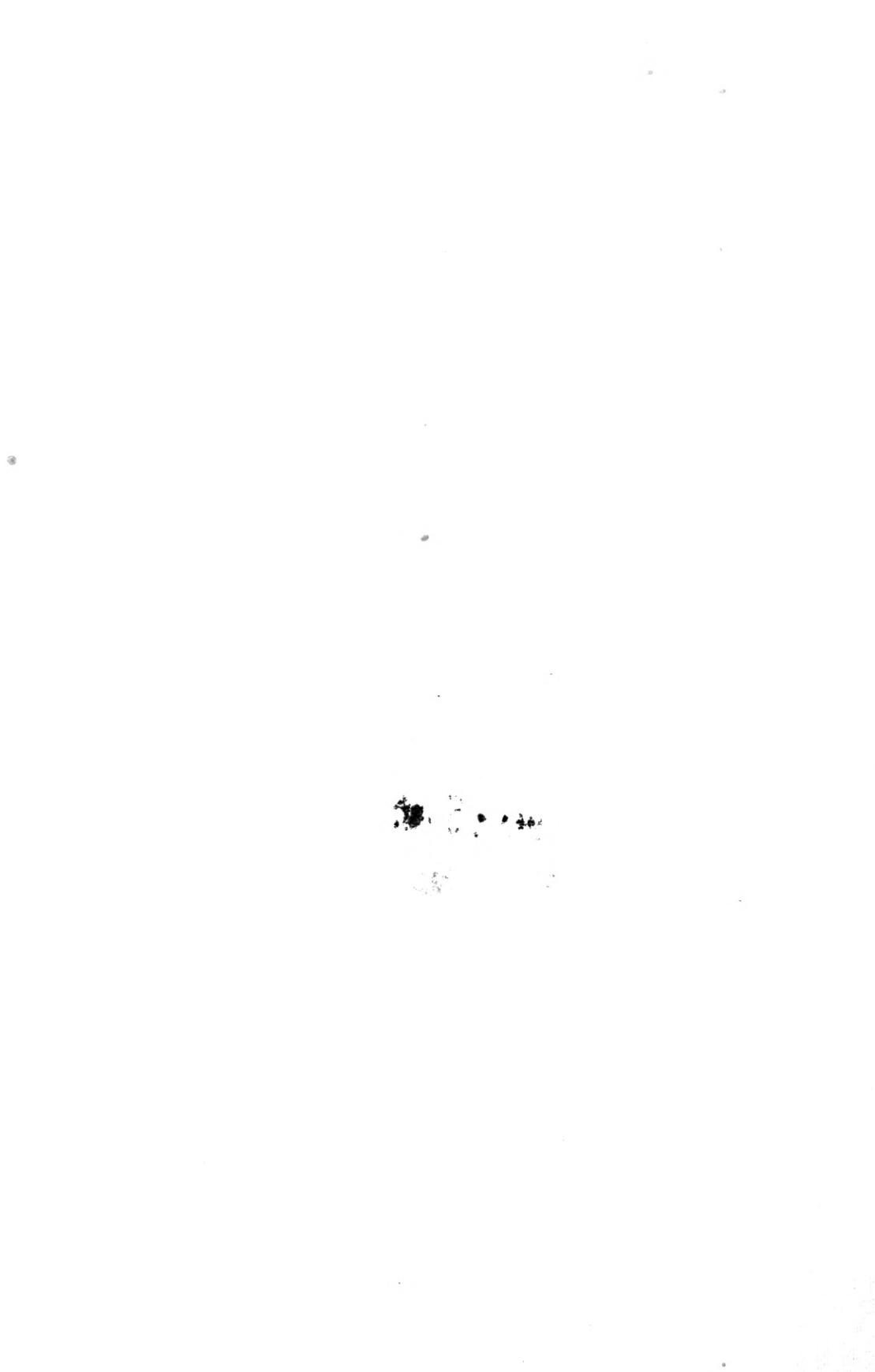


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THE SU SITE
EXCAVATIONS AT A MOGOLLON VILLAGE
WESTERN NEW MEXICO

THIRD SEASON

1946

BY

PAUL S. MARTIN

CHIEF CURATOR, DEPARTMENT OF ANTHROPOLOGY

AND

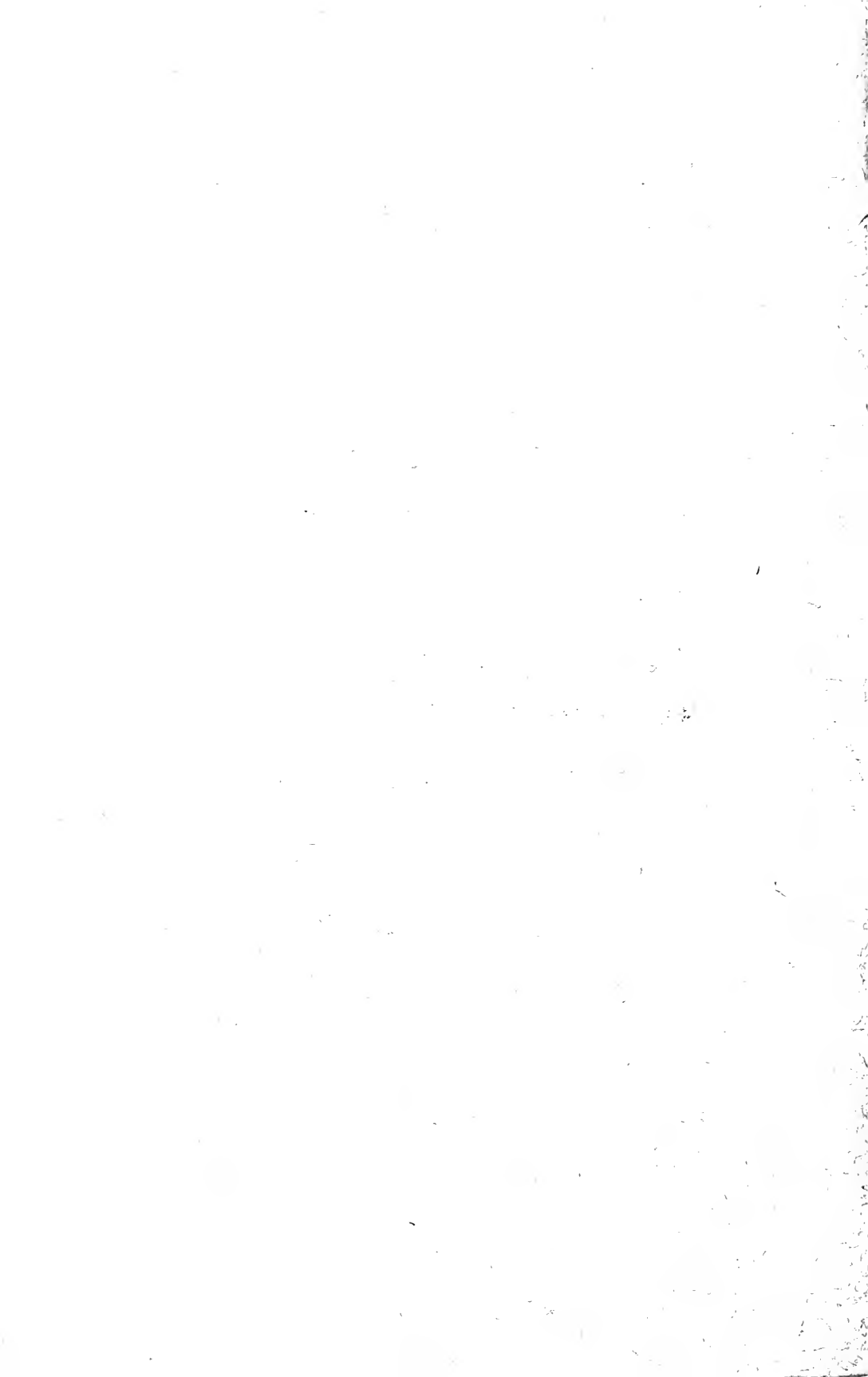
JOHN B. RINALDO

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ANTHROPOLOGICAL SERIES
FIELD MUSEUM OF NATURAL HISTORY
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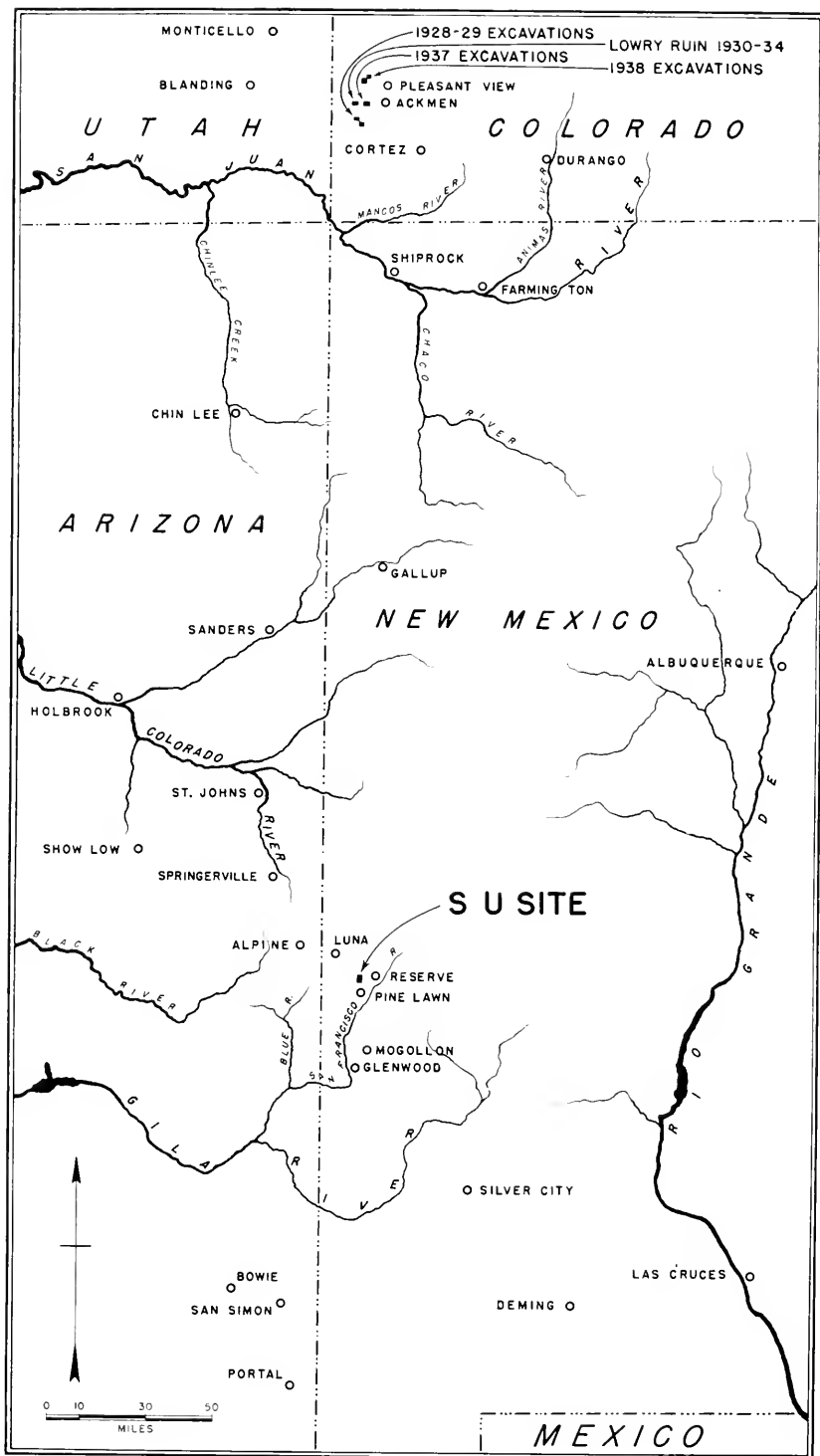
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MAP 24. Map showing location of SU site, New Mexico.

PREFACE

After a hiatus of five years, I again conducted the Field Museum Archaeological Expedition to western New Mexico in order to complete our investigation of the SU site. This Mogollon village is located in the New Mexico portion of the Apache National Forest, Township 7 S., Range 20 W., N.M.P.M., Catron County. The site is 6,440 feet above sea level. The nearest town is Reserve, New Mexico, about seven miles to the east.

Excavations in the Forest were carried on under a permit issued to Field Museum of Natural History by the Forest Service, United States Department of Agriculture. From Mr. R. B. Ewing, Forest Supervisor, Apache National Forest, Springerville, Arizona, we received cooperation and friendly assistance, for which I wish to express my gratitude.

Our excavations at the SU site were begun in 1939, and continued in 1941. We finished our researches during the season of 1946, when happily, we unearthed many more charred roof-beams, which have been sent to Dr. A. E. Douglass for study. One of the goals of this last expedition was to recover more timbers so that absolute dates might possibly be obtained. We now hope that with these additional beams, some cutting dates will be derived from our specimens.

I should like to thank Mr. Stanley Field and Colonel Clifford C. Gregg, respectively President and Director of Field Museum of Natural History, and the Board of Trustees, for their continuing interest in and appreciation of our field researches.

I take great pleasure in thanking publicly the members of my camp staff for their cooperation and assistance and in acknowledging my indebtedness to each of them: Dr. John Rinaldo, Mr. Robert F. Anderson, Mr. Leonard G. Johnson, and Mr. Tod Egan.

Mrs. Mary Crackel, proprietress of Pine Lawn Camp, continued her generous assistance to us and provided us with light, water, and milk. I am grateful to her.

I wish to express my thanks to the men who dug for us: Jose Armijo, Abel Armijo, Martin Armijo, Joe Arrias, Bued Delgado, Frank Naranjo, Pablo Serna, Willy Serna, and Gilberto Ulibarri.

Dr. A. E. Douglass, Director of the Laboratory of Tree-Ring Research, Tucson, Arizona, and his assistants, Dr. Edmund Schulman and Mr. Ted Smiley, have undertaken to analyze our tree-ring specimens.

The drawings of pottery shapes were done by Mr. Gustaf Dalstrom of the Museum's staff; those of the milling stones and metates as well as the chart of percentages of pottery types were done by Dr. John Rinaldo.

PAUL S. MARTIN

CH 35

◇ TRENCH 34



200 METERS ⊙



○ 325 METERS

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PITHOUSE Z



PITHOUSE X



PITHOUSE Y



PITHOUSE W



PITHOUSE V



PITHOUSE T



PITHOUSE S



TRENCH 35



TRENCH 34



PITHOUSE R



PITHOUSE Q

200 METERS ○



METERS

MAP 26. Map of west end of SU site, showing area excavated in 1946.

THE SU SITE

I. INTRODUCTION

In the second report on the SU site (Martin, 1943), we presented a synthesis concerning the site, together with some conjectures concerning the possibility of placing our data and hypothesis in a taxonomic setup and calling it a Mogollon entity or assemblage.

During the season of 1946, ten pit houses were excavated, eight of which we have placed in the Pine Lawn phase. The data assembled after this last season fit in with the hypotheses of 1943. Nothing new was encountered that would in any way make it necessary to set forth new or modified theories. In fact, we are sure the reader will quickly realize, after glancing at the data and examining the illustrations herein, that most of our materials (except those from three later houses—W, X, and Y) are identical with those found in 1939 and 1941.

Since the SU site is an important one and is not duplicated in the neighborhood, and since generalizations need to be based on large masses of data, the third season at the site seemed more than justified. It is hoped that our raw data, quite aside from our own hypotheses concerning them, will be useful in the future to others.

Perhaps the most worth-while event of the 1946 season was the accumulation of another lot of burned roof-timbers from the houses. These have been sent to the Laboratory of Tree-Ring Research at Tucson, Arizona. We hope that these charred roof-beams, together with those collected in 1939 and 1941, will eventually yield cutting dates.

The Pine Lawn phase, as delineated in the report on the second season at the SU site (Martin, 1943), stands unaltered.

SUMMARY

LOCATION

The SU site is located in the Apache National Forest, Township 7 S., Range 20 W., N.M.P.M., Catron County, New Mexico. The elevation of the site is 6,440 feet above sea level; the average annual rainfall is 14.04 inches.

HOUSES

In 1946, we excavated ten pit houses. Thus, a total of twenty-eight houses (twenty-five pit houses and three surface houses) have been studied at the SU site. We have placed twenty-four of these houses in the Pine Lawn phase (Martin, 1943, p. 121), and four (houses D, W, X, and Y) in the Three Circle phase. No firepits were found in any houses of the Pine Lawn phase. (For further remarks about house forms, see pp. 288-289.)

I should like to point out that these pit houses differed somewhat from Basket Maker III houses in the following details:

1. Mogollon pit houses (Pine Lawn phase) lacked any partition wall (see Martin, 1939, p. 461; Brew, 1946, p. 154); Basket Maker pit houses usually had such walls.
2. Mogollon pit houses (Pine Lawn phase) lacked an antechamber; Basket Maker pit houses usually were provided with antechambers.
3. Mogollon pit houses (Pine Lawn phase) were equipped with one or more deep floor pits; Basket Maker pit houses rarely contained floor pits. (For further discussion of houses of the Pine Lawn phase, see Martin, 1943, pp. 115-116, 130; and pp. 288-289 in this report.)

Attention is drawn to structure Y, which has been labeled "pit house" or "kiva." If, by definition, a kiva is a semi- or completely subterranean building equipped with a ventilator, a deflector, and a firepit, then structure Y at the SU village may be properly labeled a kiva. Ashes were found in the firepit. Because of the late pottery that was found on the floor of this building, we have put it in the Three Circle phase.

Houses W and X have also been placed in the same phase for the same reason. It is barely possible that they were the domiciles associated with Kiva Y.

POTTERY

During the 1946 season, 15,263 sherds were recovered from the site. The three principal types were Alma Plain, Alma Rough, and San Francisco Red, Saliz variety. A few black-on-white and textured sherds were also excavated in the houses classified as Three Circle phase (houses W, X, and Y).

The total number of sherds gathered in 1939, 1941, and 1946 was 46,660, of which 764 were textured and black-on-white wares.



FIG. 92. Pit House Q before excavation.

The distribution (in percentages) of pottery types (of totals for the entire site) is almost the same as that derived from the pottery excavated during the season of 1939 or 1941. There are fluctuations when the frequencies of wares from one house are compared with those from others, but the range of variations is about the same for all three seasons.

Alma Plain was numerically the most abundant, with San Francisco Red and Alma Rough, respectively, following.

In houses W and X and in Kiva Y, several textured and black-on-white wares were encountered (a total of 764). The percentages and types are tabulated in the chapter on pottery. Buildings W, X, and Y have accordingly been placed in the Three Circle phase. Two double bowls (both San Francisco Red) were excavated, one each from houses S and T. This shape is rare for early Mogollon.

One significant point should be noted; namely, that no Mogollon Red-on-Brown sherds were found on the SU site, nor were any picked up in our survey of 1941. Mogollon Red-on-Brown ware was found by Nesbitt (1938) just a few miles east of our site, and by Haury (1936a, b) at Mogollon 1:15 a few miles to the south of us. The complete absence of this ware from the SU site may indicate that it is somewhat earlier than either Nesbitt's or Haury's site.

The pottery types that we place in the Pine Lawn phase are all plain ware (Alma Plain, San Francisco Red, and Alma Rough). Those put in the Three Circle phase are Reserve Smudged (Reserve Plain, Nesbitt, 1938); Mimbres Black-on-White (either Bold Face or Classic); Three Circle Red-on-White; Three Circle Neck Corrugated; Incised Corrugated; Alma Punched; Alma Neck Banded.

One pot (Martin, 1940, Fig. 35, upper left), a rough, globular jar, is strikingly like pottery found by Sayles at Cave Creek, Arizona.

The shapes of some of the jars are reminiscent of Anasazi shapes.

ARTIFACTS

In the 1946 season, 482 stone artifacts were excavated at the SU site. This number (482) added to the 676 stone artifacts found in 1941 and the 316 found in 1939 makes a total, to date, of 1,474.

In addition, 11 bone tools, 32 clay objects, and 16 unworked stones were recovered. If these numbers are added to the 1941 and 1939 lots, the totals are 80 bone tools, 141 clay objects, and 36 unworked stones.

The stone tools from this village are crude and for the most part unworked. It is apparent that the Mogollon people picked up any handy stone and used it in its natural state as a tool.

The types and frequencies of certain kinds of milling stones suggest the possibility that a food-gathering economy existed. Since bits of charred corn were found only in two houses (Surface House 1 and Pit House U) and since no evidence of corn was found in any other burned houses, we assume that agriculture was unimportant in the Pine Lawn phase. The corn from Pit House U was examined by Dr. Edgar Anderson, Geneticist of the Missouri Botanical Garden, St. Louis, who states that "[one fragment] is certainly maize, the kernels are small and the cob was highly vascularized (as in Papago and Basket Maker varieties)."

As noted in the last report (Martin, 1943) the similarities between the artifacts from the SU site and those of several stages of the Cochise culture are numerous and striking. It seems likely on the basis of the data on hand that the Pine Lawn phase represents a stage in the Cochise-Mogollon continuum. Most of the milling and grinding tools have their counterparts in the Cochise materials.

Some artifacts—the pipes, the lateral notched projectile points, the bone dice, the rectangular, two-handed manos with parallel grinding surfaces—are similar to those of the Anasazi culture. Most of these traits appeared late (post A.D. 700) in the Anasazi area.

CONJECTURES

One of the main objectives in carrying on further excavation at the SU site was to gain more information as to how the former inhabitants of the village lived, how they grouped themselves socially, how they solved their subsistence problems, whether they had developed any religious concepts, and what their particular interests were.

As introduction to this discussion, it seems best to sketch briefly the ecology of the region so that we may realize to some extent how the environment limited the life and cultural development of the SU people. Remains of animal and plant life indicate that the environment was similar to that of today. The country is high (elevation 6,440 feet), mountainous, and forested with juniper, yellow pine, piñon, and live oak. Intermittent streams such as the nearby Legget Creek flow through the canyons in a general southerly direction and empty into the San Francisco and the Gila rivers. For the most part these streams follow shallow, winding courses

and contain water only in spring or after the heavier showers of the short midsummer rainy season. A permanent water supply is to be found only in springs located at the base of the mountains. After the heavy showers of midsummer, grass and flowers spring up quickly, only to die down in the fall when the land reverts to its usual semi-desert condition.

In addition to the trees mentioned above, the native vegetation includes yucca, cactus, sage, thistles, and other semi-desert plants. Of the present flora only the trees are represented in the excavated materials. Charred specimens of juniper, yellow pine, and piñon were recovered. The present native fauna includes bear, deer, coyote, rabbit, turkey, and quail. There is evidence that the animal life of a thousand years ago was similar to that of present times in the vicinity of the SU site. Bones of deer, coyote, rabbit, turkey, mountain sheep, lynx, and sage hen are represented in the collections from the site. The tree-ring record indicates that the environment in Pine Lawn was similar to that of today and that there were periods of drought as well as of rainfall and snow.

The village site itself is located on one of the ridges that extend out from the foothills at the base of the San Francisco Mountains. This particular ridge, on which the village was situated, slopes off to the valley floor rather gently on either side, but rather abruptly at the east end. Although the village might possibly have been situated on this ridge for defensive purposes (the ridge would be easier to defend than the valley), there were no evidences of fortifications or war, and it is not difficult of access from either side or from the end towards the mountains. It seems more reasonable to assume that the site was chosen because the drainage is better here than on the canyon floor, or perhaps because the former inhabitants wanted a view!

Most of the houses were located in two clusters at the east end of the ridge. Usually they were placed quite close together. Twenty-eight houses were excavated in all during the three seasons, and it was found that some were situated no more than a few yards apart. The extent of the trenching would make it seem improbable that we missed many houses in the particular area excavated and tested, but it is possible that there are between four and six yet unexcavated beyond this area. Marked depressions make two of these quite certain.

The house form was not standardized in any particular pattern, although all of them shared some general features. The roofs were

probably dome-shaped or conical; the shapes tended to be round rather than rectangular; and large, deep pits were present in the floors of all houses. The exact arrangement of the support posts for the roof differed from one house to the next. In general, it may be said that there were usually one or two main roof supports and smaller secondary roof supports spaced hit or miss about the room, with no apparent plan.

The roofs of the houses were built of branches or splints laid above the beams, and, on top of the crisscrossed branches, a layer of mud and clay was placed—presumably the same clay excavated from the pit that formed the lower part of the house.

The entrances were even less standardized. Some houses had short, stubby entryways, and others had long, lateral passages. In several instances no trace of a doorway was found. There were no firepits in houses of the Pine Lawn phase.

Inside these houses, in such floor space as remained between the posts and the pits, lay the metates, mortars, and other tools. Frequently, the metates were set up in the part of the house farthest from the doorway, and near a shallow storage pit; but almost as many were found near the entryway. Occasionally the milling tools were stored in the pits, as was also some surplus food. Burials were made in other pits, which were then filled and floored over with clay. Still other deep pits contained fire-cracked rocks; it has been suggested that these pits were heated for winter sleeping-places. None of these pits had been discolored by fire. It is hence assumed that they were not cooking pits.

The pit houses of the Pine Lawn phase differ from those of the Basket Maker period in that the former have no antechambers, are provided with several large, deep pits in the floor, and never have any sort of partition-wall within the house, nor a deflector.

The only digging implements found, with which the pits for these houses might have been dug, are the hoes. It seems probable, then, that digging sticks were used for most of the work. Digging with such crude implements must have been a long and laborious process because some of the houses were sunk into gravel strata. Even with our steel picks and shovels we found digging unusually difficult. Both clay and gravel seemed especially hard and tenacious, and excavating with our modern tools is scarcely comparable to doing the same work with a digging stick or a stone hoe.

Cutting and hewing the timbers for roof-beams and secondary roof-posts must have been laborious also, as the only suitable imple-

ment for such a purpose that we found in the excavations was the stone chopper. In testing the choppers on small branches, we found them more effective than we had previously supposed, but slower than a good stone or steel ax would be. Furthermore, more strength was required to make a good cut, and the rougher choppers bruised the hand.

The stone tools and the remains of food found in the village indicate that these people depended for their subsistence primarily on seed-gathering (probably including roots, nuts, and berries) and secondarily on hunting and agriculture. That nuts and seeds were eaten seems certain, because hulls of nuts and some seeds were excavated. It is possible to imagine that the SU people led a life similar to that of the Yuma or Havasupai Indians of modern times. Crude milling stones figure prominently among the tools found at Pine Lawn. The metates are mostly of the basin or slab types, the manos of the oval pebble or disk types. Mortars and pestles are numerous.

The character of the milling stones makes it seem likely that they were used primarily for crushing and grinding seeds. Oval scratches on the basins of the basin metates and oval grinding surfaces on the slab metates indicate that the millers used a rotary motion when milling the seed. One series of metates found *in situ* graded from coarse to fine. Also the "shelf" or wider wall of the trough metates is sometimes on the right side of the trough, sometimes on the left. This is, perhaps, a minor point, but it may indicate that the millers were both right- and left-handed (if this shelf were a resting place for the mano), and that no cultural training was imposed that enforced either right- or left-handedness.

It seems probable that the bow and arrow were used in hunting. The comparatively small size of most of the projectile points recovered would indicate that they were used as arrow points. Remains of whistles, snares, clubs, or other such artifacts related to additional methods of hunting were not recovered. In general, the relative scarcity of animal bones, the fact that the bone tools were all made of deer long-bones only, the scarcity of projectile points, and the multiplicity of projectile-point types (most of the projectile points recovered are illustrated in these reports), would seem to show that hunting was of secondary importance in providing subsistence for these people.

There is some evidence that the former SU village inhabitants did a minimum amount of farming. If their way of life was similar

to that of the Yuma or Havasupai, it seems quite possible that they used the dibble stick for planting. We recovered several stone blades that we have classified as hoe blades. These may have been provided with wooden handles that were put on parallel to the long axis of the stone blade. Blades thus hafted would have functioned more as spades and may have been used for digging pits and for making the holes into which the seeds were dropped. Only two bits of charred corn were found at the site. No remains of beans or squash or remains of any other common Indian domesticated plants were found. There were no indications of irrigation ditches, dams, or other means of supplying water to possible farming areas in the vicinity. It is probable that if ditches had existed they would now be covered up or washed away. The run-off is rapid in this vicinity and the smaller streams become rapidly swollen and laden with silt after the heavier summer showers.

Although we found trough metates and rectangular manos, characteristic of the later agricultural periods, they were less numerous than the milling stones. This fact, in addition to the scarcity of the remains of domesticated plants and other evidences of agriculture, adds strength to our assumption that farming was only of secondary importance as a means of subsistence.

We have recovered only a minimum amount of evidence as to the clothing worn by these people. On the basis of analogy to historic groups living in the same area and practicing a similar mode of subsistence, it may be conjectured that the SU people wore a gee string and apron in summer, supplemented by fur robes in winter. Our assumptions on this subject are rendered more probable by the SU tools—types used in making such clothing. For example, we found knives and scrapers that may have been used for cutting and fleshing hides; and we found awls, needles and spindle-whorl disks for weaving. The awls may have been used in separating out the warp from the weft, the needles as bodkins for leading the weft through the shed, and the perforated disk sherds, which we term "whorls," as wheels for the spindles.

Fortunately, even though our evidence for clothing is meager, we did find a number of ornaments; and here we are on firmer ground. We recovered a number of stone beads and pendants and a few thin shell bracelets. The position of these objects in the graves leaves no doubt as to their use. It is certain that the beads and pendants were worn in necklaces, and that the bracelets were worn on the forearm.

On the other hand, the record of religious or ceremonial life is as fragmentary as most of the rest of the record is. The fact that tools, pipes, ornaments, and other prized items were found with the burials seems sufficient evidence for conjecturing that the former inhabitants of the SU site believed in immortality. In addition to this evidence we recovered a few objects that are more like the sorts of objects that are used in rituals. These are figurines, zoomorphic pendants, and pipes. Most of these bear at least a superficial resemblance to objects used by contemporary primitive peoples in their rituals.

Of the twenty-four houses of the Pine Lawn phase there were only two which, by their unusual size and shape, led us to wonder if they might have been used for ceremonial purposes. These are Pit Houses A and V. Both were unusually large, deep structures and both were kidney-shaped in ground plan. Such extraordinary similarity was remarkable in this village! Both had short, stubby, steeply sloping entryways. Although similar in form, they were not similar in content. Neither contained much pottery, but Alma Rough was many times more abundant in Pit House A than in Pit House V. Pit House V contained a large quantity of grinding tools; Pit House A very few. Thus, their unusual size and depth and their remarkable similarity in ground plan, in a village where dissimilarity in house form seemed to be the rule, caused us to guess that these structures might have been ceremonial structures.

In any discussion of social grouping within the village, we are once more met by a lack of evidence. However, an examination of the map of the village shows that, in general, the village was divided into two main groups or clusters of houses. Each of these was placed rather close to one of the large kidney-shaped (ceremonial?) structures. This clustering into two groups may be the result of one or more of several factors. First, the ridge narrows at the point where the houses are scattered between the groups, so that this bipartite division might have a physiographic explanation. Second, more testing in the areas between the groups might have revealed houses that were not indicated by depressions, by sherd areas, or by flint chip areas. Third, the two house groups may have been built at quite different time intervals. Fourth, one of the home groups may have been established by the original settlers, and the other by latecomers. Finally, the grouping of the houses may actually represent some kind of social grouping—perhaps that of a moiety or a clan division. In this connection it should be noted that, with one exception, the contents and forms of all the Pine Lawn

phase houses of both groups were the same. The exception just referred to was the presence of boulder mortars in the east end of the village and the absence of them in the west end.

The culture of this village must have been simple, primitive, and unsophisticated. One can guess that the SU people developed a rigid self-discipline, a belief in all sorts of magic, a defense mechanism against anxieties, and an incapacity for change in their habitual ways of thinking and feeling. These characteristics may have been brought about by the lack of useful technics for mastering a somewhat harsh economic and social environment. At least this is the kind of culture that we sense; and our conjectures on the matter are based on the material remains, such as houses, pottery, and tools.

No one activity seemed to be more elaborated than any other, with the possible exception of milling. We guess this is true because the tools used for milling seeds and nuts outnumber all other tools.

Although a few of the stone tools show evidence of good workmanship, most of them do not. In fact most of the tools are natural stones that were only slightly modified or "worked." The pottery is plain, simple, purely functional in design, and undecorated. The houses show only a generalized similarity one to another and differ in so many details that they certainly could not be said to constitute a culturally standardized "art" form. Moreover, except for a very few ornaments, there is nothing in the culture that one might label "artistic" in any way. In fine, the culture of the Pine Lawn phase as a whole is a plain, simple, primitive culture resembling that represented in the San Pedro phase of the Cochise culture, with the exception of the important innovations of pottery and agriculture.

II. DESCRIPTION OF ARCHITECTURAL DETAILS

PIT HOUSE Q

(Fig. 93 and Map 26)

Shape.—About circular; greatest diameter, 6.7 meters.

Walls of unplastered, native soil.

Floor of hardpan, with some gravelly content in south part; uneven; depth below present ground level, 50 to 65 cm.

Firepit.—None found.

Lateral Entrance.—On east side; short and narrow.

Pits.—Five in number, three being double; least diameter, 60 cm.; greatest diameter, 1.6 meters; least depth, 16 cm.; greatest depth, 53 cm. In west pit, two bundle burials and burned adobe; in another pit, manos found.

Burials.—Two bundle burials (Nos. 47 and 48) in west pit; in poor condition; many bones missing or shifted by rodents(?); no associated objects.

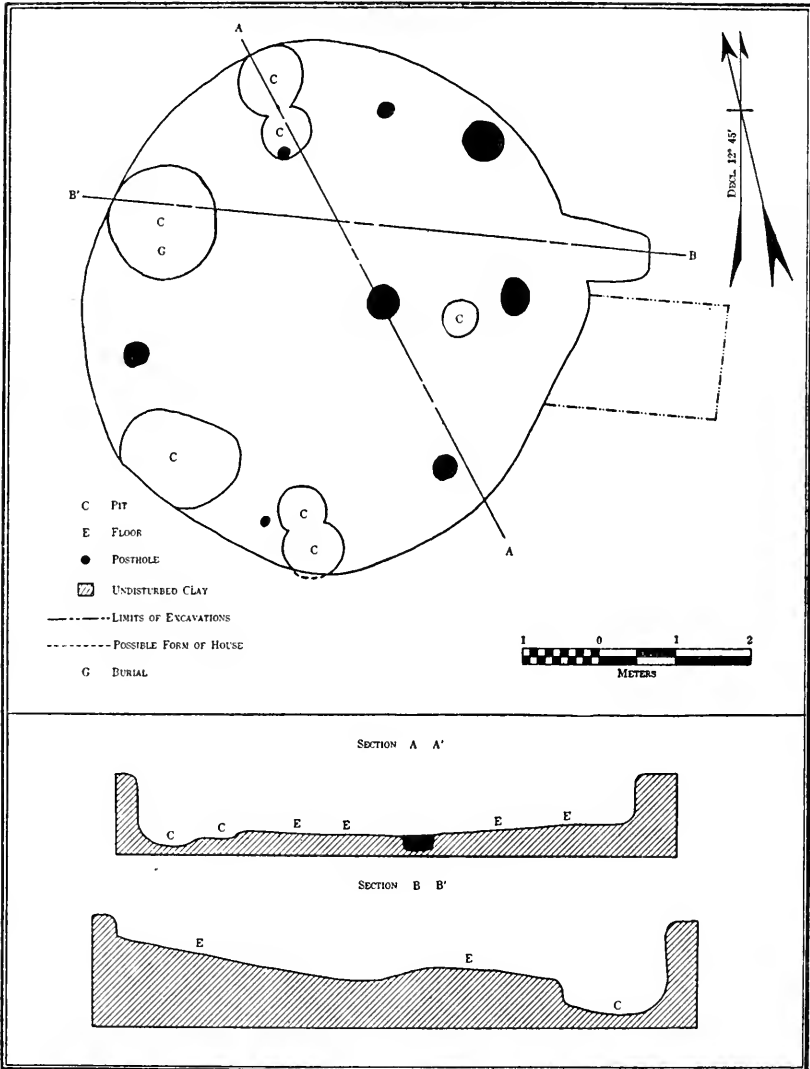
Post-holes.—Eight in number; diameters, from 10 to 50 cm.; depths, from 7 to 22 cm.

Roof.—From location of charred beams, we guess roof looked like that shown in sketch (Martin, 1940, Fig. 39).

Pottery.—Floor level: Alma Plain, 42.1 per cent; Alma Rough, 39.2 per cent; San Francisco Red, Saliz variety, 18.7 per cent.

Phase.—Pine Lawn.

General Comments.—This house burned. Absence of seeds or other stored food in pits and presence of burned rocks and quantities of charcoal in pits suggest pits may have been warmed up with heated rocks and used as sleeping places or for cooking purposes. Other pits may have been used for storage of food and grinding tools (mortars, milling stones, handstones, and the like).



MAP 26. Plan and sections of Pit House Q.

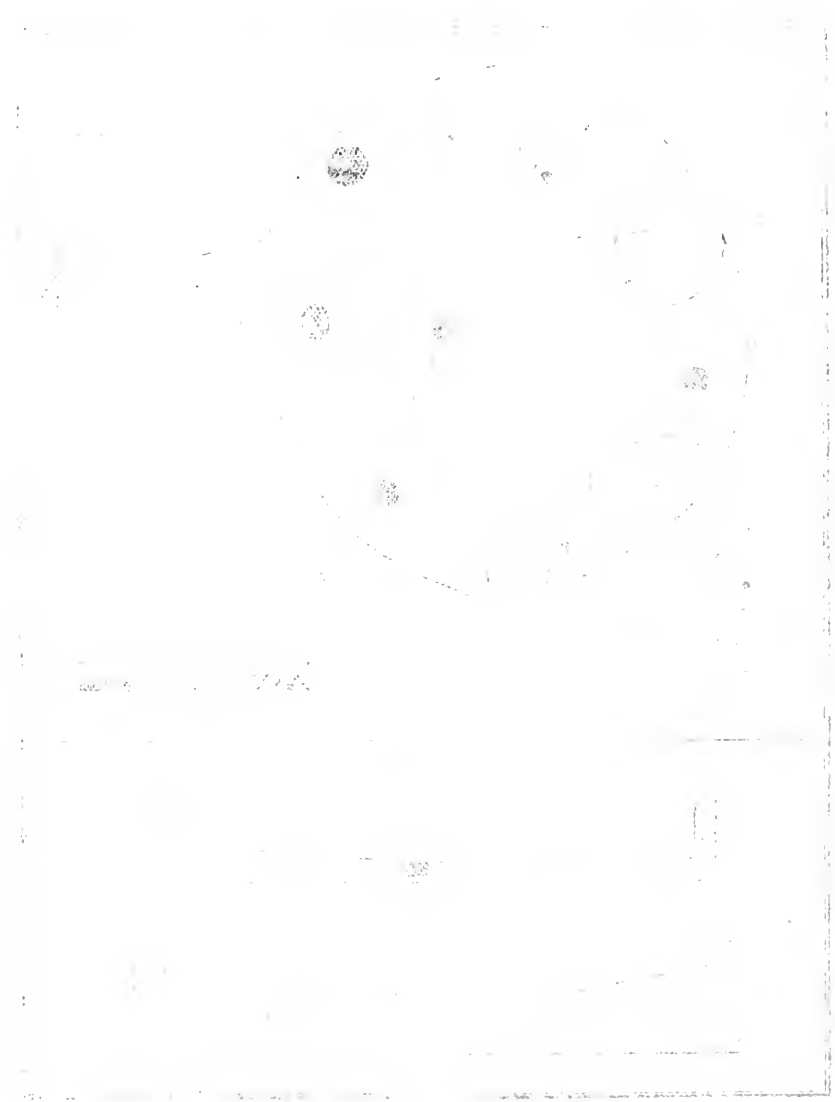


Figure 1. [Illegible text]



FIG. 93. Pit House Q; showing storage pits, trench butt in left foreground, and entrance in right foreground. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE R
(Fig. 94 and Map 27)

Shape.—Almost circular; greatest diameter, 5.6 meters.

Walls of unplastered, native soil.

Floor of gravelly orange clay; uneven; depth below present ground level, 40 to 65 cm.

Firepit.—None found.

Lateral Entrance.—On east side; shape and length not well defined.

Pits.—Two in number; least diameter, 70 cm.; greatest diameter, 1.25 meters; least depth, 20 cm.; greatest depth, 55 cm. Contained fire-cracked rocks.

Groove.—On north periphery; similar to grooves found in Pit House A (Martin, 1940); shaped like half a log; length, 1.4 meters; width, 45 cm.; depth, 10 cm. Use unknown.

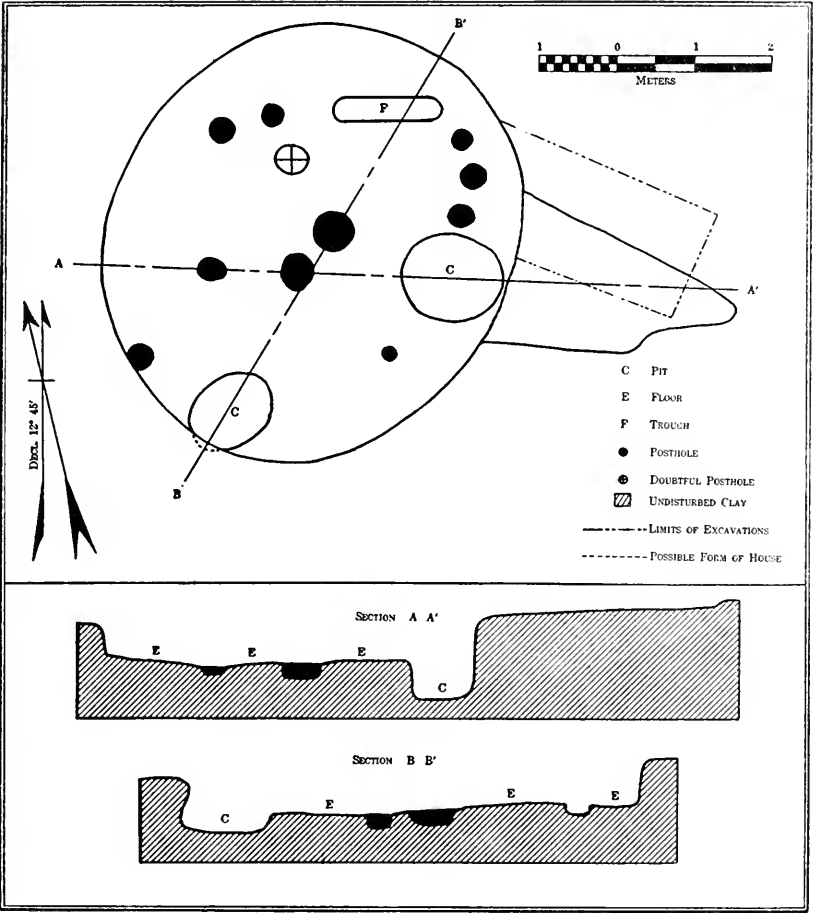
Post-holes.—Ten in number; diameters range from 20 to 50 cm.; depths range from 10 to 45 cm.

Roof.—Exact character unknown.

Pottery.—Floor level: Alma Plain, 29 per cent; Alma Rough, 38.6 per cent; San Francisco Red, Saliz variety, 32.4 per cent.

Phase.—Pine Lawn.

General Comments.—Pit House R did not burn.



MAP 27. Plan and sections of Pit House R.



FIG. 94. Pit House R; showing squared-off trench in background, post-holes, and storage pits. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE S
(Fig. 95 and Map 28)

Shape.—Oval; greatest diameter, 5.65 meters.

Walls of reddish brown clay.

Floor of yellow clay; uneven; depth below present ground level, 43 to 50 cm.

Firepit.—None found.

Lateral Entrance.—None found.

Pit.—One; bowl-shaped; least diameter, 85 cm.; greatest diameter, 1 meter; depth, 30 cm.; contained a flexed burial (No. 49) and several large rocks, one of which weighed more than 100 pounds.

Burials.—Flexed burial (No. 49) in pit; associated with it was fragment of disk-type rubbing stone. Four burials (Nos. 50–53) found in stripping operations outside of house close to a large pit; two of these in flexed position; other two yielded skulls only.

Grooves.—Four in number; in south half of house; similar to that found in Pit House R; shaped like a half log; three end in hole in wall; lengths vary from 25 to 48 cm.; depths vary from 10 to 15 cm.; all are 5 cm. wide.

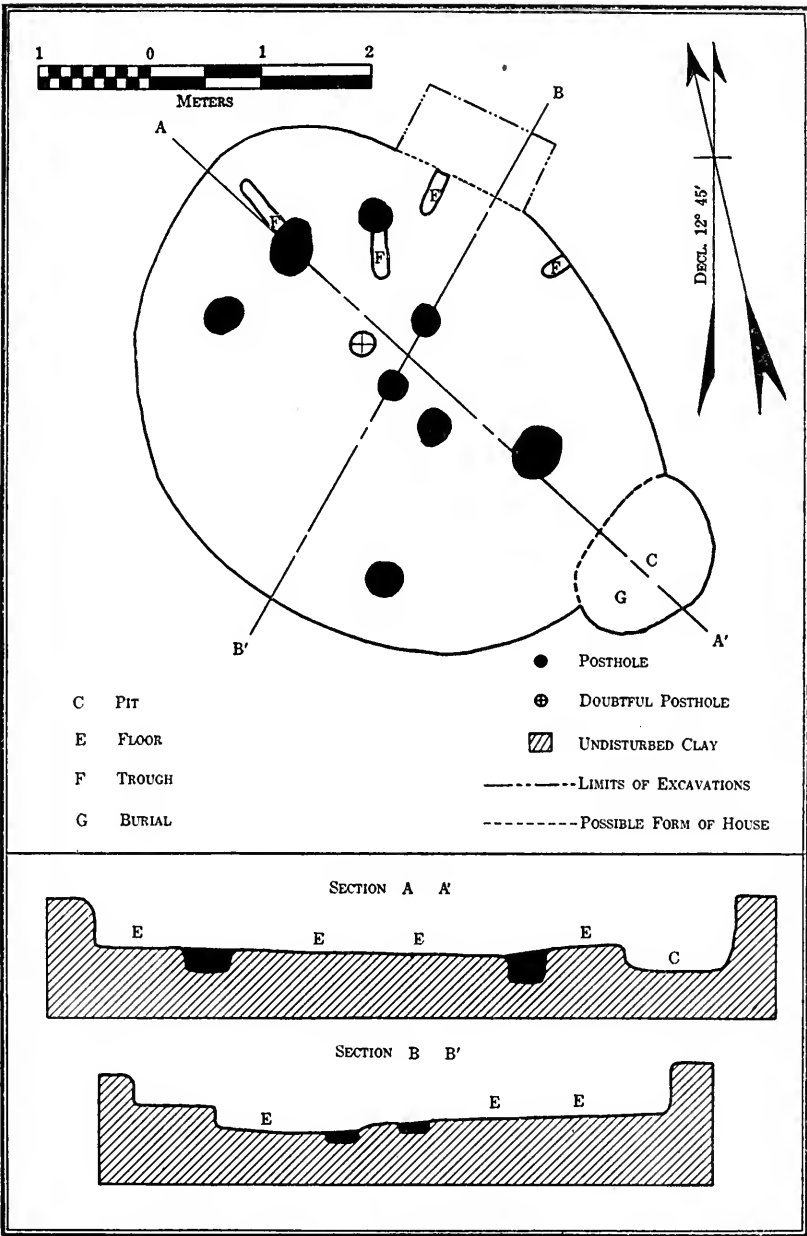
Post-holes.—Nine in number; least diameter, 20 cm.; greatest diameter, 45 cm.; least depth, 8 cm.; greatest depth, 30 cm.

Roof.—Exact character unknown.

Pottery.—Floor level: Alma Plain, 33.5 per cent; Alma Rough, 19.0 per cent; San Francisco Red, Saliz variety, 47.5 per cent.

Phase.—Pine Lawn.

General Comments.—Pit House S did not burn.



MAP 28. Plan and sections of Pit House S.





FIG. 95. Pit House S; showing squared-off trench butt in foreground, burial pit (Burial No. 49) in upper left corner, post-holes, and grooves. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE T

(Fig. 96 and Map 29)

Shape.—Circular; greatest diameter, 7.5 meters.

Walls of unplastered, orange-colored clay.

Floor of sandy clay; fairly even; depth below present ground level, 40 to 70 cm.

Firepit.—None found.

Lateral Entrance.—None found.

Pit.—One; oval, with more or less vertical sides; diameters, 1.4 by 1.74 meters; depth, 50 cm. In it were three slab metates, manos, pestles, a hoe, and a grooved maul.

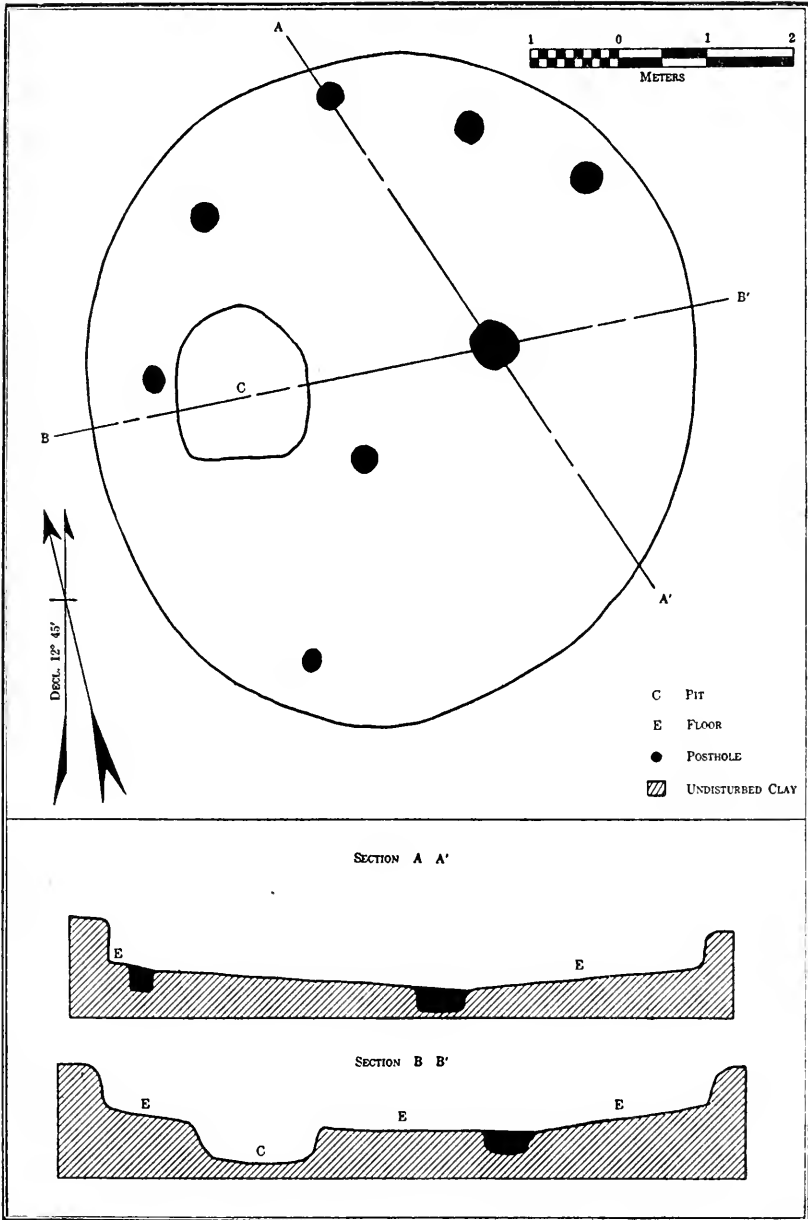
Post-holes.—Eight in number; least diameter, 25 cm.; greatest diameter, 55 cm.; least depth, 12 cm.; greatest depth, 35 cm.

Roof.—May have been umbrella-like with large central post to which were attached at a sloping angle secondary rafters. Charred beams lay pointing toward center of house.

Pottery.—Floor level: Alma Plain, 56.3 per cent; Alma Rough, 10.7 per cent; San Francisco Red, Saliz variety, 33 per cent.

Phase.—Pine Lawn.

General Comments.—This house burned. Three metates (two trough type and one boulder type) lay in a row, close together, on the floor and near the pit. Pit, as noted above, contained assemblage of grinding tools and may have been used as storage place for them.



MAP 29. Plan and sections of Pit House T.

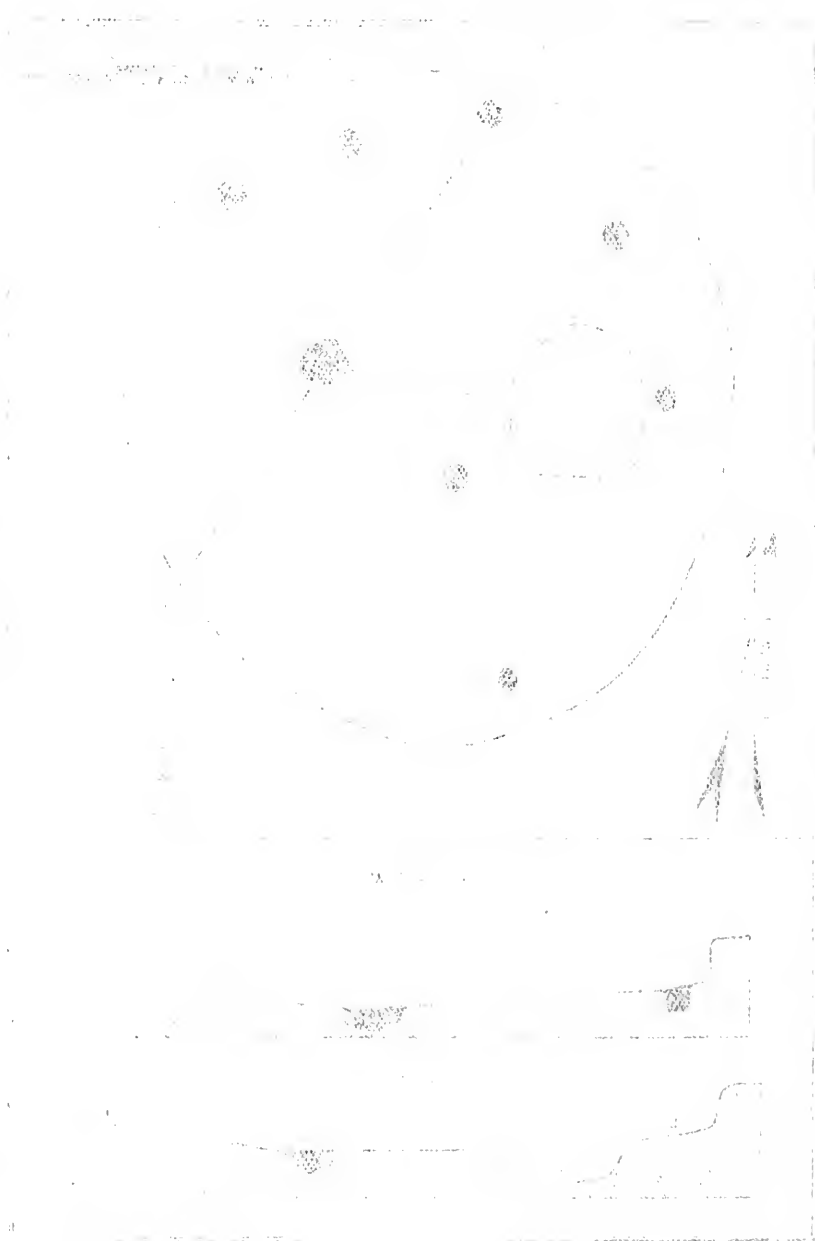


Figure 1. Cross-section of the celestial body.



FIG. 96. Pit House T; showing manos and metates in pit *in situ*, pit, and post-holes. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE U
(Fig. 97 and Map 30)

Shape.—More or less round; greatest diameter, 8 meters.

Walls of orange-colored, gravelly earth.

Floor of orange-colored, gravelly clay; depth below present ground level, 34 to 58 cm.

Firepit.—None found.

Lateral Entrance.—On northeast side, ovaloid in shape; floor slopes up toward outer end.

Pits.—Five in number; four bowl-shaped, one jug-shaped; least diameter, 53 cm.; greatest diameter, 1.95 meters; least depth, 40 cm.; greatest depth, 50 cm.; largest pit filled with unworked stones, hammer stones, and knife blade; jug-shaped pit contained seven pebble mortars, two slab mortars, and one mano; in another pit bits of charred corn, metates, and manos.

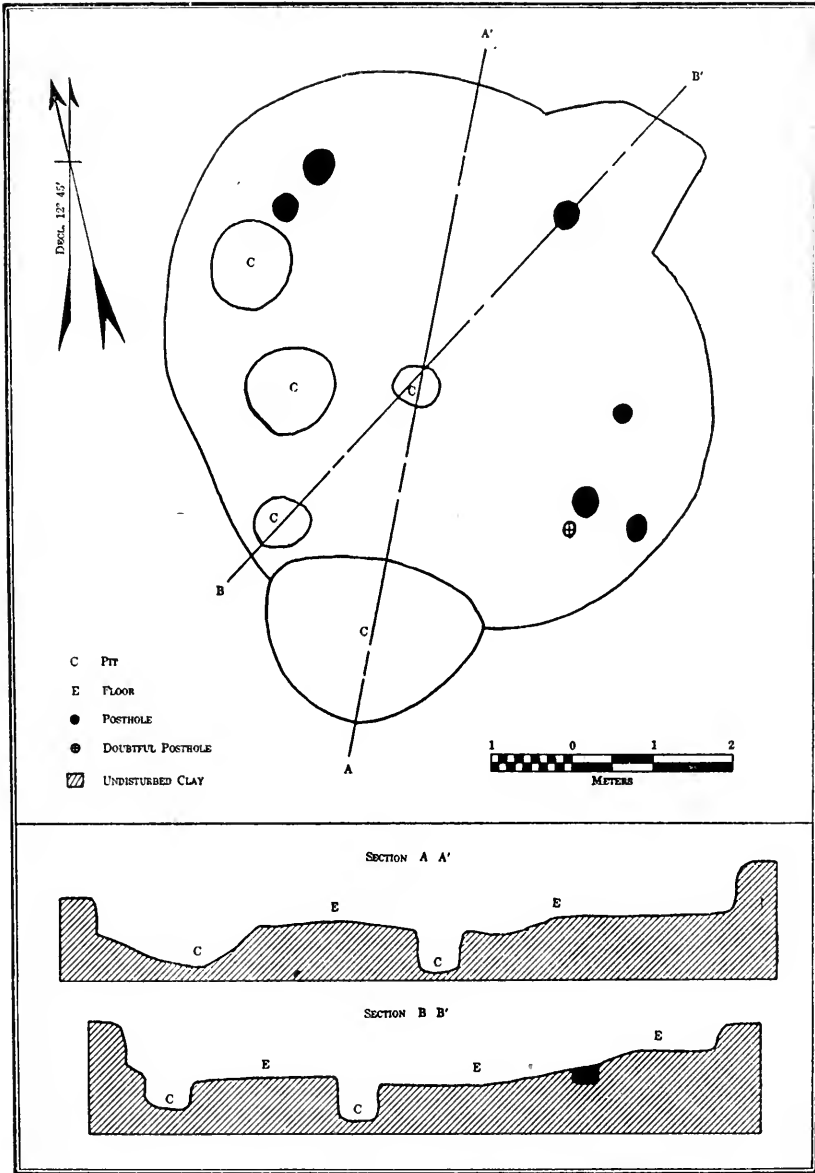
Post-holes.—Eleven in number; least diameter, 14 cm.; greatest diameter, 42 cm.; least depth, 8 cm.; greatest depth, 30 cm.

Roof.—Exact character unknown.

Pottery.—Floor level: Alma Plain, 40.1 per cent; Alma Rough, 21.1 per cent; San Francisco Red, Saliz variety, 38.8 per cent.

Phase.—Pine Lawn.

General Comments.—Pit House U partly burned. Presence of charred nuts, nut shells and seeds as well as charred corn, verify guess that food-gathering and some agriculture were means of subsistence. This is the second instance of the presence of corn at this site, and from that it may be inferred that agriculture was not important at the SU site. The corn was identified by Dr. Edgar Anderson of the Missouri Botanical Garden, who stated that the specimen has characteristics similar to those of Papago and Basket Maker varieties.



MAP 30. Plan and sections of Pit House U.





FIG. 97. Pit House U; showing entrance at upper left, pits, and post-holes. Bulge at right is shallow pit, apparently, under roof of house. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE V

(Fig. 98 and Map 31)

Shape.—Kidney-shaped; greatest diameter, 10 meters.

Walls of orange-yellow clay mixed with gravel.

Floor of orange-yellow clay; depth below present ground level, 1.15 to 1.55 meters.

Firepit.—None found.

Lateral Entrance.—On east side of house.

Pits.—Four in number; one round, three oval; least diameter, 90 cm.; greatest diameter, 2 meters; least depth, 25 cm.; greatest depth, 60 cm.

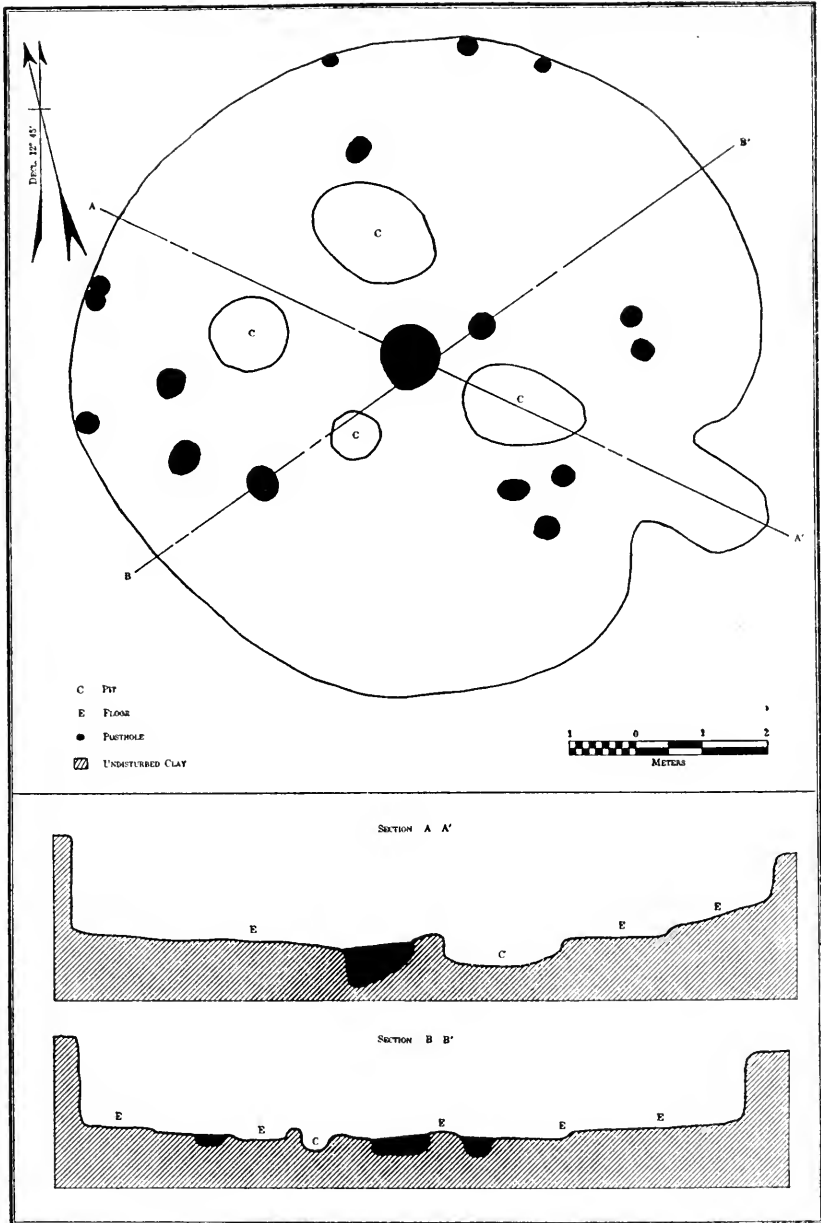
Post-holes.—Sixteen in number; diameters range from 20 to 50 cm.; depth, from 15 to 75 cm.

Roof.—Exact character unknown, but probably two central, croched posts supported roof-beams ranged in spoke pattern.

Pottery.—Floor level: Alma Plain, 54.9 per cent; Alma Rough, 0.3 per cent; San Francisco Red, Saliz variety, 44.8 per cent.

Phase.—Pine Lawn.

General Comments.—This house probably burned. General plan (assemblage of artifacts and pottery) like Pit House A.



MAP 31. Plan and sections of Pit House V.

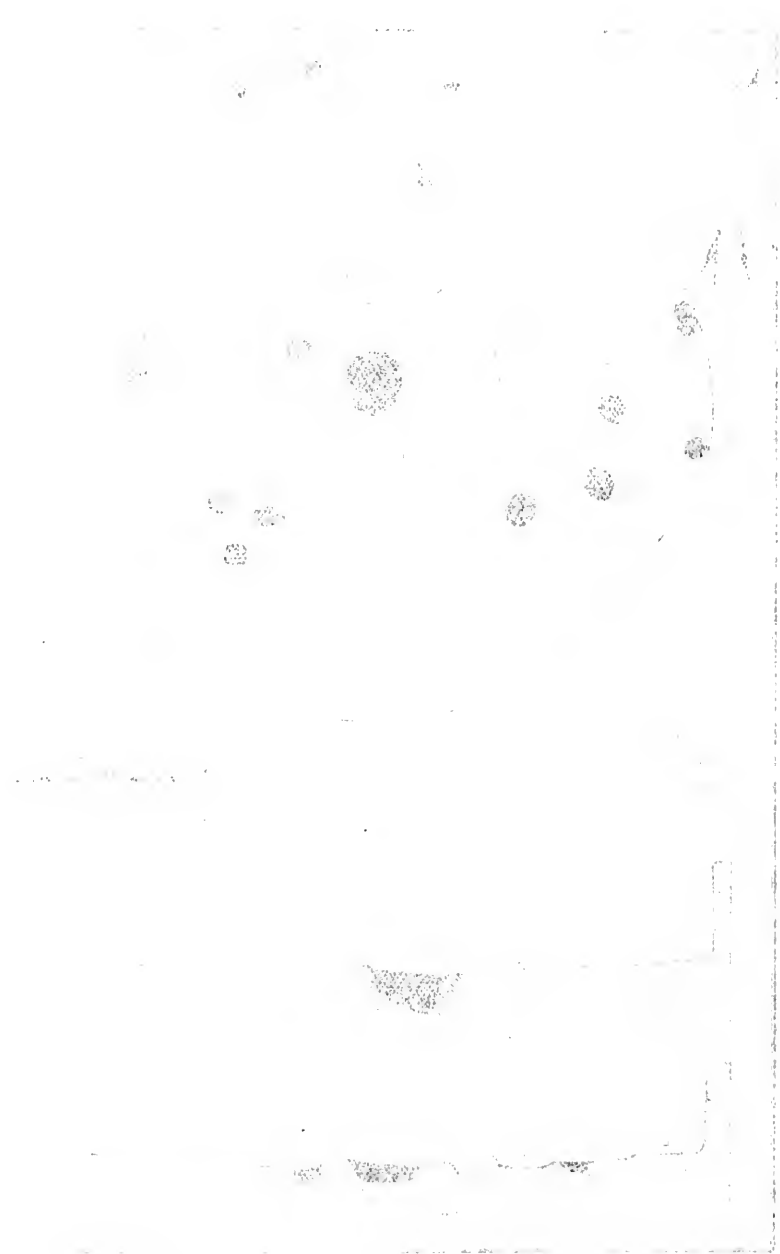


Figure 1. [Illegible text]



FIG. 98. Pit House V; showing entrance at left, pits, and post-holes. Note unusual diameter and depth of house. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE W
(Fig. 99 and Map 32)

Shape.—Squarish with rounded corners; greatest diameter, 6.5 meters.

Walls of yellow-orange clay.

Floor of gravelly, yellow-orange clay; depth below present ground level, 50 cm. to 1.2 meters.

Firepits.—None found.

Lateral Entrance.—On northeast side; semicircular in shape; floor about 30 cm. above pit house floor.

Pits.—Two in number; one round, one oval; least diameter, 50 cm.; greatest diameter, 70 cm.; least depth, 30 cm.; greatest depth, 40 cm.

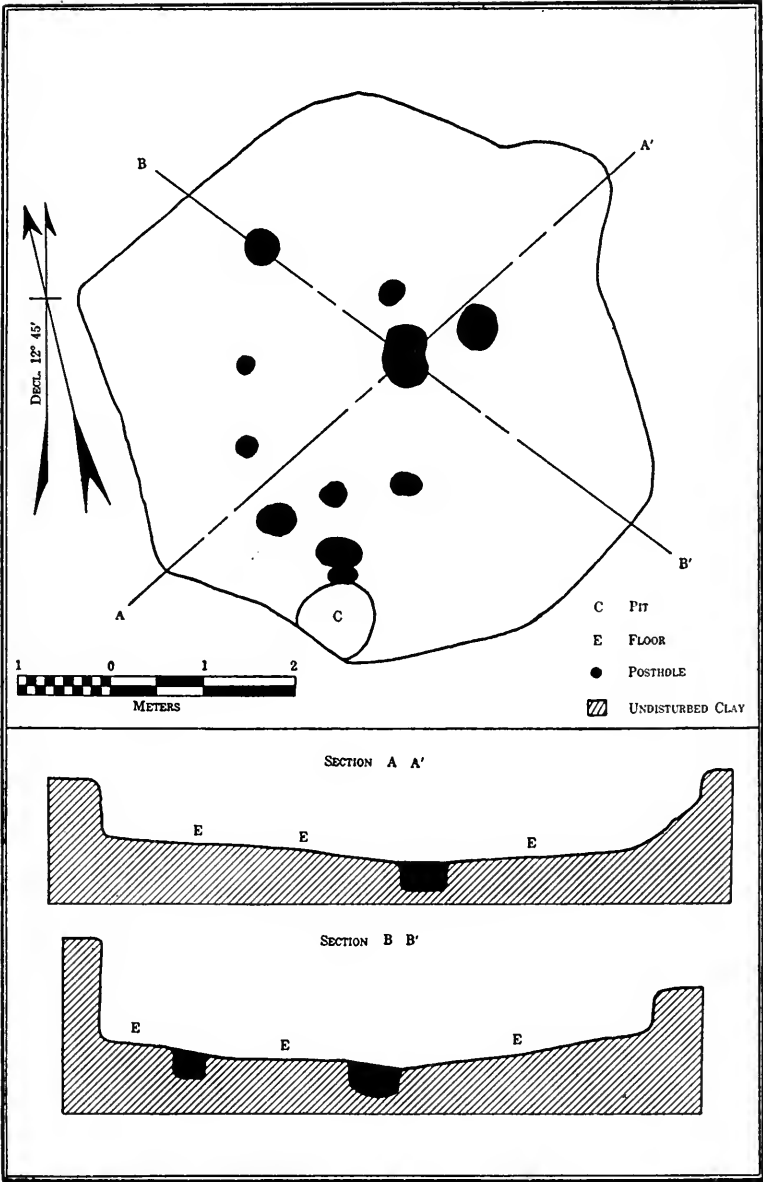
Post-holes.—Ten in number; least diameter, 20 cm.; greatest diameter, 50 cm.; least depth, 10 cm.; greatest depth, 35 cm.

Roof.—Exact character unknown.

Pottery.—Floor level: Alma Plain, 49.6 per cent; Alma Rough, 0.6 per cent; San Francisco Red, Saliz variety, 40.3 per cent; Three Circle Neck Corrugated, 5 per cent; Reserve Smudged, 0.9 per cent; Mimbres Black-on-White, 0.4 per cent; Three Circle Red-on-White, 0.4 per cent; Red Mesa Black-on-White, 0.8 per cent; Incised Corrugated, 0.2 per cent; Indeterminate Black-on-White, 1 per cent; Indeterminate Corrugated, 0.8 per cent.

Phase.—Three Circle.

General Comments.—This house probably burned.



MAP 32. Plan and sections of Pit House W.



Figure 1. A map of the study area.



FIG. 99. Pit House W, plan view. Note pits and post-holes. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE X

(Fig. 100 and Map 33)

Shape.—D-shaped; greatest diameter, 6.9 meters.

Walls of yellow-orange clay.

Floor of gravelly, yellow-orange clay; fairly even; depth below present ground level, 50 to 95 cm.

Firepit.—None found.

Lateral Entrance.—None found.

Pits.—Five in number; three round, two oval; least diameter, 35 cm.; greatest diameter, 1.3 meters; least depth, 10 cm.; greatest depth, 60 cm. Largest pit contained one mano and many unworked stones; semi-flexed burial (No. 54) in pit next to largest one.

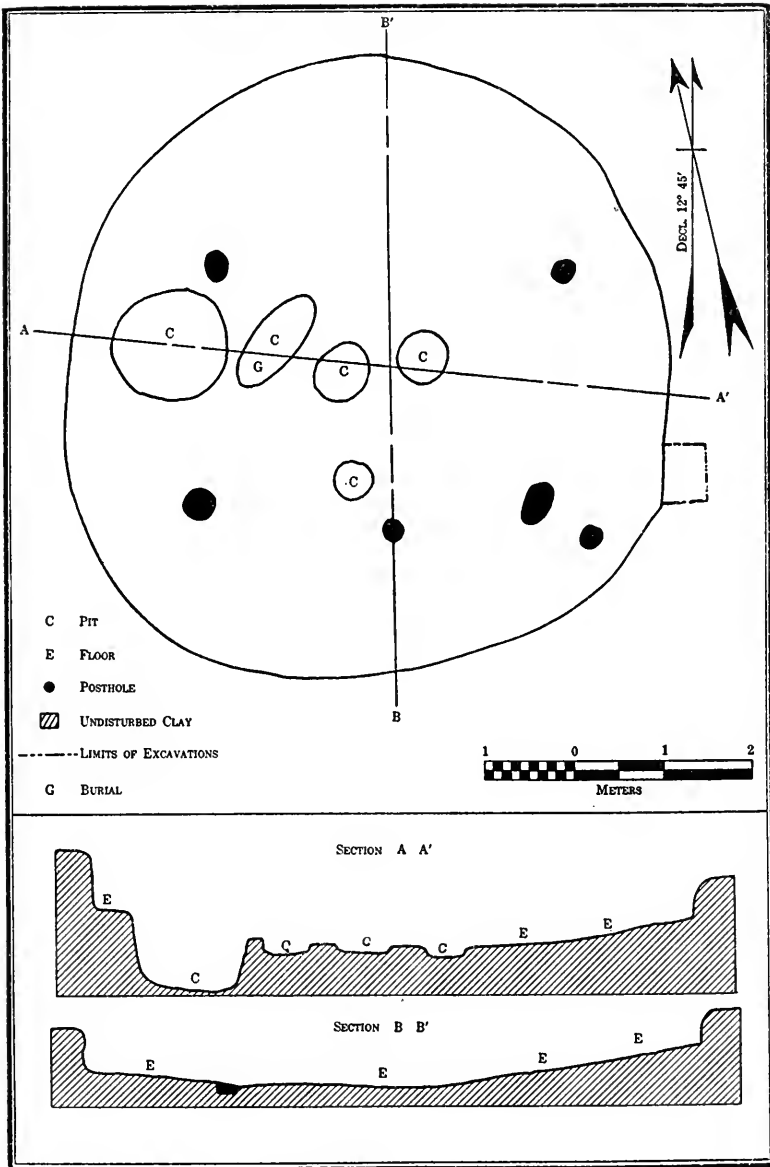
Burial.—Semi-flexed burial (No. 54) found in potato-shaped pit; small Three Circle Neck Corrugated jar at head; broken Mimbres bowl (type not yet named) found, half on either side of skeleton; hammer stone near pelvis; disk-shaped stone beads around neck.

Post-holes.—Six in number; diameters range from 20 cm. to 35 cm.; depth, from 10 cm. to 25 cm.; one large post-hole in each quadrant of house; beams probably arranged in rectangle between posts. From burned clay impression, beams were covered by splints and then earth.

Pottery.—Floor level: Alma Plain, 47.7 per cent; Alma Rough, 16.6 per cent; San Francisco Red, Saliz variety, 17.7 per cent; Three Circle Neck Corrugated, 9.3 per cent; Alma Neck Banded, 0.4 per cent; Incised Corrugated, 0.4 per cent; Mimbres (not typed), 0.4 per cent; Red Mesa Black-on-White, 1.5 per cent; Indeterminate Black-on-White, 1.9 per cent; Indeterminate Textured, 1.1 per cent.

Phase.—Three Circle.

General Comments.—This house burned.



MAP 33. Plan and sections of Pit House X.

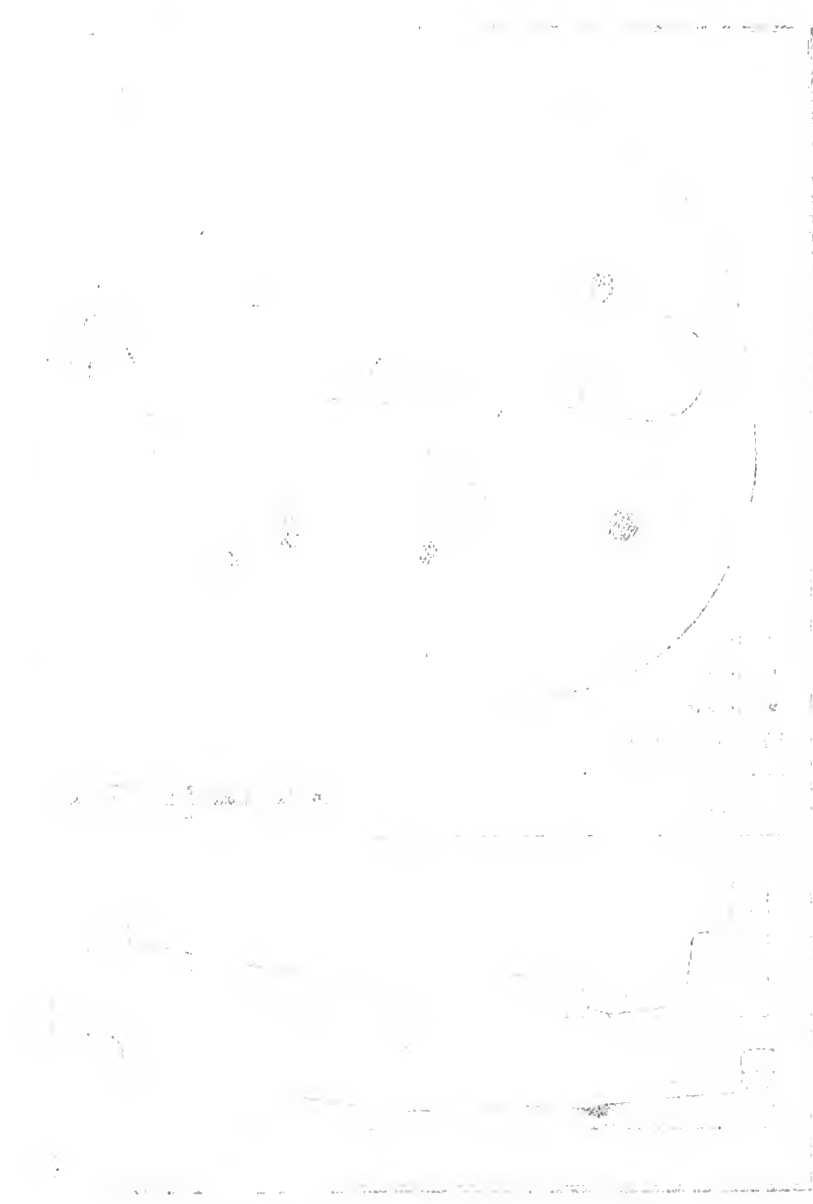


Figure 1: A schematic diagram showing the layout of a system with various components and connections.



FIG. 100. Pit House X; showing pits, post-holes, and burial (No. 54) *in situ*. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE (OR KIVA) Y

(Fig. 101 and Map 34)

Shape.—Rectangular; greatest inside diameter, 4.8 meters.

Walls of yellow-orange clay on north, east, and west walls and portion of south wall; above ventilator opening and on either side, rubble masonry of flat, unworked stones; walls covered by grayish-brown plaster 1 cm. thick.

Floor of yellow-orange clay covered with grayish mud plaster; smooth; depth below present ground level, 1.5 to 1.8 meters.

Firepit.—One; rectangular; 30 cm. wide, 40 cm. long, 20 cm. deep; lined with grayish mud plaster with rounded, grayish mud plaster coping.

Deflector.—Small post-holes at south corners of firepit may have held supports for stone slab; fragment of slab found inside firepit.

Lateral Entrance.—None found.

Ventilator.—On south side; tunnel opening 30 cm. square framed by small plaster-covered posts. The interior of tunnel plastered 30 cm. beyond door; tunnel 60 cm. long; distance from tunnel ceiling to surface of ground, 90 cm.

Sipapu.—None found.

Pits.—None found.

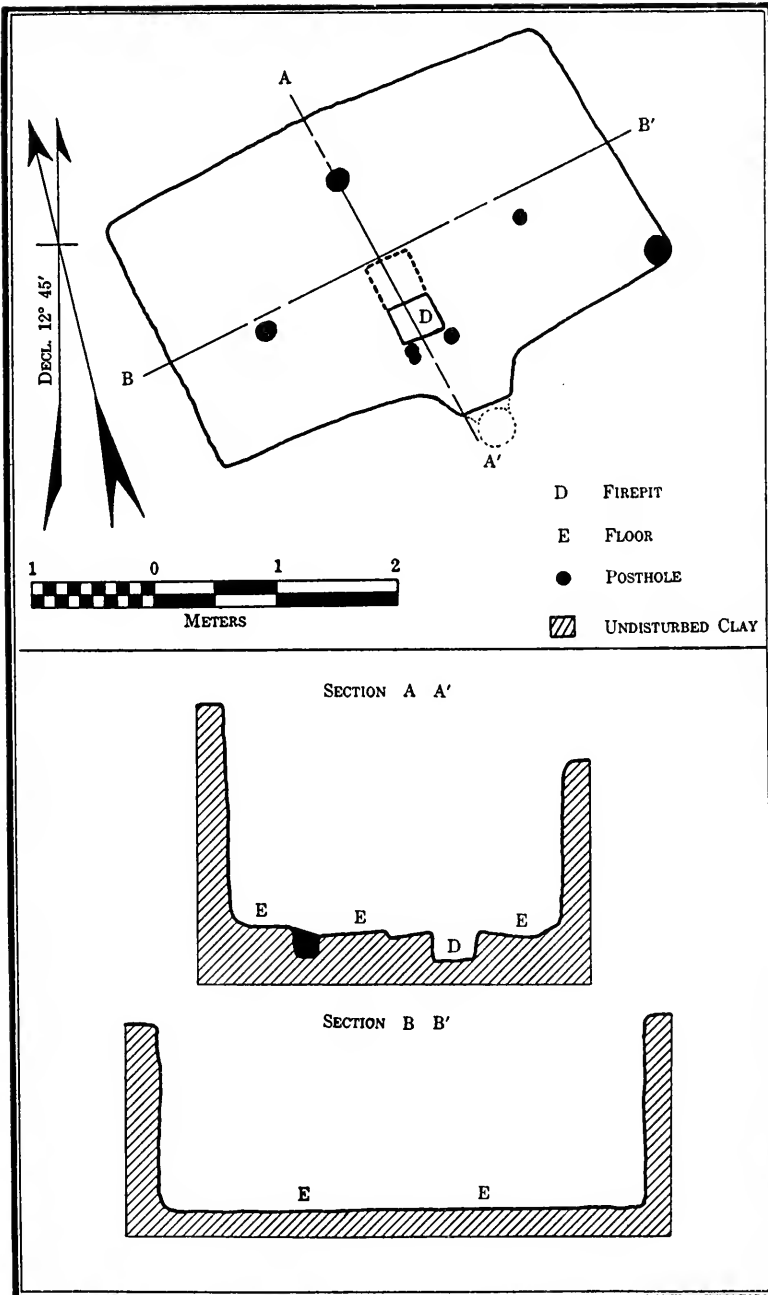
Post-holes.—Four primary; diameters from 15 to 23 cm.; depth from 15 to 28 cm.

Roof.—Exact character unknown; possibly main beams laid on top of walls and supported where needed by upright posts.

Pottery.—Floor level: Alma Plain, 52.9 per cent; San Francisco Red, Saliz variety, 17.6 per cent; Mimbres Bold Face, 5.9 per cent; Indeterminate Black-on-White, 11.8 per cent; Reserve Smudged, 11.8 per cent.

Phase.—Three Circle.

General Comments.—This house burned. It is quite apparent from description given and from ground plan that this structure differs from all others at the SU site and was possibly a kiva rather than a house. Extensive stripping and trenching around the building revealed no surface house. Only 75 sherds were found in the building, including those in the fill and on the floor.



MAP 34. Plan and sections of Pit House (or Kiva) Y.

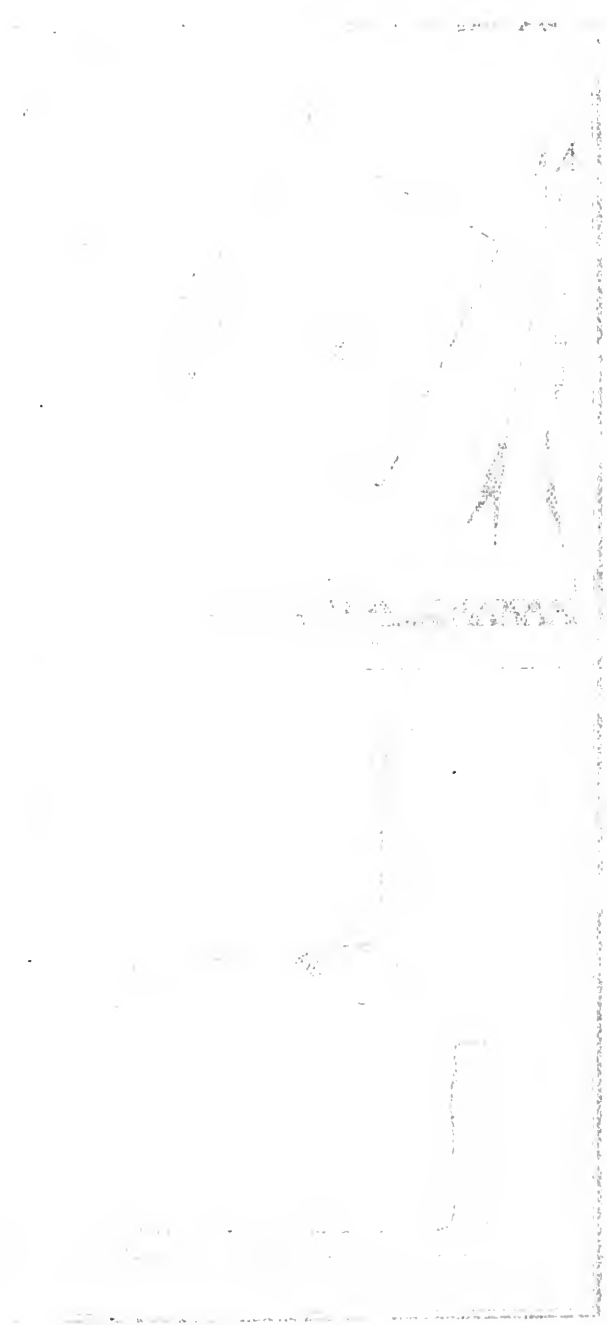




FIG. 101. Pit House (or Kiva) Y; showing post-holes, firepit, and ventilator shaft (to right of meter stick). Arrow (50 cm. long) points north.

PIT HOUSE Z

(Fig. 102 and Map 35)

Shape.—About circular; greatest diameter, 6.1 meters.

Walls of orange-colored, gravelly earth.

Floor of gravelly and sandy clay with some rather large stones protruding; depth below present ground level, 50 to 85 cm.

Firepit.—None found.

Lateral Entrance.—None found.

Pits.—Four in number; least diameter, 50 cm.; greatest diameter, 1.3 meters; least depth, 15 cm.; greatest depth, 45 cm. One pit contained a mano and a hammer stone.

Post-holes.—Six in number; diameters range from 25 to 30 cm.; depths range from 25 to 40 cm.

Roof.—Exact character unknown.

Pottery.—Floor level: Alma Plain, 57.8 per cent; Alma Rough, 29.2 per cent; San Francisco Red, Saliz variety, 13 per cent.

Phase.—Pine Lawn.

General Comments.—This house burned.

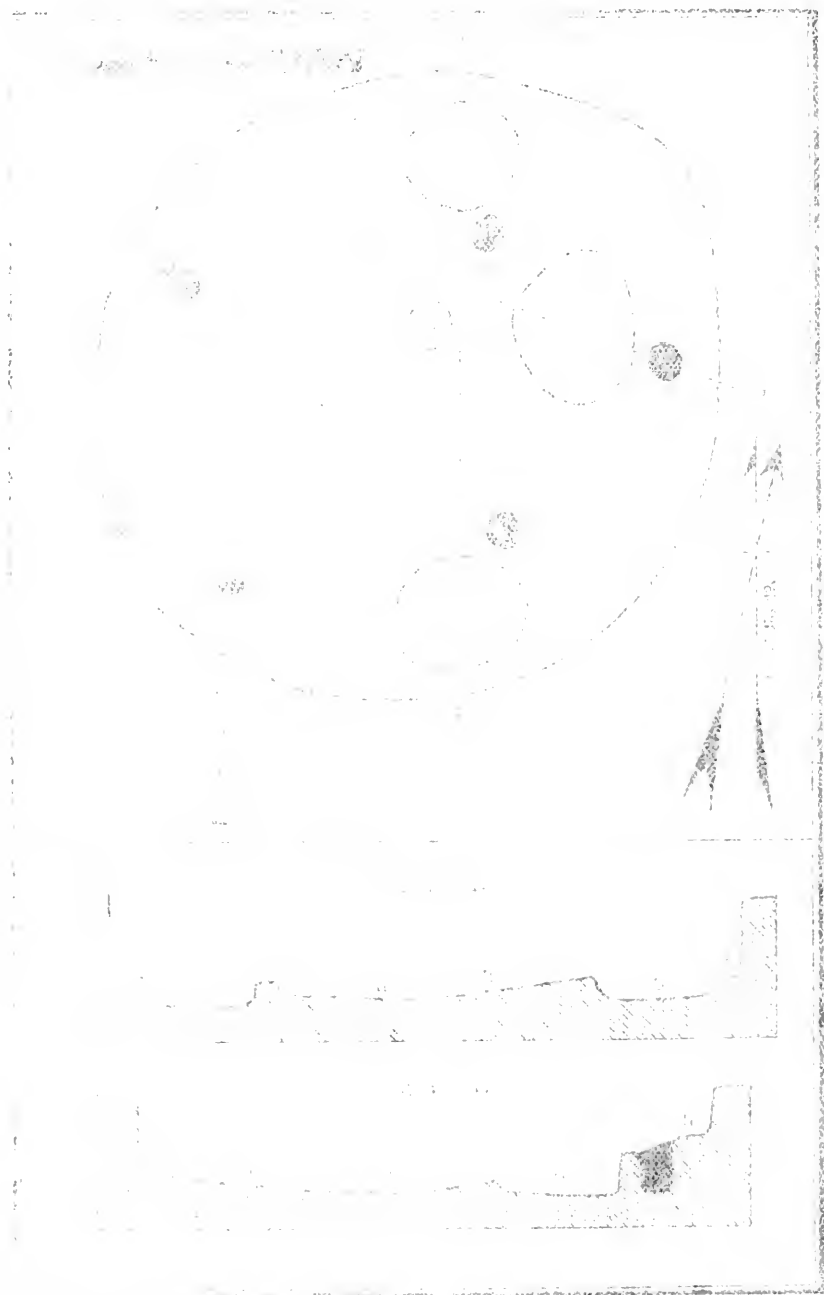


Fig. 1. Mechanical drawing of a component.



FIG. 102. Pit House Z; showing pits and post-holes. Note uneven floor. Arrow (50 cm. long) points north; meter stick in background.

III. ARTIFACTS

On pages 320-361 the details of the artifacts are given in outline form. For convenience in comparison the objects have been grouped as follows:¹

ARTIFACTS

Object	<i>Ground and Pecked Stone</i>	Number excavated
Hand stones		
Manos		110
Rubbing stones		24
Milling stones		
Metates		40
Small, metate-like grinding stones		38
Mortars		23
Pestles		16
Polishing stones		16
Hammer stones		27
Mauls		15
Pitted pebbles or stones		6
Paint palette		1
Paint grinding stones		4
Pipes		5
	<i>Chipped Stone</i>	
Projectile points		14
Knives		9
Scrapers		19
Choppers		12
Drills		2
Pot covers		4
Hoes		2
	<i>Polished Stone</i>	
Zoomorphic figurine		2
Beads		92
Pendants		1
	<i>Bone</i>	
Awls		8
End-scraper		1
Dice		1
Tube		1
	<i>Clay</i>	
Worked sherds		24
Pipes		2
Miniature ladles		6
	<i>Unworked Stone</i>	
Pigments		11
Crystals		5
Total number of artifacts		541

¹ Based on field notes compiled by Leonard Johnson.

A study of the artifacts unearthed during the 1946 field season furnishes us with additional evidence to support such generalizations concerning the material culture of the Pine Lawn phase as were made in the reports on the previous two seasons at the SU site.¹ These generalizations and the new supporting evidence may be summarized as follows:

SHAPING OF TOOLS

The majority of tools unearthed at the SU site show very few marks of modification and shaping previous to their use. It is evident that the stones that were selected conformed to convenient, culturally determined shapes and that these stones were then used without preliminary change and shaping, because the majority of the tools recovered at the site are unmodified except on their working surfaces. Consequently, when most of the stone artifacts were unearthed they could be distinguished from other stones in the fill only by their worked surfaces, such as the pecked and striated grinding surfaces of the manos and metates, the battered ends of the hammer stones and pestles, and the chipped edges of the scrapers and knives. In fact, the more highly finished artifacts such as projectile points, pipes, carved figurines, and beads which were worked and shaped on all surfaces are in a distinct minority.

FUNCTIONS OF ARTIFACTS

The evidence for functions of particular artifacts for the most part also duplicates that found in previous seasons. The association of manos and rubbing stones with metates (for example, the convex-grinding-surfaced manos with the troughed and basin type metates); associations in position, as in Pit House T, where three metates were set up in a graded series with their manos, and another set of manos and metates had been placed in a neighboring shallow pit for storage; and, finally, such associations as mortars with pestles—all bear evidence to the functions of the particular artifact types in such associations. It should be noted that these metates were not tilted at an angle by placing small stones underneath, as has been observed elsewhere. The desired angle was obtained by other means, such as shaping the trough at an angle within the block of which it was manufactured, or by carving the metate from a block in which the upper grinding surface inclined at an angle to the plane of the base of the metate.

Again, artifacts were found which bear indications that they served more than one function. For example, many manos and rubbing stones have battered ends indicating their use as hammer stones or pestles. In other instances it was difficult to determine from the general shape or features, other than size of certain classes of artifacts, whether they were used for one purpose or another. For example, slab type metates were distinguished from metate-like grinding stones, pebble type manos from oval rubbing stones, and oval rubbing stones from oval polishing stones primarily on the quite arbitrary basis of size; in other features they were nearly identical. Furthermore, random flake scrapers could be distinguished from random flake knives in certain instances only on the rather arbitrary basis of thickness. Thus it becomes increasingly apparent that the Mogollon peoples of this particular phase did not have very well-defined limitations on the size of stone selected for a definite function. Apparently they used whatever stone happened to be handy at the moment, and used some tools for more than one function if it was convenient to do so.

RELATION OF ARTIFACTS TO FOOD-GATHERING

Additional evidence was found to support previous observations that the Mogollon peoples of the Pine Lawn phase depended for their food subsistence primarily on gathering wild seeds, roots, bulbs, and nuts and only secondarily on hunting and agriculture. This season as in other seasons the types of milling stones ordinarily associated with a "seed-gathering" economy continued to predominate over other types of tools found. The more undeveloped "primitive" types of these tools, such as the concave slab and basin type metates, oval and round one-handed manos, multi-faced pestles, and pebble type mortars, were the types most often found. The more developed types, such as the trough type metate, rectangular two-handed manos, and the like types ordinarily associated with a developed agriculture in the Southwest, were far less frequently found. Furthermore, artifacts which might ordinarily be associated with hunting are also proportionately scarce; projectile points, in particular, continue to show a heterogeneity of types, instead of becoming stylized as in later periods.

Correlated with this type of economy is the relative scarcity of remains of food products indicative of developed agriculture or hunting. Although several pit houses excavated had been burned and contained more than the usual quantity of material because of the

action of fire, only one small cache of charred corn was found, and no evidence of beans, squash, or other domesticated plants. This is equally true of the residue of products of the chase; the worked bone artifacts are made of deer, long-bones only, and of no other animal. Furthermore, very little unworked bone was found—evidence which, with these other things, would indicate either a lack of interest or a lack of ability in hunting. This small interest in hunting, greater than evidenced in the Cochise culture, was developed to an even greater proportion in later phases.

COMPARISONS WITH ARTIFACTS FROM OTHER HORIZONS

Another aspect of this study was the investigation of similarities and differences between the artifacts of the Pine Lawn phase and those of other time horizons and cultures.

As has been previously observed, similarities between the artifacts from the SU site and those of the several stages of the Cochise culture are numerous and marked. Cochise-like traits continued to be found at the SU site this season in such numbers that it seems probable that the Pine Lawn phase represents an interval in the Cochise-Mogollon continuum. Although there are exceptions, the majority of stone traits, especially of the milling and grinding tool types, have their counterparts in the Cochise artifacts. Even many of the exceptions are clearly developments from Cochise traits. For example, the rounded contours, slightly constricted and curved sides at the open end, and the lack of shelf at the closed end of the trough type metate show clearly that it is a development from the Cochise basin type metate that is slightly open at one end and that is found in both San Pedro and Pine Lawn phases. Similarly, it seems clear that the rectangular two-handed mano is a development from the symmetrical bifaced mano of Cochise times, and the three-quarters grooved maul a development from the full grooved maul. Other traits such as the choppers, random flake scrapers and knives, and the lateral notched projectile points are straight Cochise traits and show a minimum of difference and development.

On the other hand, there are the bone awls and flakers, the pottery objects, the pipes, and numerous projectile point types which do not have counterparts in artifacts of the Cochise culture and which must perforce be compared with the traits of other cultures and periods. A few such relationships are evident at the SU site in a comparison of the earlier pit houses (Pit Houses Q-V) with the artifacts from later ones (Pit Houses W, X, Y). These differences

are not as distinct as one might suppose and are more apparent in architecture and pottery than in stone and bone artifacts. The differences in stone and bone artifacts are differences in frequencies rather than in presence or absence of particular traits, with a few exceptions; namely, the trough type metate with trough open at both ends, disk type beads, and rectangular worked sherds of the pottery smoother type. Nor are these differences too apparent in the frequencies. The oblong two-handed manos with single flat grinding surfaces are slightly more frequent in the later pit houses, and in general there are many more one-handed manos in the earlier pit houses and more two-handed manos in the later pit houses.

A minor number of traits are generally similar to those of other cultures. Examples of these traits are the Anasazi-like cloud blower pipes, the longer examples of the lateral notched projectile points with expanding stems which vaguely resemble Basket Maker atlatl dart points, the bone dice, the rectangular two-handed manos with parallel grinding surfaces, and the trough type metate open at both ends. Also, strangely enough, the paint palette is more reminiscent of Anasazi paint palettes than the carved, decorated Hohokam palettes.

Thus it appears that the stone industry of this phase was a simple, stable industry stemming from the Cochise and branching out in the later Mogollon culture with gradually increasing relations by trade or other means with the Anasazi culture.

The identification of materials in the stone objects was made by Dr. Sharat K. Roy, Chief Curator, Department of Geology, Chicago Natural History Museum. The identification of materials in the bone implements and of the identifiable unworked bone fragments was made by Mr. D. Dwight Davis, Curator of Anatomy, Department of Zoology, Chicago Natural History Museum.

OCCURRENCE OF ARTIFACTS BY PIT HOUSES

- Pit House Q: Manos 14, metates 4, grinding slabs 6, mortars 4, polishing stones 3, hammer stones 2, mauls 1, pipes 1, projectile points 1, choppers 2, pot covers 1, worked sherds 1, pigments 1, crystals 1
- Pit House R: Manos 4, rubbing stones 2, metates 2, grinding slabs 1, paint grinding stones 2, pitted pebbles 2, pestles 2, polishing stones 1, hammer stones 6, mauls 2, projectile points 1, knives 1, scrapers 1, choppers 2
- Pit House S: Manos 13, rubbing stones 5, metates 4, grinding slabs 1, mortars 2, pestles 4, polishing stones 4, hammer stones 3, mauls 3, pipes 2, projectile points 2, knives 1, scrapers 1, choppers 3, hoes 1, bone die 1, drill 1, awls 2, worked sherds 1, pigments 1, crystals 3, miniature ladles 2
- Pit House T: Manos 21, rubbing stones 4, metates 6, grinding slabs 1, mortars 4, pestles 2, polishing stones 2, hammer stones 2, mauls 3, pipes 2, projectile points 4, scrapers 2, choppers 3, pot covers 2, ceremonial object 1, bone awls 1, bone flesher 1, worked sherds 1, miniature ladles 1
- Pit House U: Manos 12, rubbing stones 8, metates 3, grinding slabs 7, paint grinding stones 1, mortars 8, paint palette 1, pestles 4, polishing stones 2, hammer stones 8, mauls 4, projectile points 1, knives 3, scrapers 3, choppers 1, bone awls 1, worked sherds 1, miniature ladles 1, basketry sherd 1, pigments 2, crystals 1
- Pit House V: Manos 10, rubbing stones 2, metates 14, grinding slabs 19, mortars 1, pitted pebbles 2, pestles 2, polishing stones 3, hammer stones 3, mauls 1, projectile points 2, knives 1, scrapers 4, choppers 1, pot covers 1, bird pendants 1, worked sherds 12, pigments 3
- Pit House W: Manos 16, rubbing stones 2, metates 4, grinding slabs 1, mortars 1, pestles 1, hammer stones 1, pipes 1, knives 1, scrapers 1, hoes 1, bone tube 1, bone awl 1, worked sherds 4
- Pit House X: Manos 14, rubbing stones 1, grinding slabs 2, pitted pebbles 1, pestles 1, hammer stones 1, projectile points 2, knives 2, scrapers 4, beads 92, drills 1, worked sherds 2, miniature ladles 1, pigments 1
- Pit House Y: Manos 2, mortars 3, pitted pebbles 1, polishing stones 1, hammer stones 1, mauls 1, pipes 1, projectile points 1, scrapers 1, miniature ladles 1, pigments 1, bone awls 2
- Pit House Z: Manos 2, scrapers 1, worked sherds 1

MANOS

(Figs. 103-107, 109)

Manos with single grinding surfaces:

- (a) Oblong in outline, surfaces parallel, grinding surface convex..... 6
From Pit Houses S, W, X
Length: maximum, 22.7 cm.; minimum, 18.8 cm.; average, 20.5 cm.
Width: maximum, 12.6 cm.; minimum, 9 cm.; average, 10.7 cm.
Thickness: maximum, 7.8 cm.; minimum, 3.1 cm.; average, 4.3 cm.
- (b) Oblong in outline, surfaces parallel, grinding surface slightly convex... 1
From Pit House W
Length, 16.7 cm.; width, 10.4 cm.; thickness, 2.6 cm.
- (c) Oblong in outline, surfaces parallel, grinding surface flat..... 4
From Pit Houses Q, R, X
Length: fragmentary
Width: maximum, 11.3 cm.; minimum, 9.4 cm.; average, 10.9 cm.
Thickness: maximum, 5.8 cm.; minimum, 4.4 cm.; average, 5 cm.
- (d) Oblong in outline, wedge-shaped in cross section, grinding surface flat..... 2
From Pit Houses T, X
Lengths, 12.2, 16.1 cm.; widths, 9.9, 12.6 cm.; thicknesses, 4.9, 5.5 cm.
- (e) Oval in outline, surfaces parallel, grinding surface convex..... 17
From Pit Houses Q, S, T, U, V, W, X
Length: maximum, 20.6 cm.; minimum, 12.9 cm.; average, 17.3 cm.
Width: maximum, 13.6 cm.; minimum, 8.2 cm.; average, 10.2 cm.
Thickness: maximum, 7.3 cm.; minimum, 2.2 cm.; average, 4.7 cm.
- (f) Oval in outline, surfaces parallel, grinding surface slightly convex... 9
From Pit Houses R, U, V, X, Z
Length: maximum, 19 cm.; minimum, 10.6 cm.; average, 14.6 cm.
Width: maximum, 13 cm.; minimum, 7.9 cm.; average, 10.1 cm.
Thickness: maximum, 6.5 cm.; minimum, 3.7 cm.; average, 4.7 cm.
- (g) Oval in outline, surfaces parallel, grinding surface flat..... 12
From Pit Houses Q, R, S, U, V, W
Length: maximum, 20.4 cm.; minimum, 11.6 cm.; average, 15 cm.
Width: maximum, 12.6 cm.; minimum, 8.5 cm.; average, 10.4 cm.
Thickness: maximum, 5.8 cm.; minimum, 2.8 cm.; average, 4.2 cm.
- (h) Round in outline, surfaces parallel, grinding surface convex..... 2
From Pit House Z; Pit House S (stripping)
Lengths, 9.3, 10.3 cm.; widths, 8.2, 10 cm.; thicknesses, 6.7, 4.1 cm.
- (i) Round in outline, surfaces parallel, grinding surface slightly convex, small pitted depression in upper surface..... 2
From Pit Houses W, Y
Lengths, 15.5, 11.5 cm.; widths, 11.4, 9.3 cm.; thicknesses, 5.3, 6.3 cm.
- (j) Disk-shaped, surfaces parallel, grinding surface flat..... 1
From Pit House Q
Length, 12.2 cm.; width, 11.1 cm.; thickness, 3.6 cm.
- (k) Rectangular in outline, surfaces parallel, grinding surface convex... 18
From Pit Houses Q, R, S, T, W, X
Length: maximum, 22.7 cm.; minimum, 14.2 cm.; average, 20.3 cm.
Width: maximum, 12.4 cm.; minimum, 8.6 cm.; average, 10.5 cm.
Thickness: maximum, 7.4 cm.; minimum, 3.4 cm.; average, 4.9 cm.

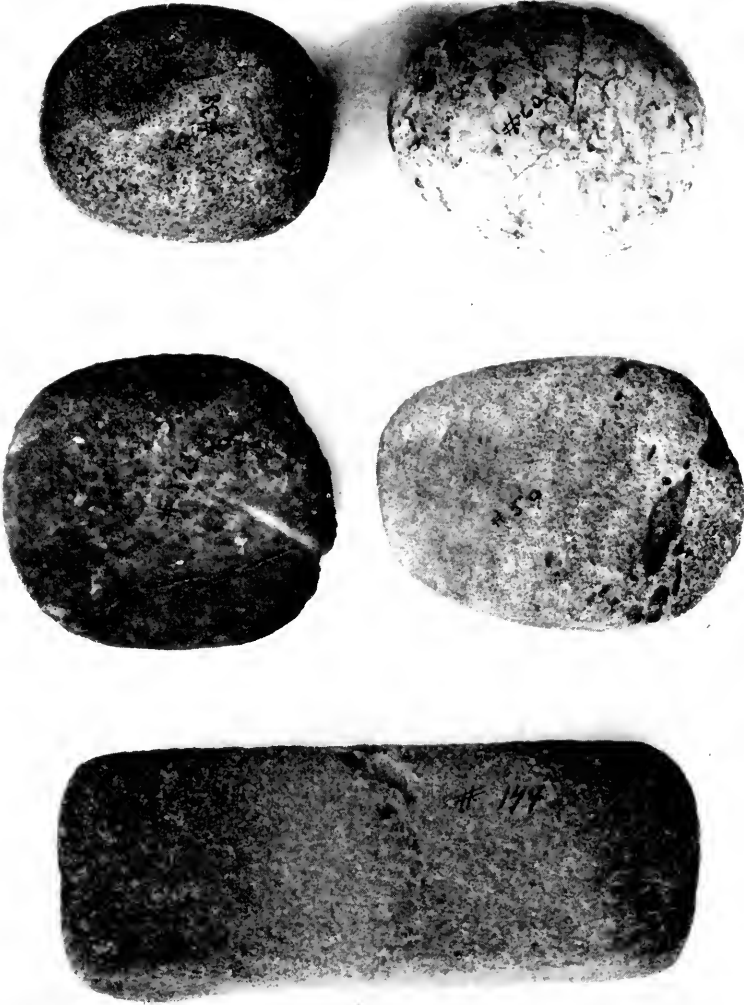


FIG. 103. Manos (miscellaneous types). Length of left specimen (top row) 10.6 cm.

MANOS—*continued*

(Figs. 103-107, 109)

- | | | |
|--|---|---|
| (l) | Rectangular in outline, surfaces parallel, grinding surface slightly convex..... | 9 |
| | From Pit Houses Q, U, V, W | |
| | Length: maximum, 23 cm.; minimum, 10.6 cm.; average, 19.1 cm. | |
| | Width: maximum, 13.4 cm.; minimum, 9.8 cm.; average, 11.4 cm. | |
| | Thickness: maximum, 5.9 cm.; minimum, 3.9 cm.; average, 4.6 cm. | |
| (m) | Rectangular in outline, surfaces parallel, grinding surface flat..... | 3 |
| | From Pit Houses Q, T, V | |
| | Lengths, 17.5 cm.; widths, 7.8, 9.4, 12.1 cm.; thicknesses, 3.8, 5.6 cm. | |
| (n) | Roughly square in outline, surfaces parallel, grinding surface convex..... | 8 |
| | From Pit Houses S, T, U, W | |
| | Length: maximum, 18.7 cm.; minimum, 11.5 cm.; average, 15.5 cm. | |
| | Width: maximum, 12.7 cm.; minimum, 10 cm.; average, 11.6 cm. | |
| | Thickness: maximum, 7 cm.; minimum, 3.2 cm.; average, 4.7 cm. | |
| (o) | Turtleback type, squarish with rounded ends in outline, surfaces parallel, upper surface convex, grinding surface convex lengthwise, slightly convex crosswise..... | 3 |
| | From Pit Houses Q, X | |
| | Lengths, 18.7, 18.9, 16.3 cm.; widths, 10.4, 8.4, 11.8 cm.; thicknesses, 4, 3.6, 3.3 cm. | |
| (p) | Oblong in outline, one rounded end, one squarish end, surfaces parallel, grinding surface convex..... | 3 |
| | From Pit House T | |
| | Lengths, 20.8, 21.5, 18.8 cm.; widths, 13, 11.7, 13.2 cm.; thicknesses, 3.8, 3.7, 6.7 cm. | |
| Manos with two grinding surfaces: | | |
| (a) | Round in outline, surfaces parallel, flat..... | 1 |
| | From Pit House Y | |
| | Length, 12.4 cm.; width, 10.8 cm.; thickness, 4.2 cm. | |
| (b) | Oval in outline, surfaces parallel, slightly convex..... | 2 |
| | From Pit Houses T, U | |
| | Lengths (fragmentary); widths, 13.8 cm.; thicknesses, 5.1, 2.5 cm. | |
| (c) | Rectangular in outline, surfaces parallel, flat..... | 6 |
| | From Pit Houses Q, R, T, V, W | |
| | Length: maximum, 24.6 cm.; minimum, 10.1 cm.; average, 17.5 cm. | |
| | Width: maximum, 13.5 cm.; minimum, 10.2 cm.; average, 12 cm. | |
| | Thickness: maximum, 8.3 cm.; minimum, 3.2 cm.; average, 5.4 cm. | |
| (d) | Roughly square in outline, surfaces parallel, flat, smooth..... | 1 |
| | From Pit House Q | |
| | Length, 17.7 cm.; width, 11 cm.; thickness, 4 cm. | |
| Materials: granite, trachyte, quartzite. | | |
| | Manos with long edge grooved for finger grip..... | 2 |



FIG. 104. Rectangular two-handed manos (upper surfaces). Length of top specimen 23 cm.

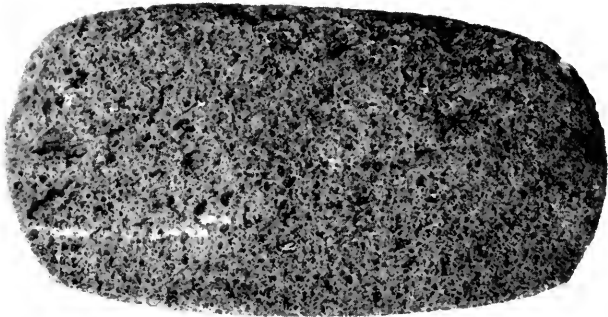
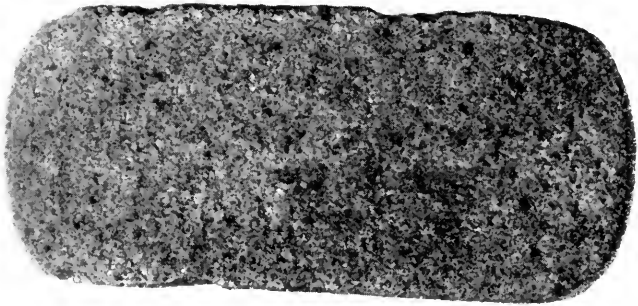
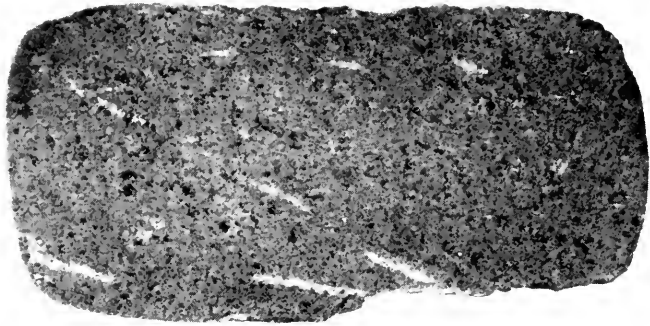


FIG. 105. Rectangular two-handed manos (grinding surfaces). Length of top specimen 23 cm.

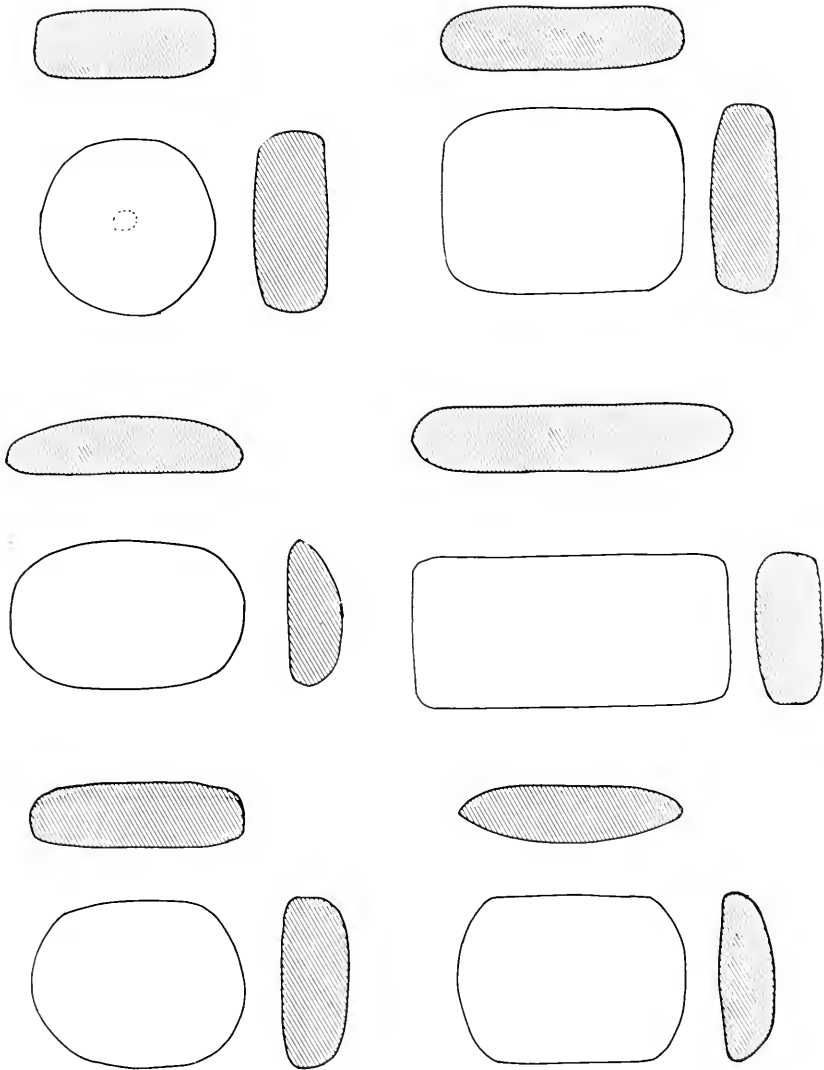


FIG. 106. Outlines and sections of manos: disk type, oval pebble type, squarish type with rounded ends (left, top to bottom); squarish type, rectangular type, turtleback type (right, top to bottom). Length of right specimen (bottom row) 13 cm.

RUBBING STONES

(Fig. 107)

Rubbing stones with single rubbing surface:

- (a) Oval in outline, surfaces parallel, rubbing surface flat 8
 From Pit Houses R, T, U, V, X
 Length: maximum, 12 cm.; minimum, 7.7 cm.; average, 10.1 cm.
 Width: maximum, 9.3 cm.; minimum, 4 cm.; average, 7.3 cm.
 Thickness: maximum, 6 cm.; minimum, 1.8 cm.; average, 4.5 cm.
- (b) Roughly round in outline, surfaces parallel, rubbing surface flat 7
 From Pit Houses S, T, U, W
 Length: maximum, 9.9 cm.; minimum, 7.8 cm.; average, 9 cm.
 Width: maximum, 9.8 cm.; minimum, 5.7 cm.; average, 8.2 cm.
 Thickness: maximum, 6.3 cm.; minimum, 2.7 cm.; average, 4.4 cm.
- (c) Roughly round in outline, wedge-shaped in cross section, flat rubbing
 surface 1
 From Pit House S
 Length, 10.3 cm.; width, 9.6 cm.; thickness, 4.5 cm.
- (d) Oblong in outline, surfaces parallel, flat rubbing surface 1
 From Pit House T
 Length, 11.4 cm.; width, 6.8 cm.; thickness, 4.5 cm.
- (e) Roughly square in outline, surfaces parallel, flat rubbing surface 3
 From Pit Houses U, V, W
 Lengths, 9.2, 10.9, 8.9 cm.; widths, 6.9, 9.5, 6 cm.; thicknesses, 3, 6.4,
 1.5 cm.

Rubbing stones with two rubbing surfaces:

- (a) Oval or oblong in outline with two flat rubbing surfaces 4
 From Pit Houses S, T, U
 Length: maximum, 11.3 cm.; minimum, 8.4 cm.; average, 10.1 cm.
 Width: maximum, 9.1 cm.; minimum, 6.2 cm.; average, 7.6 cm.
 Thickness: maximum, 5 cm.; minimum, 1.7 cm.; average, 3.5 cm.



FIG. 107. Miscellaneous types of manos (upper row) and rubbing stones (lower row). Length of right specimen (bottom row) 11.7 cm.

METATES

(Figs. 108-110)

- (a) Slab type, large slab, generally rectangular or oval in outline with flat or slightly concave upper surface; bottom and sides of boulder unworked, concavity sometimes pecked. 17
From Pit Houses Q, R, S, T, U, V
Length: maximum, 58.5 cm.; minimum, 39.8 cm.; average, 45.7 cm.
Width: maximum, 37.4 cm.; minimum, 25.1 cm.; average, 31.2 cm.
Thickness: maximum, 13.6 cm.; minimum, 3.7 cm.; average, 6.5 cm.
- (b) Basin type, unshaped blocks of stone with oval grinding surfaces somewhat basin-shaped and extending to one edge of stone. 8
From Pit Houses R, S, T, U, V
Length: maximum, 71.1 cm.; minimum, 68 cm.; average, 69.5 cm.
Width: maximum, 48 cm.; minimum, 33.8 cm.; average, 39.9 cm.
Thickness: maximum, 19 cm.; minimum, 11.1 cm.; average, 16 cm.
- (c) Trough type, open one end only; unshaped blocks of stone with trough-shaped grinding surface open at one end only; trough slopes up steeply at closed end, sides curved slightly. 14
From Pit Houses Q, S, T, U, V, W
Length: maximum, 61 cm.; minimum, 42 cm.; average, 52.8 cm.
Width: maximum, 46 cm.; minimum, 33.4 cm.; average, 39.3 cm.
Thickness: maximum, 19 cm.; minimum, 6.5 cm.; average, 12.2 cm.
- (d) Trough type, open at both ends; unshaped block of stone roughly square in outline; upper end of trough slopes up sharply and is narrower than lower end; surface deeply pitted from pecking with hammer stone. 1
Length, 45.9 cm.; width, 41.6 cm.; thickness, 16.9 cm.

Dimensions of trough, trough type metates:

Length: maximum, 49.1 cm.; minimum, 28.1 cm.; average, 41.3 cm.
Width: maximum, 26.7 cm.; minimum, 19.5 cm.; average, 23.3 cm.
Depth: maximum, 11.3 cm.; minimum, 2.7 cm.; average, 4.7 cm.

Dimensions of basin, basin type metates:

Length: maximum, 42 cm.; minimum, 31.6 cm.; average, 36.8 cm.
Width: maximum, 29 cm.; minimum, 16.5 cm.; average, 20.3 cm.
Depth: maximum, 15.1 cm.; minimum, 4.5 cm.; average, 7.8 cm.

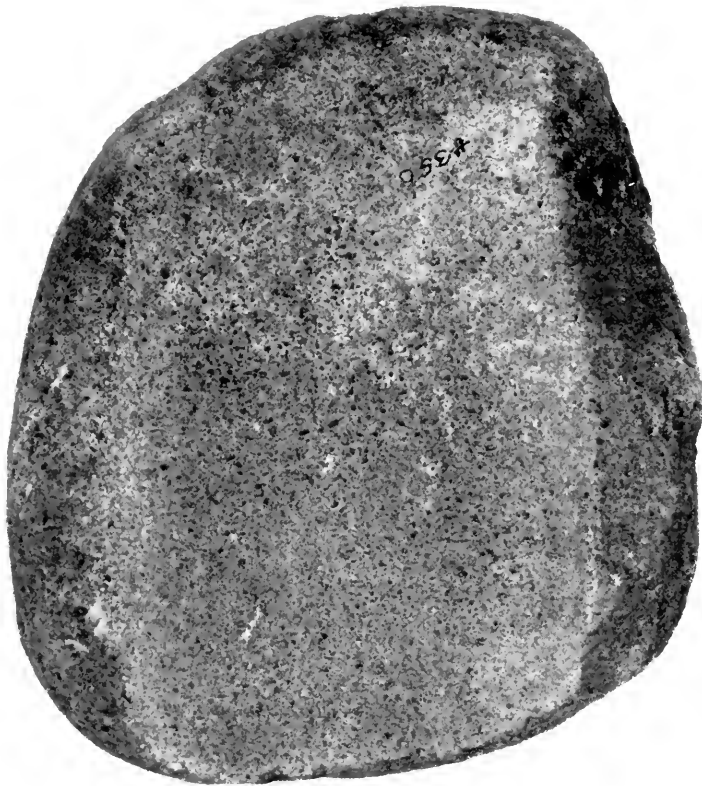


FIG. 108. Trough type metate, trough open at both ends. Length 45.9 cm.



FIG. 109. Metates and manos *in situ*, Pit House T.

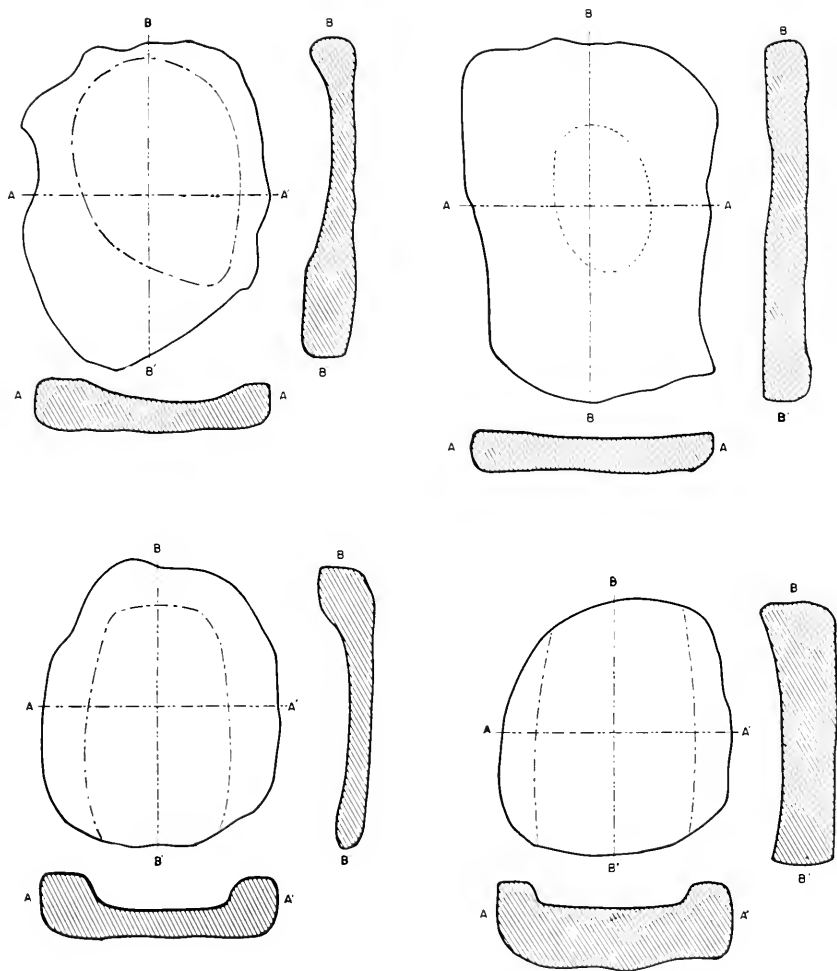


FIG. 110. Outlines and sections of metates: basin and slab types (top); trough types (bottom). Length of right specimen (bottom row) 45.9 cm.

SMALL, METATE-LIKE GRINDING STONES

(Fig. 111)

With single grinding surface:

- (a) Large slabs of stone, roughly rectangular or oval in outline, with smooth grinding surface, occasionally slightly concave; sides and bottom usually unworked, occasionally bottom-beveled so that grinding surface is sloping. 28
From Pit Houses Q, R, S, T, U, V, W
Length: maximum, 41.7 cm.; minimum, 19.7 cm.; average, 25.8 cm.
Width: maximum, 33.3 cm.; minimum, 8.7 cm.; average, 19.2 cm.
Thickness: maximum, 17.1 cm.; minimum, 3.8 cm.; average, 7.1 cm.

With two grinding surfaces:

- (a) Roughly rectangular or oval in outline, worked by pecking, smoothed by grinding. 10
From Pit Houses U, V, X
Length: maximum, 29.4 cm.; minimum, 21.3 cm.; average, 25.5 cm.
Width: maximum, 27.2 cm.; minimum, 14 cm.; average, 20.3 cm.
Thickness: maximum, 7.6 cm.; minimum, 4.2 cm.; average, 5.8 cm.

ABRADING SLABS or PAINT GRINDING STONES

(Not illustrated)

- (a) Small slabs of stone, roughly rectangular in outline, with single flat or slightly concave grinding surface, worked by pecking, smoothed by grinding, frequently showing traces of paint. 4
From Pit Houses R, S, U
Lengths, 16.4, 11.2, 19.3, 14.7 cm.; widths, 10.5, 10.5, 12.2, 14.4 cm.; thicknesses, 4.3, 3.2, 4.3, 2.9 cm.

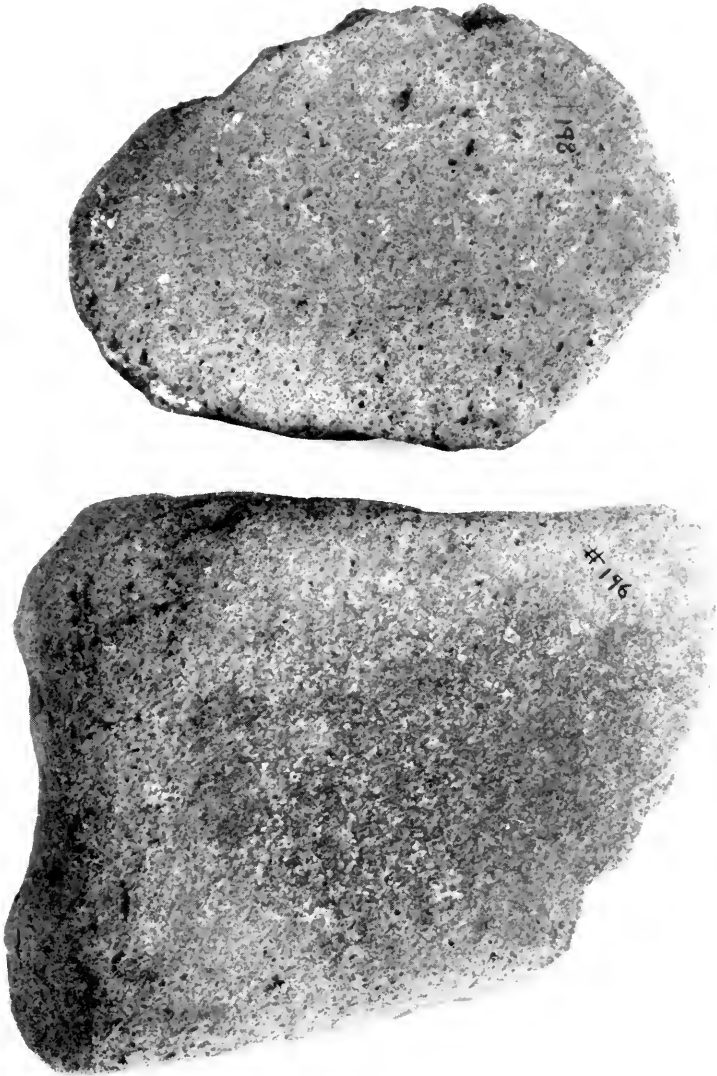


FIG. 111. Small, metate-like grinding stones. Length of lower specimen 27.1 cm.

MORTARS

(Figs. 112-114)

- (a) Pebble type, large, porous, roughly round pebbles, exterior unworked, bearing deep cup-shaped depression pecked in center of one face 22
From Pit Houses Q, S, T, U, V, W, Y
Length: maximum, 30 cm.; minimum, 17.1 cm.; average, 23.5 cm.
Width: maximum, 27.6 cm.; minimum, 11.5 cm.; average, 20.2 cm.
Thickness: maximum, 16.4 cm.; minimum, 5.6 cm.; average, 10.4 cm.
Diameter of depressions: maximum, 14.3 cm.; minimum, 9.4 cm.; average, 11.1 cm.
Depth of depressions: maximum, 10.2 cm.; minimum, 3.5 cm.; average, 5.8 cm.
- (b) Large, rough, oval boulder, exterior unworked, with deep oval cavity pecked in one face 1
From Pit House Y
Length, 43 cm.; width, 33.7 cm.; thickness, 24.2 cm.
Length of depression, 16.8 cm.; width of depression, 13.2 cm.; depth of depression, 9.3 cm.

PAINT PALETTE

(Not illustrated)

- Thin slab, roughly square in outline, surfaces parallel, very smooth, oval depression in one face 1
From Pit House U
Length, 16.9 cm.; width, 16.3 cm.; thickness, 2.8 cm.
Length of depression, 12.4 cm.; width of depression, 9.4 cm.; depth of depression, 1.6 cm.

PITTED PEBBLES

(Fig. 113)

- Ovoid and round pebbles having small round depression worked in one surface 6
From Pit Houses R, V, X, Y
Length: maximum, 14.8 cm.; minimum, 8.4 cm.; average, 12 cm.
Width: maximum, 12.9 cm.; minimum, 7.2 cm.; average, 10 cm.
Thickness: maximum, 9.6 cm.; minimum, 5.9 cm.; average, 7.6 cm.
Diameter of depression: maximum, 6.6 cm.; minimum, 3.3 cm.; average, 4.9 cm.
Depth of depression: maximum, 3 cm.; minimum, 2 cm.



FIG. 112. Pebble type mortars. Diameter of lower specimen 25.5 cm.

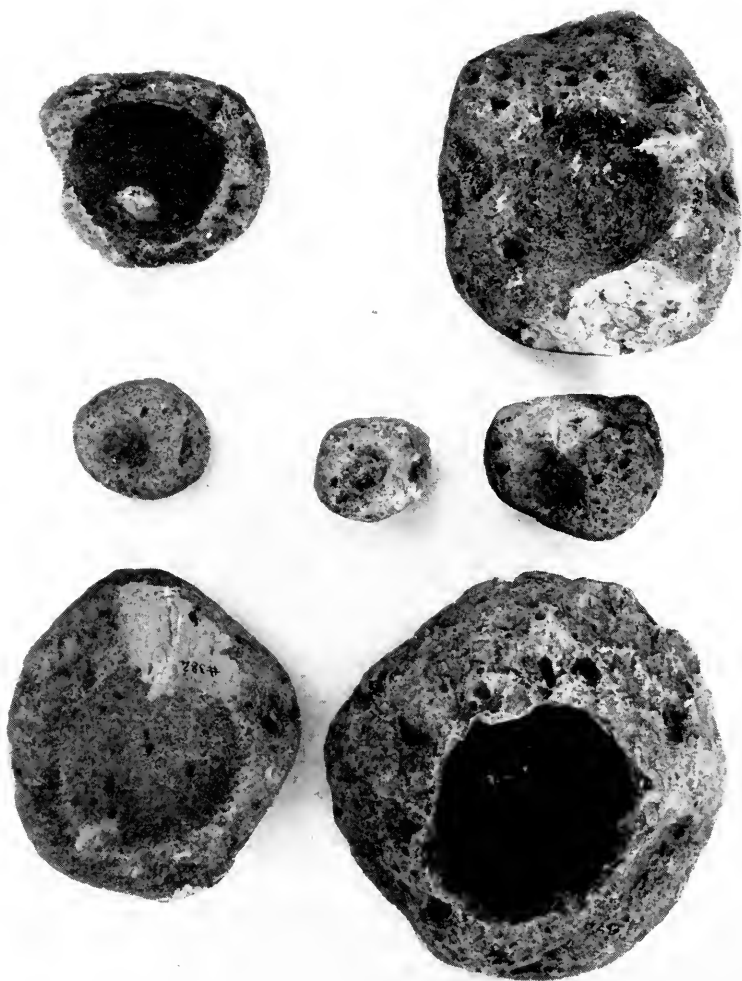


FIG. 113. Pebble type mortars (top and bottom rows); pitted pebbles (center row). Diameter of right specimen (bottom row) 30 cm.



FIG. 114. Mortar made from boulder. Pit House Y. Length 43 cm.

PESTLES

(Fig. 115)

- (a) Angular type, long angular stone, unaltered except for one end, which is round, pecked and battered; other end wider and round for hand grip. . . 10
From Pit Houses R, S, T, U, V, W, X
Length: maximum, 34.1 cm.; minimum, 15.6 cm.; average, 22.9 cm.
Width: maximum, 11.1 cm.; minimum, 6 cm.; average, 9.1 cm.
Thickness: maximum, 9.4 cm.; minimum, 5.5 cm.; average, 6.6 cm.
- (b) Multi-faced type, roundish pebbles with some pecked flat surfaces, and battered ends. 6
From Pit Houses S, T, U
Length: maximum, 10.8 cm.; minimum, 8.3 cm.; average, 9.3 cm.
Width: maximum, 9 cm.; minimum, 8.6 cm.; average, 8.7 cm.
Thickness: maximum, 8.8 cm.; minimum, 7 cm.; average, 7.7 cm.

POLISHING STONES

(Not illustrated)

- Oval or roundish in outline with one or more smooth flat polishing surfaces. . . 16
From Pit Houses Q, R, S, T, U, V, Y
Length: maximum, 8.7 cm.; minimum, 4.3 cm.; average, 7 cm.
Width: maximum, 6.7 cm.; minimum, 2 cm.; average, 4.6 cm.
Thickness: maximum, 6.4 cm.; minimum, 1.4 cm.; average, 2.3 cm.

HAMMER STONES

(Not illustrated)

- Battered and pitted pebbles, mostly round and angular shapes. 27
From Pit Houses Q, R, S, T, U, V, W, X, Y
Length: maximum, 12.7 cm.; minimum, 6 cm.; average, 8.7 cm.

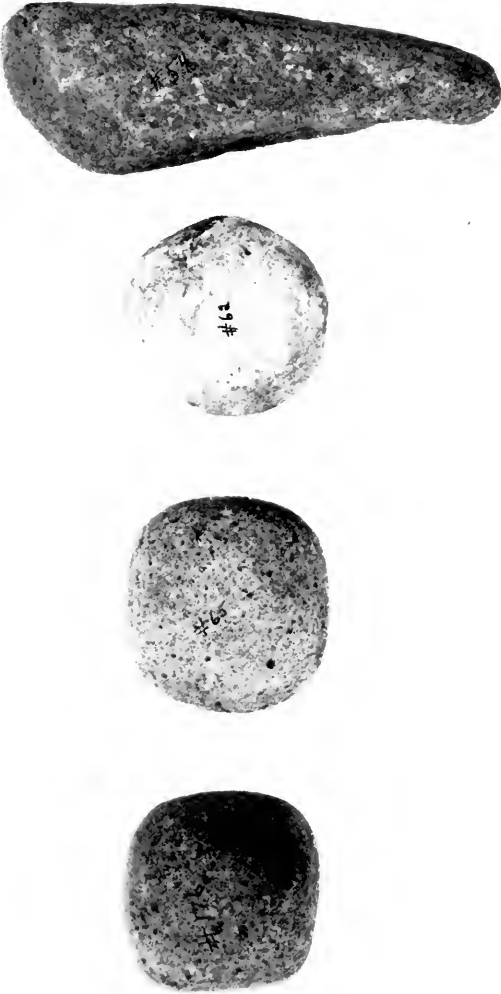


FIG. 115. Angular pestle and three multi-faced pestles. Length of specimen at left 8.3 cm.

MAULS

(Fig. 116)

- (a) Round pebbles, oval in outline, with full groove around middle, one or more ends battered..... 13
From Pit Houses Q, R, S, T, U, V
Length: maximum, 16.6 cm.; minimum, 7.3 cm.; average, 13.9 cm.
Width: maximum, 11.2 cm.; minimum, 5.3 cm.; average, 8.9 cm.
Thickness: maximum, 10.4 cm.; minimum, 4 cm.; average, 7.2 cm.
- (b) Round pebble, oval in outline with three-quarters groove around middle, one end battered..... 1
From Pit House R
Length, 12.8 cm.; width, 9.8 cm.; thickness, 8.2 cm.
- (c) Roughly rectangular pebble, full grooved around middle, battered at one end..... 1
From Pit House Y
Length, 15.6 cm.; width, 8.9 cm.; thickness, 8.2 cm.



FIG. 116. Full-grooved mauls. Length of bottom specimen 15.5 cm.

PIPES

(Fig. 117)

Cylindrical or tubular type, tapering slightly from larger bowl end to smaller stem end; greatest diameter about seven-eighths distance from stem end; central perforation through pipe is narrower at stem end; two specimens with bores unfinished..... 5

From Pit Houses Q, S, T, W
Lengths: 4.9, 5.2, 3.5, 6.4, 4.6 cm.
Diameters: 2.8, 4.2, 3.4, 3.1, 2.5 cm.
Diameters of bores: 1.1, 2.3, 2.2, 2, 1.4 cm.
Material: scoria.



FIG. 117. Tubular stone pipes. Length of right specimen (top row) 4.6 cm.

PROJECTILE POINTS

(Fig. 118)

- | | |
|--|---|
| (a) Lateral notched, expanding stem narrower than shoulder, straight base, straight or slightly convex edges..... | 4 |
| From Pit Houses Q, S, X | |
| Lengths, 3.8, 4.5, 3.9, 2.5 cm.; widths, 1.9, 2.4, 2.2, 1.7 cm.; thicknesses, 0.3, 0.4, 0.7, 0.4 cm. | |
| (b) Diagonal notched, expanding stem narrower than shoulder, base slightly convex, edges straight with slightly flaring barbs..... | 1 |
| From Pit House U | |
| Length, 2.3 cm.; width, 1.6 cm.; thickness, 0.3 cm. | |
| (c) Short, leaf-shaped, with slightly convex edges and convex base..... | 1 |
| From Pit House V | |
| Length, 3.8 cm.; width, 3.1 cm.; thickness, 0.7 cm. | |
| (d) Roughly leaf-shaped, upper portion of edges slightly convex, basal portion of edges straight; straight base..... | 2 |
| From Pit Houses R, S | |
| Lengths, 5.1, 2.9 cm.; widths, 1.8 cm.; thicknesses, 0.4 cm. | |
| (e) Small, slender, corner-notched, with slightly expanding stem narrower than shoulder, edges straight..... | 2 |
| From Pit Houses T, Y | |
| Lengths, 3.5, 2.5 cm.; widths, 1.4, 1.1 cm.; thicknesses, 0.1, 0.3 cm. | |
| (f) Long, slender blade with straight edges, straight stem and straight base.. | 1 |
| From Pit House T | |
| Length, 6.5 cm.; width, 2.2 cm.; thickness, 0.6 cm. | |
| (g) Fragments, one tip with convex edges and two basal portions, lateral notched with expanding stem..... | 3 |
| From Pit Houses T, V | |
- Materials: obsidian, chert, flint, jasper, smoky quartz.

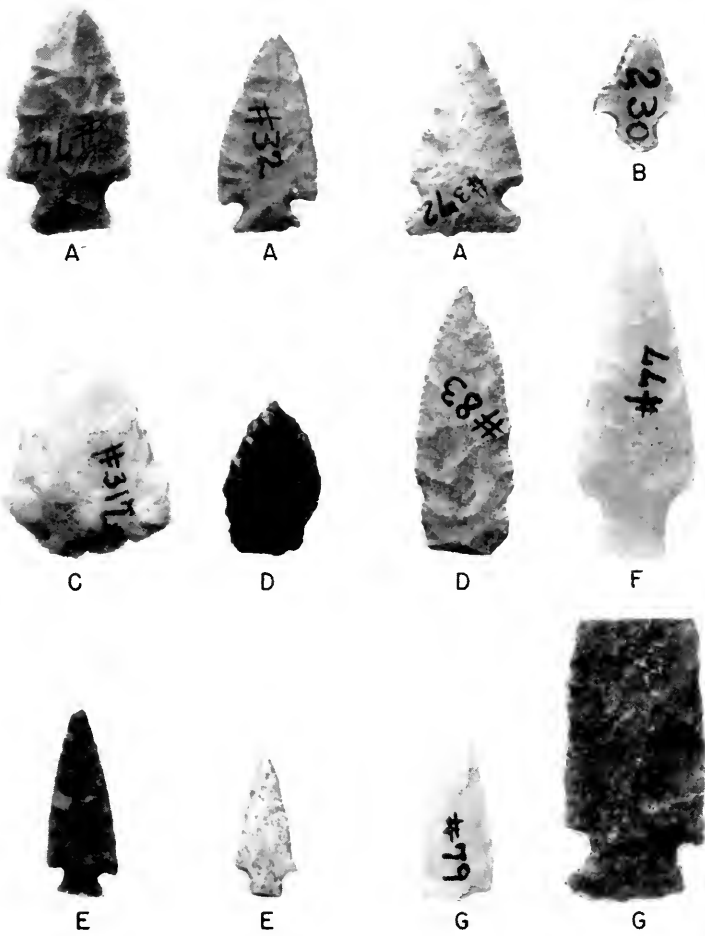


FIG. 118. Projectile points (types a-g). Length of left specimen (top row) 4.5 cm.

KNIVES

(Fig. 119)

- (a) Plano-convex flakes with longitudinal chipping along convex surface, secondary chipping along one edge..... 7
From Pit Houses S, U, V, X
Length: maximum, 6.3 cm.; minimum, 3.9 cm.; average, 5.1 cm.
Width: maximum, 3.9 cm.; minimum, 2 cm.; average, 2.6 cm.
Thickness: maximum, 1.3 cm.; minimum, 0.6 cm.; average, 0.9 cm.
- (b) Blades with curved edges and secondary chipping on all major surfaces and edges..... 2
From Pit Houses U, W
Lengths, 6.2, 9 cm.; widths, 3, 3.9 cm.; thicknesses, 1.4, 1.1 cm.
- Materials: flint, chert, felsite, basalt, quartz-chlorite schist.

SCRAPERS

(Fig. 119)

- (a) Convenient thick flakes with secondary chipping along one or more edges; edges frequently curved..... 18
From Pit Houses R, S, T, U, V, W, X, Y, Z
Length: maximum, 6.1 cm.; minimum, 3.3 cm.; average, 4.7 cm.
Width: maximum, 4.8 cm.; minimum, 2.3 cm.; average, 3.6 cm.
Thickness: maximum, 1.9 cm.; minimum, 0.6 cm.; average, 1.3 cm.
- (b) Large, rough, thick, angular flake with pressure chipping along one edge; original cleavage surface unaltered except on one edge..... 1
From Pit House X
Length, 7.5 cm.; width, 5.4 cm.; thickness, 1.8 cm.
- Materials: flint, chert, quartz-felsite, basalt.

DRILLS

(Fig. 119)

- Broad bases of drills tapering gradually to shaft (tip broken off)..... 2
From Pit House S (stripping) and Pit House X
Lengths, 3.3, 7 cm.; widths, 1.9, 3.6 cm.; thicknesses, 0.4, 0.6 cm.
Materials: basalt, chalcedony.

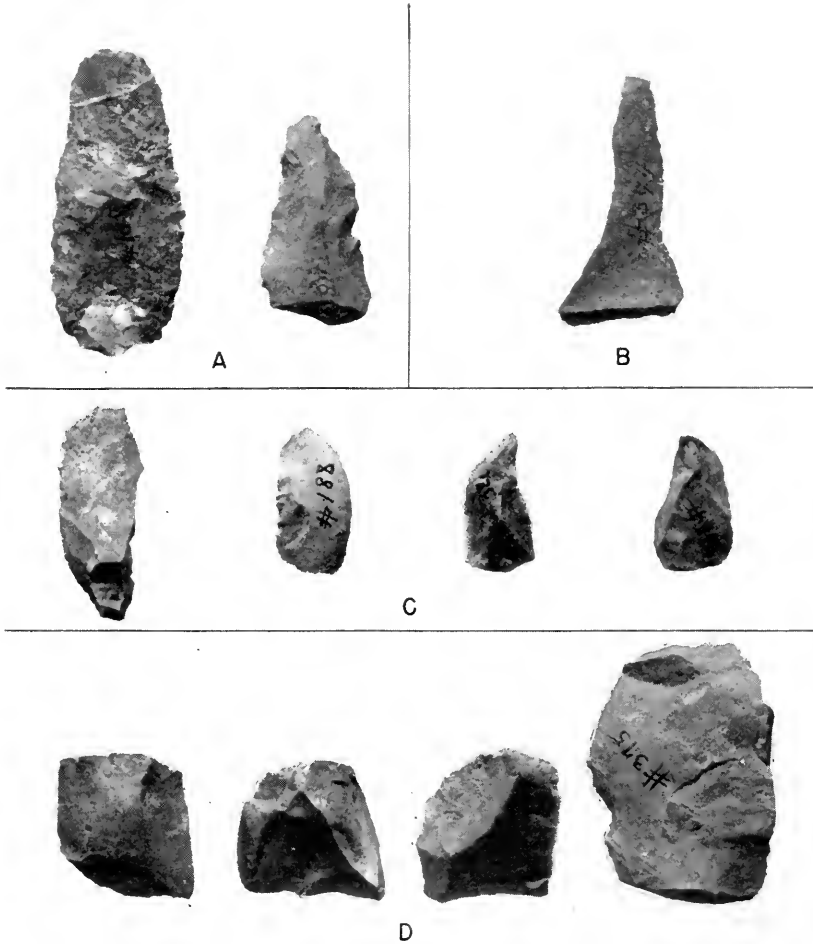


FIG. 119. *a*, Knife blades; *b*, Drill fragment; *c*, Plano-convex knives; *d*, Scrapers. Length of left specimen (top row) 9 cm.

CHOPPERS

(Fig. 120)

Large angular core implements, one or more sides flaked to cutting edge; frequently plano-convex in cross section, occasionally part of the original crust left intact..... 12

From Pit Houses Q, R, S, T, U, V

Length: maximum, 11.8 cm.; minimum, 8 cm.; average, 10.3 cm.

Width: maximum, 10.3 cm.; minimum, 6.2 cm.; average, 8.8 cm.

Thickness: maximum, 7.1 cm.; minimum, 2.5 cm.; average, 5.2 cm.

POT COVERS

(Not illustrated)

Roughly circular disks, edges chipped, surfaces parallel, smooth, occasionally one surface rough, unworked..... 4

From Pit Houses Q, T, V

Diameters: 14.6, 13, 15.5, 15.7 cm.

Thicknesses: 2.7, 1.4, 3, 2.2 cm.

HOES

(Not illustrated)

Thin natural plates of stone, roughly oblong in outline with one end rounded, other end pointed; edges chipped and rounded through use..... 2

From Pit Houses S, W

Lengths, 20.3, 12.5 cm.; widths, 11.9, 9.2 cm.; thickness, 1.1, 1.2 cm.

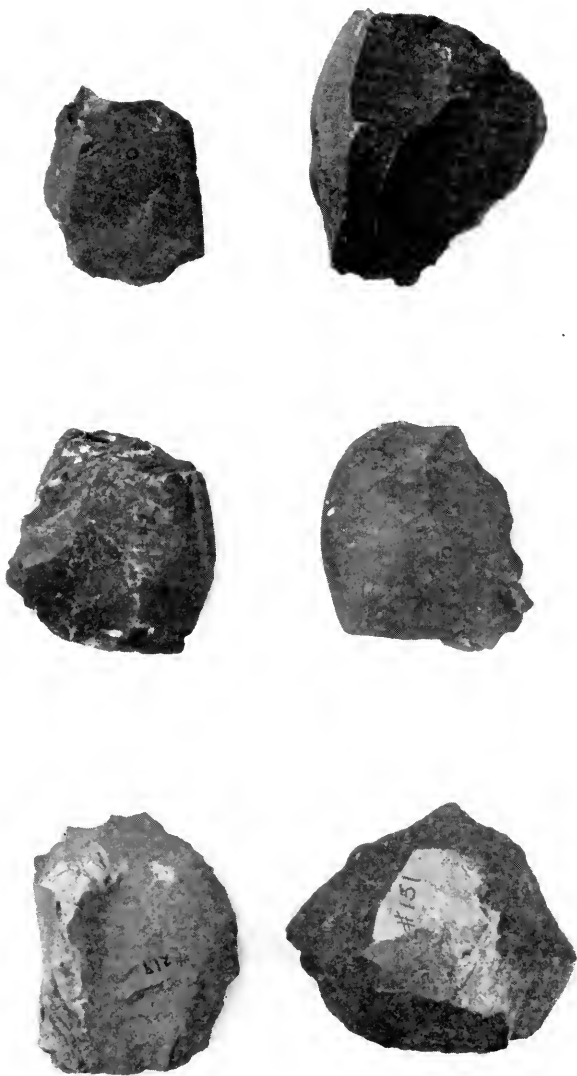


FIG. 120. Plano-convex and bifaced choppers. Length of left specimen (bottom row) 10 cm.

BONE AWLS

(Fig. 121)

- (a) Head of bone unworked except by original splitting, other end ground and polished to a sharp point; four with side notch made from bones split in half 6
From Pit Houses S, T, U, W, Y
Length: maximum, 15.4 cm.; minimum, 9.1 cm.; average, 12.7 cm.
Material: deer (*Odocoileus* sp.) metacarpals.
- (b) Split bone; head almost wholly removed, other end ground, polished and tapered to sharp point 2
From Pit Houses S, Y
Lengths: 15.4, 9.4 cm.

BONE END-SCRAPER or FLESHER

(Fig. 121)

- (Fragmentary and charred); made from almost flat section of split bone shaft, beveled and chipped at one end, other end broken 1
From Pit House T
Fragment 4.8 cm. long



FIG. 121. Bone awls and flesher. Length of specimen on right 15.4 cm.

MINIATURE LADLES

(Fig. 122)

- Fragments of bowls and handles of miniature ladles; bowl portion generally round, shallow; handles rod-like, occasionally almost flat on upper surface; no complete specimens 6
- From Pit Houses S, T, U, X, Y
- Materials: Alma Rough, Alma Plain.

POTTERY PIPES

(Fig. 122)

- "Cloud blower" type, funnel shape, greatest diameter at bowl end; tapering from bowl to stem end; small hole at stem end; bowl and stem in one piece; bowl flares out abruptly from stem portion in one specimen 2
- From Pit Houses S, T
- Lengths, 4.5, 4 cm.; diameters of bowls, 2.2, 2.3 cm.

BASKETRY MOLDED SHERD

(Fig. 122)

- Fragment of pottery bowl which shows impression of coiled basketry 1
- From Pit House U



FIG. 122. Ladle fragments (top row); pottery pipes (middle row); basketry molded sherd (bottom row). Length of pipes 4 and 4.5 cm.

WORKED SHERDS

(Fig. 123)

- (a) Small pottery disks with edges ground smooth; two with holes drilled through center..... 20
From Pit Houses Q, S, T, U, V, X, Z
Diameters: maximum, 6.2 cm.; minimum, 2.1 cm.; average, 3.5 cm.
Thicknesses: maximum, 1 cm.; minimum, 0.5 cm.; average, 0.6 cm.
Materials: Alma Plain, Alma Rough, San Francisco Red.
- (b) Fragments of rectangular worked sherds with edges ground smooth..... 4
From Pit House W
Widths, 3.8, 3.5, 3.1 cm.; thicknesses, 0.5, 0.5, 0.5, 0.7 cm.
Materials: Alma Plain, San Francisco Red.

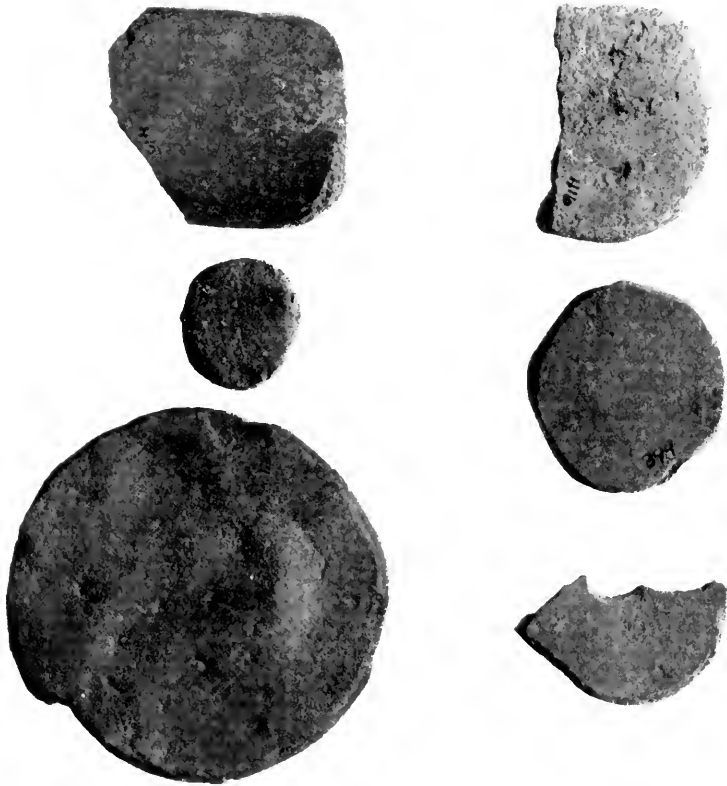


FIG. 123. Worked sherds. Diameter of upper left specimen 6.2 cm.

PENDANTS

(Fig. 124)

- (a) Zoomorphic image, carved in round, head crested, hole drilled through body for suspension, possibly bird 1
From Pit House V
Length, 3.2 cm.; width, 1.5 cm.; height, 1.6 cm.
Material: fluorite.

BEADS

(Fig. 124)

- Disk-shaped stone beads, perforated through center 92
From Pit House X
Diameter, 3 mm.; thickness, 0.5 to 1 mm.
Material: serpentine.

BONE TUBE

(Fig. 124)

- Short section of hollow shaft of long-bone, ends polished smooth 1
From Pit House W
Length, 4.1 cm.; width, 2.8 cm.; thickness, 2.2 cm.

BONE DIE

(Fig. 124)

- Rectangular slip of bone with curved edges; scratched diagonally on smooth side; other surface left rough 1
From Pit House S (stripping)
Length, 2.4 cm.; width, 1.4 cm.; thickness, 0.4 cm.

PROBLEMATICAL OBJECT

(Fig. 124)

- Bipartite object; upper part of white stone, roughly triangular lower part of dark gray stone, carinate 1
From Pit House T
Length, 7 cm.; width, 3.2 cm.; height, 6.9 cm.
Material: limestone.



FIG. 124. Zoomorphic pendant and bone die (top); stone disk beads (center); problematical object and bone tube (bottom). Length of bone tube 4.1 cm.

UNWORKED STONE

(Not illustrated)

Pigments

Lumps of azurite, malachite, limonite, hematite, turquoise 11
From Pit Houses Q, S, U, V, X, Y

Crystals

Hexagonal quartz crystals 5
From Pit Houses Q, S, U

DATA ON UNWORKED BONE FRAGMENTS

Meleagris gallapavo (turkey)

Lepus sp. (jack-rabbit)

Thomomys sp. (pocket gopher)

Canis lupus (wolf)

Odocoileus sp. (deer)

Number of identifiable fragments 24

Unidentified animal bone fragments 133

OCCURRENCE OF ARTIFACTS BY PIT HOUSES

ARTIFACT TYPE	PIT HOUSES											TOTALS*				ALL SITES COCHISE†
	Q	R	S	T	U	V	W	X	Y	Z	Q	Z	A-G	H-P	ALL SITES COCHISE†	
Manos.....	14	6	13	21	12	10	16	14	2	2	110	63	84	257	..	
Single grinding surface.....	12	5	13	19	11	9	14	14	1	2	100	57	73	230	..	
Oblong, convex.....	..	..	1	..	..	..	1	4	..	..	6	14	9	29	..
Oblong, slightly convex.....	..	..	..	..	..	..	1	..	..	..	1	12	1	14	..
Oblong, flat.....	1	1	..	..	..	..	..	2	..	..	4	..	22	26	P
Oblong, wedge-shaped, flat.....	..	..	..	1	..	..	..	1	..	..	2	1	5	8	..
Oval, convex.....	1	..	3	5	2	3	2	1	..	..	17	14	4	35	P
Oval, slightly convex.....	1	..	..	..	3	3	..	1	..	1	9	..	2	11	P
Oval, flat.....	1	1	5	..	1	1	3	..	..	..	12	..	10	22	P
Round, convex.....	..	..	1	..	..	..	..	..	..	1	2	6	1	9	P
Round, slightly convex.....	..	..	..	..	..	..	1	..	1	..	2	..	..	2	P
Round, flat.....	1	..	..	..	..	..	..	..	..	..	1	..	2	3	P
Rectangular, convex.....	3	2	2	6	..	..	2	3	..	..	18	..	..	18	P
Rectangular, slightly convex.....	3	..	..	..	2	1	3	..	..	..	9	..	1	10	..
Rectangular, flat.....	1	1	3	12	15	..
Roughly square, convex.....	..	..	1	3	3	1	..	..	..	..	8	..	3	11	P
Turtleback, convex.....	1	..	..	..	..	..	..	2	..	..	3	10	..	13	..
Asymmetrical, convex.....	..	..	..	3	..	..	..	..	..	..	3	..	1	4	..
Two grinding surfaces.....	2	1	..	2	1	1	2	..	1	..	10	6	11	27	..	
Round, flat.....	..	..	..	..	..	..	..	..	1	..	1	..	6	7	P
Oval, slightly convex.....	..	..	..	1	1	..	..	..	..	..	2	4	4	10	..
Rectangular, flat.....	1	1	..	1	..	1	2	..	..	..	6	2	1	9	..
Roughly square, flat.....	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..
Single stones.....	2	5	4	8	2	2	2	1	..	..	24	36	53	113	..
Single grinding surfaces.....	2	4	3	6	2	2	..	..	..	..	17	30	42	89	..
Oval, flat.....	2	..	1	3	1	1	..	1	..	..	8	29	11	48	P
Roughly round, flat.....	..	..	3	1	2	..	1	..	..	..	7	1	17	25	P
Roughly round, wedge-shaped, flat.....	..	..	1	..	..	..	..	..	..	..	1	..	7	8	..
Oblong, flat.....	1	1	7	8	..
Roughly square, flat.....	..	..	..	1	1	1	1	..	..	..	3	..	..	3	..
Two rubbing surfaces.....	..	1	1	1	2	..	..	..	..	..	4	6	11	21	P
Oval, flat.....	..	..	1	1	..	..	..	..	..	..	1	..	8	9	P
Oblong, flat.....	..	..	1	..	2	..	..	..	..	..	3	6	6	3	..

OCCURRENCE OF ARTIFACTS BY PIT HOUSES—continued

ARTIFACT TYPE	PIT HOUSES											TOTALS*					ALL SITES	COCHISE†
	Q	R	S	T	U	V	W	X	Y	Z	Q-Z	A-G	H-P					
Metates.....	4	2	4	6	3	14	4	..	..	..	..	40	25	34	99	P
Slab type.....	3	1	1	3	1	8	..	..	..	..	..	17	10	14	41	P
Basin type.....	..	1	2	1	1	3	..	..	..	..	..	8	7	13	28	..
Trough type, closed at one end.....	1	..	1	2	1	6	3	..	..	..	..	14	8	7	29	..
Trough type, open at both ends.....	..	..	1	..	..	1	..	..	..	..	..	1	..	..	1	..
Small, metate-like grinding stones.....	6	1	1	1	7	19	1	2	..	..	..	38	..	23	61	..
Single grinding surface.....	6	1	1	1	3	14	1	1	..	..	..	28	..	19	47	P
Two grinding surfaces.....	..	..	..	..	4	5	..	1	..	..	..	10	..	4	14	..
Paint grinding stone.....	..	2	1	..	1	1	..	..	..	..	..	4	6	9	19	..
Mortars.....	4	..	2	4	8	1	1	..	3	..	..	23	24	28	75	..
Pebble type.....	4	..	2	4	8	1	1	..	2	..	..	22	24	27	73	P
Large pebble type.....	..	..	..	..	1	..	..	..	1	..	..	1	..	1	2	..
Paint palette.....	..	2	..	..	..	2	..	..	..	..	..	1	..	10	17	..
Pitted pebbles.....	..	2	4	2	4	2	1	1	1	1	..	16	17	45	78	..		
Pestles.....	..	2	2	1	1	2	1	1	..	..	..	10	6	21	37	..
Angular.....	..	2	2	1	3	..	..	..	..	..	..	6	11	24	41	P
Multi-faced.....	3	1	4	2	2	3	..	..	..	..	..	16	13	92	121	..
Polishing stones.....	2	6	3	2	8	3	1	1	1	1	..	27	5	45	77	P		
Hammer stones.....	1	2	3	3	4	1	..	..	..	..	..	15	12	23	50	..
Mauls.....	1	1	3	3	4	1	..	..	..	..	..	13	10	23	46	P
Oval, full grooved.....	..	1	..	..	..	..	..	..	..	..	..	1	2	..	3	..
Oval, three-quarter grooved.....	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..
Roughly rectangular, full grooved.....	..	..	2	2	..	..	1	..	..	..	..	7	7	9	23	..
Pipes.....	1	..	1	2	..	..	1	..	1	..	..	5	4	8	17	..
Tubular.....	1	..	1	2	..	..	1	..	..	..	..	2	3	1	4	..
Cloud blower.....	1	1	1	4	1	2	..	2	1	..	..	14	30	21	65	..
Projectile points.....	1	1	2	4	1	..	..	..	..	..	..	4	10	4	18	P
Lateral notched, expanding stem.....	1	..	1	..	..	..	..	2	..	..	..	6	7	..	17	..
Diagonal notched, expanding stem.....	..	..	..	..	1	..	..	..	..	..	..	1	11	5	17	..
Short, leaf-shaped.....	..	1	1	..	..	1	..	..	..	..	..	2	1	3	6	..
Leaf-shaped, basal edge straight.....	..	1	1	..	..	..	..	..	..	..	..	2	2	2	6	..
Small, slender, corner-notched.....	..	..	1	1	..	..	..	..	1	..	..	1	2	1	2	..
Long, slender, straight stem.....	..	..	..	1	..	1	..	..	..	..	..	1	..	1	9	..
Fragments.....	..	..	..	2	..	1	..	..	..	..	..	3	6	..	9	..

OCCURRENCE OF ARTIFACTS BY PIT HOUSES—continued

ARTIFACT TYPE	PIT HOUSES											TOTALS*				ALL SITES	COCHISE†
	Q	R	S	T	U	V	W	X	Y	Z	Q-Z	A-G	H-P				
Knives.....	..	..	1	..	4	1	1	2	..	..	9	11	49	69	..	..
Random, plano-convex flakes.....	..	..	1	..	3	1	..	2	..	..	7	9	45	61	P	..
Blades, secondary chipping.....	..	..	..	..	1	..	1	..	..	..	2	2	4	8	P	..
Scrapers.....	..	1	1	2	3	4	1	5	1	1	19	3	96	118	..	..
Random thick flakes.....	..	1	1	2	3	4	1	4	1	1	18	2	87	107	P	..	
Large, rough thick flakes.....	..	..	..	..	..	..	..	1	..	..	1	1	9	11	P	..
Choppers.....	2	2	3	3	1	1	..	..	..	..	12	5	12	29	..	..
Plano-convex.....	2	2	3	3	1	1	..	..	..	..	12	5	12	29	P	..
Pot covers.....	1	..	..	2	..	1	..	..	..	..	4	1	1	6	..	..
Hoes.....	..	1	..	..	..	1	..	..	..	..	2	..	3	5	..	..
Pendants, bird.....	..	..	..	..	..	1	..	..	..	..	1	1	2	4	..	..
Beads, disk.....	..	..	..	..	..	..	92	..	..	..	92	..	1	93	..	..
Bone tube.....	..	..	..	..	..	..	..	..	..	..	1	2	..	3	..	..
Bone die.....	..	1	..	..	..	..	..	..	..	..	1	2	..	3	..	..
Drills, expanding base.....	..	1	..	..	..	..	1	..	..	..	2	..	3	5	..	..
Problematical object.....	..	..	1	1	..	..	..	..	..	..	1	..	..	1	..	..
Bone awls.....	..	2	2	2	1	1	..	2	..	..	8	17	23	48	..	..
Head of bone unworked.....	..	..	1	2	1	1	..	2	..	..	6	9	14	29	..	..
Head of bone almost removed.....	..	1	1	2	1	1	..	1	..	..	2	1	9	12	..	..
Bone flesher.....	..	..	1	..	..	..	..	..	..	..	1	..	1	2	..	..
Worked sherds.....	1	1	1	1	1	13	4	2	..	..	24	35	68	127	..	..
Disks.....	1	1	1	1	1	12	..	1	..	1	18	28	57	103	..	..
Perforated disks.....	..	..	..	..	..	1	..	1	..	..	2	5	7	17	..	..
Rectangular.....	..	..	..	..	..	4	..	..	..	..	4	2	11	17	..	..
Miniature ladles.....	..	2	1	1	1	..	1	1	..	..	6	1	10	17	..	..
Basketry sherd.....	..	1	..	..	1	..	..	..	..	..	1	1	1	2	..	..
Pigments.....	2	1	..	..	2	3	..	1	1	1	11	4	9	24	..	..
Crystals.....	1	..	3	..	1	..	..	..	..	..	5	3	7	15	..	..

* Totals Pit Houses A-G includes Surface House No. 1 (all houses excavated 1938 season).
 Totals Pit Houses H-P includes Surface Houses Nos. 2, 3 (all houses excavated 1941 season).
 † P denotes similarity to Cochise artifact type.

IV. POTTERY

BY

LEONARD G. JOHNSON

GENERAL REMARKS

The 15,263 sherds recovered during the third and concluding season's work at SU site served to corroborate the findings of the previous two seasons.

Only the plain wares, Alma Plain, Alma Rough, and San Francisco Red, were encountered in Pine Lawn phase houses Q-V, and Z.

The plain wares of the Pine Lawn phase reveal no interperiodic fluctuations or type variation. The work of three seasons and the collection of 46,660 sherds reveal Alma Plain as the predominating and basic pottery type. The numerical count also seems to indicate a close rivalry between Alma Rough and San Francisco Red. (For a full description of Alma Plain, Alma Rough, and San Francisco Red see Martin, 1943, pp. 236-246.)

The tabulation below is a compilation of all pottery excavated during the seasons of 1939, 1941, and 1946. It is intended to present a composite numerical and percentile picture of all pottery excavated at the SU site. In tables 4-7 a similar treatment is accorded all individual houses excavated during 1946.

TABULATION OF ALL POTTERY

YEAR	ALMA PLAIN		ALMA ROUGH		SAN FRANCISCO RED, SALIZ VARIETY		PAINTED AND TEXTURED		TOTAL NO. OF SHERDS
	No.	%	No.	%	No.	%	No.	%	
1939 . . .	6,077	51.7	3,354	28.5	2,322	19.8	...	...	11,753
1941 . . .	10,861	55.3	3,873	19.7	4,910	25.0	...	...	19,644
1946 . . .	7,241	47.5	2,356	15.4	4,901	32.1	764	5.0	15,263
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	24,179	51.8	9,583	20.5	12,133	26.0	764	1.7	46,660

SHAPES (PINE LAWN PHASE)

I have illustrated by drawings (Figs. 127, 128) all the reconstructed pots recovered from Pine Lawn phase houses (A-C, E-V, and Z).

Within these early houses there is nothing to indicate the presence of any Anasazi or Hohokam influences, and for this reason I shall treat all those vessels that came from early houses as Mogollon types. Additional research is sorely needed if we are to set up indisputable vessel types for the Mogollon culture.

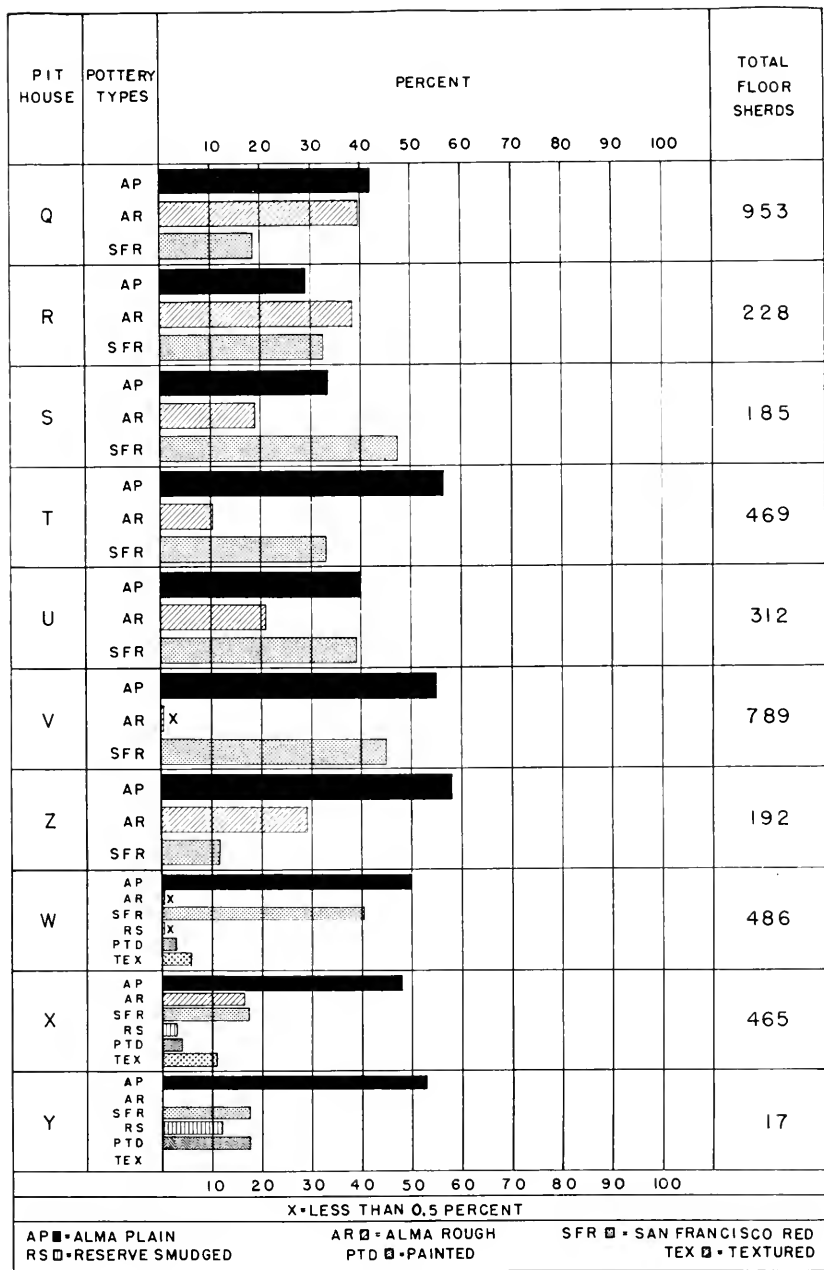


FIG. 125. Graph representing distribution (in percentages) of pottery types found on floors of all houses excavated in 1946.

DESCRIPTION AND MEASUREMENTS (PINE LAWN PHASE)

ALMA PLAIN

Bowls:

Pit House B, Fig. 127, *a*. Deep hemispherical bowl with vertical walls, roughly rounded lip. Greatest diameter, 13.5 cm.; greatest height, 7.7 cm. (see also Martin, 1940, Fig. 35).

Jars:

Pit House B, 127, *b*. Small globular jar without neck; incurving rim; thick, bluntly rounded lip. Greatest diameter, 10.5 cm.; greatest height, 8.5 cm. (see also Martin, 1940, Fig. 35).

Pit House B, Fig. 127, *c*. Small, wide-mouthed jar with oral part drawn out from body; direct rim with thin, sharp lip. Greatest diameter, 10.2 cm.; greatest height, 11 cm. (see also Martin, 1940, Fig. 35).

Pit House M, Fig. 127, *d*. Barrel-shaped; greatest diameter occurs close to bottom of vessel; incurved, sloping walls and rim with rounded lip; flat bottom. Greatest diameter, 19.1 cm.; greatest height, 16 cm. (see also Martin, 1943, Fig. 88).

Pit House T, Fig. 127, *e*. Small, globular, wide-mouthed jar, slightly incurved rim. Greatest diameter, 14.7 cm.; greatest height, 13.3 cm. (see also Fig. 131, *d*).

ALMA ROUGH

Jars:

Pit House F, Fig. 127, *f*. Small globular jar without neck; incurving rim with roughly rounded lip. Greatest diameter, 15 cm.; greatest height, 11.4 cm. (see also Martin, 1940, Fig. 35).

Pit House P, Fig. 127, *g*. Wide-mouthed jar; low shoulder with straight, insloped wall; roundish, irregular lip; flat bottom. Greatest diameter, 21.3 cm.; greatest height, 16.3 cm. (see also Martin, 1943, Fig. 88).

SAN FRANCISCO RED, SALIZ VARIETY

Bowls:

Pit House E, Fig. 128, *h*. Deep, hemispherical bowl; very slightly incurved rim with rounded lip. Greatest diameter, 21.7 cm.; greatest height, 13.2 cm. (see also Martin, 1943, Fig. 89).

Pit House F, Fig. 128, *i*. Hemispherical bowl with slightly incurving rim; gently rounded lip. Greatest diameter, 16.8 cm.; greatest height, 9.6 cm. (see also Martin, 1943, Fig. 89).

Pit House S (stripping), Figs. 128, *j*; 126, top. Double bowl; bottom portion hemispherical, pinching in approximately two-thirds of total height above base; upper portion hemispherical and having greatest diameter; slightly incurved rim. Greatest diameter, at top, 28.9 cm.; greatest height, 13.9 cm.

Pit House T, Figs. 128, *k*; 126, bottom. Double bowl; bottom portion hemispherical, pinching in approximately one-half of total height above base; upper portion hemispherical and having greatest diameter; slightly incurved rim. Greatest diameter at top, 21.5 cm.; at bottom, 17.2 cm.; greatest height, 14 cm.

Jars:

Pit House G, Fig. 128, *l*. Narrow-mouthed jar with oral part drawn out from body; round bottom; wall sloping gently inward. Greatest diameter, 32 cm.; greatest height, 42.8 cm. (see also Martin, 1943, Fig. 90).

Pit House C, Fig. 128, *m*. Large, globular, narrow-mouthed jar with short neck; slightly incurved rim with rounded lip. Greatest diameter, 34.7 cm.; greatest height, 34 cm. (see also Martin, 1940, Fig. 36).



FIG. 126. Double bowls (San Francisco Red, Saliz variety): from Pit House S, stripping (top); from Pit House T (bottom).

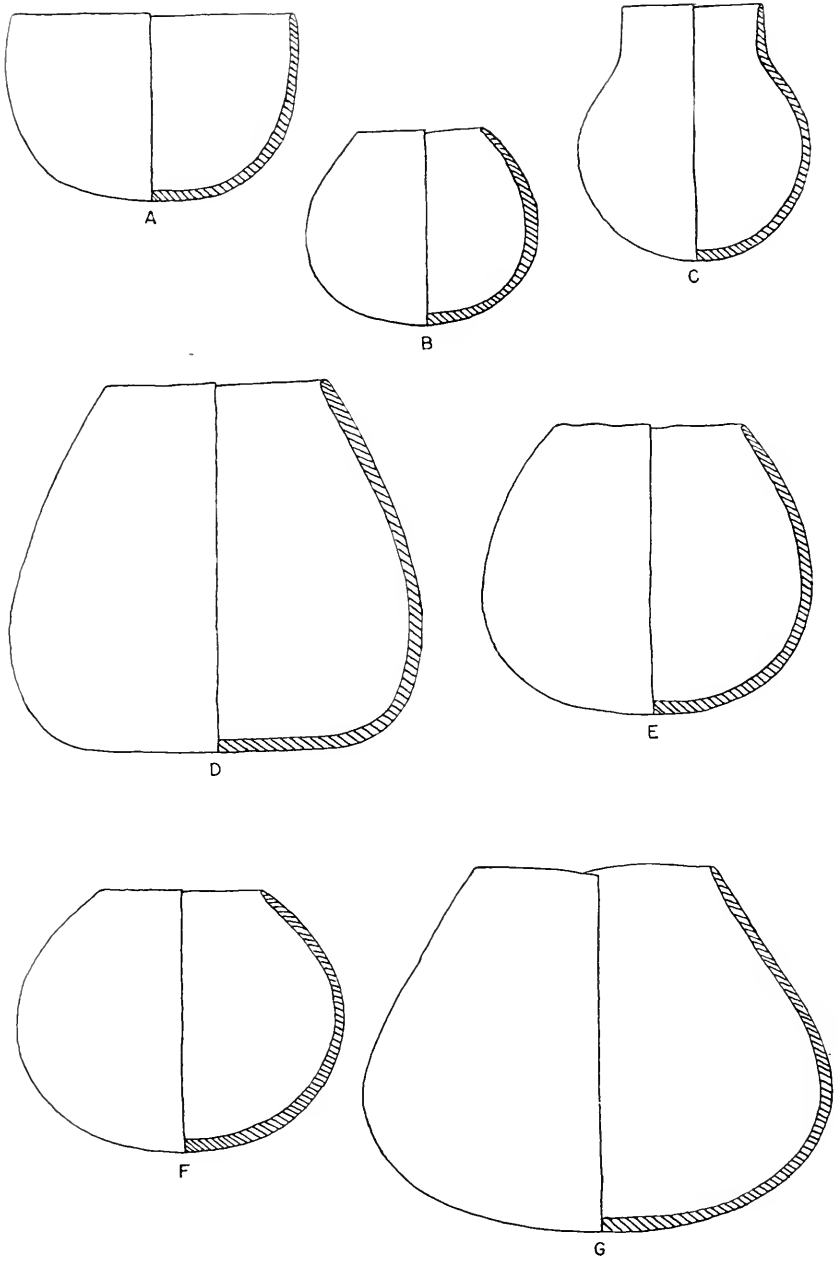


FIG. 127. Bowl and jar forms; Alma Plain and Alma Rough.

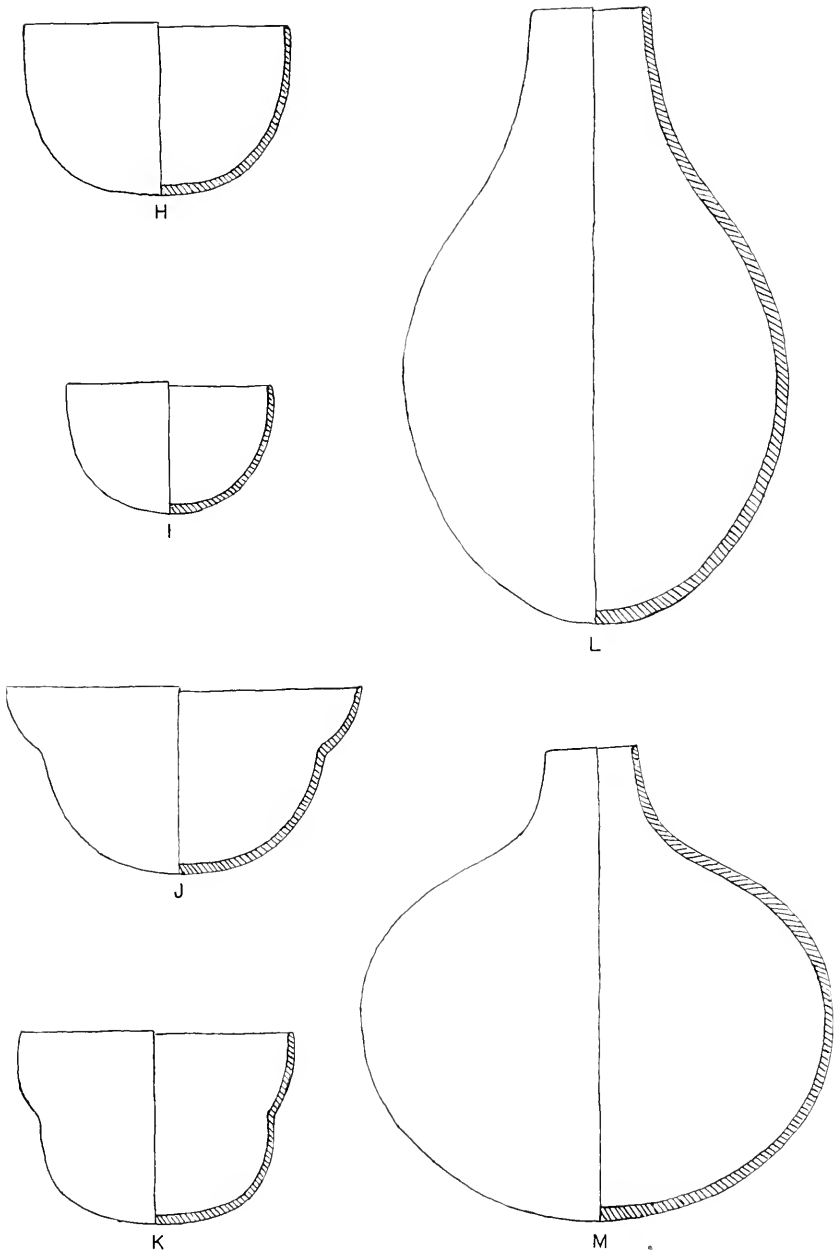


FIG. 128. Bowl and jar forms; San Francisco Red, Saliz variety.

TABLE 4.—PLAIN WARES, PINE LAWN PHASE HOUSES (1946 SEASON)

LOCATION	ALMA PLAIN		ALMA ROUGH		SAN FRANCISCO RED, SALIZ VARIETY		TOTAL NO. OF SHERDS
	No.	%	No.	%	No.	%	
Pit House Q							
Surface.....	5	13.5	31	83.8	1	2.7	37
Fill.....	373	41.0	350	38.4	188	20.6	911
Floor.....	401	42.1	374	39.2	178	18.7	953
Pits and entrance...	56	40.0	38	27.1	46	32.9	140
	835	40.9	793	38.9	413	20.2	2,041
Pit House R							
Fill.....	71	25.0	132	46.4	81	28.6	284
Floor.....	66	29.0	88	38.6	74	32.4	228
Pits.....	8	21.0	4	10.5	26	68.5	38
	145	26.4	224	40.7	181	32.9	550
Pit House S							
Fill.....	293	35.9	116	14.2	407	49.9	816
Floor.....	62	33.5	35	19.0	88	47.5	185
	355	35.5	151	15.1	495	49.4	1,001
Pit House T							
Trench 34..... (Surface to floor)	327	52.7	86	13.9	207	33.4	620
Fill.....	179	45.4	56	14.4	158	40.2	393
Floor.....	264	56.3	50	10.7	155	33.0	469
Pits and entrance...	145	41.1	44	12.5	164	46.4	353
	915	49.9	236	12.8	684	37.3	1,835
Pit House U							
Test trench 35.....	56	34.2	42	25.6	66	40.2	164
Trench around wall.	46	33.8	31	22.8	59	43.4	136
Fill.....	38	19.0	66	33.0	96	48.0	200
Floor.....	125	40.1	66	21.1	121	38.8	312
Pits and post-holes..	111	40.9	36	13.2	125	45.9	272
	376	34.7	241	22.2	467	43.1	1,084
Pit House V							
Trench around wall to floor.....	506	47.2	149	13.9	418	38.9	1,073
Fill.....	598	47.0	60	4.7	614	48.3	1,272
Floor.....	433	54.9	2	0.3	354	44.8	789
	1,537	49.1	211	6.7	1,386	44.2	3,134
Pit House Z							
Trench.....	35	34.0	59	58.2	9	7.8	103
Fill.....	12	52.1	8	34.8	3	13.1	23
Floor.....	111	57.8	56	29.2	25	13.0	192
	158	49.8	123	38.8	37	11.4	318
Stripping							
Environs of R.....	88	46.5	46	24.4	55	29.1	189
Environs of S.....	261	61.0	56	13.1	111	25.9	428

POTTERY OF LATE HOUSES (THREE CIRCLE PHASE)

The painted and textured wares of the three late houses, W, X, and Y, are numerically insignificant when compared to the total of sherds obtained at SU site, and relatively insignificant when compared to the plain wares found within the late houses themselves. Alma Plain and San Francisco Red sherds are in the majority for the site, as a whole.

The presence in Houses W, X, and Y of dated painted wares and textured wares, although both were few in number, makes it necessary to assume that these domiciles were later than the houses of the Pine Lawn phase. After consideration of these late pottery types it was decided to put Houses W, X, and Y in the Three Circle phase A.D. 900-1050.

The identification of the late pottery was based primarily on design, although paste and surface features were also noted.

The restored black-on-white bowl, found in Pit House X with Burial No. 54 (Fig. 129), and sixty-seven black-on-white sherds recovered from Pit Houses W, X, and Y, can not be classified as true Mimbres Bold Face or Mimbres Classic (Haury, 1936b). On the basis of color and paste, however, this pottery does fit within a broad Mimbres classification. A consideration of design leads me to believe that this material is intermediate between Mimbres Bold Face and Classic.

While Alma Plain maintained its dominating position of importance, Alma Rough was being replaced by the textured wares and Three Circle Neck Corrugated in particular (Haury, 1936b).

SHERDS FROM HOUSES W, X, AND Y*

<i>Plain Wares</i>		<i>Textured Wares</i>	
	No.		No.
Alma Plain	2,571	Three Circle Neck Corrugated . .	326
Alma Rough	275	Incised Corrugated	23
San Francisco Red	1,073	Alma Punched	29
Reserve Smudged	120	Alma Neck Banded	5
		Indeterminate	46
<i>Painted Wares</i>			
	No.		No.
Mimbres	67		
Three Circle Red-on-White	4		
Red Mesa (Gladwin, 1945)	43		
Indeterminate	101		

* For details and percentages consult Tables 4-7.
For illustrations of late type sherds see Fig. 130.



A



B

FIG. 129. *a*, Red Mesa Black-on-White stirrup jar, Pit House X; *b*, Restored Mimbres bowl (type not yet named), Pit House X (Burial No. 54).

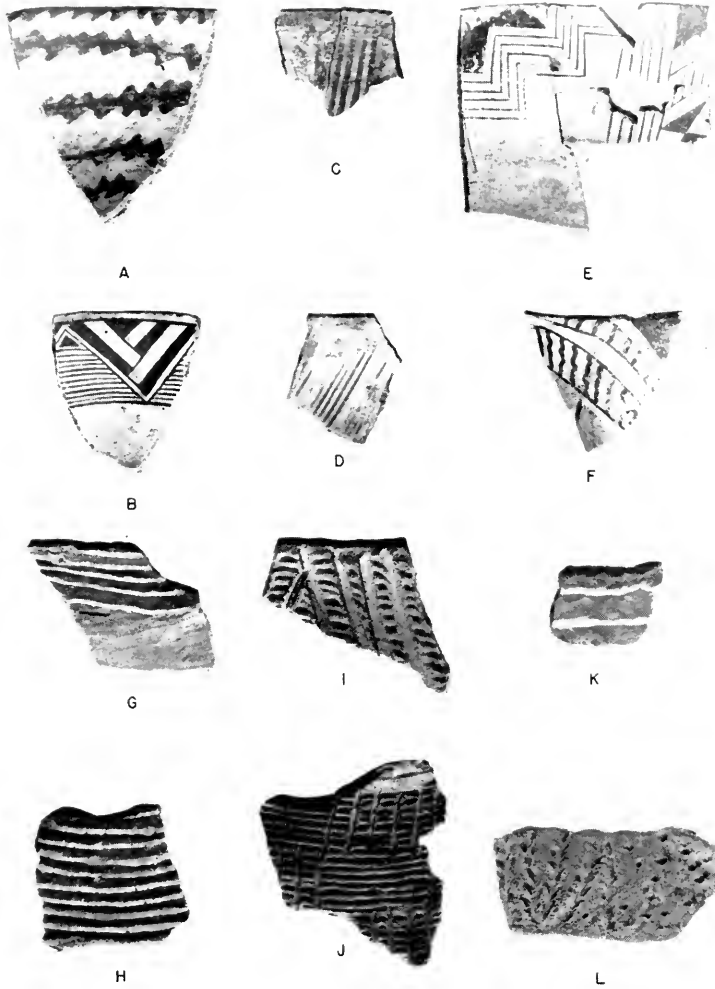


FIG. 130. Painted and textured wares from Pit Houses W, X, and Y: *a, b*, Mimbres; *c, d*, Three Circle Red-on-White; *e, f*, Red Mesa Black-on-White; *g, h*, Three Circle Neck Corrugated; *i, j*, Incised Corrugated; *k*, Alma Neck Banded; *l*, Alma Punched.

SHAPES (THREE CIRCLE PHASE)

Description and Measurements

- Fig. 131, *a*. Alma Plain wide-mouthed globular jar with rounded lip; flat bottom. Greatest diameter, 17.1 cm.; greatest height, 16 cm.
- Fig. 131, *b*. San Francisco Red wide-mouthed globular jar with an almost direct rim. Greatest diameter, 15.5 cm.; greatest height, 14.9 cm.
- Fig. 131, *c*. Three Circle Neck Corrugated jar; globular in shape with slightly flaring rim; two small neck lugs present. Greatest diameter, 10.6 cm.; greatest height, 10.5 cm.
- Fig. 131, *d*. See page 364.
- Fig. 132, top. Alma Plain "seed" jar, narrow-mouthed globular jar. Greatest diameter, 21 cm.; greatest height, 20.5 cm.
- Fig. 132, bottom. Three Circle Neck Corrugated jar; globular in shape with corrugated neck, rounded bottom. Greatest diameter, 28.9 cm.; greatest height, 27.4 cm.

EXPLANATION OF POTTERY DATA

"Floor" sherds are those sherds that lay directly on the floor of the house, and in the first 10 cm. of fill above the floor.

"Fill" includes all dirt in a pit house from the surface to within 10 cm. of the floor.

All sherds from the post-holes and storage pits are listed under "Pits."

TABLE 5.—SHERD ANALYSIS

Pit House W, Three Circle Phase

	TRENCH		FILL		FLOOR		TOTAL SHERDS	
	No.	%	No.	%	No.	%	No.	%
PLAIN								
Alma Plain	789	52.1	389	61.6	241	49.6	1,419	53.9
Alma Rough	77	5.0	20	3.4	3	0.6	100	3.8
San Francisco Red	467	30.8	158	24.8	196	40.3	821	31.1
Reserve Smudged	14	1.0	19	2.9	4	0.9	37	1.4
PAINTED								
Mimbres	28	2.0	10	1.5	2	0.4	40	1.5
Three Circle R/W	2	0.1	..	..	2	0.4	4	0.1
Red Mesa B/W	6	0.4	2	0.3	4	0.8	12	0.5
Indeterminate	34	2.2	3	0.4	5	1.0	42	1.6
TEXTURED								
Three Circle Neck Corrugated	74	5.0	29	4.5	24	5.0	127	4.8
Alma Neck Banded	2	0.1	..	..	..	..	2	0.1
Incised Corrugated	4	0.2	3	0.3	1	0.2	8	0.3
Alma Punched	7	0.5	..	..	..	..	7	0.3
Indeterminate	9	0.6	3	0.3	4	0.8	16	0.6
Total	1,513		636		486		2,635	

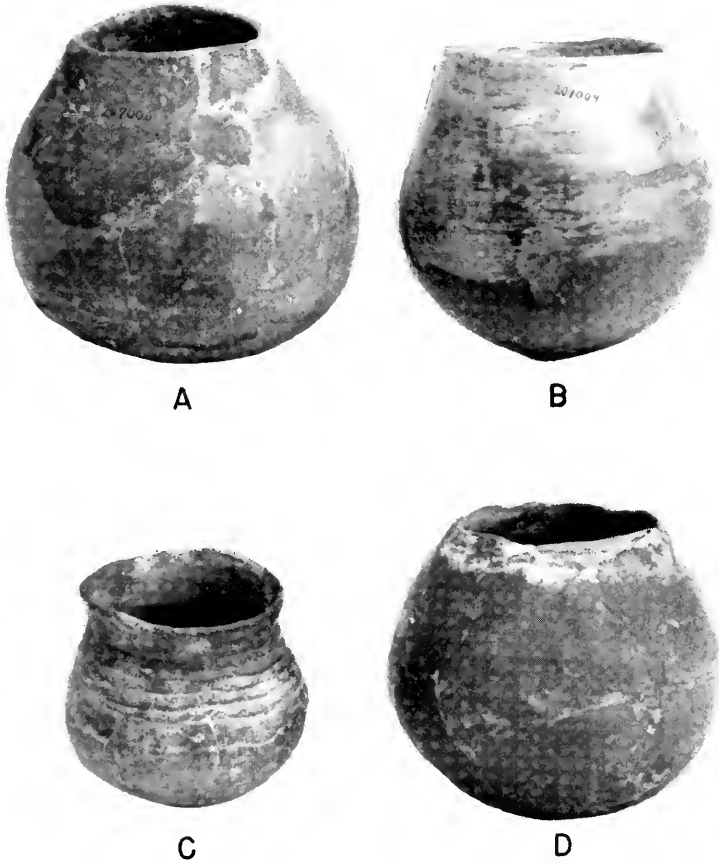


FIG. 131. Restored vessels: *a*, Alma Plain jar, Pit House W; *b*, San Francisco Red jar, Pit House Y; *c*, Three Circle Neck Corrugated jar, Pit House X; *d*, Alma Plain jar, Pit House T.

TABLE 6.—SHERD ANALYSIS
Pit House X, Three Circle Phase

	TRENCH		FILL		FLOOR		TOTAL SHERDS	
	No.	%	No.	%	No.	%	No.	%
PLAIN								
Alma Plain.....	245	54.7	401	61.4	222	47.7	868	55.5
Alma Rough.....	46	10.3	43	6.5	77	16.6	166	10.6
San Francisco Red.....	45	10.0	41	6.3	82	17.7	168	10.8
Reserve Smudged.....	13	3.0	25	3.8	14	3.0	52	3.3
PAINTED								
Mimbres (not typed)....	5	1.1	12	1.9	2	0.4	19	1.2
Red Mesa B/W.....	4	0.9	17	2.6	7	1.5	28	1.7
Indeterminate.....	17	3.8	17	2.6	9	1.9	43	2.7
TEXTURED								
Three Circle Neck Cor- rugated.....	45	10.0	70	10.7	43	9.3	158	10.0
Incised Corrugated.....	8	1.8	2	0.3	2	0.4	12	0.8
Alma Punched.....	9	2.0	10	1.6	..	..	19	1.2
Alma Neck Banded.....	..	..	1	0.2	2	0.4	3	0.2
Indeterminate.....	11	2.4	14	2.1	5	1.1	30	2.0
Total.....	448		653		465		1,566	

TABLE 7.—SHERD ANALYSIS
Pit House Y, Three Circle Phase

	TRENCH		FILL		FLOOR		TOTAL SHERDS	
	No.	%	No.	%	No.	%	No.	%
PLAIN								
Alma Plain.....	236	57.7	39	69.6	9	52.9	284	58.9
Alma Rough.....	9	2.2	..	..	..	..	9	1.9
San Francisco Red.....	75	18.3	6	10.7	3	17.6	84	17.3
Reserve Smudged.....	24	5.9	5	8.9	2	11.8	31	6.5
PAINTED								
Mimbres (not typed)....	6	1.5	1	1.8	1	5.9	8	1.7
Red Mesa B/W.....	2	0.5	1	1.8	..	..	3	0.7
Indeterminate.....	13	3.2	1	1.8	2	11.8	16	3.3
TEXTURED								
Three Circle Neck Cor- rugated.....	38	9.3	3	5.4	..	..	41	8.5
Incised Corrugated.....	3	0.7	..	..	..	..	3	0.6
Alma Punched.....	3	0.7	..	..	..	..	3	0.6
Total.....	409		56		17		482	



FIG. 132. Restored vessels: Alma Plain "seed" jar, Pit House D (top);
Three Circle Neck Corrugated jar, Pit House D (bottom).

V. REPORT ON THE BURIALS

Eight burials were uncovered at the SU site during the summer of 1946. Four of these were found in the stripping around Pit House S, and the other four in the pits in the house floors. There were few artifacts associated with these burials. A fragment of a rubbing stone was found with one, a bone die with another, and pottery vessels and a hammer stone with a third. Whenever the position of the burial was determinable, the body was generally found to be in a flexed seated position with the individual facing east.

All the skeletons were in a poor state of preservation. In two cases only parts of broken skulls were found, and in two other burials the bones were disarticulated and in such a powdery condition that they could be traced only with the greatest difficulty. One calvarium and three incomplete skeletons with skulls were brought back to the Museum. These were cleaned and coated with a vinyl acetate solution, but were not mended. They still await mending, study, and measurement by a physical anthropologist. A total of thirty-one crania have been brought back to the Museum from the SU site since the first season and should present a fair series for future study.

The following is an outline of such particular features of each burial uncovered as could be determined while they were *in situ*:

Burial 47:

Location: Pit House Q, pit in rear of house.
Age: Old (55+ years).
Deformation: Occipital flat.
Position: Disarticulated (possibly bundle?).
Associated Objects: None.
Sex: Female?
Orientation: Could not be determined.

Burial 48:

Location: Pit House Q, pit in rear of house.
Age: Middle-aged (45+ years).
Deformation: ?
Position: Disarticulated (possibly bundle?).
Associated Objects: None.
Sex: Could not be determined.
Orientation: Could not be determined.

Burial 49:

Location: Pit House S, pit.
Age: 35-40 years.
Deformation: Slight occipital.
Position: Flexed seated, arms across body.
Associated Objects: Fragment of disk type rubbing stone.
Sex: Female?
Orientation: Facing east.



FIG. 133. Burial 54 *in situ*, Pit House X. Note Three Circle Neck Corrugated jar near skull and parts of a Mimbres bowl (type not yet named) on either side of the skeleton. Arrow (50 cm. long) points north.

Burial 50:

Location: Small pit, 20 cm. outside southeast wall, Pit House S.
Age: 35-40 years.
Deformation: Posthumous warping too great to determine original con-
formation of skull.
Position: Flexed seated.
Associated Objects: Bone die.
Sex: Male.
Orientation: Facing east.

Burial 51:

Location: 30 cm. outside southeast wall, Pit House S.
Remarks: Only broken fragments of skull found.

Burial 52:

Location: Outside south wall of Pit House S.
Age: Child (7-8 years).
Deformation: Skull mashed flat (found only 20 cm. below ground surface).
Position: Flexed seated.
Associated Objects: None.
Sex: ?
Orientation: Facing north.

Burial 53:

Location: In southwest wall of Pit House S.
Remarks: Only broken fragments of skull found 10 cm. below surface.

Burial 54:

Location: Shallow pit in southwest quadrant of Pit House X.
Age: *Ca.* 30 years.
Sex: Male.
Deformation: Flat occipital, "cradle board."
Position: Semi-flexed on back, arms across body, legs flexed.
Associated Objects: Small Three Circle Neck Corrugated jar, broken
Mimbres bowl (type not yet named), flint core, hammer stone.
Orientation: Axis of body southwest to northeast. Face turned toward
east.
Remarks: This was the only burial uncovered in excavating the Three
Circle phase houses; all other burials were located in or just outside
Pine Lawn phase houses.

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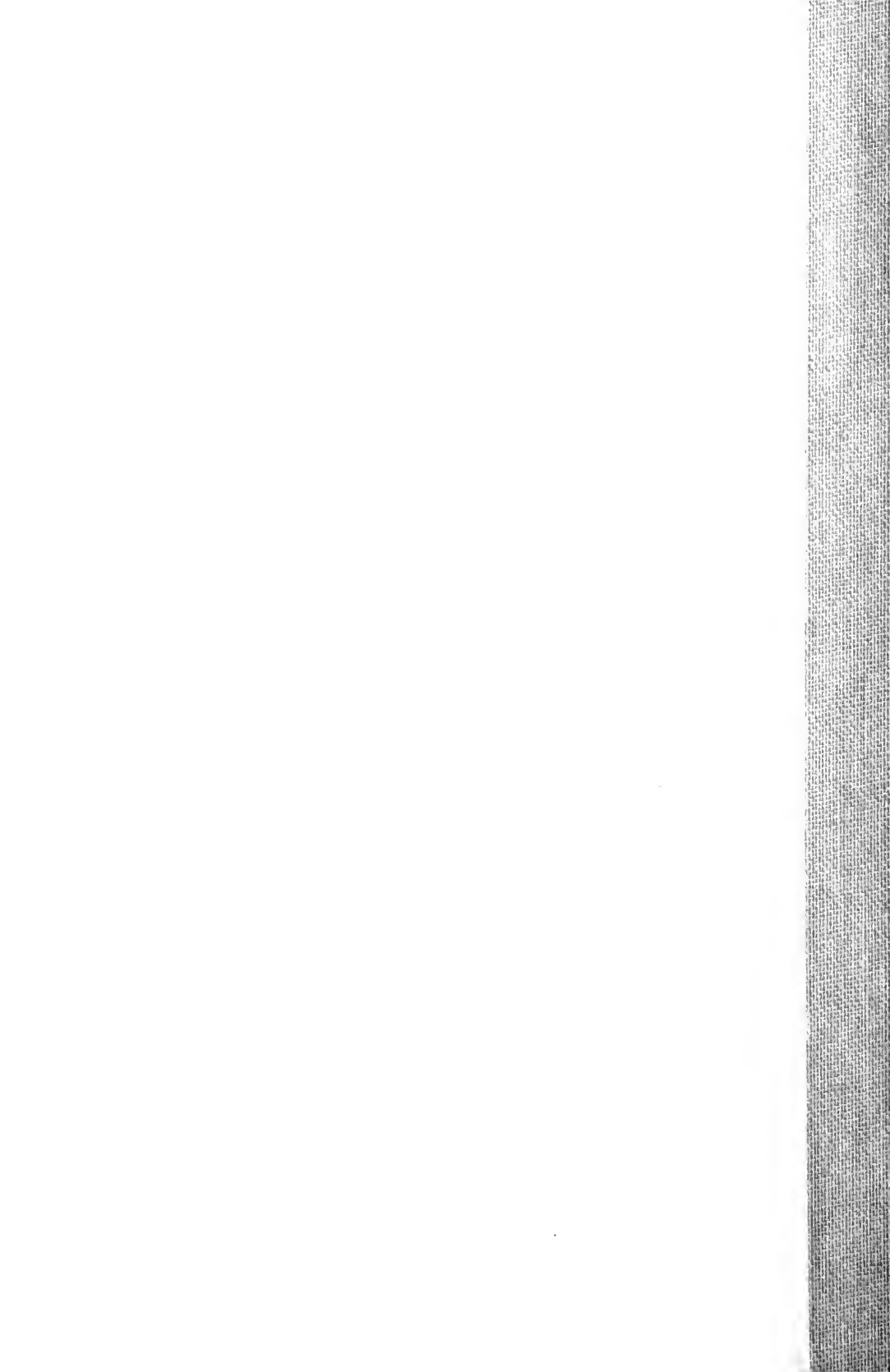
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