NV-Wa-197 (Archaeological Research Facility site records, Berkeley) are a number of fish remains, most of which are scales embedded in pieces of skin or adhering to hafted bifaces. The site is a small vertical shaft cave in a tufa stack at the southern end of Winnemucca Lake, Nevada; the deposit within the cave was some 16 feet deep. It was mined by a relic collector, who loaned the materials to the University of California, Berkeley, and later sold them to the Favell Museum of Western Art and Artifacts, Klamath Falls, Oregon.

Fishes represented

Fishes of four species are represented: a trout (family Salmonidae), a minnow (family Cyprinidae), and two suckers (family Catostomidae).

The trout remains consist solely of 14 scales adhering to two hafted bifaces found in mammal skin pouches (Pouches I and II of Hester 1974). These pouches, recovered from a depth of about 10 feet below the surface of the deposit, appear to date from between A.D. 600 and A.D. 1100 (Hester 1974).

The minnow remains consist of (1) two pieces of skin bearing scales and (2) questionably, 12 small, incomplete vertebrae. The sucker material comprises a facial bone and a piece of skin bearing scales. The remains of the minnow and the suckers are from an unknown provenience within the deposit.

The scale characters used in this report have been elucidated by Casteel (1972:78-83).

Lahontan cutthroat trout

The 14 trout scales agree with those of the Lahontan cutthroat trout, Salmo clarkii henshawi Gill and Jordan (see Holder 1912:fig. 54, as Salmo henshawi tahoensis).

Two of these scales were on a hafted biface (#2 of Hester 1974) from Pouch I; 12 were on the hafted biface from Pouch II. One scale on the hafted biface from Pouch I is 3.0 mm. long; it adheres to the blade and to one side of the distal end of the haft. A smaller scale adheres to the haft. The 12 scales on the hafted biface from Pouch II are from 1.0 to 3.7 mm. long; one adheres to the base of the blade, three to the binding, and eight to the haft (at distances

of 100 to 160 mm. from the tip of the blade).

These scales (see Pl. 1a) are cycloid, with circuli but without radii or lateral fields. Within the fauna of the Lahontan Basin, these characters identify the 14 scales as those of a species of trout, presumably the Lahontan cutthroat trout (the only other trout of this region, Salmo smaragdus Snyder, is currently regarded as a derivative of an introduced rainbow trout). The largest scale, 3.7 mm. in diameter, may represent a trout more than 30 inches (76 cm.) in total length.

Tui chub

The minnow scales agree with those of the tui chub, Gila (Siphateles) bicolor (Girard); see Follett (1967:Pl. 5). (The basis for regarding Siphateles as a subgenus of Gila has been discussed by Hubbs, Miller, and Hubbs 1974.)

The material of this species consists of two pieces of skin, representing two fish more than 8 inches long. Each piece bears a number of rows of scales. Some of the scales are complete or nearly so; they are cycloid, with circuli, and with prominent radii in the posterior field but none in the anterior field (see Pl. 1b). Within the fauna of the Lahontan Basin, these characters identify the scales as those of a minnow.

Mummies of the tui chub from an archaeological site near Pyramid Lake, Nevada, provided the basis for determining the size of the individuals represented by the two pieces of skin. In the first piece (Pl. 1c), the length of a series of 10 scales in the first row above the lateral line is 22 mm., which equals the length of a similar series in a mummy 7 1/2 inches (19 cm.) long. This fish, when alive, would have measured more than 8 inches (20 cm.) in total length. The other piece of skin (including the proximal part of both pelvic fins and some 15 rows of scales) is comparable in size to the corresponding part of a mummy 8 1/2 inches (21.5 cm.) long, which, in life, would have been more than 9 inches (23 cm.) in total length. The only Lahontan minnow that reaches a total length of 8 inches or more is the tui chub.

Twelve vertebrae, their centra 1.2 to 4.2 mm. in length, may represent young individuals of the tui chub, but are too incomplete for positive identification.

Tahoe sucker

The facial bone, a right maxillary (Pl. 2a), agrees with that of the Tahoe sucker, Catostomus (Catostomus) tahoensis Gill and Jordan (see Snyder 1917:fig. 1, as Catostomus arenarius).

This maxillary, 9.0 mm. long, appears too large to represent the mountain sucker, Catostomus (Pantosteus) platyrhynchus (Cope). It is distinguishable from a maxillary of the kuyui, Chasmistes cujus (Cope), by the more prominent descending process of its articular head, by its less striate posterior ramus, and by a decurved lamina descending from the upper mesial part of its posterior ramus. This bone represents a sucker about 7 1/4 inches (184 mm.) in total length.

Kuyui

The sucker scales agree with those of the kuyui, Chasmistes cujus Cope (see Snyder 1917, fig. 2).

The material of this species consists of a piece of skin (Pl. 2b) bearing 24 scales (the largest 9.3 mm. long) in seven longitudinal rows, including a part (5 scales) of the lateral-line row. These scales are cycloid, with circuli, and with radii in both the anterior and posterior fields (see Pl. 2c). Within the fauna of the Lahontan Basin, these characters identify the scales as those of a sucker. They are far larger than those of a mountain sucker. They are interpreted as representing a kuyui, rather than a large Tahoe sucker, because of their more elongate form, more posterior focus, longer and less numerous anterior radii, and longer and more sharply defined lateral fields. The scales represent a kuyui about 22 inches (56 cm.) in total length.

Discussion

This small collection of fish remains includes material of each of the four species known to have been utilized by aboriginal inhabitants of Falcon Hill, near the northern end of Winnemucca Lake (see Follett 1963:33).

Other archaeological sites within the Lahontan Basin from which remains of the Lahontan cutthroat trout, tui chub, Tahoe sucker, and kuyui have been recorded were noted by Follett (1967).

The few fish remains from NV-Wa-197 further corroborate the evidence from other sites that these four fishes were utilized as food by aboriginal peoples in the vicinity of Pyramid and Winnemucca lakes.

Acknowledgments

I thank Dr. Robert F. Heizer (University of California, Berkeley) and Dr. Thomas R. Hester (University of Texas, San Antonio) for the opportunity to report on these fish remains and for information and advice, Dr. A. B. Elsasser (University of California, Berkeley) for information, Mrs. Lillian J. Dempster (California Academy of Sciences) for assistance with the manuscript, Mr. Gene H. Favell (Favell Museum of Western Art and Artifacts, Klamath Falls, Oregon)

for the opportunity to study the trout scales, and Mr. Maurice C. Giles (California Academy of Sciences) for prints of the photographs.

BIBLIOGRAPHY

Casteel, R. W.
1972 A Key, Based on Scales, to the Families of Native California Freshwater Fishes. Proceedings, California Academy of Sciences, Ser. 4, Vol. 39:75-86.

Follett, W. I.
1963 Preliminary Report on Fish Remains from the Falcon Hill Sites, Washoe County, Nevada. Nevada State Museum, Anthropological Papers, No. 9:33-34.

1967 Fish Remains from Coprolites and Midden Deposits at Lovelock Cave, Churchill County, Nevada. University of California Archaeological Survey, Report No. 70:93-116.

Hester, T. R.
1974 Archaeological Materials from Site NV-Wa-197, Western Nevada: Atlatl and Animal Skin Pouches. (This volume.)

Holder, C. F.
1912 The Fishes of the Pacific Coast. New York: Dodge Publishing Co.

Hubbs, C. L., R. R. Miller, and L. C. Hubbs
1974 Hydrographic History and Relict Fishes of the North-Central Great Basin. Memoirs, California Academy of Sciences, Vol. 7.

Snyder, J. O.
1917 The Fishes of the Lahontan System of Nevada and Northeastern California. Bulletin, U. S. Bureau of Fisheries, 1915-1916, Vol. 35:31-86.

Explanation of Plates

Plate 1a — Scale, length 2.4 mm., representing a Lahontan cutthroat trout, Salmo clarkii henshawi; from hafted biface found in Pouch II, recovered from a depth of approximately 10 feet below the surface.

Plate 1b — Scale, length 4.3 mm., representing a tui chub, Gila (Siphateles) bicolor; from piece of skin shown in Plate 1c.

Plate 1c — Piece of skin, 30 x 61 mm., representing a tui chub, Gila (Siphateles) bicolor, more than 8 inches (20 cm.) long; recovered from an unknown depth.

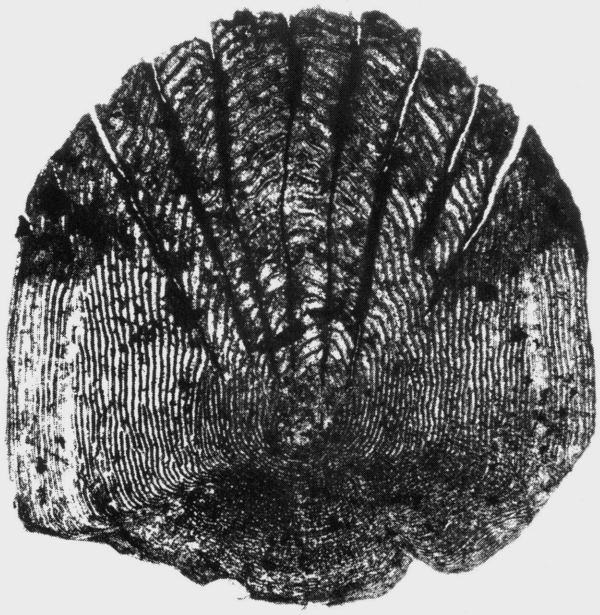
Plate 2a — Maxillary (right), length 9.0 mm., representing a Tahoe sucker, Catostomus (Catostomus) tahoensis, about 7 1/4 inches (184 mm.) in total length; recovered from an unknown depth.

Plate 2b — Piece of skin, 28 x 24 mm., representing a kuyui, Chasmistes cujus, about 22 inches (56 cm.) in total length; recovered from an unknown depth.

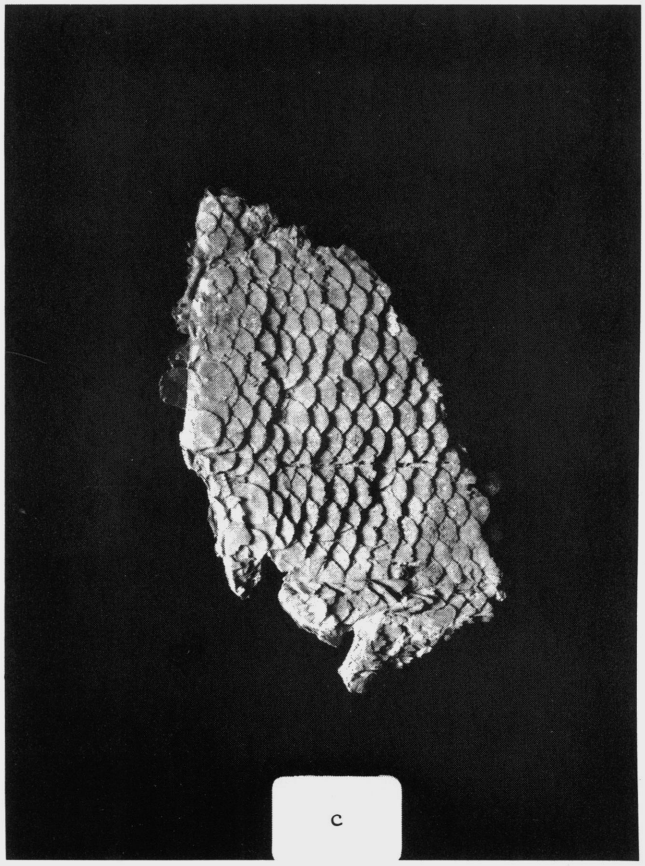
Plate 2c — Scale, length 8.8 mm., representing a kuyui, Chasmistes cujus; the lowermost scale from piece of skin shown in Plate 2b.

Plate 1

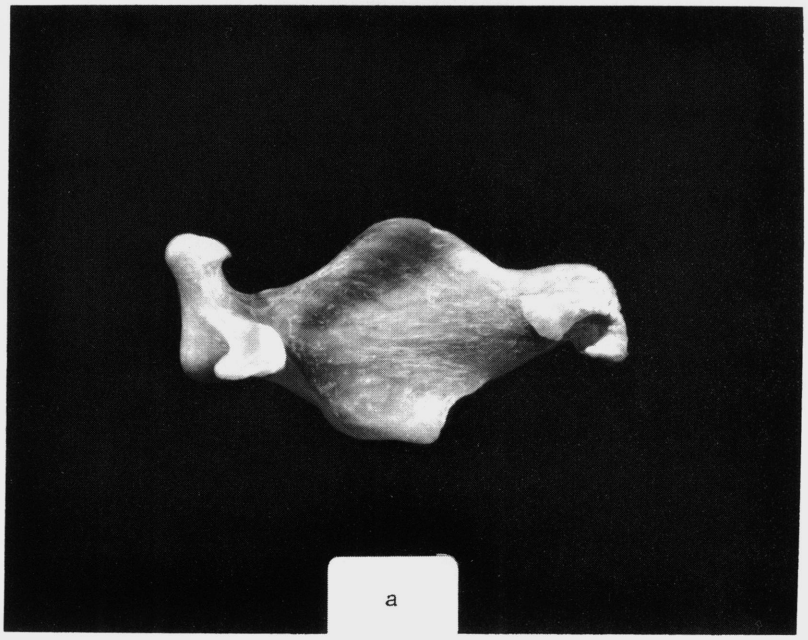
a



b

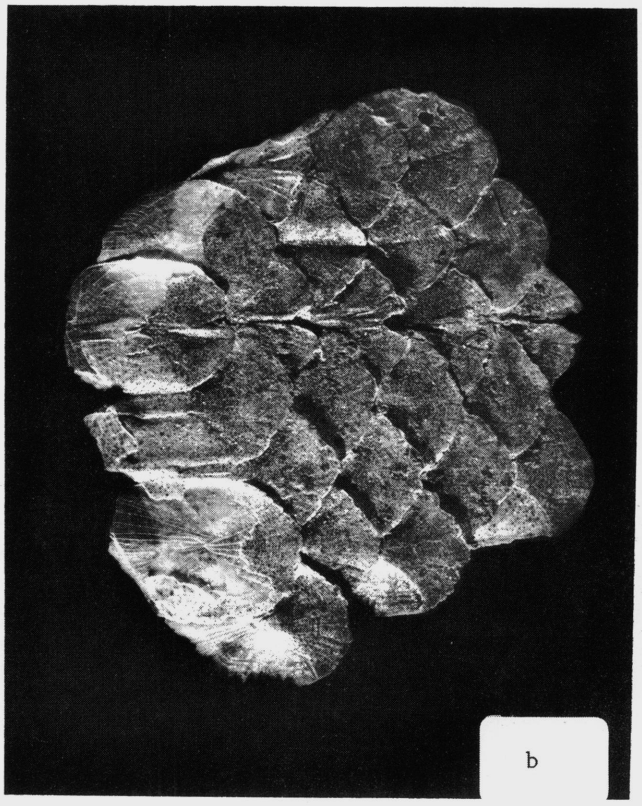


c

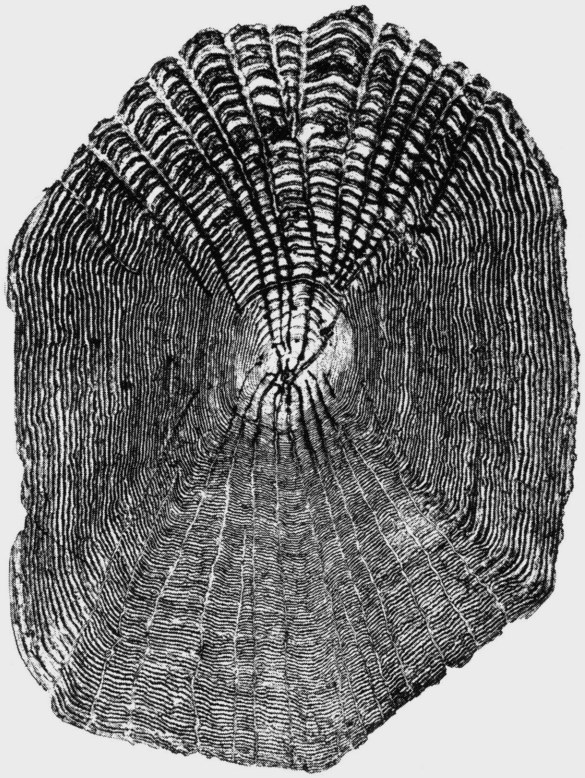


a

Plate 2



b



c

II. A NORTHERN PAIUTE ACCOUNT OF AN EARLY GREAT BASIN EXPLORING EXPEDITION

William Wihr

In January, 1974, while searching for documentary materials pertaining to the Pyramid Lake Paiute I came upon a previously unpublished account listed as Ethnological Document number 37:3 of the Department and Museum of Anthropology. These materials are part of the University Archives and are stored in the Bancroft Library of the University of California at Berkeley. This account as well as two word lists was recorded at Burns, Oregon by Dr. W. L. Marsden in 1913 (see Marsden 1923, and Heizer, Hester and Nichols 1972 for more information on Dr. Marsden).

Numana or Captain Dave is believed to have been born near Unionville, Nevada, south of Mill City and not far from the Humboldt River, on April 14, 1828. His father was Yapahtaka, a son of Truckee, of Truckee River fame. His mother was a Shoshone. In 1871 he was given the chieftainship of the Kuyuidokado Paiute Band at Pyramid Lake by the aging Numaga, also known as Young Winnemucca. In 1879 he was chosen in council to succeed his uncle Old Winnemucca, or Poito, as chief of all the Northern Paiute. He was the last individual to hold this position. In 1888 he journeyed to Washington, D. C.,and was commissioned to head the Pyramid Lake Indian Police, a position he held until his death in 1919.

Numana's personal character seems to vary with the race of his biographer. While on a visit to San Francisco he was described by newspaper reporters as ".....one of the leading men of the Piute Nation.....a very intelligent Indian" (Hopkins 1888:96). Janet Woodruff, a Bureau of Indian Affairs field matron at Wadsworth, Nevada from 1908 through 1915, had this to say of Captain Dave:

> Not all the Piutes held Captain Dave in the highest esteem. To the whites, he was a clever Indian, a loyal friend who was called to the white man's councils to plan for the subjugation of the resisting Piutes. To some older Indians he was known as Numana, the betrayer an object of execration to the children of those who had been sold for gold and power; to the younger generation, he was just Numana, an old Piute spending his last days somewhere in the region of Nixon (Woodruff 1939:162).

Also from Woodruff's account, an Indian known only as Joe was quoted as saying "Uh-huh! Long time gone. Somebody say Numana is snake in sagebrush. No good" (ibid.).

Sara Winnemucca in her Life Among the Paiutes (1883) had an even more derogatory opinion of Numana's character. In describing how an Indian Agent had extorted her people she had this to add:

> There are unprincipled men in all tribes, as I suppose there are among all people, and the agent found one for his work. He is known as "Captain Dave".....Twenty years ago I knew him to blow a young girl's brains out because she refused to marry him, and his behavior ever since has been in keeping with that. It is no secret among my people that he exposed his wife to bad white men for money. He is not a "leading man". No man can be a leading man among Indians, unless he is honorable and brave. Dave is neither. On the contrary, he has no character whatsoever, and could always be hired to do a wicked thing. He is my own cousin (Hopkins 1883:96, 98).

Numana claimed that Frémont, who was the first white man to visit Pyramid Lake, giving it that name on January 10, 1844, was not the first white person that he had seen. If so he may have seen the Bonneville-Walker expedition as they traveled through the Sink of the Humboldt River in September of 1833. or the Bartleson-Bidwell party in October of 1841. As there is no record of any other whites in the area during this period I believe the following account to perhaps be a composite of these events:

Numana's Account

Long time ago we lived at Winmogga (1). We moved this way and camped in eight camps. For there we hunt rabbits. Somebody yell and said "Hide, the whitemen are coming." Then everybody hides in a deep canyon alongside a river.

The whiteman came and camped two miles below us. They had back (pack?) --horse (2). Then my father told all the people not to build any fire and the next ask no fire until late in the afternoon. "I tell you this because if you make fire the white man might see the smoke and they might come and kill all of us (3). But tomorrow late in the afternoon you get dry wood and make fire because at that time the white man cannot see the smoke in the east." So we made no fire and had nothing to eat until next day at noon.

I was small at that time so slept good (4), but perhaps some older people had no sleep that night. Early in the morning my father went out but nobody saw him go away. At daylight we saw him coming back and he carried something under his arm. When he came home somebody asked, "Where you been and what is that you carry."

My father said, "I went out to see those white men and when I come near the camp one man come towards me but I keep going to him. When he was yet far off he held out his hand. I also held out my hand. He took my hand and

pull it up and down and in Indian language he said to me, 'I come (from) the plains which is far, far away, and saw many people on my way but nobody ever come to me like you. You are my friend. That is the reason I shake your hand. I have been a long time coming and wherever I camp I put up a post and this I write; In this part of the country the Indians are my friends because they have made no trouble for me (5). I am going far out west to look over a country which lays along a big water. Now, because you are a good friend I'll give you a bay horse which I left not far behind. He is poor and is tired, but here there is good feed for him and he will soon be fat (6). I'll also give you this.' He give me his food and I eat and it is good."

Then my father opened his roll. What we saw then we did not know, but now I know that it was a white shirt, a (pair of) pants, some biscuits, some bacon, a knife, a piece of steel for making fire, a long piece of wire which was to be made into awls and (which was) this wise broken into little pieces and was given to my fathers friends. But my father kept the knife.

That was the first time we ever tasted bread and bacon because everybody took a bite and everybody said it was good food.

Next my father send my oldest brother to find the horse. Not long afterwards the horse got fat and we had a nice time with him. My brother liked the horse very much. But one day when all of the men went out hunting, I, being small, was left with my mother, and there came a Paiute man from somewhere in the west. He had a long rope and he took the horse and led him away and my brother cried. When my father came back from the hunt he did not go after the strange man who took our horse because he thought the horse may be killed long ago (7).

Notes

(1) This refers to Winnemucca Lake, to the east of Pyramid Lake. This Lake in times past received overflow waters from Pyramid Lake and the Truckee River.

(2) The Bartleson-Bidwell group had been reduced from a wagon train to a pack train weeks before reaching the Sink of the Humboldt. By that time most of the thirty-two members were on foot to save their few remaining animals (Bidwell 1937:19-23). Both the Frémont and Walker parties without a doubt included pack horses.

(3) This fear was probably well founded as the Bonneville-Walker trapping expedition, fearing attack, shot and killed thirty-nine Indians (this number varies as high as seventy-five in some accounts) at the Sink of the Humboldt River in September of 1833 (Ewers 1959:71; see also Ellison 1937:33 for a similar account of this massacre). Numana's band had at least heard of, if not been victims of this act.

The ban on fires was also quite sensible as whites, coming from the plains, often mistook smoke for war signals.

(4) Numana would have been five years old in 1833 at the time of Walker's visit, twelve in 1841 with Bartleson and Bidwell, and fifteen in 1844 during Frémont's visit.

(5) There is no record of Frémont, Walker, Bartleson and Bidwell or any other persons observing this practice. It would be ridiculous as no Nevada Indians could read at this time. Numana says that the whiteman spoke to him "in Indian language". Presumably this would have been in either Paiute or Shoshone, but again it is unlikely that any whites at this date knew either of these tongues.

(6) Frémont in his Narratives (Frémont and Nevins 1956:335) notes on January second, 1844, leaving an exhausted horse along the trail, eight days prior to his arrival at Pyramid Lake. If this account is indeed that of the Kuyuidokado encounter with Frémont, this might be reference to that horse. As Frémont's progress had been considerably slowed by snow and a dense fog, the horse would not be very far behind.

Leonard (of the Bonneville-Walker party) makes no reference to any event of this nature. His party, short of food by this time, would probably have butchered an exhausted horse for meat (Ewers, op. cit.:74). The same is without doubt true for Bidwell also.

(7) Early use of the horse among the Northern Paiute and other Great Basin tribes was usually for food rather than transportation. Perhaps this is what Numana's father had conjectured, and why he saw no point in trying to recover the stolen bay.

BIBLIOGRAPHY

Bidwell, John
1937 A Journey to California. John Henry Nash, Printer. San Francisco.

Ellison, William H., ed.
1937 The Life and Adventures of George Nidever. University of California Press. Berkeley.

Ewers, John C., ed.
1959 Adventures of Zenas Leonard, Fur Trader. University of Oklahoma Press. Norman.

Frémont, John C., and Allan Nevins (ed.)
1956 Narratives of Exploration and Adventure. Longmans, Green and Co. New York.

Heizer, Robert F., T. R. Hester and M. P. Nichols (eds.)
1972 Notes on Northern Paiute Ethnography: Kroeber and Marsden Records. Archaeological Research Facility, Department of Anthropology, University of California, Berkeley.

Hopkins, Sara Winnemucca
1883 Life Among the Piutes: Their Wrongs and Claims. Cupples, Upham and Co. Boston.

Marsden, W. L.
1923 The Northern Paiute Language of Oregon. University of California. Publications in American Archaeology and Ethnology, Vo. 20:175-191. Berkeley.

Woodruffe, Janette
1939 Indian Oasis. The Caxton Printers Ltd. Caldwell, Idaho.

III. PINYON NUT GATHERING EQUIPMENT

FROM THE VICINITY OF GARDNERVILLE, DOUGLAS COUNTY, NEVADA

Colin I. Busby

The materials described in this report were collected in the near vicinity of Gardnerville, Douglas County, Nevada during the late 1930's and early 1950's by R. F. Heizer. The basketry consists of three conical, twined, openwork burden baskets that were found cached in the branches of a pinyon pine (Pinus monophylla), 10 miles southeast of Gardnerville. The gathering hooks, of which three of a total of four are described here, along with several nondescript seed beaters, were collected in 1950 by members of a University of California Field Party in the Pine Nut Mountains east of Gardnerville. All the artifacts are believed to be of recent manufacture and their chief value lies in the fact that they are assignable to the ethnographic Washo Indians residing in the area (see Stewart 1966:196-203 for a discussion of the Washo territorial area).

Since these are the only three burden baskets in the ethnographic collections of the Robert H. Lowie Museum of Anthropology, University of California, Berkeley, known to have come from Washo territory, it was not possible to make an exhaustive comparison of attributes with other known Washo burden baskets of comparable function. However, a comparison was made with two other burden baskets from the S. A. Barrett collection in the Lowie Museum attributed to the Washo, although they were not collected in the Washo territory. A conical burden basket (LMA 1-10477) and an openwork burden basket (LMA 1-10493) were used for the comparison. Both are described as Washo by Barrett in the main museum catalogue. Except for the up to the right weft helix slant present on 1-10483, a pattern found in all Washo basketry where split and peeled shoots are used, the burden baskets are comparable in every way. Thus, on the basis of this limited comparative sample, their provenience in Washo territory and their dissimilarity to known ethnographic Paiute basketry, these three burden baskets can be assigned to the Washo.

The inferred uses of both the basketry and gathering hooks as part of the material culture of pinyon nut gathering, is based on both the use evidence present, especially in regards to the basketry, and on their direct association with the pinyon nut stands in the Pine Nut Mountains as well as on the ethnographic/descriptive reports on pine-nut gathering that exist in the literature (see Coville:1892, Dutcher:1893, and Wheat:1967:29-39 among others for descriptions of the pine nut harvest).

DESCRIPTIONS

LMA 1-39558 - Openwork, twined pinyon basket.

Native Name and Classification - mama´i - Burden basket - coarsely woven, plain twine technique (Barrett:1917:20).

Size - 63.5 cm high; 55.9 cm diameter at rim.

Work Habit Features - Woven from point of base upward and rightward working on the exterior face. It is not possible to tell whether or not the strands were pulled to the front or back with each turn of the twining.

Warp Material - Whole, peeled shoots. (Salix sp.). Average of 4mm thickness.

Start - Simple layered crossing of 6 warp elements probably crossing 6 more elements and twined (over two) together. Much of the start destroyed by use.

Warp Arrangement - Conical from the start.

Warp Insertions - Butts sharpened with metal knife and wedged into weft rows so that they do not project on either face. Butt ends project 10-15mm below top row of twining turn.

Degree of Warp Slant - 6^{o} to the left of vertical (slightly more pronounced in upper portion of basket).

Warp Selvage - Warp ends trimmed flush with last row of twining; probably trimmed and reworked when 'new' rim added. Onto this a semi-peeled shoot hoop, 9.0 mm thick, (Salix sp.) is lashed (up to the right slant).

Weft Material - Whole, peeled roots. (Salix sp.). Average of 2.5 mm thick.

Main Contruction Weave - Plain twining over single warp elements.

Auxiliary Weave - Plain twining over two warp elements for 12.7 cm up from base of half-split non-peeled shoots (Salix sp.).

Slant of Turns in Weft Helix - Main = Down to the right.
Auxiliary = Up to the right.

Spacing of Weft Rows - Openwork. Space between rows varies from 45-50 mm.

Splices - Moving and fag ends both trimmed on work face. Two types of splices present. In the more common one, the fag end is caught under a turn of the twining on the work face with the end projecting down; moving ends continue

doubled up with the new strand until used up. In a few cases, the moving end is trimmed on the work face after being caught under the second turn of twining after the fag end appears.

Weft Turn Count - 14.0 - 16.0 weft turns per 10.0 cm.
3.0 weft courses per 10.0 cm.

Decoration - None.

Superstructural Supports - 1. Hoop of partially peeled shoot (Salix sp.) lashed on to rim.
2. Interior hoop, 7.0 mm thick, of partially peeled shoot (Salix sp.) lashed on to interior, 23.5 cm. down from rim, with half-split, unpeeled shoots (Salix sp.) (up to the right slant).
3. Cloth strip for carrying basket tied to hoop rim support at two points 56.0 cm apart.
4. Leather thong (on outside) tied to interior rim.
5. Base - covered with a piece of leather (boot remnant) and lashed onto basket with a leather thong.

Use Evidence - Small globules of pitch of Pinus monophylla (?) on interior of basket. Basket heavily used - mended in many places due to breaking of warp and weft elements. Mending consists of simple lashing of broken elements together with either whole or half split unpeeled shoots (Salix sp.). Rim is pulled loose in some places and is semi-detached. From a comparison with the other burden baskets studied and with other specimens present in the Lowie Museum collections, it appears that the original selvage of this piece has been trimmed and a new hoop rim lashed on. Dawson (personal communication) indicates that it was customary for a new rim to be fitted if the previous one had been broken through hard usage, and in this particular specimen, this appears to have been the case.

LMA 1-39559 - Openwork, twined pinyon basket.

Native Name and Classification - mama´i - Burden basket - coarsely woven, plain twined technique (Barrett:1917:20).

Size - 71.0 cm high; 62.9 cm diameter at rim.

Work Habit Features - Woven from point of base upward and rightward working on the exterior face. It is not possible to tell whether or not the strands were pulled to the front or back with each turn of the twining.

Warp Material - Whole, peeled shoots. (Salix sp.). Average of 5.0 mm thick.

Start - Simple layered crossing of 6 warp (?) elements crossing 6 more (?) and twined (over two) together. Much of the start destroyed by use.

Warp Arrangement - Conical from the start.

Warp Insertions - Butts sharpened with a metal knife and wedged into weft rows so that they do not project on e ither face. Butt ends project 13-16 mm below top of twining turn.

Degree of Warp Slant - 8^{o} to the left of vertical (slightly more pronounced in upper portion of basket).

Warp Selvage - The warp ends are bunched together either into groups of two or three, with three being the more common arrangement. Usually one of the elements in each grouping is trimmed flush, 4.7-5.2 cms above the last row of twining and the element or elements remaining is then bent down to the right and plain twined a few turns with an up to the right slant around the group of elements ahead and to the right. Those warps that serve as wefts in the selvage end up trimmed on the exterior side of the basket, tips pointing downward. This process is repeated util all the warps have been so treated. (Process is similar to that illustrated in Barrett:1917:19). Onto this, a peeled shoot hoop (Salix sp.), 11.0 mm thick is lashed (up to the right slant).

Weft Material - Whole, peeled roots. (Salix sp.). Average of 3.0 mm thick.

Main Construction Weave - Plain twining over single warp elements.

Auxiliary Weave - Plain twining over two warp elements for 2.5 cm up from base of half split, non-peeled shoots (Salix sp.).

Slant of Turns in Weft Helix - Main = Down to the right.
Auxiliary = Up to the right.

Spacing of Weft Rows - Openwork. Space between rows varies from 44-47 mm.

Splices - Moving and fag ends trimmed on work face. Two types of splices present. In the more common one, the fag end is caught under a turn of the twining on the work face with the end projecting down; moving ends continue doubled up with the new strand until used up. In a few cases, the moving end is trimmed on the work face after being caught under the second turn of twining after the fag end appears.

Weft Turn Count - 14.0 - 16.0 weft turns per 10.0 cm.
3.0 weft courses per 10.0 cm.

Decoration - None.

Superstructural Supports - 1. Hoop of peeled shoot (Salix sp.) lashed on to rim.
2. Interior hoop, 11.0 mm thick, of peeled shoot (Salix sp.), lashed on to interior, 23.5 cm down from rim, with half split unpeeled shoots (Salix sp.) (up to the right slant).
3. Two leather thongs (on outside) tied to interior rim and placed 34.0 cm apart. Joining these is a piece of canvas webbing approximately 72.0 cm long.
4. Base - covered with a piece of leather and lashed to the basket with a leather thong.

Use Evidence - Small globules of pitch of Pinus monophylla (?) on interior of basket. Basket heavily used - mended in many places due to the breaking of warp and weft elements. Mending consists of simple lashing of broken elements together with either whole or half split unpeeled shoots (Salix sp.) (up to the right slant). Rim is broken and loose in several places and is semi-detached from the basket.

LMA 1-39560 - Openwork, twined pinyon basket.

Native Name and Classification - mama´i - Burden basket - coarsely woven, plain twined technique (Barrett:1917:20).

Size - 86.4 cm high; 76.8 - 65.4 cms diameter at rim (varies due to use).

Work Habit Features - Woven from point of base upward and rightward. It is not possible to tell whether or not the strands were pulled to the front or back with each turn of the twining.

Warp Material - Whole, peeled shoots. (Salix sp.). Average of 4.0 mm thick.

Start - Simple layered crossing of 7 warp elements crossing 7 more and twined (over two) together.

Warp Arrangement - Conical from the start.

Warp Insertions - Butts sharpened with a metal knife and wedged into weft rows so that they do not project on either face. Butt ends project 11-16 mm below top of twining turn.

Degree of Warp Slant - 7^{o} to the left of vertical (slightly more pronounced in upper portion of basket).

Warp Selvage - The warp ends are bunched together either into groups of two or three, with three being the more common arrangement. Usually one of the elements in each grouping is trimmed flush, 4.6-5.3 cms above the last row of twining

and the element or elements remaining is then bent down to the right and plain twined a few turns with an up to the right slant around the group or elements ahead and to the right. Those warps that serve as wefts in the selvage end up trimmed on the exterior side of the basket, tips pointing downward. This process is repeated until all the warps have been so treated. (Process is similar to that illustrated in Barrett:1917:19). Onto this, a semi-peeled shoot hoop (Salix sp.), 10.0 mm thick is lashed (up to the right slant).

Weft Material - Whole, peeled roots. (Salix sp.). Average of 2.5 mm thick.

Main Construction Weave - Plain twining over single warp elements.

Auxiliary Weave - Plain twining over two warp elements for 4.0 cm up from base of half split, un-peeled shoots (Salix sp.).

Slant of Turns in Weft Helix - Main = Down to the right.
Auxiliary = Up to the right.

Spacing of Weft Rows - Openwork. Space between rows varies from 43-47 mm.

Splices - Moving and fag ends both trimmed on work face. Two types of splices present. In the more common one, the fag end is caught under a turn of the twining on the work face with the end projecting down; moving ends continue doubled up with the new strand until used up. In a few cases, the moving end is trimmed on the work face after being caught under the second turn of twining after the fag end appears.

Weft Turn Count - 15.0 - 16.0 weft turns per 10.0 cm.
2.5 weft course per 10.0 cm.

Decoration - None.

Superstructural Supports - 1. Hoop of partially peeled shoot (Salix sp.) lashed on to rim.
2. Interior hoop, 12.0 mm thick, of unpeeled shoot (Salix sp.), lashed on to interior, 39.4 cm down from rim, with half split, unpeeled shoots (Salix sp.) (up to the right slant).
3. Base - covered with a piece of leather and lashed to the basket with a leather thong.

Use Evidence - Small globules of pitch of Pinus monophylla (?) on interior of basket. Basket mended in several places due to breaking of warp and weft elements. Mending consists of simple lashing of broken elements together with either whole or half split, unpeeled shoots (Salix sp.) (up to the right slant).

LMA 2-28469 - Pinyon gathering hook.

Length - 152.0 cm.

Maximum Thickness at Butt - 2.8 cm (measurement taken at hooked end).

Maximum Thickness at Tip - 1.4 cm.

Material - Peeled willow (Salix sp.).

Description - A long, slightly tapering, fairly straight willow branch showing only slight weathering with a natural hook, 14.0 cm long at one end making an angle of 35° with the main branch. Both butt and tip ends, as well as the tip of the hook, show evidence of cutting with a metal knife, with no subsequent finishing of the primary cut marks. Much of the branch shows evidence of having been peeled with a metal knife as cut marks and small pieces of bark are present on the branch in many places.

Function - Used to hook the cones of the pinyon pine (Pinus monophylla) from the tree (Dutcher:1893:379).

LMA 2-28470 - Pinyon gathering hook.

Length - 187.0 cm.

Maximum Thickness at Butt - 2.3 cm.

Maximum Thickness at Tip - 2.3 cm.

Material - Peeled willow (Salix sp.).

Description - A long, farily straight pole of peeled willow showing only minimal weathering with a short, worked, tapered piece of willow, 22.0 cm long, lashed at an angle of 30° to one end of the pole with several lengths of baling wire. (Similar to Wheat:1967:30). Shallow notches that extend approximately half way around the two pieces are cut into both the main and auxiliary pieces at two locations to provide support of the baling wire ties. Much of the pole shows evidence of having been peeled with a metal knife, as cut marks and small pieces of bark are present on the pole in many places. All the trimming, shaping and cutting of the two components was done with a metal knife.

Function - Used to hook the cones of the pinyon pine (Pinus monophylla) from the tree (Dutcher:1893:379, Wheat:1967:31).

LMA 2-28472 - Pinyon gathering hook.

Length - 205.0 cm.

Maximum Thickness at Butt - 2.3 cm (measurement taken at hooked end).

Maximum Thickness at Tip - 1.2 cm.

Material - Peeled willow (Salix sp.).

Description - A long tapering, curving, badly weathered willow branch with a natural hook, 10.0 cm long, at one end, making an angle of 35° with the main branch. The butt end near the hood has been smooth and rounded with a metal knife.

Function - Used to hook the cones of the pinyon pine (Pinus monophylla) from the tree (Dutcher:1893:379).

ACKNOWLEDGEMENTS

The author gratefully acknowledges the advice and assistance provided by Mr. L. E. Dawson, of the Lowie Museum of Anthropology. Thanks are also due to Dr. R. F. Heizer, Department of Anthropology for his assistance and in providing information on the specimens.

APPENDIX

Since much of the information of first hand accounts of pinyon nut gathering is not readily available or accessible, it was thought to be worthwhile and of some value, to include several selected excerpts from various sources on this with the intention of rounding out the descriptions of the material culture items presented above. It should be pointed out, that while these accounts do not refer specifically to the Washo, the items and methods of collection appear to be similar among the many groups who gathered the pinyon nut harvest.

The first excerpt is taken from the chapter "Nevada Forests" in the book Steep Trails by John Muir, published in 1918. In this essay, Muir describes the pinyon nut harvest as he witnessed it in 1878 in the Sierra Nevadas.

The second excerpt by Frederick Vernon Coville appeared in a brief report entitled The Panamint Indians of California (American Anthropologist, Vol. V, October, 1892, pp. 352-53) and discusses only briefly the pinyon nut harvest in relation to other gathered food sources.

The final excerpt and the most informative, is taken from the report by B. H. Dutcher on Pinon Gathering Among the Panamint Indians which appeared in the American Anthropologist in 1893 (American Anthropologist, Vol. VI, October 1893, pp. 377-386).

J. MUIR

"Long before the harvest-time, which is in September and October, the Indians examine the trees with keen discernment, and inasmuch as the cones require two years to mature from the first appearance of the little red rosettes of the fertile flowers, the scarcity or abundance of the crop may be predicted more than a year in advance. Squirrels, and worms, and Clarke crows, make haste to begin the harvest. When the crop is ripe the Indians make ready their long beating-poles; baskets, bags, rags, mats, are gotten together. The squaws out among the settlers at service, washing and drudging, assemble at the family huts; the men leave their ranch work; all, old and young, are mounted on ponies, and set off in great glee to the nut lands, forming cavalcades curiously picturesque. Flaming scarfs and calico skirts stream loosely over the knotty ponies, usually two squaws astride of each, with the small baby midgets bandaged in baskets slung on their backs, or balanced upon the saddle-bow, while the nut-baskets and water-jars project from either side, and the long beating-poles, like old-fashioned lances, angle out in every direction.

Arrived at some central point already fixed upon, where water and grass is found, the squaws with baskets, the men with poles, ascend the ridges to the laden trees, followed by the children; beating begins with loud noise and chatter; the burs fly right and left, lodging against stones and sagebrush;

the squaws and children gather them with fine natural gladness; smoke-columns speedily mark the joyful scene of their labors as the roasting-fires are kindled; and, at night, assembled in circles, garrulous as jays, the first grand nut feast begins. Sufficient quantities are thus obtained in a few weeks to last all winter."

F. V. COLVILLE

"As in the case of most civilized communities, the greater portion of their plant food consists of starchy material in the form of seeds. Most important is the Nevada nut pine, Pinus monophylla, which grows abundantly in the mountains at an altitude of six to eight thousand feet. In early autumn, after the seeds have matured, but before the cone scales have opened, the cones are beaten from the trees, gathered in baskets, and spread out on a smooth piece of ground exposed to the heat of the sun. The scales soon become dry and crack apart, and the seeds are shaken out by blows from a stick or the more persistent ones rattled out by hand. The empty cones are then removed from the ground and the seeds gathered in baskets. Large quantities of pine nuts are thus collected, and most of them are cached in dry places among the rocks for use during the year. They are said to remain fresh and edible for several years if properly stored.

To prepare them for food the nuts are put into a basket with some live coals and shaken or stirred until they are gradually roasted. In this state pine nuts are often sold in market in California and other Western States, being disposed of precisely as peanuts are in the East. These roasted seeds, after the removal of their thin shells, may be munched entire or ground in a wooden mortar with a stone pestle and eaten dry or made into a soup."

B. H. DUTCHER

"Shortly after daylight all hands, one after another, rolled slowly out of their scanty blankets and gathered around the feeble flames that the more energetic had succeeded in starting. Crouching down on their haunches, they endeavored to drive the chill fron their bones by presenting first one side to the blaze, then the other, and to remove the sleep from their eyes by vigorous rubbing. Before sunrise a meager breakfast had been eaten, and they began the work of the day, the women betaking themselves to the nutting, the men to further sleep, tobacco, or cards. In fact, with the exception of acting as rather disinterested spectators at times and of eating the pinons on all possible occasions, the men took no part in the industry. My guide at one time during the morning attempted to shoot some of the quail that abounded in the neighborhood, but failed.

Immediately after the meal several of the women equipped themselves with large, conical pack-baskets and beating sticks and sallied forth to gather the

cones from the trees in the vicinity. The baskets were made of light wicker-work, shaped like the frustum of a right cone, about two to two and one-half feet high and nearly as broad. The upper base of the frustum, or the bottom of the basket, was flat, and from three to five inches in diameter. A leather thong was fastened into the side just below the rim, passed aroung the forehead, and similarly inserted into the wicker-work on the other side of the head, thus serving to bind the basket to the carrier. The beating or pulling sticks were straight rods, about an inch in diameter and five or six feet long, stripped of bark and with all the branches removed, save one at the outer extremity, which was cut off about six inches from its union with the main staff. The stick itself terminated immediately beyond this point. To prevent this spur or limb from being split off by the rough usage to which it was subjected a stout thong was wrapped around from one branch to the other about three or four inches from the vertex of the anlge. To give a clearer idea of this instrument, it may be compared to an A, in which the uprights stand for the limbs, one being greatly prolonged, and the cross-bar for the binding thong.

Thus equipped with basket and stick, a squaw would advance to some untouched tree and proceed to beat and pick the cones from the limbs until her receptacle was full, when she would return to camp, empty the load onto the ground, and start off again to refill the basket or remain to open cones, as necessity dictated. Those not engaged thus in keeping up the supply of fresh cones busied themselves in removing the nuts.

The cones of Pinus monophylla are small, perhaps three inches long by two in diameter, with strong, thick scales, under each of which are found two, rarely one, of the small seeds called "pinons" or pine nuts. Being quite tough when fresh and having moreover an abundant supply of sticky pitch, they are rather difficult to open, unless subjected to a drying treatment. To this end a dense pile of brush is prepared, six or eight feet across and two feet high, and caused to burn slowly or rather to smoulder, the density and close packing of the mass preventing any strong or rapid combustion. On top of this heap and through it the fresh cones are mixed and left until the heat has dried the pitch and caused the cone leaves to open out to an angle of perhaps 45^{o} or 50^{o} and expose the nuts beneath. When a sufficient number of the cones had been dried and opened and the mass had cooled the women would seat themselves in a circle around the heap, each with a shallow, shell-shaped basket, a small stick, and two stones, and proceed to work. One of these stones was flat, of the size of a small plate, and was laid on the ground as an anvil; the other, about the size of the fist, was used as a hammer. Having raked out a few of the dried cones with her stick, she would grasp one in her left hand and, holding it with its base on the anvil and its apex upward, would strike it from one to three sharp blows with the hammer; then, dropping the hammer, she would grasp the cone in both hands, hold it over the basket-saucer, and by a slight twisting motion, moving the hands in opposite directions, accompanied by a shaking up and down, dislodge the already loosened nuts from under the opened leaves.

This operation almost invariably resulted in the removal of all the nuts; but to guard against loss each cone was examined immediately after the shaking, and if any remained they were picked out by the fingers. The empty cones were tossed aside into a heap.

So completely do they remove the kernels by these operations that though I carefully searched many of the discarded cones not a single nut did I find in any of them."

REFERENCES CITED

Barrett, Samuel A.
1917 The Washo Indians. Bulletin of the Public Museum of the City of Milwaukee, Vol. 2, No. 1, Milwaukee.

Coville, Frederick V.
1892 The Panamint Indians of California. American Anthropologist, Vol. V, October, 1892, Washington.

Dutcher, R. H.
1893 Pinon Gathering Among the Panamint Indians. American Anthropologist, Vol. 6, October, 1893, Washington.

Muir, John
1918 Steep Trails. William Frederic Bade (ed.), Houghton Mifflin Co., Boston and New York.

Stewart, Omer C.
1966 Tribal Distributions and Boundaries in the Great Basin IN d'Azevedo, Warren L. et. al., (eds.), The Current Status of Anthropological Research in the Great Basin:1964. Desert Research Institute, Technical Report Series S-H, Social Sciences and Humanities Publications No. 1, Reno.

Wheat, Margaret M.
1967 Survival Arts of the Primitive Paiutes. University of Nevada Press, Reno.

Plate 1a - View of LMA 1-39560
Typical of the burden baskets described.

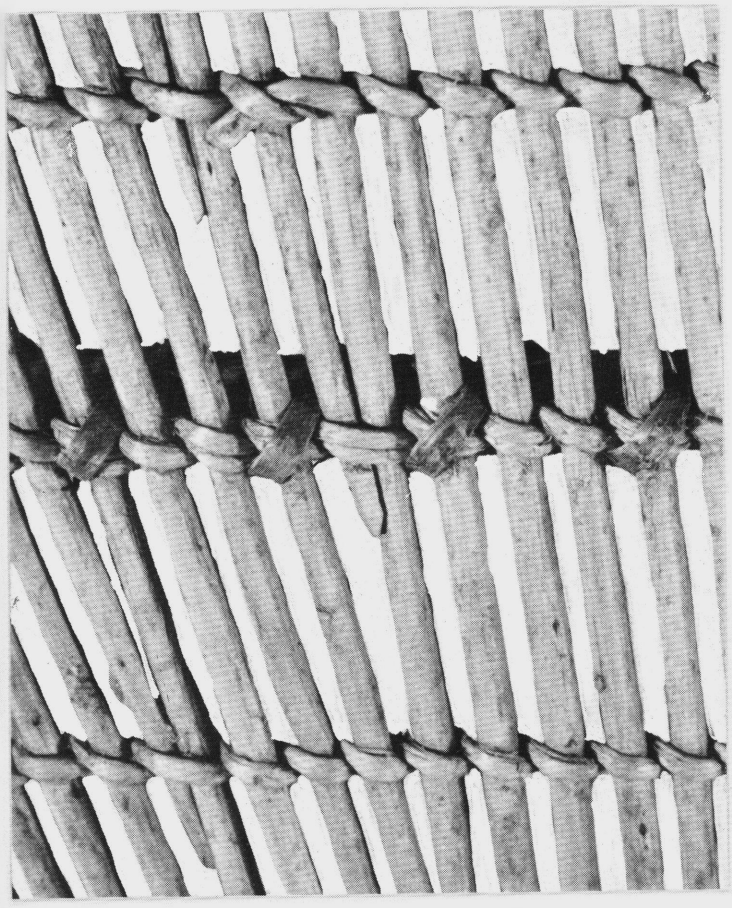


Plate 1b - Close-up view of portion of LMA 1-39560, showing weft helix slant of main construction weave and lashing of inner support hoop plus warp insertions.

IV. DECORATED STONE DISCS FROM THE LOWER HUMBOLDT VALLEY, NEVADA

Robert F. Heizer

A fairly common kind of prehistoric artifact found in occupation caves and open village sites in the vicinity of Humboldt Sink, Churchill County, Nevada, is a thin, circular stone object, usually with a central drilled perforation and biconcave in cross section. Fifty examples of these have been recorded by me, most of them being undecorated. Decorated examples, numbering 13, are described here. Of these 11 come from the large open village site (NV-Ch-15) on the margin of the former lake or sink near the point where the Humboldt River emptied into the lake. Two examples were recovered from nearby Lovelock Cave, a closed site probably temporarily utilized in times of cold weather or as a defensive retreat by the people occupying NV-Ch-15.

We must first admit that we do not know what function or purpose or use these pieces served. Nothing known as regards their occurrence or association seems to offer us any direct lead to inferences about what part they played in the life of their makers. Failure to offer an "explanation" of these pieces does not, however, deter us from making their existence known in the hope that workers in future may be able to offer us enlightenment on their function. None have, to my knowledge, been found attached to wooden shafts in the manner of those found in Bowers Cave in southern California (Elsasser and Heizer 1963: Pl. 5c), and I know of no evidence so far reported in Great Basin ethnographies of their use as whorls for a spindle used to spin the fibers of "a tule-like plant growing among the tules" such as reported by Kroeber (1929:262-263) for the Valley Nisenan.

It is probable that the nicely finished and decorated examples had a different purpose from the generally more crudely made and more abundant undecorated examples from the same sites. No doubt it will be possible for persons inclined to see "notations" in such objects as evidence of their having served as calendrical records or mnemonic devices, but I do not have much faith in such numerological interpretations.

Here are the basic facts about the 13 pieces illustrated in Figures 1-3.

Fig. 1a, a', a". Lowie Museum of Anthropology (hereafter LMA) 1-65855. From surface of site NV-Ch-15. Fine-grained white limestone. Edge of disc is not notched; decoration is in form of inscribed triangles.

Fig. 1b, b', b". Formerly in possession of J. T. Reid, Lovelock, Nevada. From surface of site NV-Ch-15. White limestone.

Fig. 1c. Reid Collection. Site NV-Ch-15. Black slate. One surface decorated.

Fig. 1d. Formerly in collection of T. Derby, Lovelock, Nevada. Site NV-Ch-15. Fine-grained mica-schist. One surface decorated; thickness at center, .8 cm.

Fig. 2a, a', a''. LMA 2-39399. Recovered in 1969 during screening of the 1911 guano miner's dump outside Lovelock Cave (site NV-Ch-18). Decoration consists of different sized concave dull pits on each surface and paired tick-lines on one surface. A few of the pits appear to have been started with a hollow drill, then deepened with a slightly smaller diameter solid drill with a sharp tip.

Fig. 2b, b', b''. LMA 1-19192. Collected by L. Loud from site NV-Ch-18 in 1912. Broken in half. Material: dense, fine-grained brown tuff (?).

Fig. 2c, c'. J. Reid Collection. Site NV-Ch-15. Gypsum (?).

Fig. 3a, a'. LMA 1-65854. White limestone. Site NV-Ch-15. One surface is much weathered, and all that can be positively seen on it are the same edge tick marks and an identical pair of engraved dot-and-circle and X designs. Originally on the weathered surface there were also tick marks around the perimeter of the straight-walled central perforation. It thus appears that both surfaces were decorated in the same way.

Fig. 3b, b'. LMA 1-65856. Site NV-Ch-15. White marble. Only one side decorated.

Fig. 3c, c'. LMA 1-65858. Site NV-Ch-15. Fine-grained gray sandstone.

Fig. 3d, d'. LMA 1-46113. Site NV-Ch-15. Black slate. One surface decorated.

Fig. 3e, e'. LMA 1-65857. Site NV-Ch-15. White limestone. One surface badly eroded and no decoration visible.

Fig. 3f. LMA 1-8589. Site NV-Ch-15. White limestone.

Fig. 3g. Reid Collection. Site NV-Ch-15. White marble.

The occurrence of the dot-and-circle motif in the Humboldt Sink extends its distribution further south than the limit indicated by Smith and Spier (1927). Some of the discs have central perforations which are straight-sided (Fig. 1a''; 2a'', b''; 3a') and these holes were presumably drilled with a hollow shaft drill, perhaps of bone or cane, charged with sand. The other discs were biconically drilled.

BIBLIOGRAPHY

Elsasser, A. B. and R. F. Heizer
1963 Archaeology of Bowers Cave, Los Angeles County, California. University of California Archaeological Survey, Report No. 59: 1-60. Berkeley.

Kroeber, A. L.
1929 The Valley Nisenan. University of California Publications in American Archaeology and Ethnology 24 (4).

Smith, D. A. and L. Spier
1927 The Dot and Circle Design in Northwestern America. Journal de la Societé des Americanistes de Paris 19:47-55.

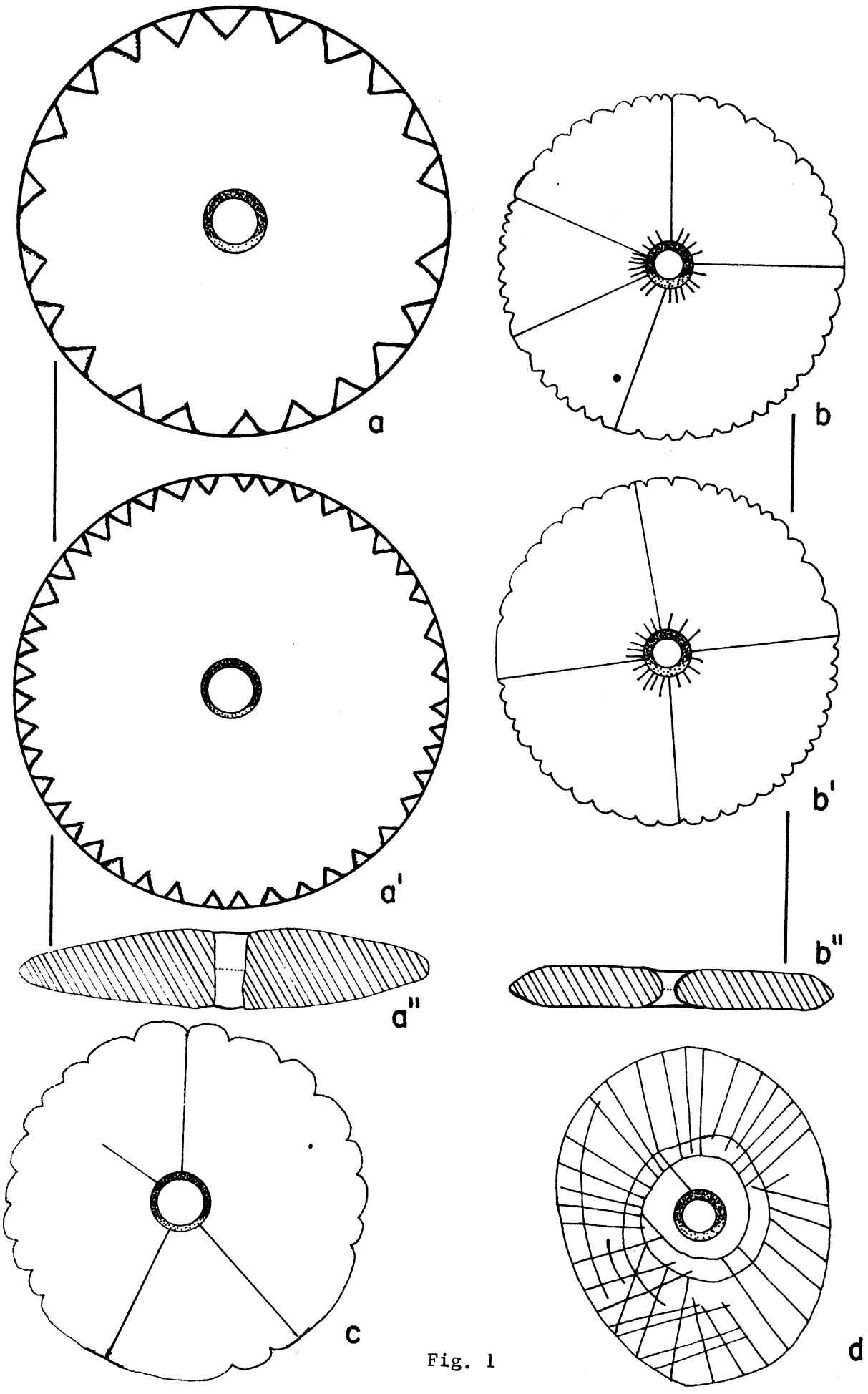


Fig. 1

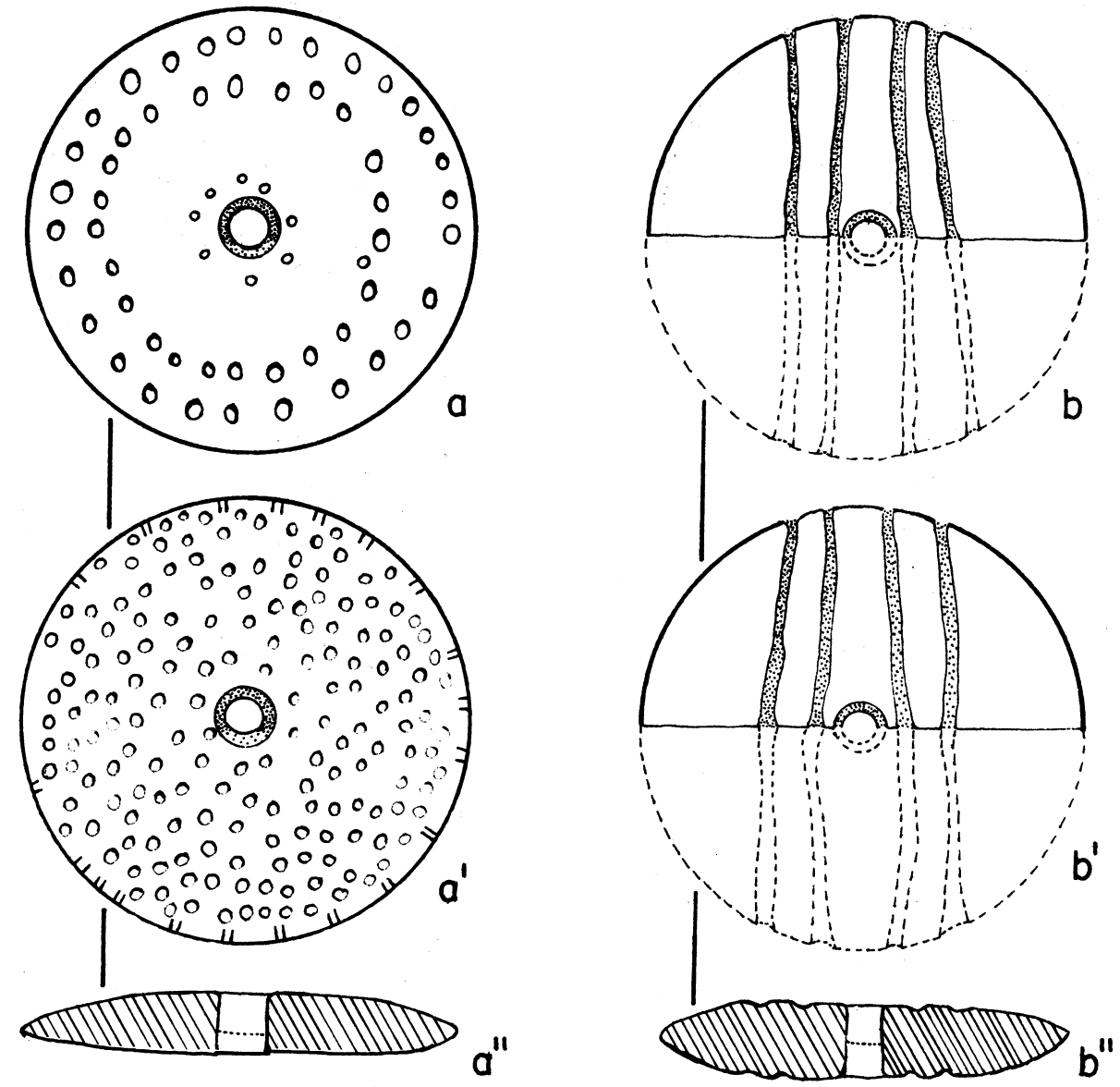


Fig. 2

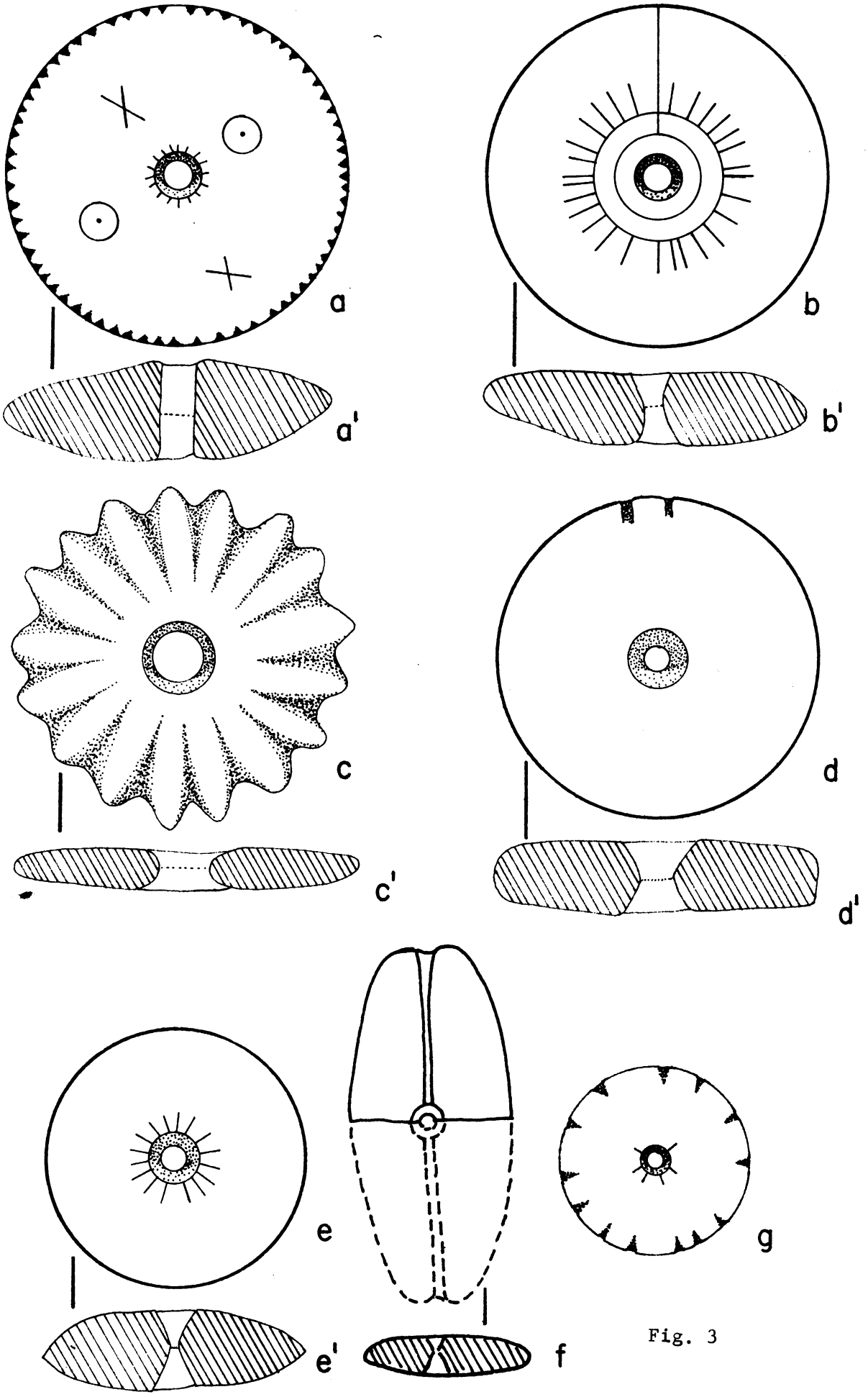


Fig. 3