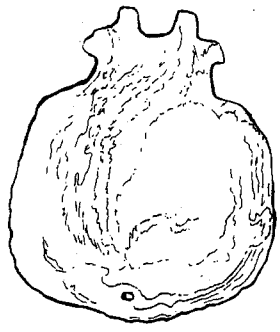
Archeology of the Oroville Dam Spillway

By Donald P. Jewell

A House Floor in Napa County, California

By Eugene Robinson

ARCHEOLOGICAL



Interpretive Services Section

DIVISION OF BEACHES AND PARKS

FEBRUARY 1964

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PART 1 Archeology of the Oroville Dam Spillway

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ARCHEOLOGICAL REPORT 10

Interpretive Services Section

STATE DIVISION OF BEACHES AND PARKS

SACRAMENTO, CALIFORNIA
FEBRUARY 1964

PREFACE

The archeological work done at the site of the Oroville Dam Spillway as recorded in Part I of this present report was made possible by Interagency Agreement No. 350919. This agreement is between the Department of Water Resources and the Division of Beaches and Parks whereby the latter agency attends to the archeological needs of the former.

The project was done under contract from the Division of Beaches and Parks to the Central California Archeological Foundation, a nonprofit organization set up to assist in such archeological programs.

The work in the field was under the supervision of Donald P. Jewell who was assisted in excavation by Jon Muller and John Duncan. Assistance in other forms came from the State Park Archeologist; from William Olsen, Assistant State Park Archeologist; and from Charles Heikka, Supervising Construction Enginner, Oroville Project, Department of Water Resources, and his staff.

The specimens recovered from these excavations are housed at the State Indian Museum, Sacramento, under Accession No. 234.

Part II records work done by Eugene Robinson on a house pit at a village site in Napa County. The work done by Mr. Robinson serves to complement the excavation of the series of house pits by Mr. Jewell in Butte County.

One rarely finds data on archeological house remains in reports published on California archeology. It is hoped, therefore, that this number of the Archeological Reports will serve to draw attention to the need for additional published information on archeological house remains.

Francis A. Riddell, Editor

STATE OF CALIFORNIA
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CONTENTS

PART I: Archeology of the Oroville Dam Spillway
by Donald P. Jewell

PART II: A House Floor in Napa County, California
by Eugene Robinson

Part I | Archeology of the Oroville Dam Spillway

By Donald P. Jewel

INTRODUCTION

This report concerns field work performed from June 11, to July 22, 1961, consisting of the investigation of three aboriginal village sites located along the projected spillway of the Oroville Dam. The dam will confine the Feather River about six miles northeast of Oroville, California (Map 1).

The sites have been designated as But (for Butte County) 99, 100, and 101. They all will not be completely destroyed by spillway construction, but But-101, the largest of the excavated villages, will be totally ruined for it lies on the center-line of the spillway.

Within the limits imposed by time and funds, choices were made regarding field techniques and procedures, most of which are made evident in the text of this report. It was decided to concentrate on house features rather than to look for burials. The midden deposit was shallow and nearly sterile. Although burials are known to occur in conjunction with archeological sites in this part of the country (Olsen and Riddell, 1963) it was tentatively assumed that the occupants of the villages under discussion followed the characteristic practice of establishing a cemetery some distance away from the living site (as reported by Elmer Johnson, a local Maidu informant).

Another important decision was to test houses by single 5 foot units in their centers, rather than to sacrifice them to the bulldozer in favor of more complete excavation of fewer houses. This permitted us to investigate, with varying degrees of thoroughness, nine houses at But-101, and two houses at each of the other sites. Only on three occasions did our excavations extend outside the house pits.

Equipment was available only for the topographic mapping of But-101, (Map 2) which was indexed by a grid system. Directions are oriented in all maps and plans to magnetic north.

Other than for the maps, and for personal notes kept by the writer, it was possible to confine all field records to the forms supplied in Meighan's The Archaeologist's Note Book (1961). This proved to be both convenient and adequate.

An interesting deviation from conventional field methods was the experimental use of compressed air. A hose and nozzle were attached to

a SCUBA diving tank containing about 2000 pounds of compressed air. Its concentrated blast of released air made it possible to dust off surfaces much better than a broom or brush could do, and even to move dirt if it was desired to do so. Figure 6b shows the fire pit of House 4, But-101, and the surrounding floor, cleaned by compressed air. With only about ten minutes of air available with each tankful, the experiment was expensive but highly successful, and it is here urged that continued experimentation be made with the technique.

ENVIRONMENT

The three sites overlook the flood plain of the Great (or Central) Valley of California. Except for a slight darkening about the house pits, the soil is red; indeed, this is part of the Red Lands described by Hinds (1952: 145-147) as being one of the major divisions of Great Valley Geology. These are broad bench lands sloping towards the axis of the valley. Once also flood plains, they were deformed by gentle folding or faulting, and now are being eroded by the drainages that once deposited them. Here, the nearest constantly flowing drainage is the Feather River, which, next to the Sacramento River with which it joins, has the largest run-off of any river in California (Senate Document 113: 100). The three sites are located along the edge of an arroyo which, judging from its occasional small pools of stagnant water, has a run-off during the winter, only.

This is a region of mild winters and dry summers with almost complete absence of rainfall in the midsummer months. The annual mean rainfall at Oroville is 27.34 inches. Mild winds alternate in blowing up and down the canyon in the summer, but strong north winds blow in the winter.

The sites are in the ecological zone described by Brown (1957: 9-10) as foothill oak woodland, with the most common tree, however, being the Digger Pine (Pinus sabiniana), which occurs with the Interior Live Oak (Quercus wislizenii).

Other plants observed growing in the immediate vicinity of the sites were button willow, sour dock, wild grape, poison oak, manzanita, the Brodieas, and assorted grasses. There were several fig trees about, and another European intruder, the bull thistle, also was there.

Among the numerous animals known to occupy such an environment, we observed the raccoon, beaver, otter, California ground squirrel, grey squirrel and deer.

But-101

But-101 will be discussed first in the sequence because it was the major site of the three, and the first to be investigated.

General Description

Map 2 shows But-101 to consist of ten house pits, however, it was not until after the map was made that "House 1" was found to be a natural depression showing no evidence of having been a dwelling. Conversely, it is possible that there were undetected house pits in the area concealed by erosional filling. Map 2 also shows the extent of excavations made in houses 2, 3, 4, 5, and 10.

The site, consisting of nine houses, fully occupied a small mound on the edge of an embankment overlooking the Feather River some 250 feet to the south. A small spring seeped from the bank of a gully about 50 feet to the west.

Excavation

House 5 was the first to be excavated and is shown with some of its features in Figure 11. One of the trenches bisecting the house fill was extended to the east of the house (Map 2). This was designated as Trench A, and findings derived from its extension outside House 5 will be separately discussed below. These trenches began as units 2 1/2 feet wide, or half the standard size of the grid units.

Excavation proceeded at 3 inch levels, following surface contours. The back dirt was screened sequentially with a 1/2 inch and a 1/4 inch wire mesh.

Artifacts were recovered immediately and it was evident that occupation had occurred atop the ruins of this house. In fact, there appeared to have been two periods of occupation above the collapsed roof of the earlier house, the evidence for which follows.

Prior to its excavation, there was a small cluster of rocks, about cobblestone size, centered in the depression of House 5 (a characteristic unique to But-101, and shared with all the other pits except House 8). These rocks, along with the ashes present with them, so obviously bespoke of a fire hearth that it had attracted the shovel of a curious amateur a few days prior to our arrival. His digging, along a north axis, and about a foot deep, did not quite reach to the underlying floor of the house, but of course destroyed evidence of what was likely a relatively recent bit of cultural activity.

The amateur's back dirt was screened and a small hammerstone, a quartz crystal fragment, a jasper point fragment and fifteen assorted chips were recovered. The point fragment is shown in Figure 9a.

Another hearth was discovered lying on the southeast slope of the house fill at a depth of 6 inches. It consisted of a circle of small stones (about fist size) less than a foot in diameter containing a slight film of ashes. It perhaps had been used just once. On the adjoining level was a jasper tip along with two basalt points (Fig. 8b and e). Although artifacts discovered in this and other units of the excavation will be discussed in more detail later, it may be observed here that the top 6 inches of the entire excavation revealed an artifactual pattern that differed from the lower depths. From this upper level, beginning with House 5, came quartz crystals variously intact, and small points, most of which were side-notched. From the lower depths came a pattern of heavier tools of basalt including knives, scrapers, handstones, and pestles.

Below the 6 inch level just described came a litter of freshwater mussel shells and fragmented food bones. The shells were so well preserved that their outer skins, or periostraca were intact. Bones generally were rodent gnawed, and in this, it must be emphasized, came the only clear evidence of rodent activity throughout the whole excavation.

The refuse deposit fused into the burned and collapsed roof under it. This was largely a rubble of Digger Pine bark and rocks, both of which were increasingly concentrated toward the periphery. The first

appearance of bark is illustrated in Figure 5. (For convenience with subsequent reading, the features are summarized on page 13.)

The roof rubble also contained food bones, mussel shells, and broken basalt tools, indicating that it had been composed of older midden (although some of it may have been composed of sweepings and debris thrown on the roof during its use). The only other artifacts of wood were charred fragments of pine that probably had served as supporting poles. House 5 yielded nine of twelve such specimens obtained from the three sites. These specimens are never over 4 inches long, and all are about 3 inches in diameter.

The floor of House 5 did not prove to be as typically hard-packed as the others, and consequently caused some confusion. Until the firepit was discovered, excavation was carried through the floor to the underlying sterile material, a hard, claylike, but brittle stratum that will hereafter be referred to as hardpan. By working out from the firepit it was possible to outline some of the floor, which is shown in Figure 2 by the broken inner line. The firepit with subsequent excavation, proved to be typical. It was shallow (3 inches through the thin floor and into the hardpan), and contained a clutter of fragmented rocks (probably a broken griddle) surrounded by ashes. A pair of rounded, unrelated rocks, which may be seen in the foreground of the picture of the firepit, Feature 3 (Fig. 6a), are probably cooking stones. Within 2 and 3 feet respectively of the firepit and due north of it, was a broken deer antler tine and a clam shell disc bead.

The fact that House 5 had been excavated by its builders through a midden matrix was confirmed by the excavation carried through the east wall, Trench A. Except that the trench yielded increasingly fewer rocks and gradually gave way to gravelly midden, it was impossible to determine where the original house foundation had been.

From the evidence just described some inferences may be drawn concerning the construction of House 5 (with a more detailed reconstruction awaiting synthesis later in the text from further house excavations).

The builders scooped a depression about 10 feet in diameter to a depth of about 15 inches. As this took them through the topsoil to an occasional protrusion of underlying hardpan, the latter was roughly hacked away and the corrugation smoothed with the dark earth in which the pit was located. The fact that this particular floor was laid with midden might account for its softness. In any case, it refused to pack and solidify as was generally the case.

In clearing for the floor, rocks and other debris apparently were thrown in a ring around the edge. Somewhat on the inside of this ring was placed a circle of pine poles upon which were placed strips of Digger Pine bark. Some of the surrounding debris was then piled against the base and banked with decreasing thickness toward the top. The house, resting on its ring of rocky earth, likely had a conical appearance.

House 5 eventually burned and collapsed (or collapsed and burned), with human activity in its vicinity evidently proceeding apace for at least a time. The ruin, a black, rubble-filled cavity, served to receive refuse for a short period. In time, possibly in but one season, erosion formed the ruin into an evenly contoured shallow depression. Here, on at least two successive occasions, hearths were built. If these latter hearths had been protected by shelters, they were considerably more fragile than the earlier mass of House 5.

Trench A represents removal of the full width of unit 12E/12N, and the north half of 13E/12N (see Map 2). As explained above, it was an extension of the trench through House 5, and represents the only exploration of midden outside of a house (the trench through the west wall of House 10, shown on Map 2, was into sterile soil). Although excavation was carried to a depth of about 15 inches to hardpan, the midden was limited, being 15 inches in the first unit and thinning to nothing near the center of the second unit.

Artifacts occurring within 10 inches of the surface consisted of a scattering of basalt chips, fragmented bone, mussel shells, and a steep angle scraper of jasper (Fig. 8o). Deeper in the midden were more shells, two fist-size ovoid hammerstones and the end of a basalt point.

House 2, as shown in Map 2 and Figure 10 was excavated in conjunction with Houses 3 and 4. It probably was abandoned, however, before the adjoining house was constructed.

Excavation of House 2 began with the removal of the top 6 inches within the house ring, thus clearing the area above the collapsed roof. As the profile in Figure 10 shows, a surface hearth existed in the pit with the fragments of a sheet of wrought-iron that possibly had been used as a griddle. Five quartz crystals occurred at this top level, along with a small number of chips and flakes and four points. Several of the latter are illustrated in Figure 8d, f, g and 1 and all are of cryptocrystalline material.

The bark, rocks, and dirt composing the fallen roof was disturbed by roots. Here, as elsewhere, the young pine roots had followed the floor level, and expanded their growth upward. This can be seen in Figure 4a. In the illustration the arrow rests on the floor. Roofing bark can be seen above the roots, and, angling downward at the pit's edge, can be seen some of the rocks that laid on the bark.

Much of the floor was hardpacked and easily discernable, but it could not be found at its eastern periphery. It probably had been destroyed in the construction of House 3.

The firepit of House 2 was a shallow excavation into hardpan subsequently baked red by the fire. It contained a jig-saw puzzle of fractured flat rocks resting in an ashy matrix.

Feature 15, House 2, (Fig. 7a) was a naturally flat stone with a shallow basin pecked into part of its surface. With its discovery a pattern was established that persisted with all subsequently excavated houses (no such stone was found in the extensively but incompletely dug House 5). It was decided to refer to these as slab mortars, as they qualified as neither the classic metate type nor as mortars.

The tools on the floor of House 2 tended to cluster around the edge. One suspects the occupants tended to store their tools in the narrow "bench" where the roof joined the floor, and where the floor would have been soft. Thus, it is assumed that the tools were once on the floor's edge. One basalt point was found more toward the center of the floor.

Finally, this floor yielded the only definite bone artifact of the whole excavation, the "bone pin" described in the artifact section (infra).

House 3. Approach was made to this house by a trench from the previously excavated and adjoining House 2. Here an attempt was made to determine the nature of construction at the juncture of the roof with the floor. It was impossible to discern any distinctions between the three features that occurred at the floor's edge; the builders' excavated rubble, the rubble from the collapsed roof, and the soft edge of the floor. Where it could be defined, the floor was between 12 and 15 inches from the surface.

There was a hearth on the ground surface, remnants of food bones, and freshwater mussel shells. On the floor rested one handstone, a mid-section of a basalt blade, the base, possibly of a basalt knife, and one of the few obsidian flakes from the entire site.

The slab mortar of this house is shown in Figure 10, Feature 13. Its proximity to House 2 meant that, in order for it to be sufficiently removed from the sloping wall of House 3 to be usable, it postdated the collapse of House 2. In other words, House 3 slightly superimposed House 2.

House 4. As with the two preceding houses, House 4 was excavated to the point where the floor softened and disappeared in its fusion with the fallen roof and surrounding dirt.

Surface occupation was again indicated for this house by a hearth and litter consisting entirely of shell fragments and one jasper flake. The fallen roof did not reveal enough artifacts to suggest anything other than it was composed of sterile material. A fragment of roofing bark was catalogued from this house, along with a fragment of burned pine pole.

The floor of House 4 yielded more artifacts than any other house. There were 14 stone hand tools, and a scattering of chips and mussel shells. Some of the tools are illustrated in Figure 10, and show how they tended to be clustered about the floor's edge, as with previous houses.

Along with the customary slab mortar (Fig. 7b) two firepits were found. They were about 3 inches deep with a scattering of small flat stones in them. One of the pits was plastered over, so was likely earlier.

A small pit scooped in a pocket of earth in the hardpan under the floor was an unusual feature of this house. About 8 inches deep and 5 inches in diameter, it contained fragmented mussel shells and was interpreted as having been dug for refuse deposition (see Fig. 4b).

House 10. Investigation of this house began with removal of a 3 inch layer from its whole surface. The earth peeled freely at this level, exposing a very hard surface of reddish (probably fire oxidized) earth. This was covered with a scattering of burned bark and wood. The exposed surface may be seen in Figure 3b. A profile of the west half of House 10 occurs in Figure 12.

The depression of House 10 had been protected from livestock by a fallen burned tree and its branches. It cannot be said how long the dead tree had been there, and whether or not the litter described at the 3 inch level was shed from the tree or protected by it. This possible floor yielded a leaf-shaped basalt point (Fig. 8h).

The next stage in excavation was a 2 1/2 foot wide trench along the north axis through the center of the house. This was dug through roofing material and 3 inches above the floor until it intercepted a mass of burned pine wood (Feature 6). Only three flakes were found in the roof debris (all of them cryptocrystalline material), and one mussel shell. Burned bark occurred in profusion.

The trench was then taken down an additional 3 inches to the typically hard packed floor. This yielded five silicate flakes, one of basalt, food bone fragments, and two larger hand tools. The firepit was not revealed, but the slab mortar was found, and is illustrated in Figure 12 as Feature 16.

A second trench, 5 feet wide, was extended into the house from the east, and intercepted the first trench. Its purpose (as with the trenches into Houses 3 and 5) was an attempt to derive more understanding of building techniques.

Two almost completely burned stumps of what very likely had been roofing poles were encountered, but there were few other clues. The stumps appeared to have been placed in the soft dirt thrown from the original pit house excavation. Notice in Figure 12 that the poles occurred just to the left of the profile's apex, and nearly 4 feet outside the discernible floor (which is shown by the broken line). One suspects that this house was banked from within along its base, as well as on its exterior slope.

The dirt exposed in the trench approaching House 10 was slightly darker than the hills about the site, but yielded no artifacts until it was well within the house. The house seemed to have been constructed in a culturally sterile matrix. The artifacts from this trench were characterized by heavy hand tools, those commonly called hammerstones.

But-100

General Description

Clearing of the grass at this site revealed the presence of three houses. They were on a gentle slope leading down to the unnamed arroyo. Stagnant water occurred in little pools along this drainage, in the summer testifying to at least an adequate water supply in the winter.

Time permitted the exposure of the major portions of the floors of Houses 1 and 3. The bisecting fence line was used as the datum (Fig. 13). House 2 was identified as only a suggestion of a depression, so was briefly examined with a small pit to confirm its presence. Upon the discovery of a segment of floor and a burned pine pole (Feature 3), the pit was backfilled.

Excavations

House 1. Excavating by following the surface contour of the pit revealed at a depth of 6 inches a well defined occupation level. It was hard packed, littered with stone chips, and yielded the two points illustrated in Figure 8r and s, neither of which are of basalt. Here, too, was a piece of red ochre, two fragments of a steatite bowl, and a quartz crystal. This evidence was labeled: "Second Occupation Level".

No hearth occurred on the upper level, nor were there any apparent construction features. If this had been a house with a collapsed bark roof it would either have burned in time. or have been disintegrated by grazing animals.

The original floor of House 1 was 10 inches below the later level. Its overlying roof was sterile of artifacts and wood, although bark occurred. The floor features were familiar: a firepit and a slightly basined slab mortar. The latter is illustrated in Figure 9b and 13. A basalt projectile point rested on the floor along with a large silicate knife, Figure 8p and q. Finally, the floor yielded a "Y" shaped deer antler.

House 3. At a depth between 3 and 6 inches this pit also gave evidence of later occupation; however, no hearth was present or was there any evidence of covering. The earth peeled freely away to expose a litter of glass and a fragment of a clay pipe bowl. There were also some stone chips, several of which showed secondary flaking to make tiny scrapers. Finally, there was a small specimen of red ochre.

The original floor appeared 10 inches deeper, with the usual features. It lay under sterile roof fill. The floor was badly churned with the roots of several nearby small pine trees, but a 3 inch length of charred pole 2 inches in diameter had survived. The floor yielded a slight litter of mussel shells and assorted stone chips.

The slab mortar of this house, roughly rectangular and flat, showed no artificial modification other than slight pecking in the central area. It could have been overlooked, as a mere slab of rock, by one not expecting its presence.

But-99

General Description

A plan of But-99 is shown in Figure 14. It is suspected that to the south of the area shown, at a distance of 30 feet, were two or three more house pits. A jumble of fallen and disintegrating trees, however, prevented confirmation.

Water had been available to the folk of this village by walking to either of the drainages below them where tiny seep springs occurred.

Excavations

House 1. Excavation began with a 5 foot square being removed in 3 inch levels. Two fractured but intact quartz crystals, and a small naturally fused cluster of crystals occurred within the first 6 inches. Here, too, were chips of various silicate materials, bone and mussel shell fragments, and a small red ochre paint stone. These specimens were in compact, charcoal-sprinkled earth. Two projectile points which occurred in this level are shown in Figure 8v and w.

Roof material was uncovered at a depth of 6 inches and continued to a depth (from the surface) of 14 inches. This stratum was interlaced with numerous pine roots, some with a diameter of 10 inches. Except for a possible mano fragment, the only artifact found in this churned mass was a unique basalt point (Fig. 8z).

The shallow, elongated, ashy, firepit contained a cobblestone that might have been a cooking stone. To one side of the pit was a granite hammerstone.

It was necessary to extend one wall of the unit in order to expose the slab mortar whose surface showed the barest suggestion of a pecked basin less than 4 inches in diameter. This slab had been raised about a foot above the floor by a root.

House 2. The first 3 inches of the 5 foot square unit in the center of the house was characterized by numerous rocks, about 3 to 4 inches in diameter. Screening revealed several stone chips, a steatite bowl rim fragment, two projectile points (Fig. 8y and x) and three quartz crystal fragments.

The next 3 inch level continued to yield rocks, but of an increasingly large size; some were 8 to 12 inches in diameter (extending, of course, down into the next level). A projectile point was recovered from this level (Fig. 8y) along with a second steatite bowl fragment.

The third level was 6 inches thick. The material consisted of soft, ashy midden, with fewer rocks. Pine roots appeared in great profusion, one of them having lifted the slab mortar from its place in the underlying floor. There was an assortment of ten flakes in this level, and several mussel shell and bone fragments.

The final level, dug to a depth of 15 inches from the surface, exposed the floor, in this instance oxidized a brilliant red and overlain with burned bark fragments. On the floor was a pitted hammerstone, some mussel shell fragments, and two small flakes. It appeared that this house had been used as a depository for refuse after its collapse by burning.

Food Remains

The shell of the fresh water mussel (Margaretifera margaretifera) occurred as the most common distributed food remains in all levels of the three villages. The number of such specimens collected were 337 from But-101, 27 from But-99, and 6 from But-100.

Other food remains consisted of a few charred remnants of acorns, and some animal bones. There were 67 bone fragments from But-101, 20 from But-100, and 25 from But-99. Most of these were chips and slivers that have not been identified at this time. There were, however, recognizable specimens of the bones of deer (Odocoileus hemionus) and elk (Cervus canadensis). These appear to be mature specimens except for one bone of a young deer. Some bone refuse, from House 3, But-101, have been rodent gnawed. All the long bones have been shattered to get the marrow. Less than five percent show any evidence of having been exposed to fire or smoke.

Although all bones were saved, it is interesting to note that except for one possible rabbit bone fragment the usual appearance of bones of rodents that died in their burrows is lacking.

Artifacts

For purposes of tabulation the artifactual remains have been listed by artifact type rather than by site or house. This admittedly creates

difficulty for the reader, but is felt justified since analysis disclosed little differences in artifact inventory, when tabulated for the individual house pits. Tables 1 through 4 present data on the artifactual remains from all sites, by artifact type.

Wood. The only wood preserved in any of the sites were pole fragments of what is assumed to be Digger Pine. Although the field notes indicated the appearance of a pole fragment in House 3, But-100, it is not present in the collection; thus, regretfully for any anticipated dendrochronology, all of the pole fragments are from but one village, But-101. Ten specimens came from House 5, one from House 4, and one from House 10. Only one specimen was uncharred (House 10) and none had a diameter greater than 3 inches. All of the specimens were under 6 inches in length.

Bark. Only samples from all houses were catalogued of this common material. It occurred in fragments of varying sizes all less than 1 foot long and 6 inches wide. All the specimens appear to have come from dead trees. The bark often was riddled with holes made by the acorn woodpeckers for storing acorns. It is quite possible that some of the bark was stripped from trees that had burned, and it was recognized that the recovery of charred bark does not necessarily indicate that a house had burned.

Bone. Three bone artifacts were recovered from all sites, one from But-101 and two from But-100. A bone pin was found on the floor of House 2, But-101. It is made from a longitudinally split section of deer metapodial with the flat area of the proximal end serving as the base of the pin. It tapers to a blunt point. Though in poor condition, polish and longitudinal striations are still evident along the shaft. The two bone artifacts from But-100 were from the fill of House Pit 1. One is a small broken fragment of deer rib with one cut, polished end. The other is a small fragment of split mammal bone (deer?) with one cut end. It is now in a carbonized state (Table 4).

Antler. There were two specimens. The first, a single tine, was on the floor of House 5. It is now broken at the wide end and shows no wear. The second specimen is doubled pronged, and came from the floor of House 1, But-100. The specimen shows no wear, other than the cut base. Its concave side is a glossy black as if heavily smoked (Table 4).

Shell. The single shell artifact was a clam disc bead (Saxidomus nuttalii) 5mm. in diameter, on the floor of House 5, But-101. One surface is glossy, and the other naturally striated though now in poor condition. This type of specimen has been described by Baumhoff and Byrne (1960:32) as the most widely used evidence for marking Phase II of the Central Valley Late Horizon (1600-1850 A.D.).

Pigment. There were three specimens of red ochre. The most striking one came from the 3 inch occupation level of House 1, But-99. It is 105 mm. in length, somewhat hour-glass shaped, with its surface covered with narrow shallow scratches.

The remaining specimens came from But-100. One fragment, was in the fill of House 1, while the second, came from the 0 to 3 inch level of House 3 (Table 3).

Steatite Bowl Fragments. Of the four specimens two came from the alleged occupation level (6-12 inch level) above the debris of House 1, But-100.

The other two specimens are possibly from the same bowl, having come from House 2, But-99. The first of these is a triangular reworked rim fragment. The second fragment is from the same house but from the 3-6 inch level. All four specimens show scarification on both sides, while one from But-99 was modified by cutting off one broken edge for possible reuse (Table 3).

Quartz Crystals. Of the 17 crystals uncovered in the excavations, ten were relatively complete although marred by either slight battering or by heat. The remaining seven specimens are represented by broken fragments. The specimens range in size from 1.5 to 5 cm. in length. None were found at a depth greater than 9 inches. They were, thus, either part of the roof construction or were deposited after the roofs had collapsed. All were found in house pits that showed surface occupation: Houses 2 and 5, But-101; House 1, But-100; and Houses 1 and 2, But-99.

Pebbles. Nine subovoid pebbles of various shapes were found. They range from 2 to 6 cm. in diameter. Six of them came from roof material of Houses 2 and 10, But-101, and may have been part of the natural earth. Three were found on the floor of House 4, But-101. All exhibit some luster of unknown origin.

Stone Tools. It is difficult to refer to some of the stone tools from this excavation in such traditional terms as mano, hammerstone, and pestle, for many of them exhibit wear from a variety of uses. Additionaly few of the tools showed purposeful shaping. Many of the "manos" are merely ovoid cobbles with slight wear on but one side; in other words, they do not fit the form of the classic mano type. In general, the elongate cobbles served as pestles, as evidenced by battering on one or both ends. The variety of hammerstones is notable. While some types, such as one of the Pitted Hammerstones, have been shaped, this is the exception and not the rule. The specimens classed as Ovoid Hammerstones for the most part show little wear. They would be well suited for hulling acorns or various other seeds and nuts, however. Table 2 presents the pertinent data on the various stone tools.

Mortars. We accounted for two cobble, eight slab mortars and eight bedrock mortars. Both of the former were found at But-101. The first was made from a cobble of vesicular basalt (which does not occur locally) found on the surface above House 10. This specimen, weighing three pounds, had a smoothly worn depression 3 inches in diameter and 1 inch deep. The second portable mortar, on the surface, was overturned between Houses 3 and 4. It is shown in Figure 10. This was a basalt cobble weighing about four pounds. The hole was 4 inches deep, by 3 inches in diameter.

Three bedrock mortars were associated with But-101 in a quartz outcropping at the junction of the arroyo with the Feather River. They were between 2 and 3 inches deep, and each was isolated from the others by a distance of several feet. They would likely be under water at times of flood (Fig.3a).

Three scattered mortar pits were found in basalt outcroppings within 50 feet of But-99, and two were likewise found at But-100. They were about 4 inches deep. Their scarcity was not due to a lack of bedrock.

The slab mortars, eight of which were noted, received mention with the discussion of their respective houses, some have been illustrated, and all are summarized in the FEATURE SUMMARY, page 13. Further discussion here would be repetitive.

Chipped Stone. Five lithic materials are recognized in this category: 1) basalt (of which the mountain is mostly composed); 2) white or milky quartz (which occurs naturally in fragments and outcroppings); 3) obsidian; 4) cryptocrystalline stone, such as chalcedony, chert, and agate; and 5) slate.

Basalt received relatively little utilization for small tools, as will be shown below; nor was the native quartz much used, probably because of its poor fracturing quality. Obsidian was represented by only three specimens, and by eight flakes screened from all levels and sites. Slate was represented by four objects, all classed as knives. All occurred at But-101.

Figure 8 shows all the complete points taken from the three sites. Of the total sample from all sites, thirteen are made of various silicates or chert and the remainder (nine) are made of basalt. The data for the projectile point series are presented in Table 1.

Most of the projectile points are of the "Desert Sidenotched" types described by Baumhoff and Byrne (1960) as belonging to the Late Horizon, Phase II (1600-1850 A.D.). The point shown in Figure 8z, is strikingly like the type described by Baumhoff (1960) as belonging to the Kingsley Complex, Payne Cave Type 4, or Kingsley Cave Type 2.

Other tools considered here are knives, scrapers and drills or reamers (Table 2). Flake scrapers are those specimens which show little evidence of deliberate secondary flaking. An attempt was made to eliminate those which show recent fracturing during excavation by examining each under a microscope for any obvious appearance of fresh flaking. Steep angle scrapers, in contrast to the preceding specimens, are thicker and show some degree of planned chipping on at least one edge. Of ten pieces classed as blades some are sufficiently different to justify discussion before summarizing the Chipped Tools. The unique blades (Flake Knives) are shown at the bottom of Figure 8. They are characterized by their sharply serrated edges and lack of retouch flaking, giving them a sawtooth appearance. The small one was found at the 6 inch level of House 1, But-100; the remaining specimens came from the roof debris of House 5, But-101. They lend themselves excellently to opening salmon, and it is suggested here that they served as salmon knives, such similar shaped implements are identified as such by local Maidu informants (F.A. Riddell, personal communication).

Below is a summary of an analysis of the chipping waste with reference to depth.

TYPE OF MATERIAL	Surface to 6"	Intermediate*	Floor
Flakes, basalt	63	40	3
Flakes, quartz	29	12	3
Flakes, cryptocrystalline	138	68	18

*Roof debris

European Artifacts. Littering an occupation surface 6 inches beneath ground level above House 3, But-100, were fragments of a rounded, flat-sided bottle of about a pint capacity. It is a type known by local collectors to have been used for whisky during the Gold Rush era. A second European artifact was a fragment of the bowl of a clay pipe.

On the ground above House 3, But-101, were several pieces of a sheet of wrought iron, probably the side of a small stove. It had evidently been used as a griddle.

FEATURE SUMMARY

But-99

Feature 1	Slab mortar, House 1, 12"x20"x8" (Fig. 14).
Feature 2	Firepit, House 1, 12" diam., 3" deep (Fig. 14).
Feature 3	Firepit, House 2, 12" diam., 3" deep (Fig. 14).
Feature 4	Slab mortar, House 2, 24"x20"x12" (Fig. 14).

But-100

Feature 1	Firepit, House 1, 12" diam., 3" deep (Fig. 13).
Feature 2	Slab mortar, House 1, 24" long, 8" wide at one end, 12" wide other end, 8" thick (Figs. 9b, 13).
Feature 3	Burned pine pole, floor, House 2, 3" diam., 6" long (Fig. 13).
Feature 4	Slab mortar, House 3, 10"x12"x8" (Fig. 13).
Feature 5	Firepit, House 3, oblong, 18"x12", 3" deep (Fig. 13).

But-101

Feature 1	Fusion of mussel shells, pine bark, angular rocks, House 5.
Feature 2	Compacted area, first appearance of floor, House 5.
Feature 3	Firepit, House 5, 12" diam., 3" deep (Figs. 6a, 11).
Feature 4	Burned bark fragment in matrix of earth and mussel shells, House 5 (Fig. 5a).
Feature 5	Firepit in fill above House 5, 12" diam., ringed by rocks about 3" in diam.
Feature 6	Burned bark, House 10 (Fig. 12).
Feature 7	Burned bark, House 5 (Figs. 5b, 11).
Feature 8	Firepit, House 4. Plastered over, 10" diam., 3" deep (Figs. 2a, 4b, 6b, 10).
Feature 9	Possible refuse cache, House 4, 9" diam., 3" deep (Figs. 2a, 4b, 10).
Feature 10.	Firepit, House 4, 12" diam., 3" deep (Figs. 2a, 4b, 10).
Feature 11	Slab mortar, House 4, 12"x14"x8" (Figs. 2a, 4b, 7b, 10).
Feature 12	Firepit, House 3, 12" diam., 3" deep (Fig. 10).
Feature 13	Slab mortar, House 3, 8"x10"x3" (Fig. 10).
Feature 14	Firepit, House 2, 24"x18", 4" deep (Fig. 10).
Feature 15	Slab mortar, House 2. About 12" diam., 4" thick (Figs. 7a, 10).
Feature 16	Slab mortar, House 10, 4"x10", 3" thick (Fig. 10).

SUMMARY AND INTERPRETATIONS

The following cultural traits similarly appear at all three villages: firepit design, slab mortars, basalt hand tools, mortars, earth and pine bark pit houses, and at possibly a later period, quartz crystals and sidenotched points. This suggests contemporaneous occupation of the villages.

The villages were located on the banks of a drainage that served to supply water and a relatively easy route to the Feather River and between the villages. There is, of course, the possibility that the villages were not always occupied at the same time, but if they were, their size and distribution fits a logical ecological situation.

If one assumes, as did Kroeber (1953:397) that each Maidu house represented five souls, and if one also assumes (on the basis that all of the houses were not contemporaneously extant) an average population of twenty people in each village, their distribution would have been quite appropriate with reference to the acorn and pine nut supply.

Complete details of house construction cannot be inferred from available evidence. A synthesis, however, from all of the excavated houses, will permit some speculation on the matter.

Construction began with a basin shaped excavation of about 12 inches in depth and about 10 feet in diameter. This normally extended to the underlying hardpan, and the builders were therefore obliged to gouge their fire pits shallowly into this hard material. Pine poles were set into the ring of excavated rubble, possibly at about 3 foot distances. Atop the poles was placed strips of Digger Pine bark stripped from nearby trees. Finally, the builders piled the excavated rubble on top of the bark. These houses must have looked much like the Navaho hogans of the mid 18th century (cf., Underhill, 1953:227).

The type of construction just described for the Feather River region is confirmed elsewhere in the literature. Kroeber (1953:407) describes earth lodges of the Mountain Maidu (although of a much larger house) as does Dixon (1905).

Close to the firepit of each of these houses (except for the incompletely excavated House 5, But-101) occurred a characteristic slab mortar milling stone. This was a naturally flat slab in which, in most instances, a shallow basin had been pecked on some part of its surface.

Around the floor's edge, in the soft rubble that occurred there, under the narrow slope of the roof, bulky tools were stored.

That this type of house may have persisted into fairly recent times seems evidenced by the photograph shown in Figure 9a. It is copied from an exhibit in the museum at Oroville. The house was presumably photographed in the Oroville area sometime in the last century.

The folk of these villages would have eaten well from a variety of plant, animal, and fish food. The weatherproofed houses suggests that they were winter homes. The occupants would likely have arrived in the early fall in order to, first, collect the large and tasty pine nuts[1]; next, they would fish during the fall salmon run (sometime in October). Finally, they would harvest the acorns. With summer's heat and dryness, they would move higher into the mountains.

All of the excavated houses showed that they had burned. In one instance a house floor was oxidized with a reddish hue in the process, but in most cases combustion seems to have occurred in a reducing atmosphere. There seems to be no way at this writing to determine how long these houses were occupied, but it does appear that occupation could

[1]A Maidu Indian has told me that the Digger Pine nuts must be gathered before they ripen and fall from the cones.

have extended over several seasons. In any case, it is obvious that all of the houses were not occupied contemporaneously, for at least three of the houses had midden deposits above their collapsed roofs.

Although the house fires could have been naturally caused, Kroeber (1953:404) mentions that Maidu houses were burned upon the owner's death.

There was evidence of continued or further occupation on the ruins of the pit houses. This suggests either, (1) persisting occupation in nearby extant houses, or (2) a returned occupation following collapse of all the pit houses. Although tenuously, the evidence seems to support the latter explanation.

The surface artifacts are of a different nature. The quartz crystals and small side-notched points consistently fail to be related to either the pit house roofs or floors. Conversely, the heavy basaltic tools used for battering and grinding, and the milling stones, are identified with the pit houses or their roofs.

Eight of the fifteen known houses were excavated (not including the brief sampling of House 2, But-100). All of these showed surface occupation, it must be accepted that by mere chance we did not excavate any of the last houses to have been occupied. The odds do not favor such a conclusion.

The only well established time marker occurring within the houses was a single clam shell disc bead at But-101. It was found on the floor of House 5, so suggests Late Horizon, Phase II occupation. The Desert Sidenotched points from the sites are also a time marker of the Late Horizon. The few large projectile points could suggest evidence of an earlier occupation of the area, but further evidence of such was not suggested by the remaining artifactual inventory. Finally, the appearance of a broken whisky bottle and clay pipe above a house at But-100 is evidence of early historic occupation.

Thus it must be concluded that the evidence shown by the archeology of the Oroville Dam spillway area suggests sporadic or intermittent aboriginal occupation over a period of several centuries.

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TABLE [redacted] Projectile Point Data

Projectile Point Type	Catalog Number	Length (mm.)	Width (mm.)	Thickness (mm.)	Weight (Grams)	Material	Provenience
Desert Sidenotched	1495	18	9	3	0.3	Silicate	But-101 H.P. 2 0-6"
" "	1633*	19	13	3	0.5	Silicate	But-100 H.P. 1 0-12"
" "	1634*	--	12	3	0.6+	Silicate	But-100 H.P. 1 0-12"
" "	1687	21	12	3	0.5	Silicate	But-99 H.P. 2 3-6"
" "	1663 (1)*	16	10	2	0.3	Silicate	But-99 H.P. 1 3-6"
" "	1663 (2)*	16+	10	2	0.4+	Silicate	But-99 H.P. 1 3-6"
" "	1698*	27	11	3	0.7	Silicate	But-99 H.P. 2 6-12"
Triangular	1466*	--	12	3	0.5+	Silicate	But-101 H.P. 2 0" to Flr.
"	1510*	--	15	3	0.6+	Silicate	But-101 H.P. 2 6" to Flr.
"	1688	30	13	3	1.3	Silicate	But-99 H.P. 2 3-6"
Small Stemmed	1379*	20	11	3	0.6	Basalt	But-101 H.P. 5 0-6"
" "	1635*	24+	14	4	1.0+	Basalt	But-100 H.P. 1 0-12"
Large Stemmed	1330*	32+	24+	9	7.0+	Basalt	But-101 H.P. 5 15-21"
" "	1546*	--	29	8	6.6+	Basalt	But-101 H.P. 3 0-12"
" "	1667	35	27	7	5.5	Basalt	But-99 H.P. 1 6-9"
Large Shouldered	1408*	56	18	8	7.0	Basalt	But-101 H.P. 5 0-6"
Leaf Shaped	1712*	52+	16+	8	6.8	Basalt	But-101 H.P. 10 0-3"
Tip Fragment	1371	30+	--	--	2.1+	Chert	But-101 H.P. 5 12-18"
" "	1508	34+	--	--	2.1+	Basalt	But-101 H.P. 2 6" to Flr.
" "	1533	16+	--	--	0.3+	Silicate	But-101 H.P. 5 0-12"
Medial Fragment	1390	13+	--	--	0.6+	Silicate	But-101 H.P. 5 0-6"
" "	1552	41+	--	--	9.0+	Basalt	But-101 H.P. 3 On Flr.

*Fragmentary

TABLE 2: Chipped Stone and Miscellaneous Implements

Artifact Type	Catalog Number	Length (mm.)	Width (mm.)	Thickness (mm.)	Material	Comments	Provenience
Knives							
Leaf	1613	64	29	8	Silicate	Bifacially Chipped	But-100 H.P. 1 6-12"
Triangular	1623	28	24	5	Obsidian	Bifacially Chipped	But-100 H.P. 1 0-3"
Flake	1311	38	26	5	Shale	Unifacially Chipped	But-101 H.P. 5 6-9"
"	1345	46	38	12	Basalt	Serrated Edge	But-101 H.P. 5 6-9"
"	1429	102	62	13	Basalt	Unifacially Chipped	But-101 H.P. 5 0-6"
"	1447	85	35	10	Shale	Bifacially Chipped	But-101 H.P. 5 9-15"
"	1456	91	49	6	Basalt	Bifacially Chipped	But-101 H.P. 5 6-12"
"	1505	58	25	4	Shale	Unifacially Chipped	But-101 H.P. 2 6" to Flr.
"	1559	70	56	13	Shale	Unifacially Chipped	But-101 H.P. 4 0-5"
"	1666	37	32	5	Basalt	Bifacially Chipped	But-99 H.P. 1 6-9"
Chopper	1324	75	60	25	Basalt	Split Cobble	But-101 H.P. 5 12-15"
"	1569	142	85	32	Basalt	Split Cobble	But-101 H.P. 4 15" (Flr.)
Drill or Scraper	1332	26	20	8	Silicate	Bifacially Chipped	But-101 H.P. 5 No Depth
" " "	1493	29	17	7	Obsidian	Bifacially Chipped	But-101 H.P. 2 0-6"
" " "	1494	34	24	9	Silicate	Bifacially Chipped	But-101 H.P. 2 0-6"
Drill or Reamer	1556	23	8	5	Obsidian	Bifacially Chipped	But-101 H.P. 4 0-15"
Steep Angle Scraper	1455	27	16	9	Silicate	Fine Retouching	But-101 H.P. 5 6-12"
" " "	1646	20	15	8	Silicate	Crude Retouching	But-100 H.P. 3 0-3"
" " "	1682	46	27	12	Basalt	Core Fragment	But-99 H.P. 2 0-3"
Flake Scraper	1432*	15+	12	5	Silicate	Bifacially Chipped	But-101 H.P. 5 0-6"
" "	1472	31	20	5	Silicate	Edge Retouched	But-101 H.P. 2 0-6"
" "	1537	39	23	7	Silicate	Edge Retouched	But-101 H.P. 4 On Floor
" "	1556	26	16	3	Silicate	Concave Scraper	But-101 H.P. 4 0-15"
" "	1619	31	20	5	Silicate	Edge Retouched	But-100 H.P. 1 6-12"
" "	1646*	17+	12	4	Silicate	Bifacially Chipped	But-100 H.P. 3 0-3"
" "	1647	37	29	12	Silicate	Edge Retouched	But-100 H.P. 3 0-3"
" "	1683	18	13	4	Silicate	Edge Retouched	But-99 H.P. 2 0-3"

*Fragmentary

TABLE 3: Ground Stone Implements

Artifact Type	Catalog Number	Length (mm.)	Width (mm.)	Thickness (mm.)	Material	Comments	Provenience	
Mortar	1575*	204+	200+	108	Basalt		But-101	Surface near H.P. 9
Pestle	1378*	--	75	60	Basalt	Two Fragments	But-101	H.P. 5 0-6"
"	1486	182	88	67	Granite	Cobble	But-101	H.P. 2 On Floor
"	1525*	175+	58	49	Basalt	Cobble	But-101	H.P. 2 6" to Flr.
"	1557*	176	67	32+	Schist	Cobble	But-101	H.P. 4 On Floor
"	1562	177	75	60	Granitic	Cobble	But-101	H.P. 4 On Floor
"	1573	259	92	71	Basalt	Cobble	But-101	H.P. 4 On Floor
"	1576	154	62	50	Schist (?)	Cobble	But-101	H.P. 4 On Floor
"	1577	173	74	42	Granite	Cobble	But-101	H.P. 4 On Floor
"	1578	151	58	51	Basalt	Cobble	But-101	H.P. 4 On Floor
"	1581*	138+	60	44	Granitic	Cobble	But-101	H.P. 5 On Floor
"	1600*	177+	70	50	Schist	Cobble	But-101	H.P. 10 Floor Fill
"	1709*	114+	79	53	Granitic	Cobble	But-99	H.P. 2 On Floor
"	1710	191	76	45	Schist	Cobble	But-99	H.P. 2 On Floor
Handstone	1357*	78+	65	36	Granite	End Battered	But-101	H.P. 5 0-12"
"	1530*	--	95	66	Basaltic	End Battered	But-101	B.R.M. Area
"	1566*	--	--	46	Granite	Burnt	But-101	H.P. 4 On Floor
"	1574*	105+	75	45	Granite	Split	But-101	Surface Near H.P. 4
"	1579	95	70	43	Granitic	Utilized Cobble	But-101	H.P. 4 On Floor
"	1643*	--	--	34	Granite	Burnt	But-100	H.P. 3 0-3"
"	1708*	63+	60	39	Granite	Burnt	But-99	H.P. 2 On Floor
Hammer	1323	82	78	50	Granitic	Edge Battered	But-101	H.P. 5 On Floor
"	1701	75	65	48	Granitic	End Battered	But-99	H.P. 2 On Floor
"	1499	101	40	34	Metamorhic	End Battered Cobble	But-101	H.P. 2 0-6"
"	1522	79	59	23	Granite	Edge Battered "	But-101	H.P. 2 On Floor
"	1534	112	83	33	Schist	End Battered "	But-101	H.P. 5 No Depth
"	1567	142	55	30	Basalt	End Battered "	But-101	H.P. 4 On Floor
"	1571	113	57	39	Granitic	End Battered "	But-101	H.P. 4 On Floor
"	1582	48	40	17	Sandstone	Edge Battered "	But-101	H.P. 5 On Floor
"	1712	99	64	38	Metamorhic	End Battered "	But-101	H.P. 5 On Floor
"	1410	41	37	15	Silicate	Edge Battered Core	But-101	H.P. 5 6-12"

*Fragmentary

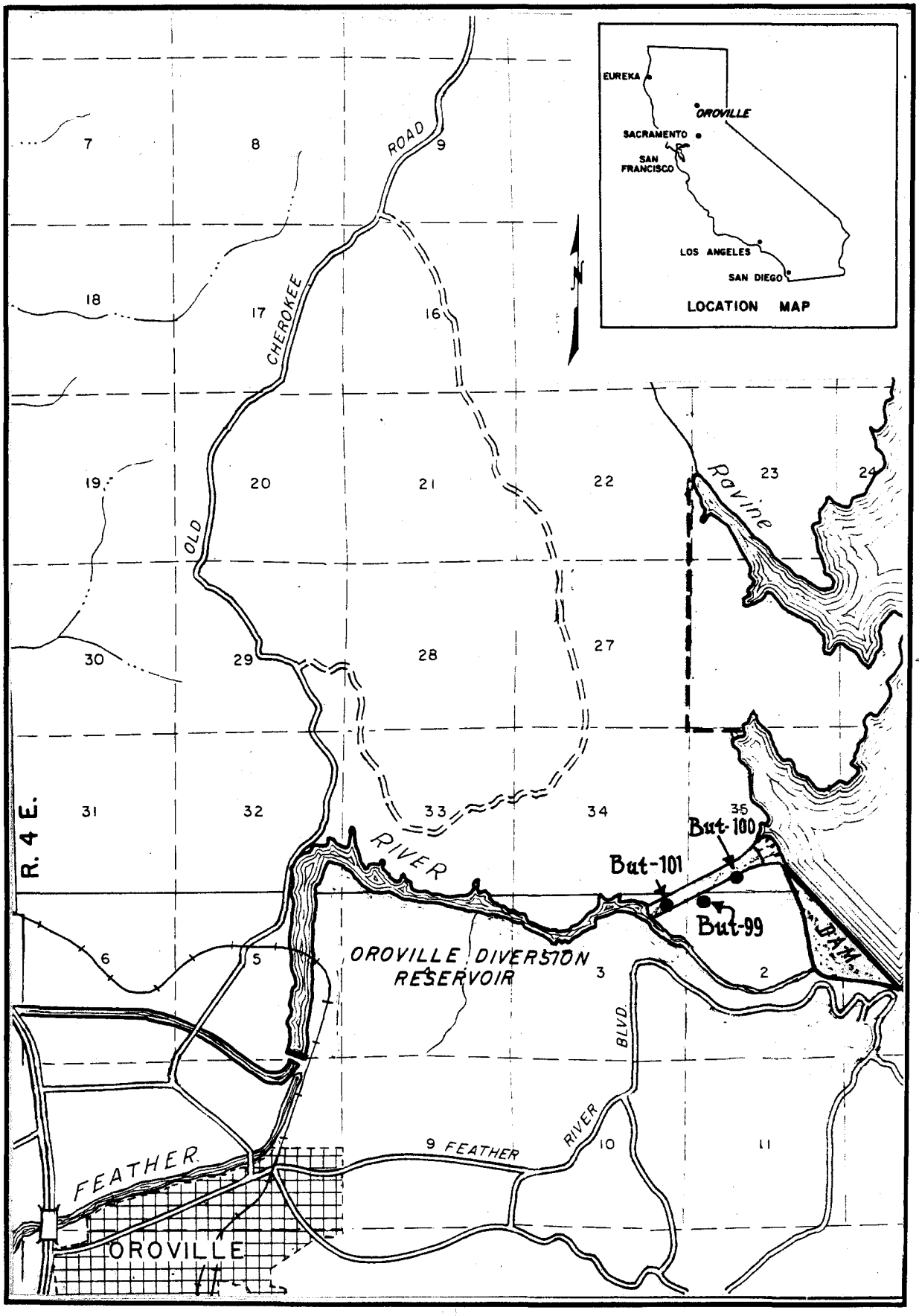
TABLE 3 (cont.): Ground Stone Implements

Artifact Type	Catalog Number	Length (mm.)	Width (mm.)	Thickness (mm.)	Material	Comments	Provenience		
Hammer	1363*	49+	47	38	Granite	Ovoid	But-101	H.P. 5	0-12"
"	1366	65	57	47	Basalt	Ovoid	But-101	H.P. 5	On Floor
"	1482	48	41	34	Basalt	Ovoid	But-101	H.P. 2	On Floor
"	1524*	60	59	44	Granite	Ovoid	But-101	H.P. 2	On Floor
"	1572*	--	--	36	Granite	Ovoid	But-101	H.P. 4	On Floor
"	1677	69	49	49	Granite	Ovoid	But-99	H.P. 1	On Floor
"	1711	69	57	46	Metamorphic	Ovoid	But-101	H.P. 5	On Floor
Abrader	1563	145	40	16	Metasediment	Stained Red	But-101	H.P. 4	On Floor
Bowl Frag.	1615*	--	--	13	Steatite		But-100	H.P. 1	6-12"
" "	1618*	--	--	--	Steatite		But-100	H.P. 1	6-12"
" "	1680*	32	30	9	Steatite	Cut and Reworked	But-99	H.P. 2	0-3"
" "	1686*	77	64	16	Steatite	Rim Fragment	But-99	H.P. 2	3-6"
Red Pigment	1632	15	12	9	Hemetite	Unground	But-100	H.P. 1	0-12"
" "	1645	27	19	13	Hemetite	Unground	But-100	H.P. 3	0-3"
" "	1654	105	39	18	Hemetite	Ground	But-99	H.P. 1	0-3"

*Fragmentary

TABLE 4: Bone and Antler Implements

Artifact Type	Catalog Number	Length (mm.)	Width (mm.)	Thickness (mm.)	Material	Comments	Provenience
Bone "Pin"	1501	197	3-13	3-8	Metapodial	Complete	But-101 H.P. 2 On Floor
Cut Bone Frag.	1609	25+	11	4	Deer Bone	Carbonized Frag.	But-100 H.P. 1 3-6"
Cut Rib	1651	36+	11	4	Deer Rib	Fragment	But-100 H.P. 1 3-12"
Antler Tine	1630	125	20(base)	10(base)	Deer Antler	Cut Base	But-100 H.P. 1 0-3"


EUREKA
OROVILLE
SACRAMENTO
SAN FRANCISCO
LOS ANGELES
SAN DIEGO
LOCATION MAP
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CHEROKEE ROAD
OLD
Ravine
RIVER
But-100
But-101
But-99
OROVILLE DIVERSION RESERVOIR
BLVD.
FEATHER
FEATHER RIVER
OROVILLE
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MAP 2

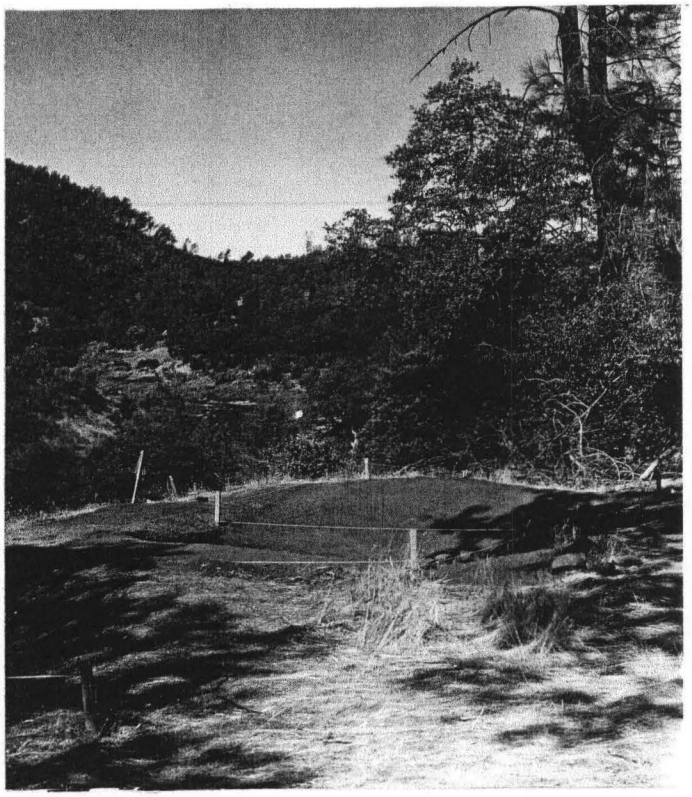
Insert #3

INSERT #3
-LINESHOT

Map 2. Topographic map of Site But-101.

FIGURE 1

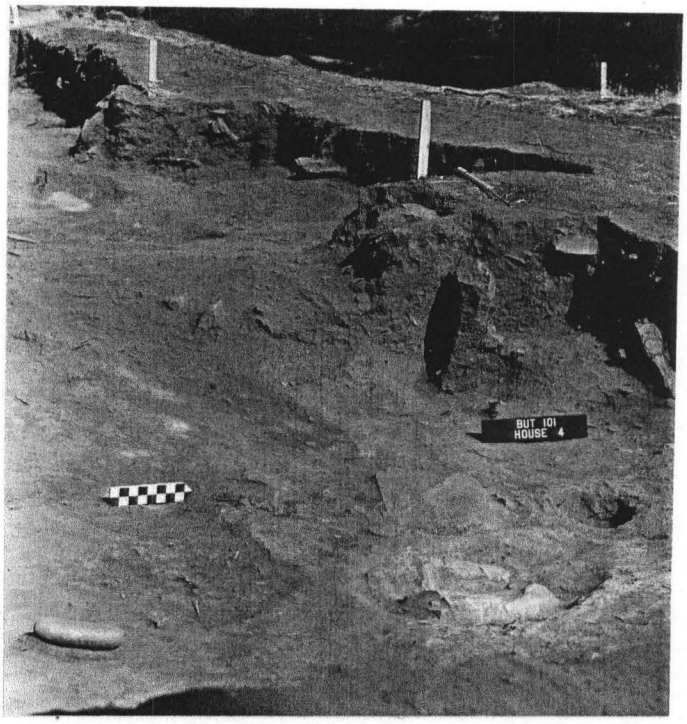
a. View of Site But-101, Housepit 10 looking southwest prior to clearing; Feather River in background.



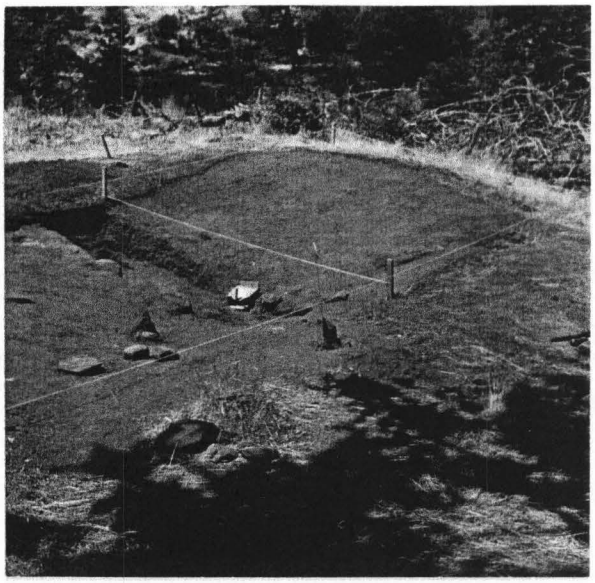
But-101, Housepit 10 cleared and partially excavated.

ON PAGES LIKE THIS ONE — MAKE ONE LINESHOT AND ONE HALFTONE

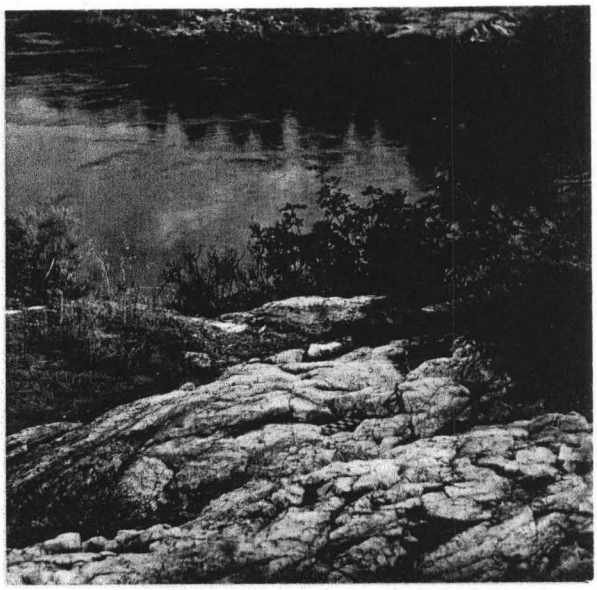
FIGURE 2



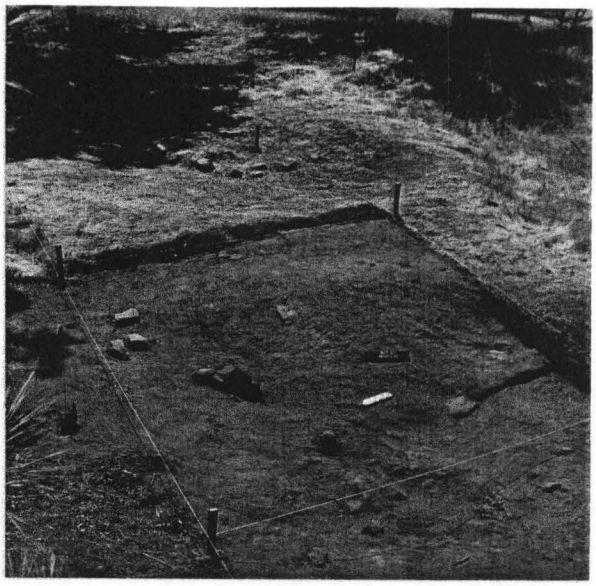
a. But-101, Housepit 4 after excavation. Note hearth (right center) and pestle (left foreground). Housepits 2 and 3 in background.



b. But-101, Housepit 10 during excavation.

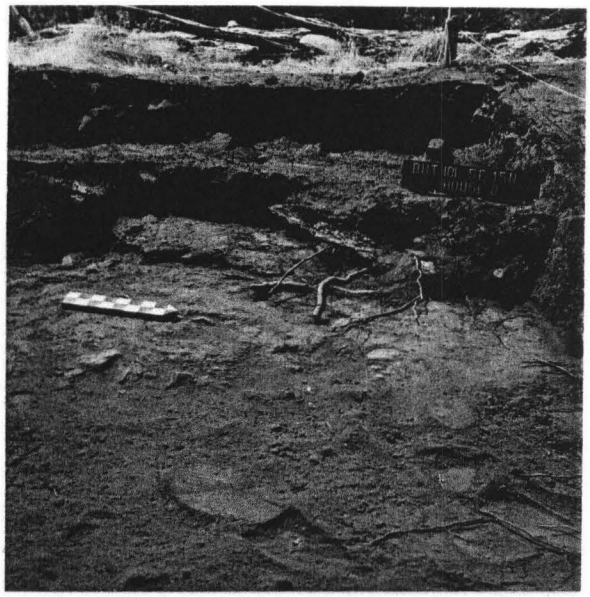


a. Bedrock mortar area in white quartz below But-101. Feather River in background.



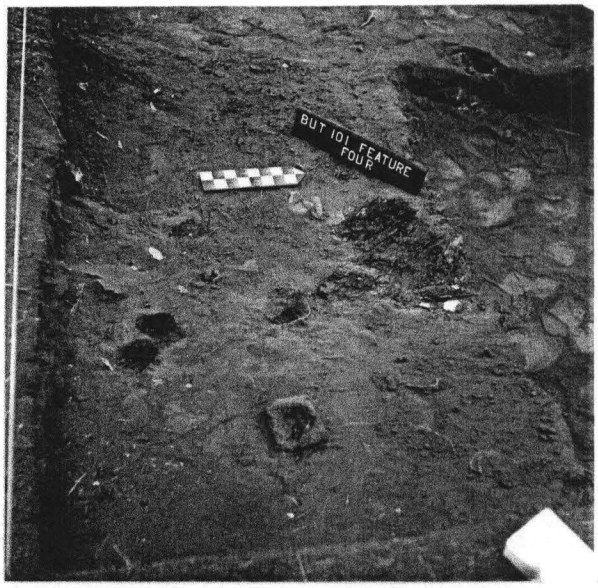
b. But-101, Housepit 10 excavated to a depth of 3 inches.

FIGURE 4

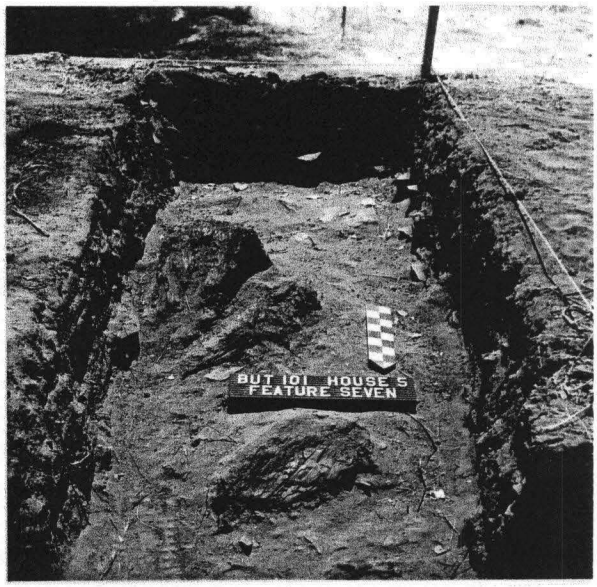


a. But-101, Housepit 2 exposed to floor level, note roofing bark slab and roots growing on floor level.

b. But-101, Housepit 4 showing firepits, cache pit and slab mortar.



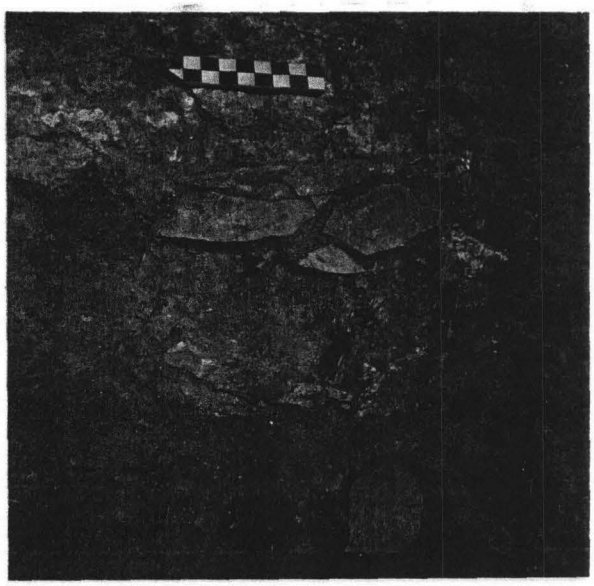
a. View of But-101, Housepit 5 showing slabs of roofing bark (Feature 4).



b. But-101, Housepit 5 and burned roofing bark (Feature 7).

FIGURE 6

a. But-101, Housepit 5 firepit (Feature 3).



b. But-101, Housepit 4 firepit with rock lining (Feature 8), cleaned with compressed air.

a. But-101, Housepit 2 slab mortar (Feature 15).

b. But-101, Housepit 4 slab mortar (Feature 11).

- MAKE MASK ARROWS TO BE OUTLINED

FIGURE 8

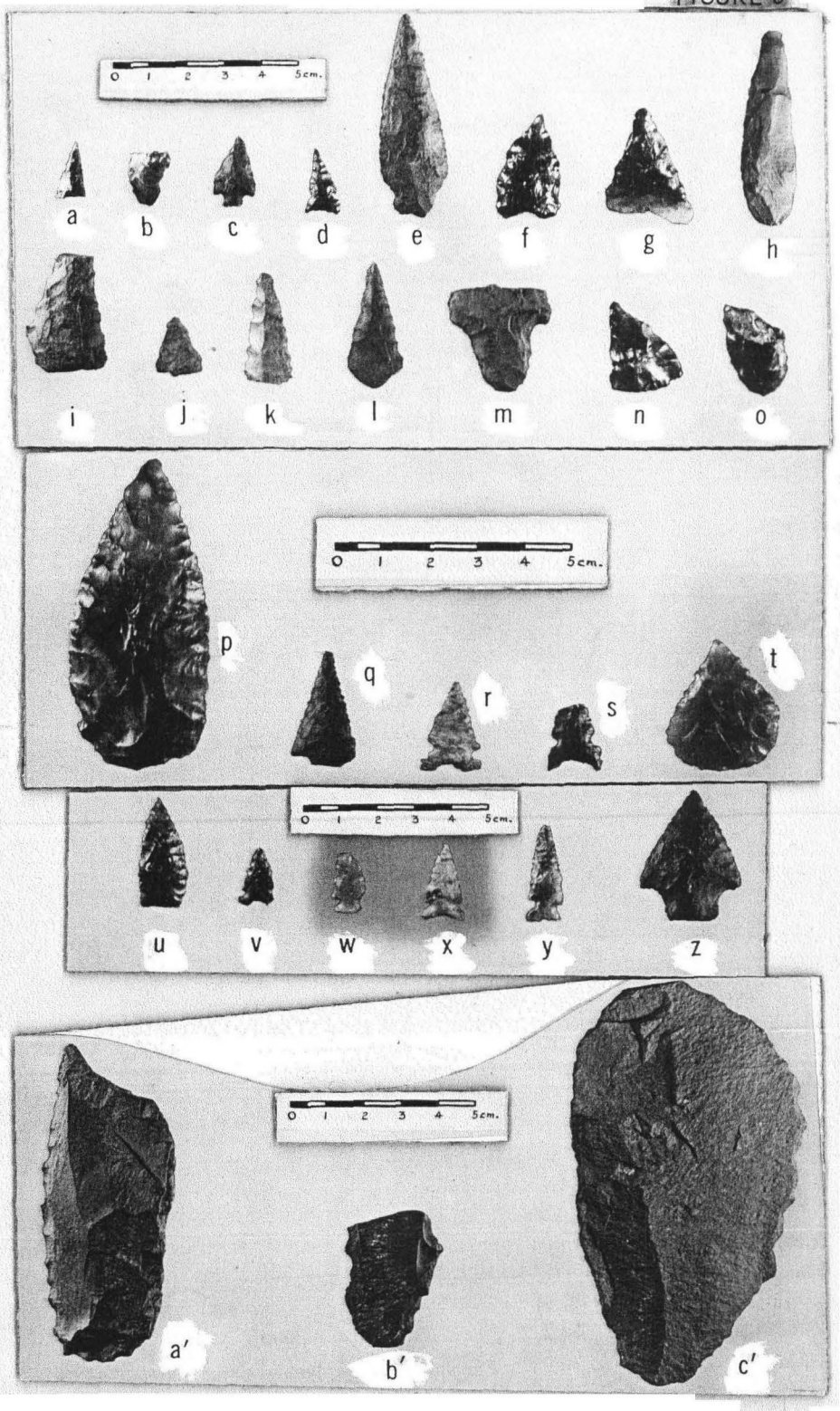
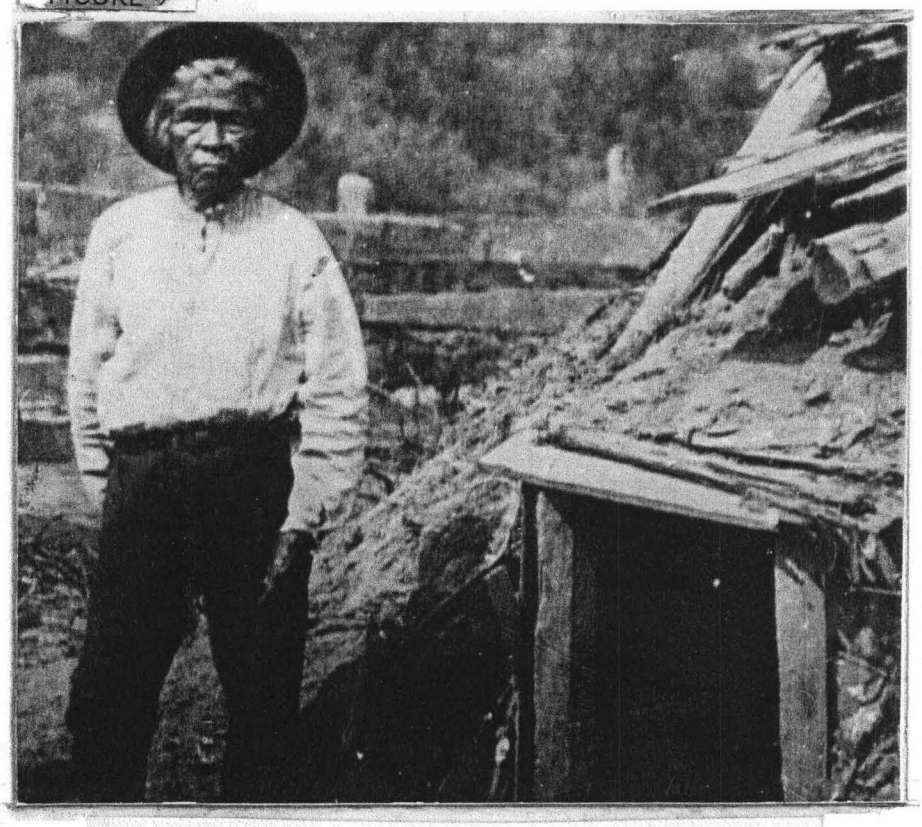
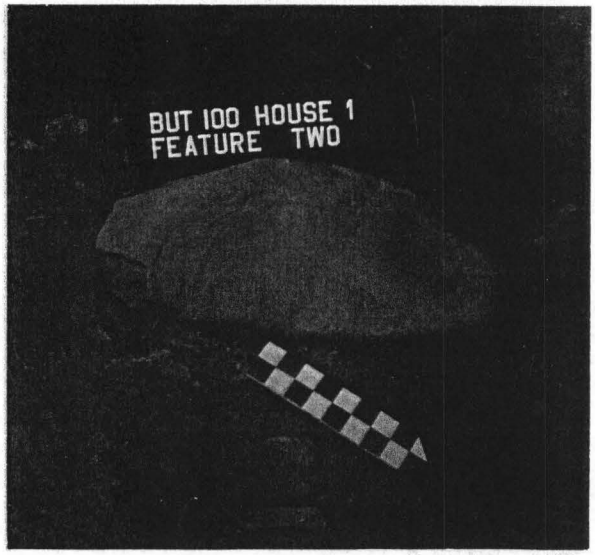


FIGURE 9



a. A Maidu man beside conical bark house ca. 1880 (note banked earth).



b. But-100, Housepit 1 slab mortar (Feature 2).

1.40

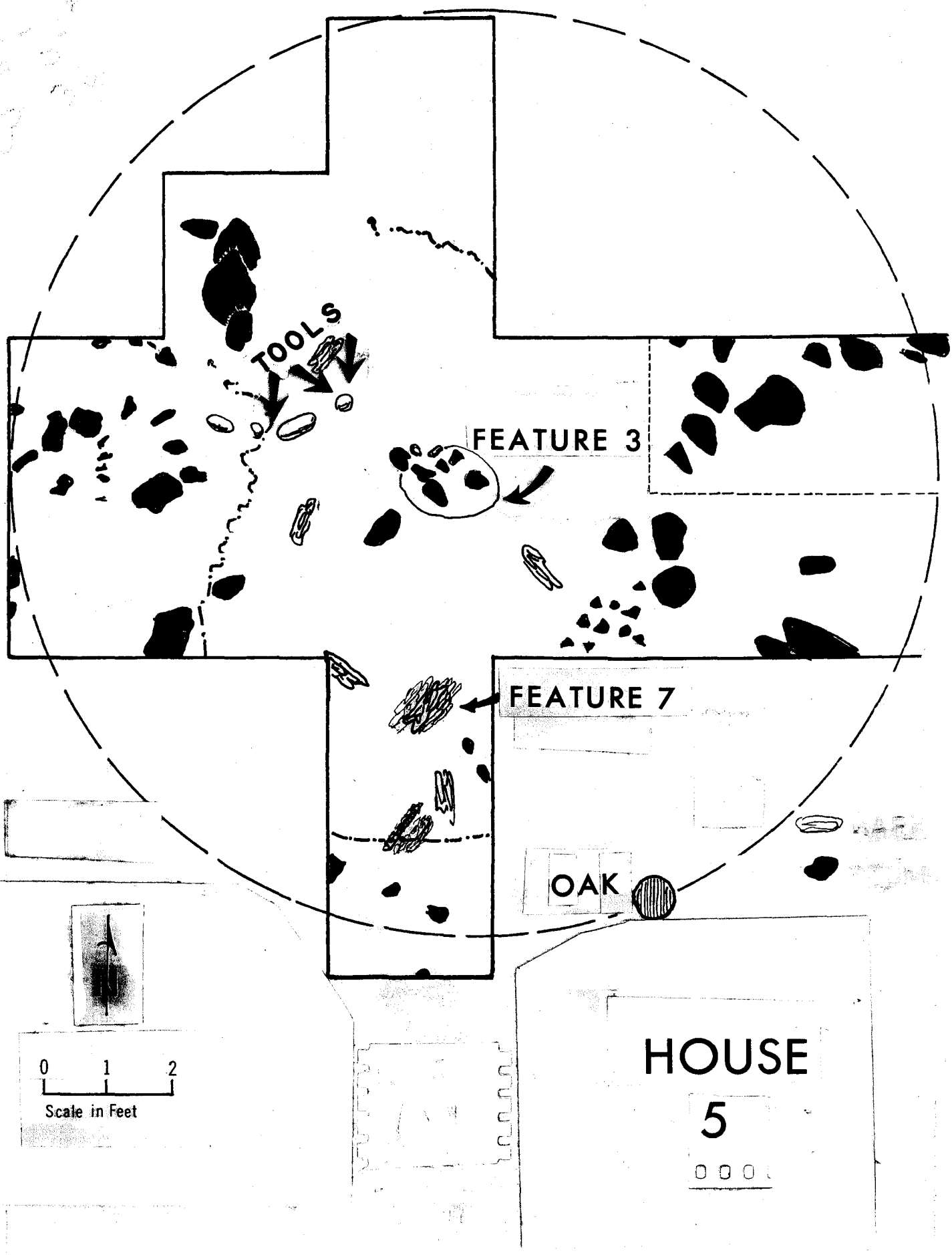
Figure 8.
a. Projectile point tip fragment of silicate (234-1533).
b. Flake scraper of silicate (234-1432).
c. Small stemmed projectile point of basalt (234-1379).
d. Desert sidenotched projectile point of silicate (234-1495).
e. Large shouldered projectile point of basalt (234-1408).
f. Triangular drill or reamer of obsidian (234-1493).
g. Triangular drill or reamer of silicate (234-1434).
h. Leaf shaped projectile point of basalt (234-1712).
i. Large stemmed projectile point (fragmentary) of basalt. (234-1330).
j. Basalt flake (234-1509).
k. Projectile point tip fragment of chert (234-1371).
l. Projectile point tip fragment of basalt (234-1508).
m. Large stemmed projectile point of basalt (234-1546).
n. Triangular drill or reamer of silicate (234-1332).
o. Steep angle scraper of silicate (234-1455).
p. Leaf shaped knife of silicate (234-1613).
q. Small stemmed projectile point of basalt (234-1635).
r. Desert sidenotched projectile point of silicate (234-1633).
s. Desert sidenotched projectile point of silicate (234-1634).
t. Triangular knife of obsidian (234-1623).
u. Triangular projectile point of silicate (234-1688).
v. Desert sidenotched projectile point of silicate (234-1663). (1).
w. Desert sidenotched projectile point of silicate (234-1663). (2).
x. Desert sidenotched projectile point of silicate (234-1687).
y. Desert sidenotched projectile point of silicate (234-1698).
a'. Flake knife of green shale (234-1447).
b'. Flake knife of basalt (234-1429).
c'. Flake knife of basalt (234-1429).

FIGURE 10

Insert 4

INSERT #4

Figure 10. But-101, Plan view and profile of Houses 2, 3 and 4.



Reduced 69%

But-101

INSERT #5
P-36

FIGURE 12

Insert #6

INSERT #6

Figure 12. But-101, Plan view and profile of House 10.

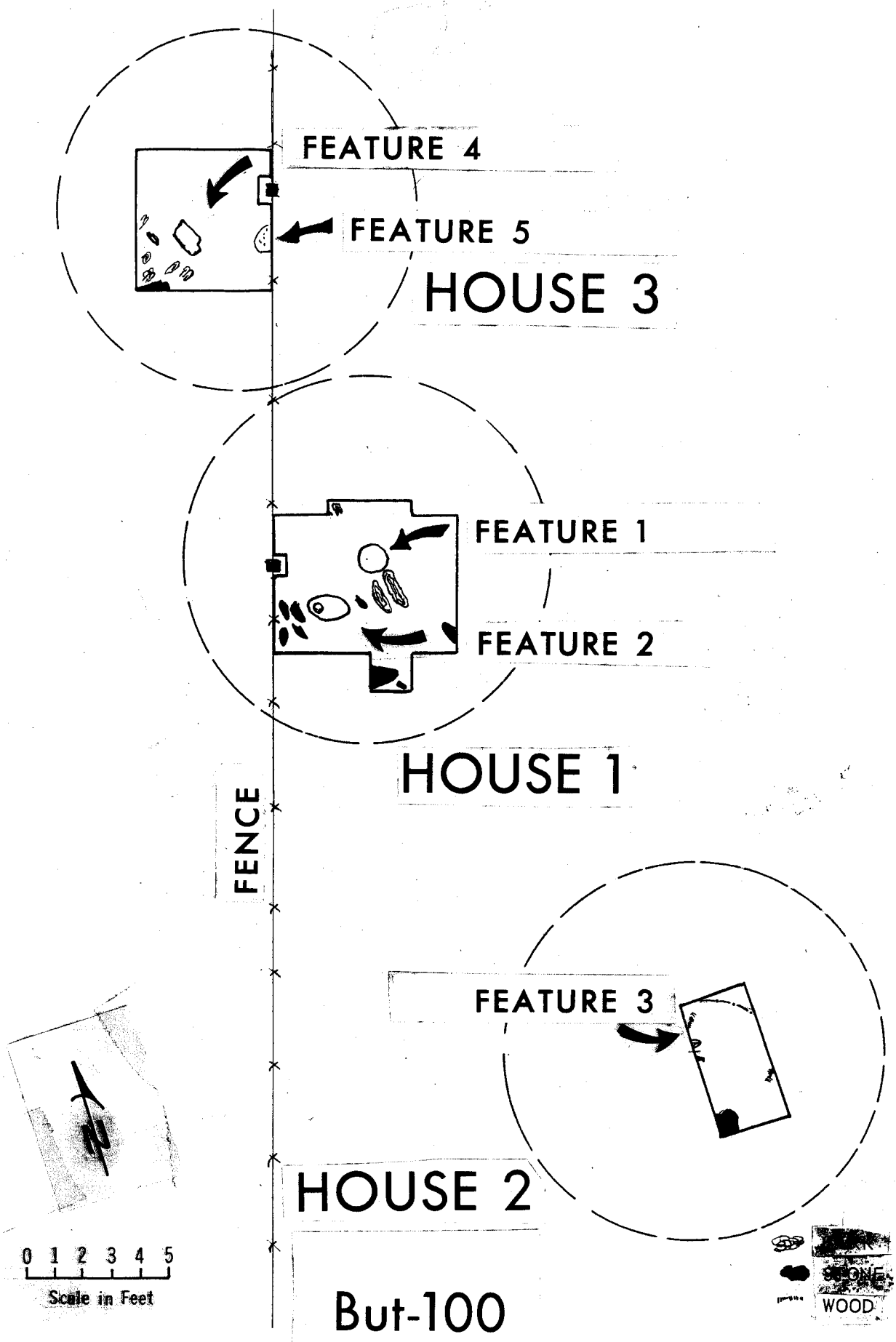

FEATURE 4
FEATURE 5
HOUSE 3
FEATURE 1
FEATURE 2
HOUSE 1
FENCE
FEATURE 3
HOUSE 2
0 1 2 3 4 5
Scale in Feet
WOOD
But-100

FIGURE 14

Insert #8

INSERT #8

Figure 14. But-99, Plan view of Houses 1, 2, 3 and 4.

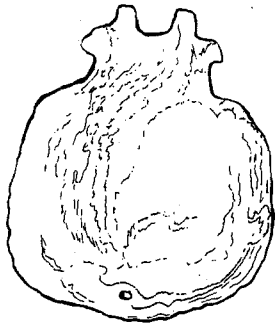
ARCHEOLOGICAL

Archeology of the Oroville Dam Spillway

By Donald P. Jewell

A House Floor in Napa County, California

By Eugene Robinson



Interpretive Services Section

DIVISION OF BEACHES AND PARKS

FEBRUARY 1964

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State Park Archeologist
Division of Beaches and Parks

PART 1 Archeology of the Oroville Dam Spillway

By Donald P. Jewell

PART 2 A House Floor in Napa County, California

By Eugene Robinson

ARCHEOLOGICAL REPORT 10

Interpretive Services Section

STATE DIVISION OF BEACHES AND PARKS

SACRAMENTO, CALIFORNIA
FEBRUARY 1964

PREFACE

The archeological work done at the site of the Oroville Dam Spillway as recorded in Part I of this present report was made possible by Interagency Agreement No. 350919. This agreement is between the Department of Water Resources and the Division of Beaches and Parks whereby the latter agency attends to the archeological needs of the former.

The project was done under contract from the Division of Beaches and Parks to the Central California Archeological Foundation, a nonprofit organization set up to assist in such archeological programs.

The work in the field was under the supervision of Donald P. Jewell who was assisted in excavation by Jon Muller and John Duncan. Assistance in other forms came from the State Park Archeologist; from William Olsen, Assistant State Park Archeologist; and from Charles Heikka, Supervising Construction Engineer, Oroville Project, Department of Water Resources, and his staff.

The specimens recovered from these excavations are housed at the State Indian Museum, Sacramento, under Accession No. 234.

Part II records work done by Eugene Robinson on a house pit at a village site in Napa County. The work done by Mr. Robinson serves to complement the excavation of the series of house pits by Mr. Jewell in Butte County.

One rarely finds data on archeological house remains in reports published on California archeology. It is hoped, therefore, that this number of the Archeological Reports will serve to draw attention to the need for additional published information on archeological house remains.

Francis A. Riddell, Editor

STATE OF CALIFORNIA
Resources Agency
Department of Water Resources
Division of Right-of-Way Acquisition

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Wayne N. Stephenson	Coordinator of Archeological Investigations

CONTENTS

PART I: Archeology of the Oroville Dam Spillway
by Donald P. Jewell

PART II: A House Floor in Napa County, California
by Eugene Robinson

Part 2 | A House Floor in Napa County, California

By Eugene Robinson

INTRODUCTION

During the summer of 1958, a large floor was excavated on a site located in the low mountainous region of eastern Napa County, some 25 miles northeast of San Francisco Bay and 12 miles west of the Sacramento Valley (Map 3). The site is recorded as Nap-234 in the files of the University of California Archaeological Survey. It is a loose, ashy-textured occupation midden similar to other Late Horizon deposits in the Napa region.

Little is recorded of the ethnographic occupation of the area, but both Barrett (1908, Map 2) and Kroeber (1932, end map) include it in historic Hill Patwin territory.

The site is situated on the west end of a large, grass covered alluvial flat on upper Capell Creek, about 10 air miles northeast of the town of Napa and 15 miles west of Winters[1]. Floral cover is limited to grass and weeds on the site, while the surrounding hills support a typical oak woodland type of cover: blue and live oak, Digger Pine, and chaparral; several large Valley Oaks are in the immediate vicinity. Although Capell Creek is normally dry by late summer, a small seep spring in the ravine to the west of the midden supplies drinking water through most of the year, and was probably a determining factor in the location of the site.

Nap-234 overlooks Capell Creek from a height of 20 feet, extends for 170 feet along the top of the creek bank, and covers a semicircular area to the south about 70 feet in width. Mean depth of the deposit is about 28 inches, with a maximum of 36 inches. The site had been cultivated early in the century to a depth of 6 to 8 inches, but no previous excavations had been made other than a small series of test pits dug by the writer in the fall of 1957. Rodent activity was noted at all depths.

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[1]U. S. Geological Survey, Capell quadrangle. T7N/R3W, NW 1/4 of SE 1/4 of Sec. 20. Elevation of site is 780 feet. Special thanks are due to Donald and Clinton Pridmore, of Capell Valley, for permission to excavate on their property, and to members of the University of California Archaeological Survey, Berkeley, who worked at the site and offered many helpful suggestions: Albert B. Elsasser, James T. Davis, Jack Smith, and Eugene Prince. Students Walter Greene and Peter Berendson, of Napa, also took an interest in the site and their willing assistance is greatly appreciated.

The western half of the floor was first exposed in June, 1958, subsequently the eastern half excavated in small units as time and labor permitted. No surface depression was apparent prior to excavation. The structure had been built near the east-west center of the site and probably originally stood a short distance back from the creek bank: unfortunately, stream degradation has eroded the entire north side of the midden, destroying an estimated third of the site and approximately a quarter of the floor area (Map 4).

From the location of the floor in the deposit it is apparent that the structure had been built at a time prior to deposition of the upper 12 to 14 inches of midden on the site. The occurrence of clamshell disc beads in the midden over the floor area, and with a cremation nearby, indicates that at least the upper level of the site is attributable to Phase II of the Late Central California archeological cultural sequence. No evidence of European contact was found.

DESCRIPTION OF STRUCTURE

The floor consisted of a hard-packed, oval, basin-shaped central pit, 19.5 feet in width and varying in depth from 15 to 22 inches. Length of the pit was about 22 feet as estimated from the plan and contour of the floor near the destroyed northern side (Figs. 15 and 16).

Extending outward around the west and south edges of this central pit was a hard-packed "bench" area, approximately 13 feet in width and with an evenly graded rise of 12 to 14 inches. The extreme periphery of this feature was well defined, although no evidence of an embankment, rim, or other delimiting feature could be detected in the homogenous midden deposit. No definite evidence of the "bench" could be found on the east side of the central pit, where aboriginal activity had apparently obliterated it.

Total width (east-west dimension) of the structure, assuming the bench area to have been, more or less, of equal width on the east side, must have been about 45 feet. The oval plan of the central pit may indicate that the north-south length was somewhat greater, or possibly modified by the configuration of the creek bank.

In digging the central pit the builders had left a vertical rise around the edges on the south and west where it joins the bench area. This feature increased from 3 inches in heighth on the west, to 10 inches on the south, according to the slope of the site. It then merges with the high edge of the pit floor on the east. That the pit floor and bench floor formed a single, integral unit is indicated by the smooth, foot-worn edge of the bench, plus the fact that at no point did the pit floor extend up underneath the bench.

The vertical rise should not be interpreted as a culturally determined building trait, since it occurs primarily around the south half of the pit where it was necessary for the builders to excavate to a greater depth against the upward slope of the site in this direction. As indicated in the cross-sections, (Fig. 16) the west side of the pit has penetrated several inches into subsoil.

Some time after the initial occupation of the building a 1 to 3 inch layer of earth had been spread over the floor of the pit and had become as hard-packed as the original floor level. This layer abutted the edge of the pit on the east and south sides and extended to within 3 or 4 feet of it, on the west and north.

Evidence of the roofing system is present in the form of seven post holes, all within the central pit, and classified as follows:

1.) Center post hole: 6 inches in diameter and 24 inches deep.
2.) Three side post holes: located within the pit rim on the northwest, southwest, and southeast sides. All were 5 1/2 inches in diameter and 14 to 22 inches in depth. A fourth side post hole which would have formed a square pattern in the placement of these is assumed to have been located on the northeast side where it was destroyed by a test pit of the previous season.
3.) Three smaller post holes: 3 1/2 inches in diameter and 9, 10 and 17 inches deep, respectively, were spaced roughly midway between the larger side post holes and possibly served as bases.

Decayed remnants of the original posts were found only in the lower portions of the center post holes and the southwest side post hole.

Four feet to the east of the center post hole was the ash-filled firepit, measuring 32 by 26 inches and 6 inches deep. That this feature had been much used is indicated by hard-packed lenses of white ash, 1 to 4 inches thick, which formed the edges of the pit.

Entrance to the structure was apparently on the north side, facing the creek. Here a low break in the contour of the floor occurred in which the floor sloped to 6 inches below the general floor level, and 23 inches below the pit rim on the east side. Stream erosion had destroyed any evidence of a passageway which may have existed farther out.

The only artifacts found in direct association with the floor were two small corner-notched projectile points from the vicinity of the firepit (one of these from between the two floors) and a smoothed sandstone slab found on the bench floor 4 feet to the west of the pit rim.

Evidence that the roof of the building had been burned is afforded by large, thin areas of ash lying directly on the floor and containing quantities of charred twigs, sticks and a number of short lengths of charred poles 1 to 3 1/2 inches in diameter and 4 to 17 inches long. None of the latter were of sufficient length as to suggest a definite roofing pattern.

After abandonment of the structure approximately 12 to 14 inches of midden refuse had accumulated over the entire floor area. This was evidenced by ash lenses and hearth areas, several of which had disturbed the bench area on the south and west sides. No ash deposits were found in the upper 18 inches of fill over the central pit, and this possibly could represent surface midden which had been leveled off into the house pit depression at the time the site was cultivated.

Discussion

It is apparent from the size of the above described floor that the structure was too large to have served as an ordinary dwelling or sweat house. It more properly belongs to the larger assembly type of structure commonly erected in central and northern California of the ethnographic period. Ethnographic building traits shared with the Nap-234 floor are: Excavated floor, center post with side post roof supports, side entrance, and central firepit. While these traits serve to link the floor with late central Californian building practices, an individual or perhaps local variation is seen in the fact that only the central

northern portions of the State. Such work would not only supplement and serve as a check on the ethnographic sources, but would quite likely bring to light significant structural variations which could be related to our present knowledge of the archeological regions of the State (Heizer and Baumhoff 1956:34). Related to this is the broader, historical question of the relationships of California pit structures to those of the Plateau and Pacific slope.

BURIALS

When the site was first visited in the fall of 1957, skeletal remnants of at least four adult burials were observed eroding from the stream bank along the eastern portion of the site. Only a few long bones were retained, and burial position was impossible to determine. Two 5 by 5 foot squares excavated in the edge of the deposit at this location revealed a fifth adult burial at a depth of 28 inches. Though badly disturbed by roots and rodent activity the position was semi-flexed on the left side with head to the east. There were no accompanying artifacts. Burial locations are marked on Map 4. It is probable that these burials mark the southern fringe of a small cemetery area which has been largely destroyed by stream cutting.

CREMATION

A single cremation was found near the south edge of the house floor area (Map 4), and consisted of the burned remains of an individual cremated elsewhere and the ashes redeposited in a pit. The cone-shaped pit measured 16 inches in diameter and extended from 12 to 25 inches below the present surface. Although a number of unburned objects had been placed in the pit with the ashes, most of the offerings had been burned with the body and were thus fragmentary and badly calcined or charred.

Skeletal and dental evidence indicate that the cremation was that of an infant.

The following objects had been burned with the body.

Quantity	Description
325	Clam shell disc beads.
209	Olivella beads, Type 3e.
140	Olivella beads, small, Type 1a.
1	Haliotis pendant, drilled (fragmentary).
16	Serpentine beads, disc.
6	Magnesite beads, disc.
4(?)	Incised bird bone tubes; crosshatched diamond design element (124 pieces, length: 1-3.5 cm.) (cf., Heizer 1953, Fig. 11a, b, d, j, k). Incised cannon bone ornament; crosshatched triangle motif, 2 perforations (17 fragments).
1	Bone ornament, spatula-shaped, edges incised in small hatched triangles.
2(?)	Mammal bone rods or pins (12 pieces, 3-6 mm. dia.).
7(?)	Whistles, bird bone, 5-6 mm. dia. (7 fragments).

area of the floor was excavated. This left a wide, encircling bench area which extended to the periphery of the structure. This is in contrast to the usual Californian practice of excavating floor areas to the periphery of their diameters.[1]

Bench features have not as yet been reported in an archeological context for the central and northern California areas, although Merriam (1955:36) by analogy, describes a type of Pit River assembly house in which: "...excavation begins some distance inside, thus leaving a broad shelf for the onlookers". Cressman (1956:440) encountered bench features in 11 of 17 house floors excavated by him in the Klamath area of Oregon, although these only included a small area within the pit diameters.

From the evidence at hand, little can be deduced as to the plan of the roofing system over the floor. The posthole pattern indicates that a center post and side posts were employed as roof supports. The latter perhaps joined by horizontal stringers at their tops from which pole-rafters radiated outward to the periphery of the floor.

In this connection, some question must be raised as to the comparatively small diameter of the floor. Available data indicate that the roofs of most ethnographic buildings of this size were supported by posts of larger diameter, usually supporting a heavy layer of earth in addition to the weight of rafters, etc. Since no evidence of an earth covering could be detected on the present floor, it is possible that the roof was composed of poles and brush only, perhaps renewed seasonally. Location of the supporting posts within the central pit presupposes a fairly long span over the bench area, and would of necessity dictate a roof of fairly light construction. One is reminded here of the brush dance houses of the Wappo (Driver 1936:190), Pomo (Loeb 1926:163) and Miwok (Barrett and Gifford 1933:206); however, these were more or less temporary buildings erected for summer ceremonies, and were not excavated. A recent Wintun assembly house, without earth covering, is illustrated by Merriam (1955, Fig. 38b).

Although structural remains are time consuming to excavate and often only partially preserved, it is apparent that more field work and publication in this phase of California archeology is needed, especially in view of the well developed pit house tradition in the central and

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[1] Since the above was written a reproduction has been published (Josephy 1961:320) of one of H. B. Brown's 1852 sketches of Wintun assembly houses; the view depicts the interior of a large structure in which a shallow circular depression had been excavated in the center of the floor, thus creating a raised bench area similar to the Nap-234 floor. It is not clear in the sketch whether or not the structure is semi-subterranean, but the features may have been a symbolic expression of the traditional excavated pit, applied to an otherwise unexcavated assembly house.

A large, multi-post structure has been excavated at site Sac-29 near Sacramento, California (information from Mr. Norman L. Wilson, California State Division of Beaches and Parks, Sacramento).

For ethnographic variations in ground plans and post arrangement of Central California assembly structures, see: Barrett 1916:12; Holmes 1902, Fig. 177; Kroeber 1932:294; Barrett and Gifford 1933:200-5; Merriam 1955:64; 1960, Figs. 6 and 8; 1957:34-5; McKern 1923:176. For an archeological ground plan, see: Lillard, Heizer and Fenenga 1939:68.

1	Ulna awl, polished point and shank (Fig. 19c).
1	Deer metatarsal awl.
1	Obsidian blade.
2	Mussel shell (Mytilus californianus), unworked.
1	Shell, unidentified.
2	Acorns, carbonized.
10	Digger Pine shell, carbonized.
2	California walnut shell, carbonized.
5 oz.	Calcined small mammal and bird bone (evidently the remains of pets).

The following unburned artifacts were placed in the pit with the ashes:

6	Obsidian points; Type 1a (3), Type 2 (1), Type 3 (2); all but one "killed".
2	Obsidian points, Type 1c, long, thin and delicate (Fig. 19d, e).
1	Obsidian blade, round base, 10 cm. long (Fig. 19f).
1	Obsidian blade, or blank, 6.5 cm. wide, ca. 13 cm. long, "killed".
1	Obsidian prism.
2	Quartz crystals (fragments).
2	Two worked deer femora, possibly gaming or ritual pieces, in process of manufacture, 21.5 and 22.5 cm. long. One piece has ends squared, with an open groove sawed lengthwise on one side. There are three panels of incised, crosshatched triangles bordering the groove. A fourth panel had not been started. The other femur has ends squared and the longitudinal groove started (Fig. 19a, b, a',b'). Artifacts accompanying the cremation are not included in Tables 5 and 6.

TEST PITS

Most of the artifacts recovered at Nap-234 were from the midden fill over the floor area (Table 5), which in terms of depth theoretically represents the upper 12 or 14 inches of deposit elsewhere on the site. Table 6 indicates the depths (by 6 inch levels) of artifacts recovered from six test pits located outside of the floor area, totaling 240 cubic feet. Here a 1/4 inch mesh screen was employed.

The evidence from the test pits and floor fill indicates an unstratified, Late Horizon occupation throughout, as perhaps would be expected of a site as shallow as this one.

As previously stated, evidence of a Phase II "clam disc bead complex" occupation of the site seems to be restricted to the upper level of the midden. It was there, in addition to the cremation, four clam

beads were found in the floor fill, one in the [illegible] level of test pit No. 4, and five on the surface. Also indicative of Phase II were two Type 3a1 Olivella beads from deposit 6 inches above the central pit floor, and one from a test pit at 14 inches.

If the lower levels of Nap-234 represent a terminal Phase I occupation, the only evidence for this in the collection is a single Type 2a rectangular Olivella bead from a depth of 22 inches.

All of the artifact types in the collection correspond with types already known from Late Horizon sites in the Napa Valley (cf., Heizer, 1953).

PROJECTILE POINTS

This class of artifact is amply represented in the collection and clearly reflects a maximum use of the bow and arrow in the hunting complex. Projectile points total 193 classifiable specimens plus 62 tips and fragments, all but one of obsidian. Eighty percent of these have broken tips, attesting to a high incidence of breakage for this fragile material (Fig. 17).

Corner-notched points and stemmed, serrated points appear to be the two most favored types at the site. All of the types are found in Late Horizon sites in the Napa Valley area. Type 2 serrated points show considerable variation in form and are, in general, more slender in proportion to length than are Type 1 corner-notched points. (Type 1: 1 to 0.532; Type 2: 1 to 0.381). Type 2 points occur in Late Phase sites primarily in the Napa Valley-Sacramento Delta regions (Lillard, Heizer and Fenenga 1939: 13, Pls. 24b, 25; Johnson 1940:167; Schenck and Dawson 1929, Pl. 93) but have been found also in the Fernandez Site in Northern Contra Costa County (Davis 1960:34-35) and in sites in the lower Sonoma Valley (specimens in private collection at Sonoma Mission). Whether this type is a result of influence from the Sacramento-San Joaquin Delta into the Napa area, or vice versa, is undetermined.

While two corner-notched points (Type 1) occurred below 12 inches in the test pits (14 and 15 inches), the sample is too small to allow conclusions as to a late vogue for this type. Confirmation will have to come from excavations in other sites having greater depth.

The types are as follows (see Table 7 for measurements):

1a. Corner-notched, under 30 mm. in length (Fig. 17a, b).
1b. Corner-notched, over 30 mm. in length (Fig. 17c-g).
1c. Corner-notched, serrated (Fig. 17h-l).

2a. Side-notched, expanded stem, straight to convex base, serrated (Fig. 17m-r).
2b. Shouldered, parallel stem, straight to convex base, serrated (Fig. 17s-u).
2c. Shouldered, tapered to rounded stem, serrated (Fig. 17v-x).
2d. Serrated, straight to rounded base (Fig. 17y).

3. Triangular, straight to convex base (Fig. 17z, a').

4. Round base (Fig. 17b').

SUMMARY

Nap-234 is probably typical of the numerous habitation sites located along the wooded streams of this mountainous region. This seems to be evidence of a widespread but scattered occupation by small groups during Late Horizon times. That the site is a result of seasonal or repeated temporary occupation is indicated by the generally homogenous nature of the midden. Ash deposits and hearths are small and scattered, no complex features were noted, and no stratigraphic breaks or layering could be observed. Aside from a few lost or discarded odds and ends, nearly all of the artifacts found at the site were those used in the securing and preparation of animal and plant resources of the area. The quantity of animal bone (chiefly deer) and the scattered but regular occurrence of carbonized acorns and Digger Pine nuts, indicate that these foods were commonly utilized by the occupants of the site.

During the occupation of the site at least five burials were interred along the northeast edge of the midden. Damage by stream degradation could indicate that the original number was on the order of 10 to 12. Although a single cremation and the several clam disc beads indicate a Phase II occupation for the upper level of the site, no such evidence was found in the lower levels and it is assumed that these deposits represent a terminal Phase I occupation.

At some time during the later occupation of the site, and before final abandonment, a large assembly type structure was erected which had a post-supported roof and an excavated central pit encircled by a wide bench floor. A combination of these features into one structure apparently has not been reported elsewhere in the central California area, where it is likely that future field work will produce similar variations from known ethnographic types.

Nap-234 shows a strong cultural affiliation with the Napa Valley area, where all of the artifact types--projectile points, grinding implements, sandstone tablets, and the like, are all present in the Late Phase inventory. However, noteworthy at this site is the general scarcity of bone tools. Most of the artifact types described by Treganza (Treganza and Cook 1948, Pl. 27) from the Peterson III mound on the Sacramento plain, 30 miles to the southeast, occur at Nap-234. It is likely that considerable trade in obsidian and other products was carried on in this direction by the foothill communities.

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TABLE 5: Artifacts from Fill Over Floor Area, Nap-234

Artifact type	total	Material	Average size	Heizer 1953
Mortars, exterior shaped	7	Scoria (5) Basalt (2)	Dia.ca.15-28cm. Height 12-18cm.	Fig. 5,Types 1-a, IIIa
Hopper mortars	8	Sandstone (6) Scoria (2)	28-48 cm.	Fig. 5, Type V
Pestles, dressed cobble	5	Sandstone (3) Basalt (2)	22-29 cm.	
Pestles, tapered	3	Sandstone	6.5 cm. dia.	Fig. 5, Type III
Pestle, cylindrical	1	Scoria	9.5 cm.	Fig. 5, Type IV
Sandstone tablets	6	Sandstone		Figs. 2, 3
Bead grinding slab (?)	1	Sandstone	39.5x32.5x6 cm.	
Charmstone	1	Sandstone	6.1 cm.	Pl. 33f
Core tools	10	Basalt, schist		Pl. 35g-i
Obsidian, amorphous worked pieces	72			
Obsidian, parts of blades, blanks, tips, rejects, etc.	70			
Obsidian, projectile points and blades			(see Table 7)	
Cannon bone awls	5			
Ulna tools	2			Pl. 38a
Deer Metatarsal awl	1			
Tubular bird bone bead	1			
Tubular mammal bone bead	1			
Clam shell beads	9			
Olivella beads, Type 1a	5			
Olivella beads, Type 3a1	2			

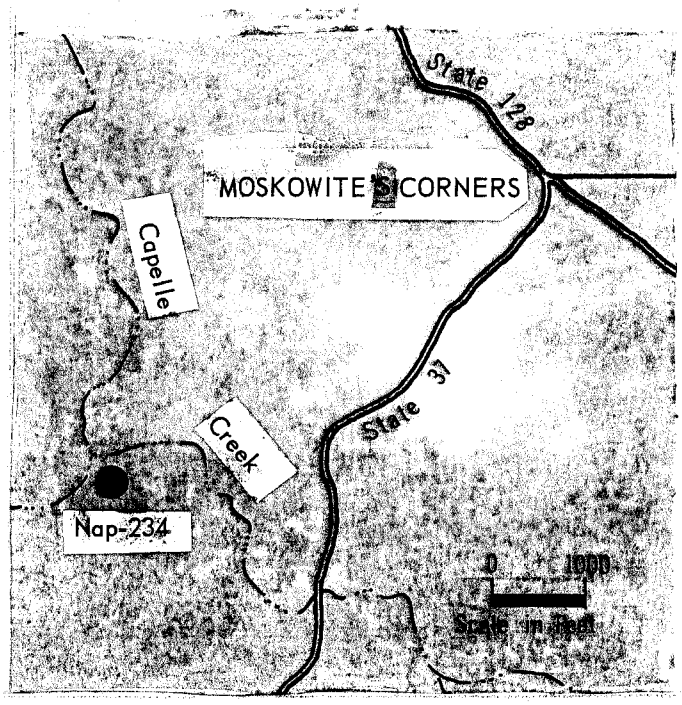
Unmodified faunal and floral remains: clam shell (12), Olivella (27), Haliotis sp. (3), Mytilus californianus (3), M. edulis (6). Animal bone total 648 fragments, mostly from deer. Carbonized flora: acorns (7), Digger Pine nut shell (20).

TABLE 6: Artifacts from Test Pits, Nap-234, Depth in Inches

Artifact Type	0-6	6-12	12-18	18-24	24-30	Total
Sandstone tablet		1				1
Obsidian points:						
Type 1a	4	1	2			7
1b	3					3
1c			1			1
2a	6	2	1	2		11
2b	1				2	3
2c		1	1		1	3
3			2	1	1	4
4					1	1
Obsidian blades:						
Type 1				1	1	2
Clam bead		1				1
Unworked clam shell	4	1				5
Olivella beads:						
Type 1a		1				1
2a				1		1
3a1			1			1
Basalt choppers	1		1	1		3
Cobble pestle					1	1
Totals	19	8	9	6	7	49

TABLE 7: Measurements of Projectile Points and Blades

	No. of Spec.	Length (mm.) Max.	Min.	Avg.	Width (mm.) Max.	Min.	Avg.	Ilust.
Projectile points:								
1a	20	30	21	25	18	12	16	Fig. 17a,b
1b	46	49	31	37	22	14	17	c-g
1c	8	35	26	31	19	13	15	h,i
2a	45	50	26	40	18	8	14	j-r
2b	24	49	21	35	15	12	13	s-u
2c	17	49	32	37	18	11	15	v-x
2d	6	--	--	--	18	16	17	y
3	23	49	27	40	24	14	18	z,a'
4	3	42	40	41	19	13	16	b'
Total	192							
Blades:								
Leaf	13	74	44	66	30	23	26	Fig. 18a-d
Convex base	9	--	45	--	32	23	27	f,g
Round base	4	62	55	58	30	25	28	e
Total	26							


State 128
MOSKOWITE CORNERS
Capelle
State 37
Creek
Nap-234
0
1000
Scale in feet

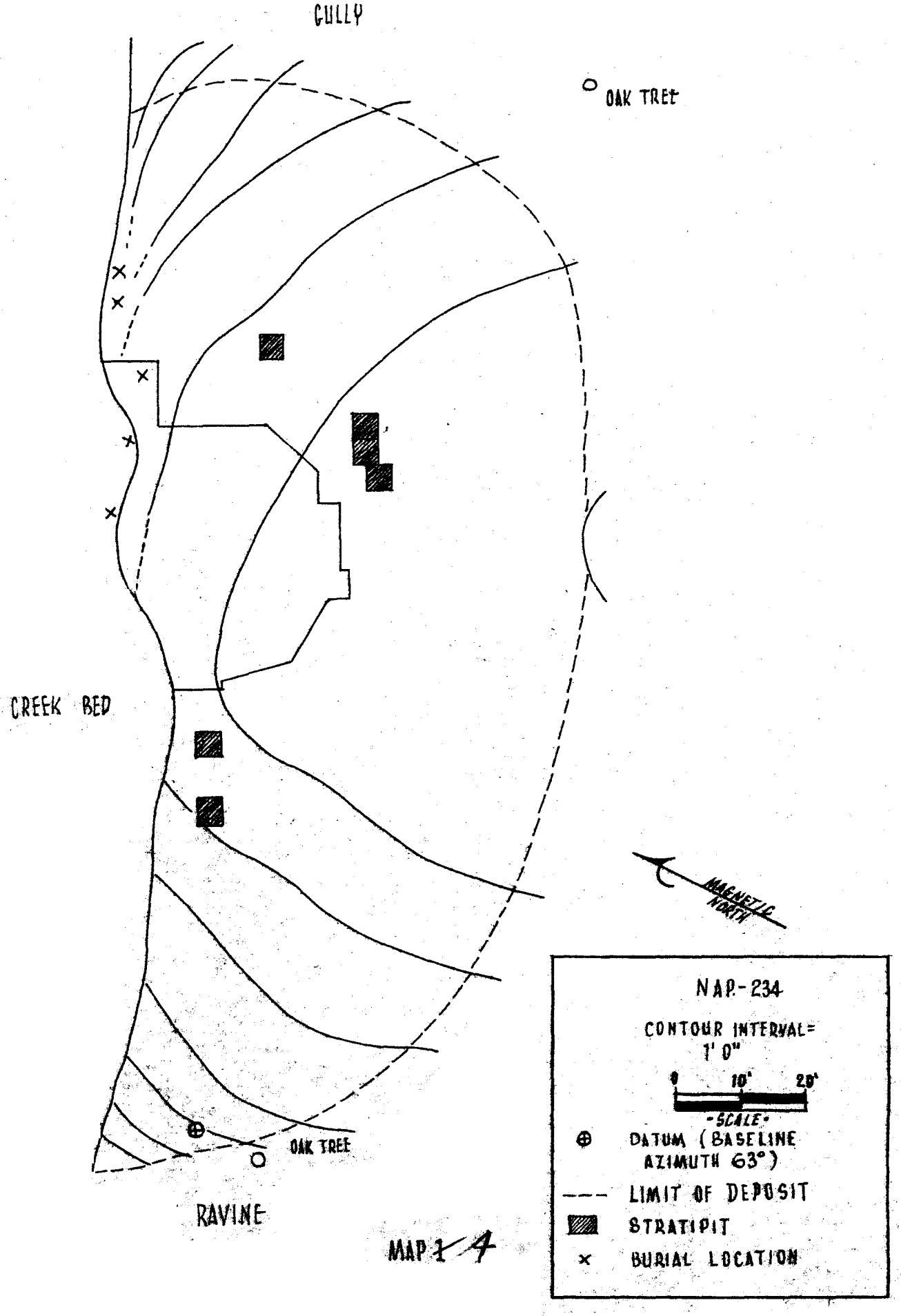

GULLY
OAK TREE
CREEK BED
OAK TREE
RAVINE
MAGNETIC NORTH
MAP 4
NAP-234
CONTOUR INTERVAL= 1' 0"
0
10'
20'
-SCALE-
DATUM (BASELINE AZIMUTH 63°)
LIMIT OF DEPOSIT
STRATIPIT
BURIAL LOCATION

FIGURE 15

Insert #11

INSERT #11

- LINESHOT

Figure 15. Detail plan of house floor and its features, Nap-234.

Key to Features
(Figures 15 and 16)

———— – ———— Extent of floor excavations

— — — — Exploratory pits.

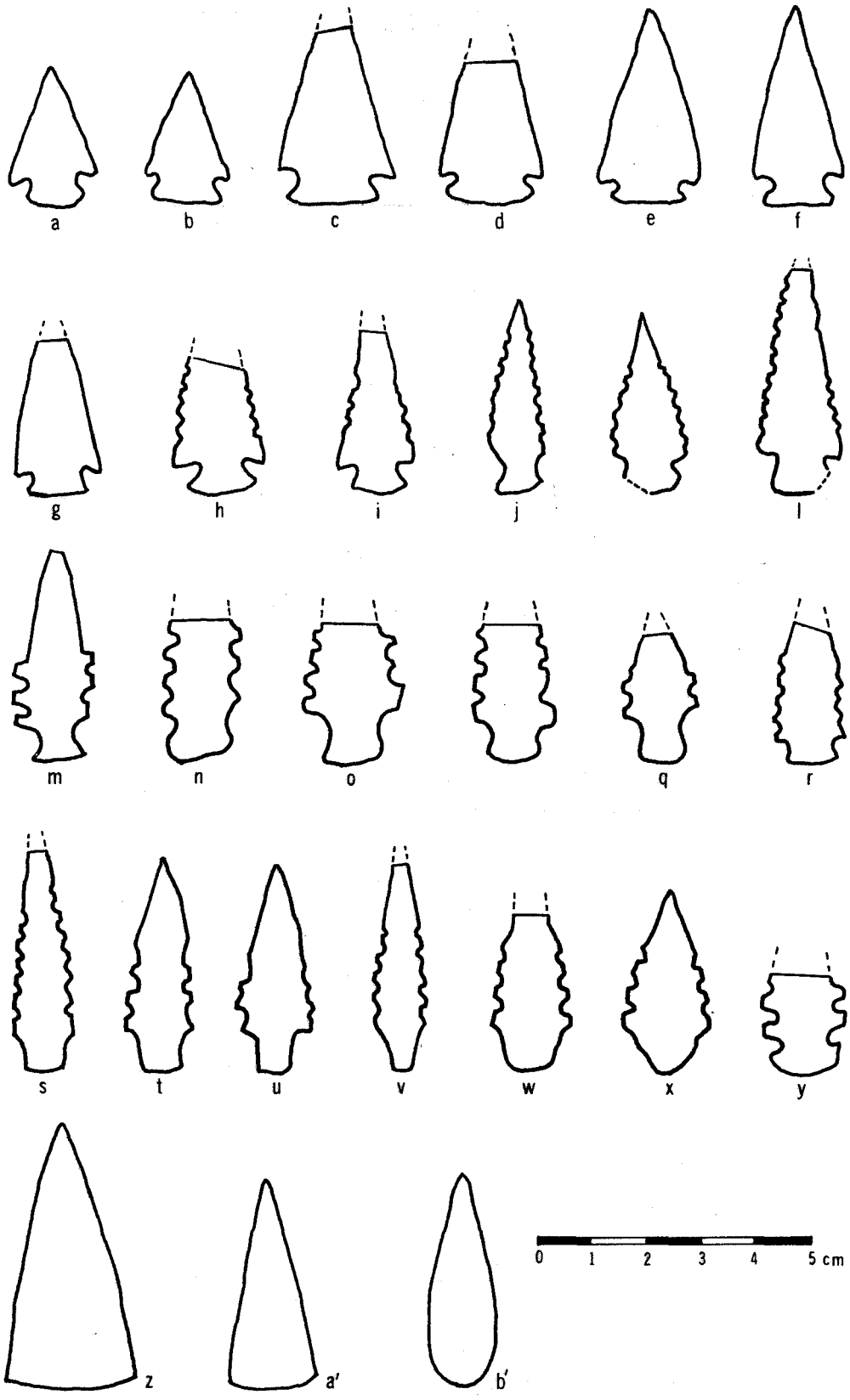
1. Edge of central pit.
2. Edge of bench area.
3. Probable location of entrance.
4. Firepit.
5. Center post hole.
6. Side post holes (3).
7. Auxiliary post holes (3).
8. Extent of second floor surface area.
9. Cremation.
10. Hearth area, intruded into bench area surface, containing 8 inches of white ash, soil under ash is burned red to depth of 1 1/2 inches.
11 Hearth extending from 9 to 17 inches below surface; 7 inches of white ash overlying burned earth and 8-10 fist-sized, firecracked rocks in association.
12. Hearth area extending from 7 to 15 inches below surface; 7 inches of white ash over 1 1/2 inches burned earth.
13. Thin ash and charcoal.
14. Thin ash and charcoal.
15. Hearth area; 4 inches red ash and burned earth under edge of bench; north half of hearth had been removed when builders excavated central pit.
16. Sandstone slab on bench surface.
17. Flat rock on periphery of bench floor.
18. Flat rocks on bench floor.

Insert #12

INSERT #12

-LINESHOT

Figure 16. Cross-sections of house floor, Nap-234.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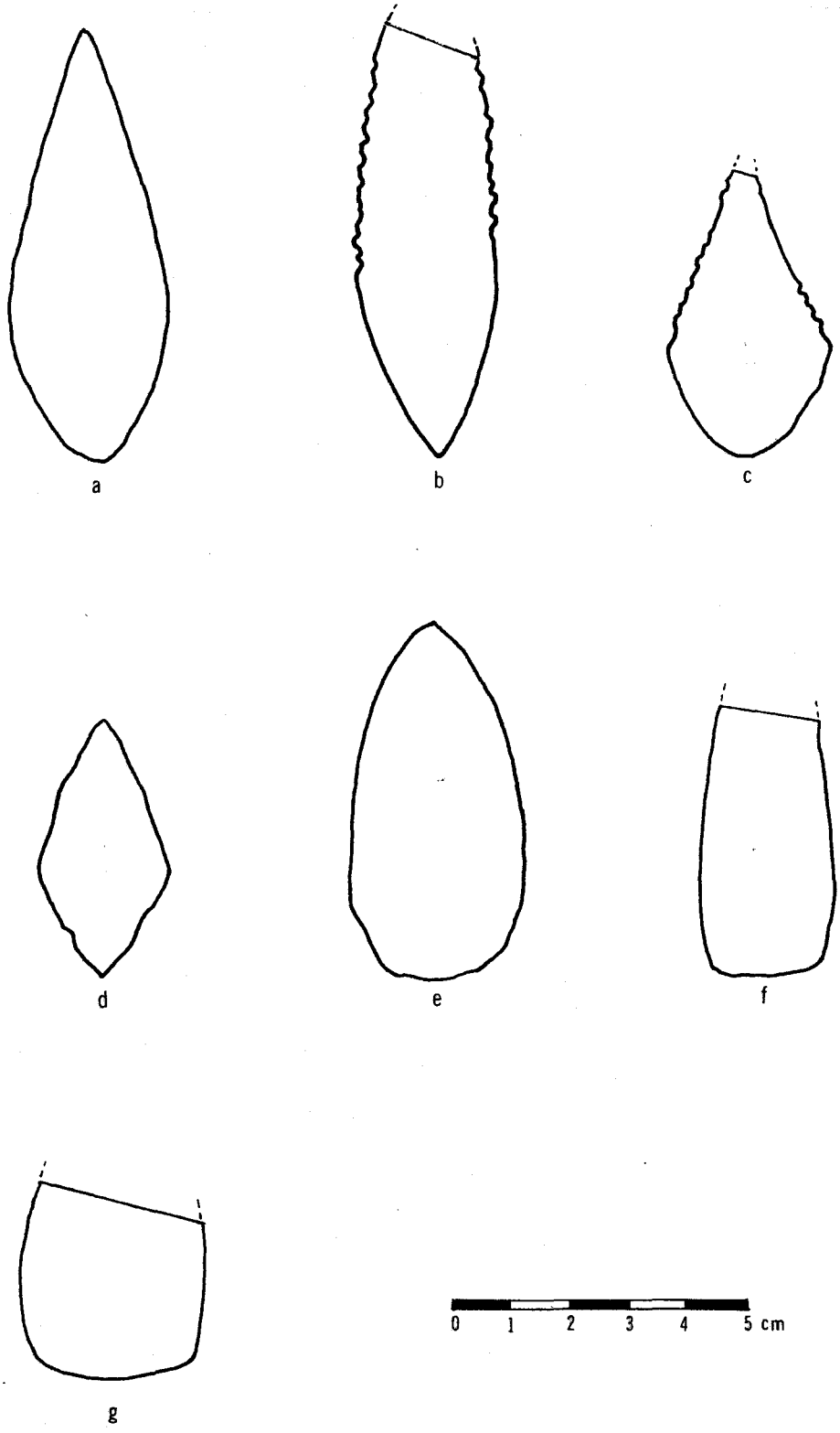
y
z
a′
b′
0
1
2
3
4
5 cm


a
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0 1 2 3 4 5 cm

FIGURE 19

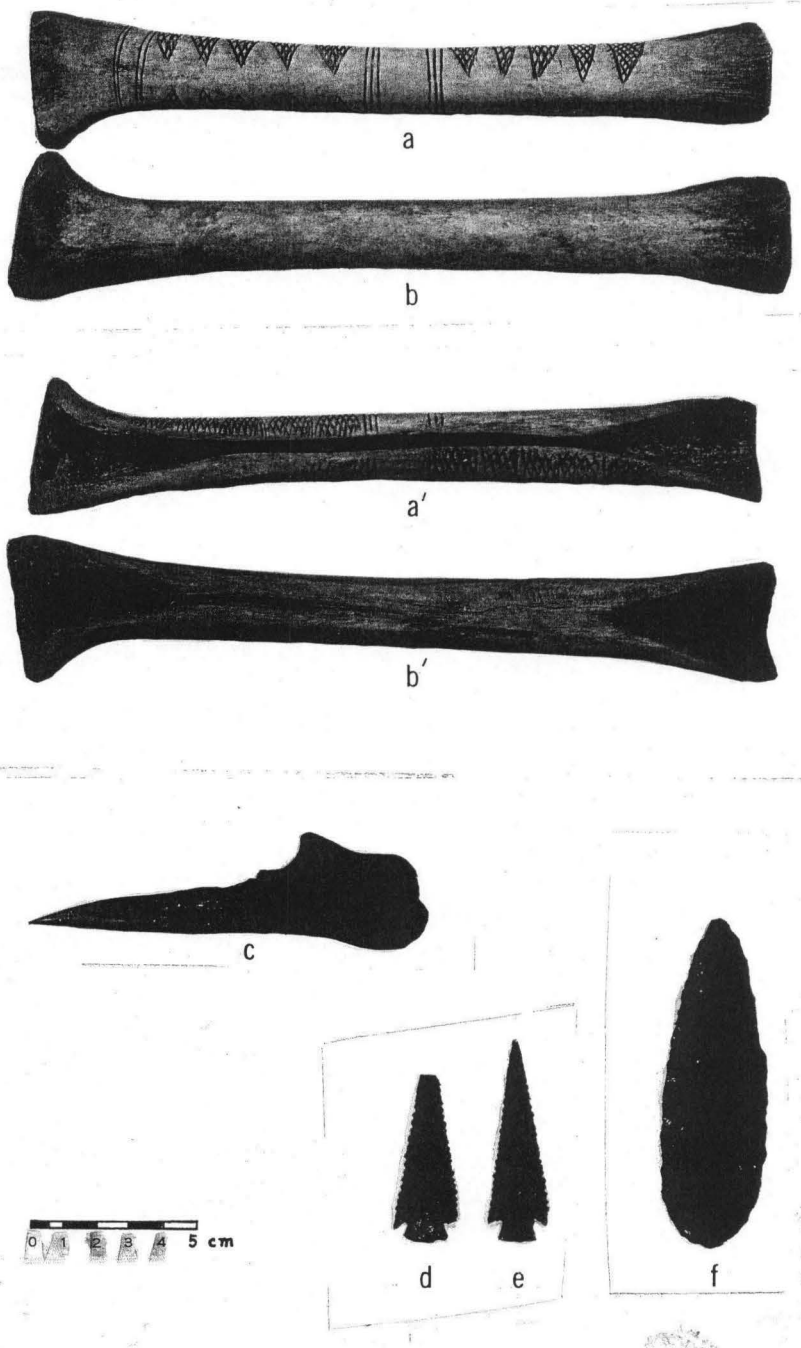
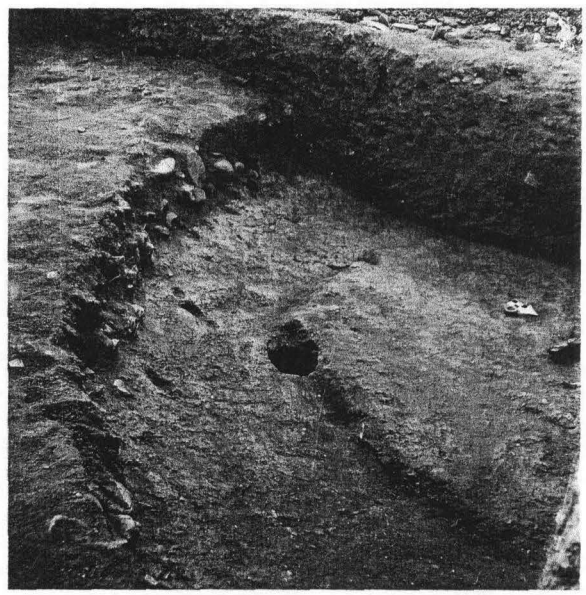
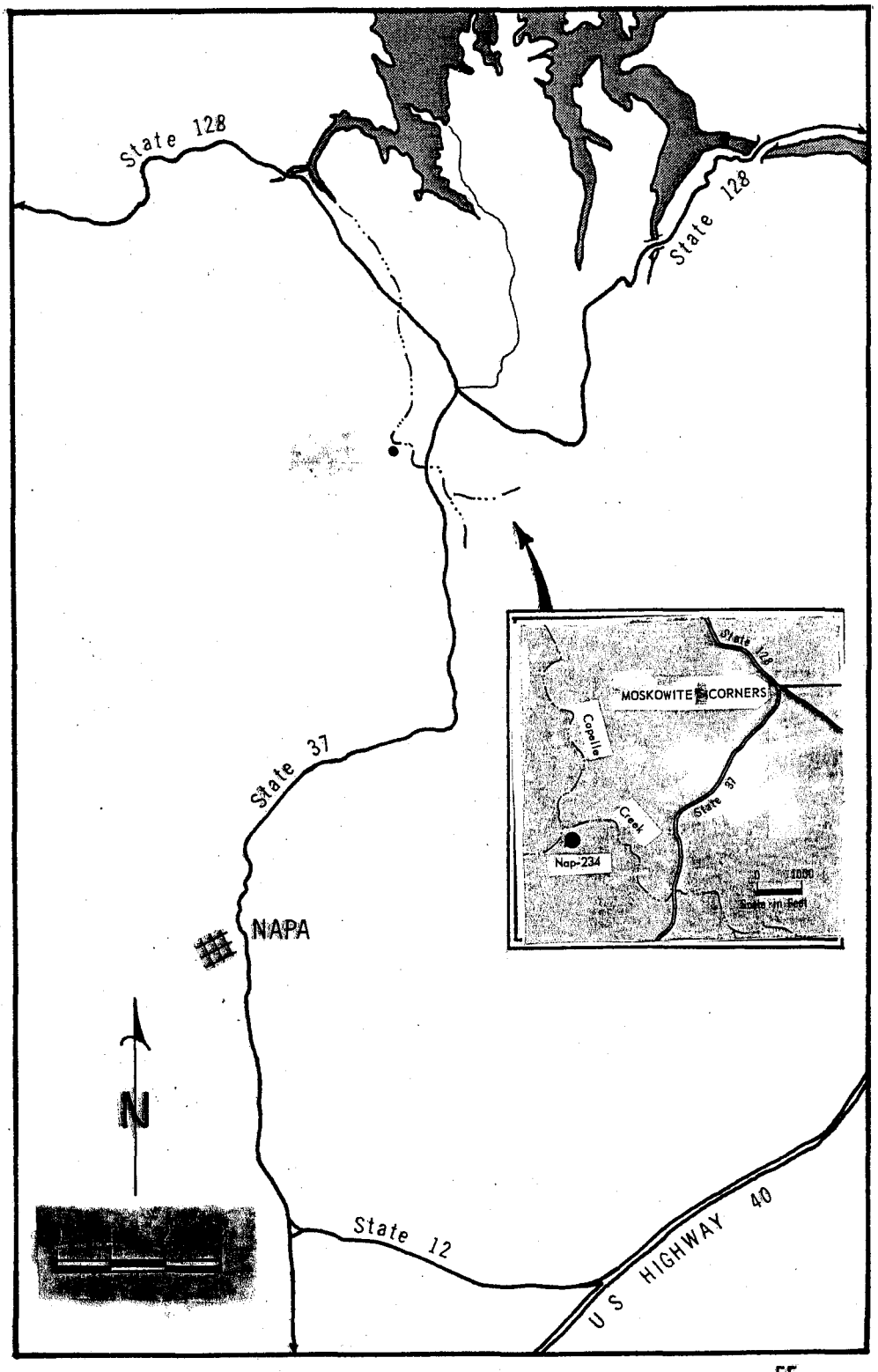


Figure 19. Specimens from Nap-234.

1.55

-MAKE MASK
—TO OUTLINE





Map 3. Location of archeological site Nap-234.

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