THE SU SITE

EXCAVATIONS AT A MOGOLLON VILLAGE

WESTERN NEW MEXICO

1939

BY

PAUL S. MARTIN

CHIEF CURATOR, DEPARTMENT OF ANTHROPOLOGY

WITH REPORTS ON POTTERY AND ARTIFACTS

BY

JOHN RINALDO

AND

APPENDIX ON SKELETAL MATERIAL

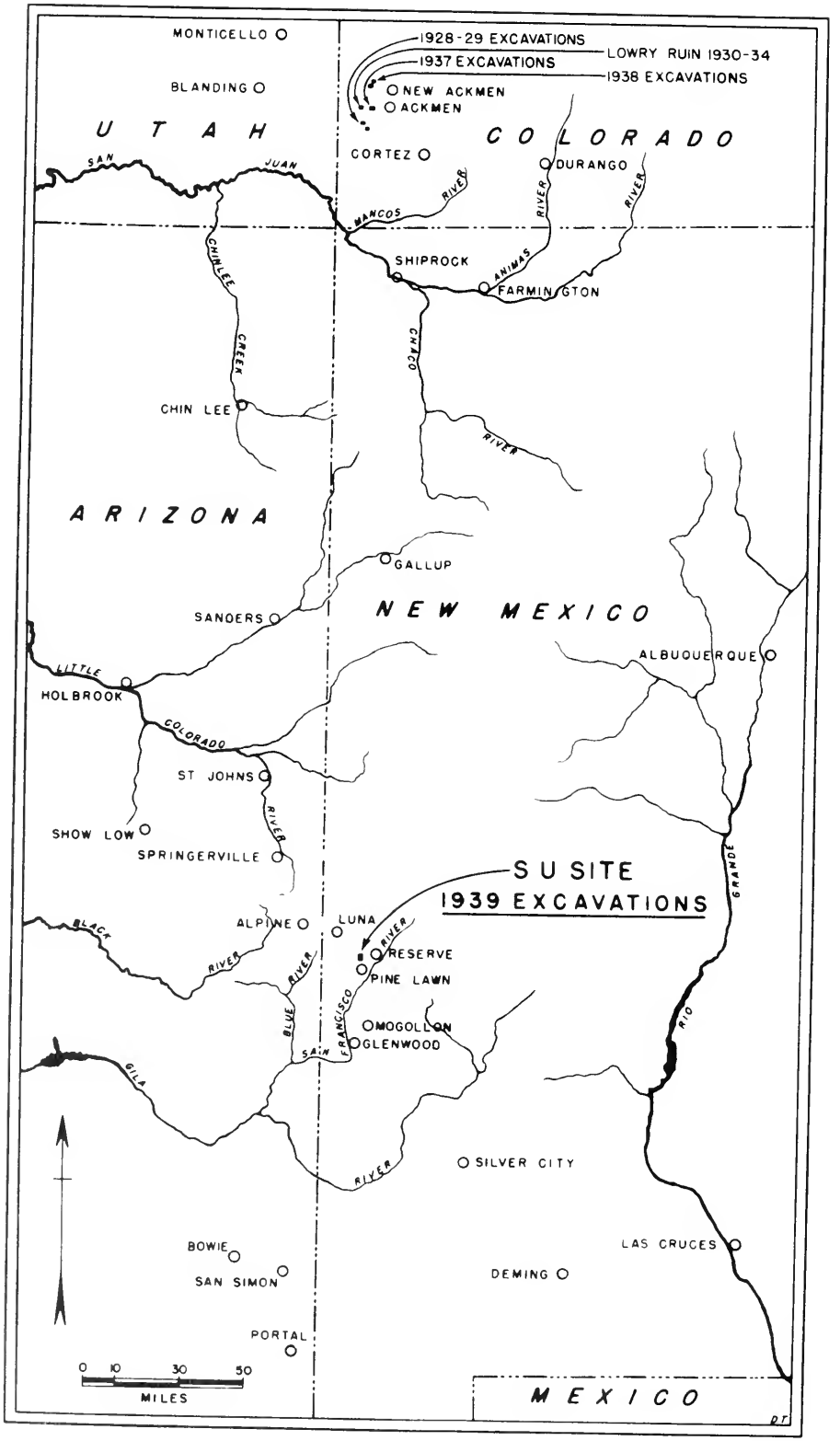
BY

MARJORIE KELLY

ANTHROPOLOGICAL SERIES
FIELD MUSEUM OF NATURAL HISTORY
VOLUME 32, NUMBER 1

JUNE 29, 1940

PUBLICATION 476



Map 1. MAP SHOWING LOCATION OF SU SITE

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PREFACE

During the summer of 1939, research was carried on by the Field Museum Archaeological Expedition to New Mexico in the Apache National Forest, about seven miles west of Reserve, in western central New Mexico (Township 7 S., Range 20 W., N.M.P.M., Catron County). This expedition, under my leadership, excavated part of an early-type Mogollon village, named "SU" after a near-by canyon and ranch ("SU" is also a local brand mark).

It gives me the greatest of pleasure to be able to state that the results of our work more than exceeded our expectations. This has brought much satisfaction to me and to Mr. Stanley Field, who again most generously financed and thus made possible our whole season's work. Mr. Field, President of Field Museum and staunch supporter of its many activities, has been an invaluable friend in our work in the Southwest, and his sincere interest and enthusiasm have added impetus to our work.

To Mr. Clifford C. Gregg, Director of the Museum, I owe a lasting debt. In the tedious work of organizing and preparing for our expedition, he helped in every way possible. And during the summer, when help was most needed, his support was always present.

My staff of assistants, without whose constant aid the expedition would have been less successful, was made up of the following:

Joe Weckler, who designed and helped build our camp, was in charge of cartography and excavations.

John Rinaldo, Associate in Southwestern Archaeology at Field Museum, washed, classified, and catalogued all pottery and stone and bone artifacts. His reports appear in this volume.

Marjorie Kelly, Associate in Southwestern Archaeology, was entrusted with the care of and notes on the twenty-six burials which were found. Before writing the brief report, which is included herein as an appendix, she held conferences with Mr. Georg Neumann of the University of Michigan, Dr. W. M. Krogman, of the University of Chicago, and Dr. Wilfrid D. Hambly and Dr. Henry Field of the Field Museum staff, in order to check her work, observations, and conclusions.

Robert Yule, Assistant in the Department of Anthropology at Field Museum, secured the extraordinarily good photographs used as illustrations in this report. The pictures of pit houses were taken with a wide-angle lens with an Eastman 5x7 view camera

from a specially built twenty-foot tower. All negatives were developed immediately in the camp dark room and, when dry, filed in standard 5x7 envelopes, numbered, and fully catalogued in the field.

Frances Weckler was an invaluable assistant, who acted as my secretary and stenographer.

Towards the close of the summer, Mr. Alexander Spoehr, now Assistant Curator of North American Archaeology and Ethnology at Field Museum, joined the expedition, supervised the back-filling, and helped close camp.

In the fall of 1938, I visited Gila Pueblo for the purpose of keeping abreast of the work done by its staff and of obtaining counsel on the choice of new sites for study. The magnificent sherd collections, survey maps, and notes were all made freely available to me. Over the sherd boards showing only plain wares from the Mogollon area many conferences were held. I am extremely grateful for all the help, suggestions, courtesies, and hospitality which I received there in abundance. Nowhere else could I have found the extensive collections of sherds of the type in which I was interested.

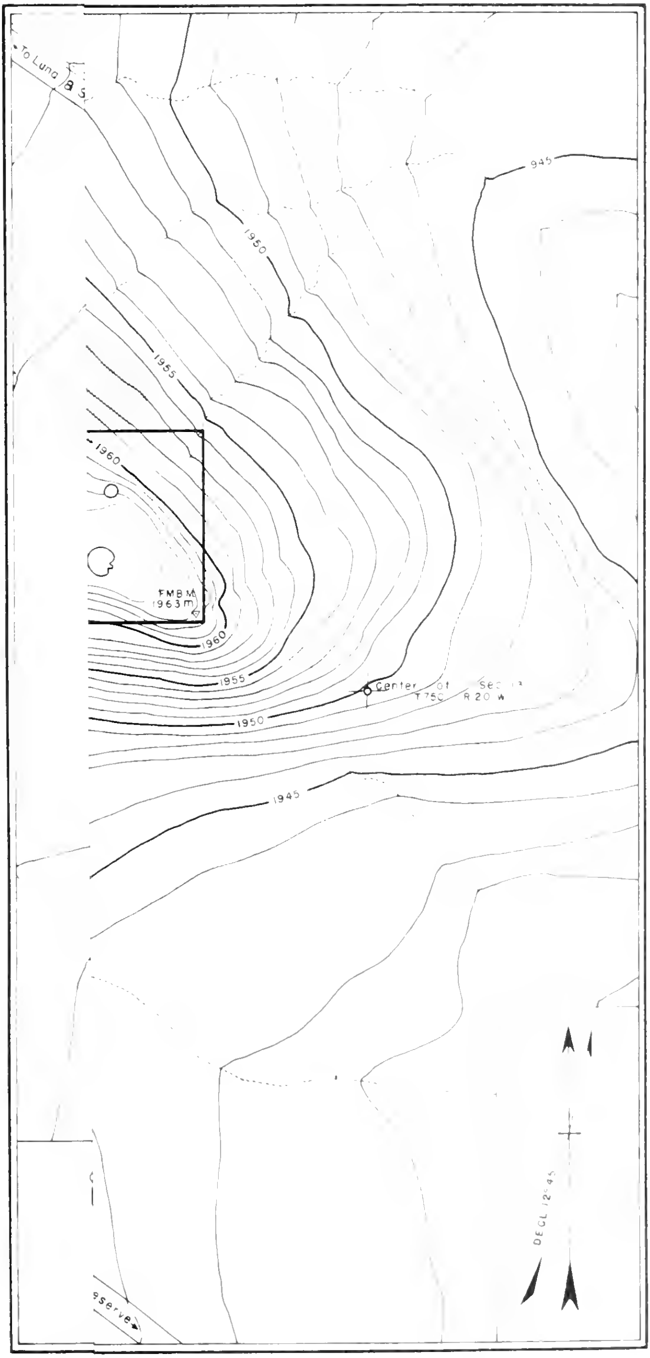
Mr. Harold S. Gladwin, Director of Gila Pueblo, very kindly offered to study all specimens of wood that we might obtain during the summer. We sent more than one hundred samples to him at his Santa Barbara Laboratory. Unfortunately, this wood turned out to be juniper and cannot be dated by present techniques. However, I am very grateful for Mr. Gladwin's careful work.

I would not be content unless I thanked Mrs. Crackel, her daughter, Betty, and her son, Danny. Mrs. Crackel fed our guests, furnished us with free water, and permitted us to use her telephone.

Mr. Benton S. Rogers, ranger of the Hood Ranger Station of the Apache National Forest, and Messrs. Ewing and Stuart, his immediate superiors of the Springerville, Arizona, office, were unfailingly kind, courteous, and helpful to us. Our excavations were carried on under a permit granted the Museum by the Department of Agriculture, Forest Service. Mr. Rogers and Mr. Stuart inspected our digging and our back-filling work and expressed their satisfaction with our job. I am grateful for their help and co-operation.

I wish especially to mention with gratitude the loyal services of Miss Lillie Wayman, cook, and of Messrs. Hugh Pigg, Luke Lancaster, Charles Phinny, Eduardo Naranjo, and Luis Martinez.

PAUL S. MARTIN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Map 2. TOPOGRAPHIC MAP OF SU SITE, NEW MEXICO

THE SU SITE

I. INTRODUCTION

Up to fifteen or twenty years ago, archaeologists generally assumed that the ancient culture of the vast Southwest was of one origin and was fairly uniform throughout. This culture was known as "Puebloan." Peculiarities, specialties, and divergences were all attributed to local variations and to chronological differences. Pottery which differed from the orthodox Gray ware and Black-on-White wares, and architecture that varied from the standard Anasazi (Basket Maker Puebloid) culture, were called "peripheral," "special developments," or "aberrations."

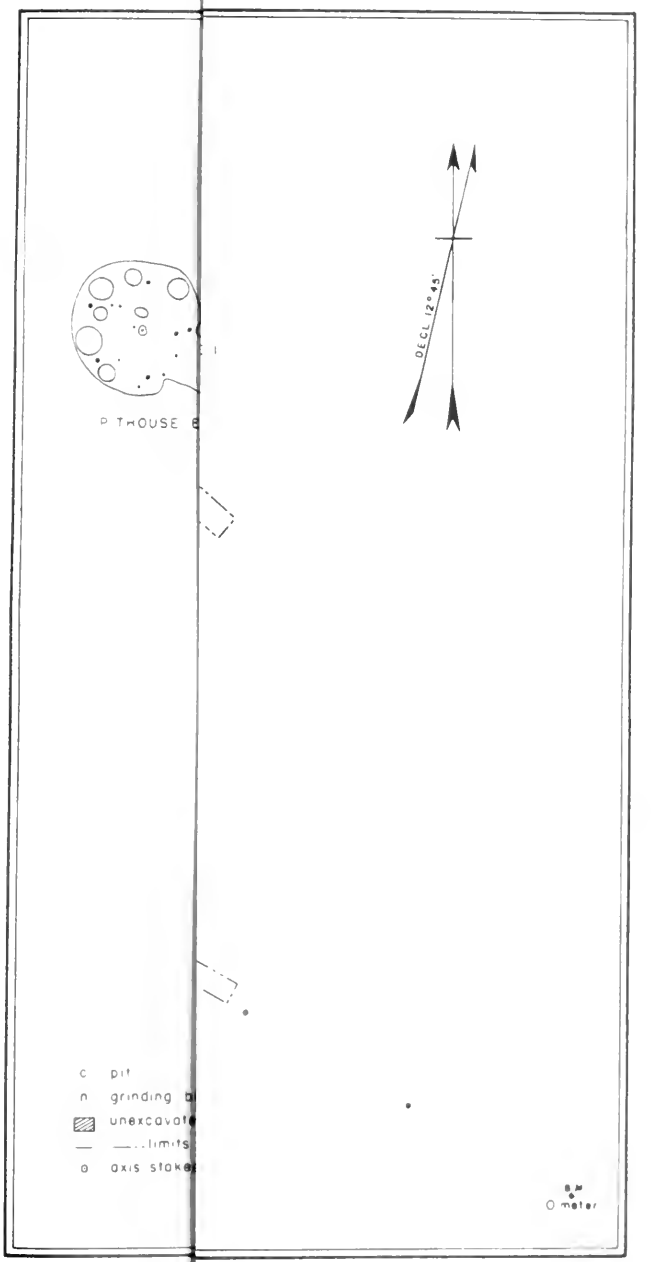
It is now known that this assumption was incorrect. Kidder suspected (1924, p. 105) and Kroeber (1928, pp. 378–380) suggested that the ancient culture of southern Arizona did not conform to the well-known late Pueblo trends or traits (for example: Black-on-White, corrugated and glazed pottery; altars, kivas, masks, terraced houses of several stories). The culture of southern Arizona, now known as the Hohokam, has since been thoroughly investigated and well described by Gila Pueblo (Gladwin, Haury, Sayles, and Gladwin, 1937). This monograph from Gila Pueblo demonstrated that this culture was a separate complex and was utterly non-Puebloan in origin and in character. The studies carried on by Gila Pueblo also indicated that the beginnings of Hohokam culture were earlier than those of the Anasazi (Basket Maker Pueblo) and that in the thirteenth or fourteenth century Puebloan people peacefully moved in and lived side by side with the Hohokam.

But soon after the Hohokam culture was delineated, a third and also separate cultural entity in the Southwest was outlined by Gladwin (1934, pp. 5 and 30), namely, the Mogollon Root. Later, Gladwin (1935, pp. 221–227) stated more explicitly what he knew and thought about the Mogollon culture. It is true that Bradfield suspected that there was an earlier stage of pottery-making underlying his materials, and he had worked out a developmental sequence, although this unfortunately was not published. I have never seen Bradfield's material, but judging from his report on Cameron Creek (1931) I think that his earliest phase at Cameron Creek was probably what Haury (1936a, p. 3) later called the San Francisco phase. Hough (1923, p. 8) also believed that the Mimbres material may have had

earlier antecedents and that it was not strongly affiliated with the Pueblo culture. Cosgrove (1932, p. 112) realized that the origins of the Mimbres culture were unknown, although Kidder in the same report (Cosgrove, 1932, p. xix) implied that from the point of view of the San Juan nucleus, the Mimbres culture was peripheral. Kidder's point of view was not unreasonable at that time, because only late Mimbres sites had been reported upon. We now know that the Mogollon roots of the Mimbres culture were probably not connected with those of the Anasazi.

After Gladwin's published remarks about the Mogollon culture, the next report on this subject to appear was by Haury (1936a, b). Haury names and defines three distinct Non-Puebloan phases which were earlier than the so-called classic Mimbres phase. Some questioned his evidence and his conclusions; I felt that his statements were sound and his speculations good. Haury, with his archaeological evidence, was able to back up the earlier published statements of Gladwin (1934 and 1935, loc. cit.). Haury's main points were that the early stages of the culture called Mogollon were neither Anasazi (Basket Maker) nor Hohokam, as then defined; that the separateness of the Mogollon culture could not be denied; and that the mixture of Anasazi and Hohokam traits (about A.D. 900) with the original Mogollon traits produced what has long been known as the Mimbres Classic phase. Several authorities have doubted the validity of both of these statements, and Nesbitt (1938, pp. 8 and 132) stated that the Mogollon culture, as currently known, did not represent a new basic pattern. Since then, Nesbitt has modified his point of view concerning the separateness of the Mogollon culture, on the basis of his own, Haury's, and our recent work.

Thus far, I have presented the history of the Mogollon problem up to the autumn of 1938. At that time, I had finished for Field Museum ten years of research in all the known periods of the Anasazi culture in southwestern Colorado (Martin, 1936, 1938, 1939). We had found a polished Red-on-Orange pottery which had previously been found by Morris (1939, pp. 156, 161, 270–272), and by Brew (Martin, 1939, pp. 487–492) and others. Brew named this ware Abajo Red-on-Orange. The origin of this pottery, which is atypical of Basket Maker wares, has been guessed at. Some thought it was an independent invention and local development of the Basket Maker people. I concurred in this conjecture at one time. But the more Rinaldo and I studied this red ware the more we felt inclined to agree with the verbal suggestion made by Dr.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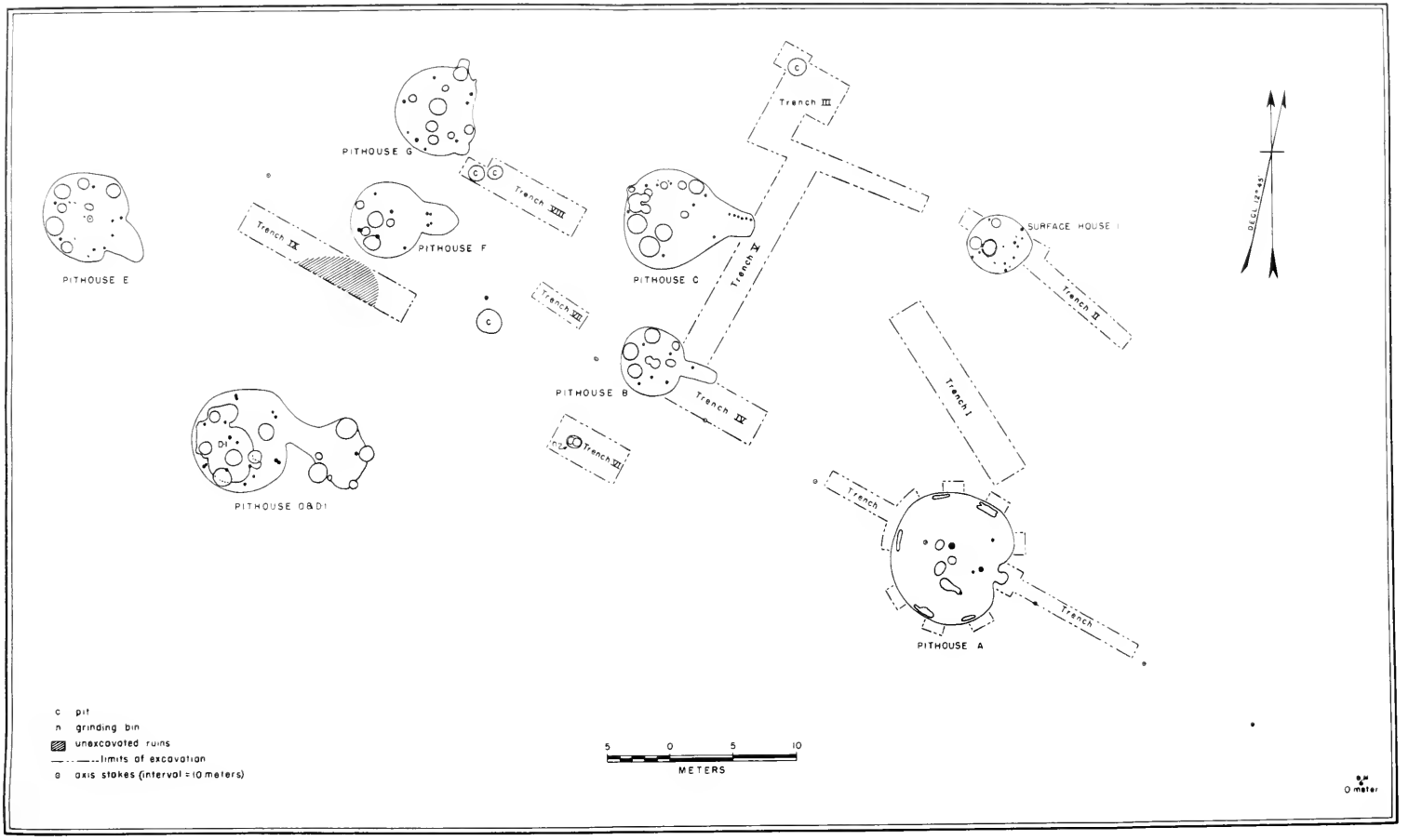


MAP 3. ENLARGED DRAWING OF RECTANGLE OUTLINED ON MAP 2 SHOWING EXCAVATED AREA

Emil Haury—that Abajo Red-on-Orange pottery was somehow tied up with Red-on-Brown Mogollon pottery. This possibility looked even better after we found in the Field Museum collections an Abajo Red-on-Orange bowl from a ruin just a few miles west of Zuñi, which lies between the Mogollon country and southwestern Colorado, where we had worked. Furthermore, the sherds of Mogollon pottery which had turned up in our excavations in the Ackmen-Lowry area interested me.

The idea of starting work in a little-known culture (Mogollon) and in a new region fascinated me. I felt I had worked long enough in one area on one set of problems and I did not want to become a slave of the Anasazi culture. Further, I wanted to study new problems so that I would have a better perspective of the Southwest as a whole. Then, too, if the Mogollon culture were merely a peripheral development of the Anasazi, I thought that I would recognize the Anasazi elements very quickly and perhaps be of some help in settling the struggle between those who were in favor of setting up the Mogollon culture as a new and separate cultural root or division and those who were against this idea.

In addition to the desire to search for the possible origin of Abajo Red-on-Orange pottery, to investigate the major characteristics of the Mogollones, and to find out if the Mogollon culture was a peripheral satellite thrown out from the San Juan "nucleus," other considerations were important.

We felt that we could obtain a much better idea of the Mogollon culture, its beginnings and affiliations, if any, by digging several small sites which yielded surface sherds only of plain, undecorated wares. It seemed safe to assume that if the Mogollon culture had had a more or less independent development, the earliest pottery would be unpainted, plain wares.

With this thought in mind, I went to Gila Pueblo in the fall of 1938 to look over the Mogollon and related sherds collected by the various archaeological surveys of the Pueblo. After considerable study, I selected for excavation in the following summer two or three sites which, according to the survey notes, were small and probably early and unmixed (because they yielded surface sherds only of brown and red plain wares). These sites were situated about seven miles west of Reserve, New Mexico. I finally chose one which seemed the most interesting and I named it the SU site, because it is near the SU canyon and ranch. SU is also a local brand mark.

The results of the co-operation and conversations on mutual problems between the staff of Gila Pueblo, Dr. Emil W. Haury, Chairman of the Department of Anthropology of the University of Arizona, and myself were beneficial; and the results of our "dig" —the SU site—were successful.

Furthermore, in addition to the pressing and interesting problems which I have discussed, two others arose during the summer:

(1) If the Mogollon culture could be given the status of an independent complex, when did the Basket Maker-Pueblo traits (which everyone recognized in late Mogollon-Mimbres periods) filter into the Mogollon stronghold?

(2) When did the Mogollon culture start? Was it earlier or later than the Hohokam or the Anasazi cultures? If earlier, what contributions did Mogollon make to their development?

The importance of our moving into the Mogollon country was partly gauged by the host of new problems which unfolded, and the new vistas which opened up.

II. DESCRIPTION OF ARCHITECTURAL DETAILS

PIT HOUSE A, SITE 1

(Figs. 1–3 and Map 4)

Shape.—Kidney-shaped; greatest diameter, 10.4 meters.

Walls of native, gravelly earth; plaster found only on north side of lateral entrance.

Floor of smoothed adobe; depth below old ground level, 56 cm. to 84 cm.

Firepit circular, sides lined with small stones; little ash found.

Deflector.—None.

Lateral Entrance on east side; very short floor (88 cm. long) rises sharply towards east.

Pits.—Three in number; one (gourd-shaped) directly south of firepit; one in southwest quadrant; and one in northwest quadrant. These contained nothing.

Burials.—None found.

Post-holes five in number. Four in uneven row in front of entrance; one in corner of largest storage pit; diameters range from 12 cm. to 28 cm.; depths all about 12 cm. One large post-hole north of firepit; diameters, 45 cm. and 55 cm.; depth 30 cm. None found on old ground level outside pit house.

Grooves (log-shaped).—Five in number, placed in outer zone, next to wall; more or less evenly spaced; the one on the east side and the one on the west side doubly wide. No logs found in any of these troughs; but in similar grooves at Forestdale ruin (1939), Arizona, Dr. E. W. Haury found rotted logs lying horizontally (verbal statement to me). Since there were not enough post-holes to support a roof, it is probable that these grooves formerly contained horizontal logs on which upright posts stood.

Roof.—Exact character unknown. See remarks under *Grooves.*

Pottery.—Only types found: Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—This pit house, the largest one excavated, did not burn.

FIG. 1. Pit House A; showing rock-lined firepit(?) in center, pits around it, log-shaped grooves in periphery, and stubby entrance-way at left. Arrow (50 cm. long) points north; meter stick in background.

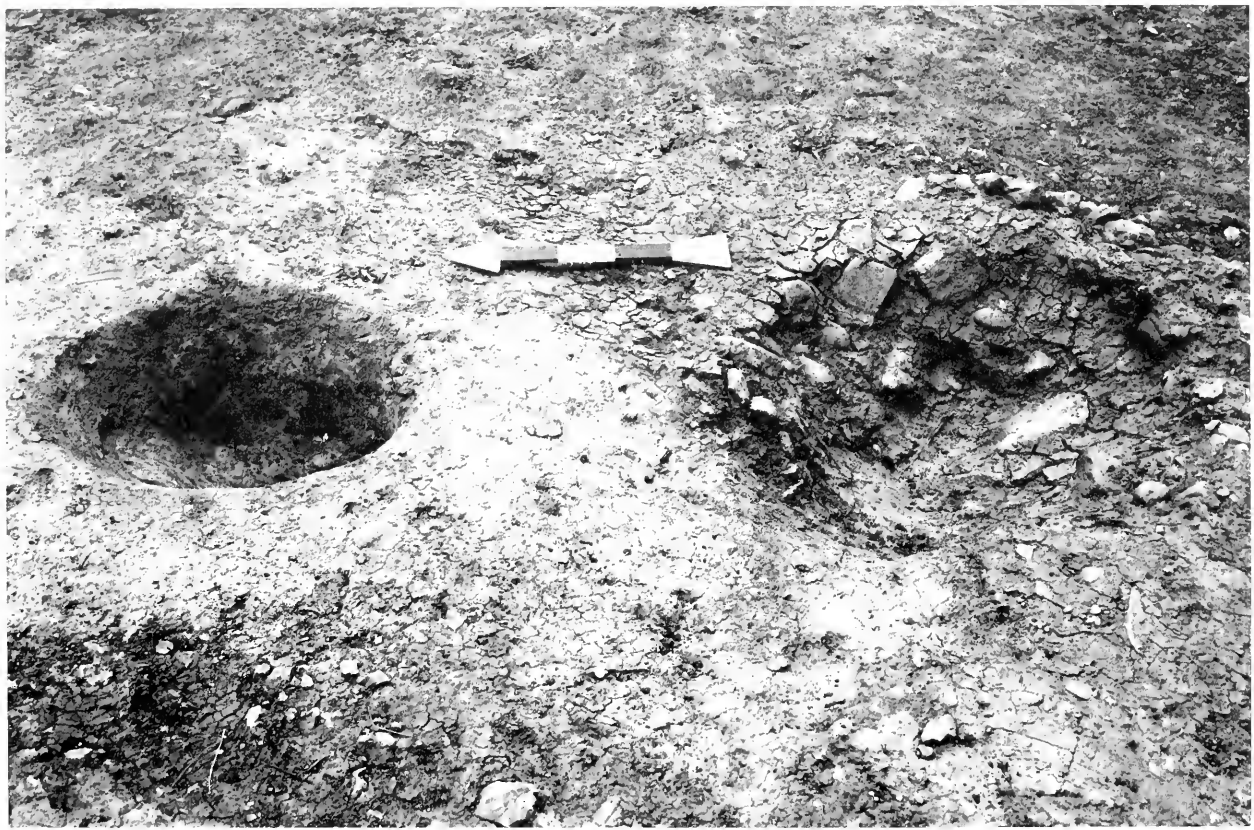
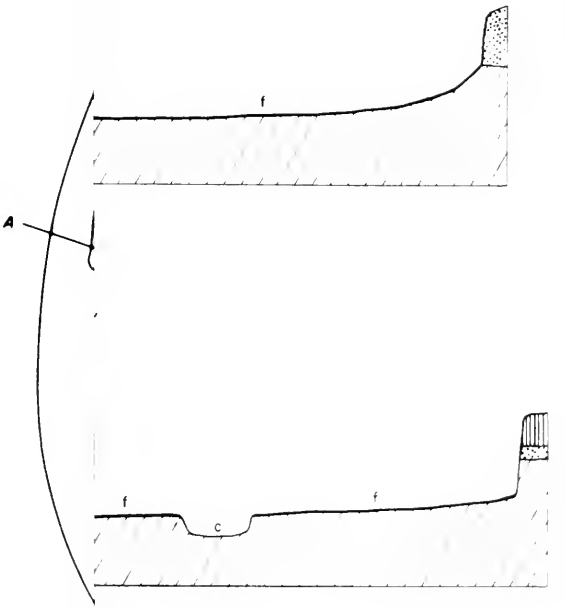


FIG. 2. Pit House A; showing central, rock-lined firepit and adjacent large central post-hole. Arrow (50 cm. long) points north.



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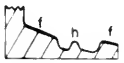
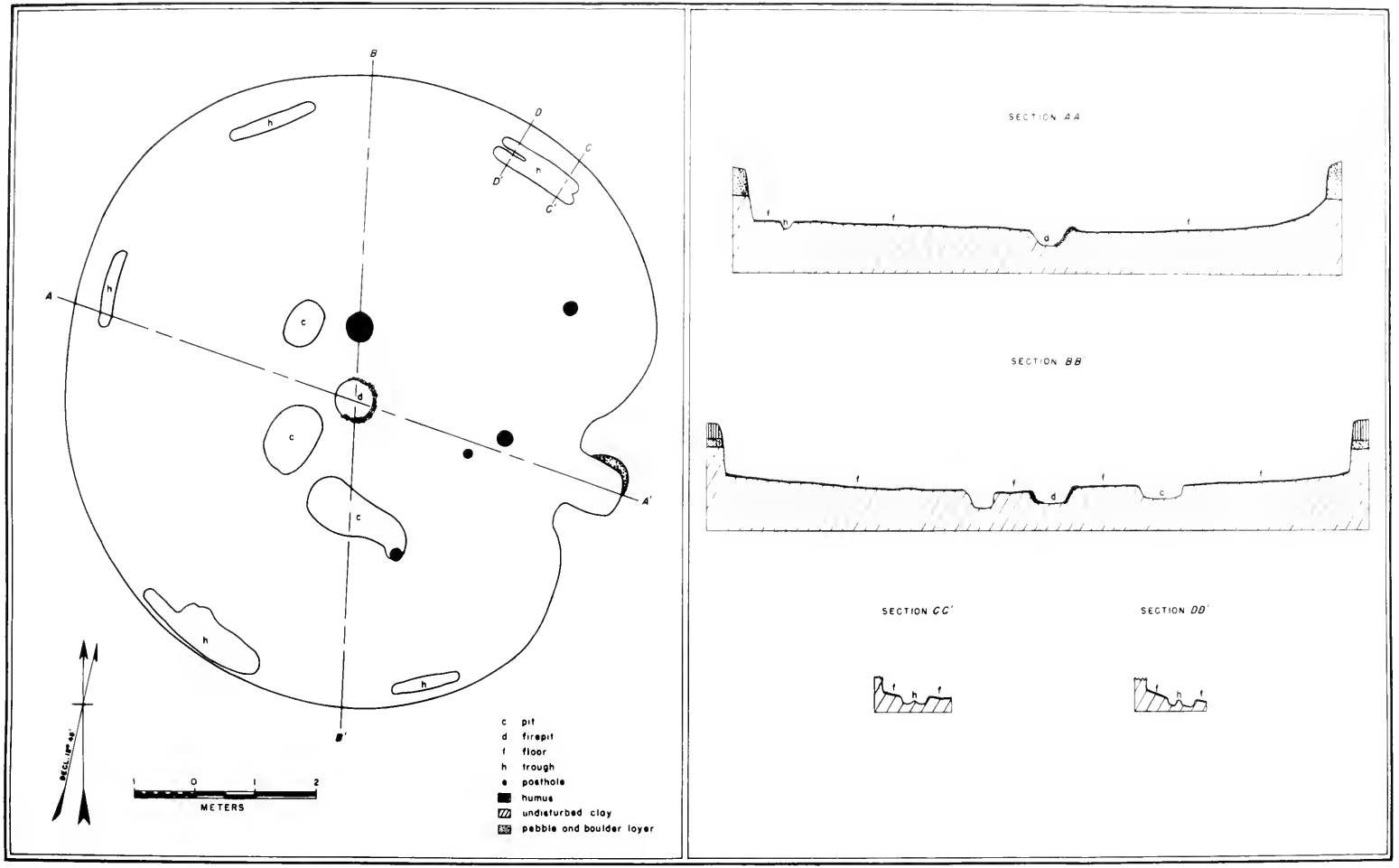




MAP 4. GROUND PLAN AND SECTIONS OF PIT HOUSE A

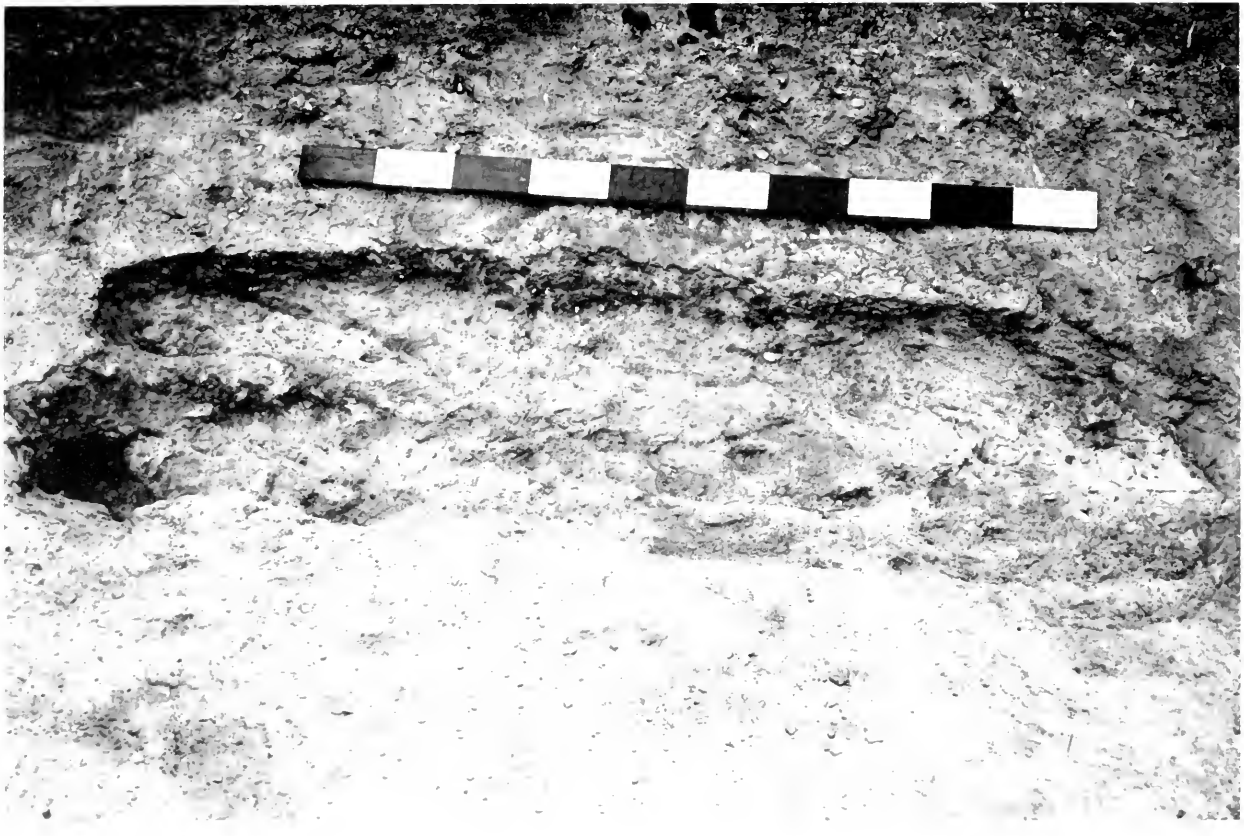


FIG. 3. Pit House A; showing double log-shaped grooves in floor of periphery. Looking northeast; meter stick in background.

PIT HOUSE B, SITE 1

(Fig. 4 and Map 5)

Shape.—More or less round; greatest diameter, 5.55 meters.

Walls of native, gravelly earth.

Floor of smoothed adobe; depth below old ground level, 25 cm.

Firepit.—Gourd-shaped? A few ashes found in eastern portion of pit.

Deflector.—None.

Lateral Entrance.—On east side; 2.8 meters long; width approximately 1 meter; floor rises gradually towards east.

Pits.—Five in floor; depths range from 20 cm. to 60 cm.; diameters range from 60 cm. to 1.45 meters; one pit in northwest quadrant and one in southwest quadrant possibly contemporaneous with house (i.e. in use when house was occupied), remaining pits probably dug through fill after house was deserted. Three pits contained burials.

Burials.—Five in number: one in pit 1, two in pit 2, one in pit 3, and one lying on the ground west of the firepit. Burial No. 3 in pit 1 had four shell bracelets on left arm; burial No. 4 in pit 2 had obsidian projectile point on pelvis. All burials placed after house was abandoned. Fill over burials very soft.

Post-holes.—Six in number. Depths range from 17 cm. to 32 cm.; diameters, from 17 cm. to 27 cm. None found on old ground level outside pit house.

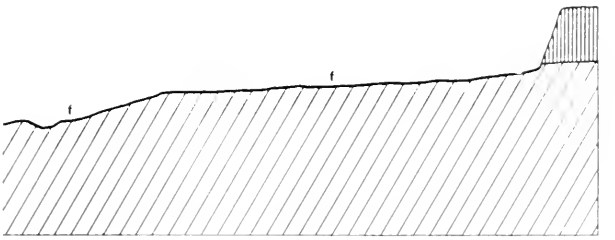
Roof.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—Pit House B did not burn.

ION *AA'*



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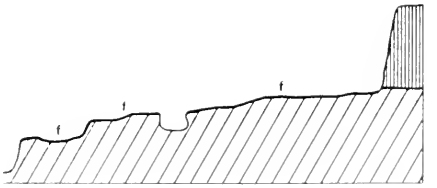

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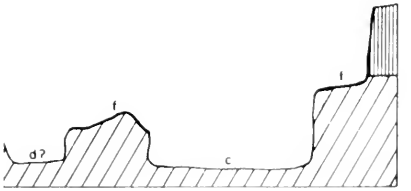
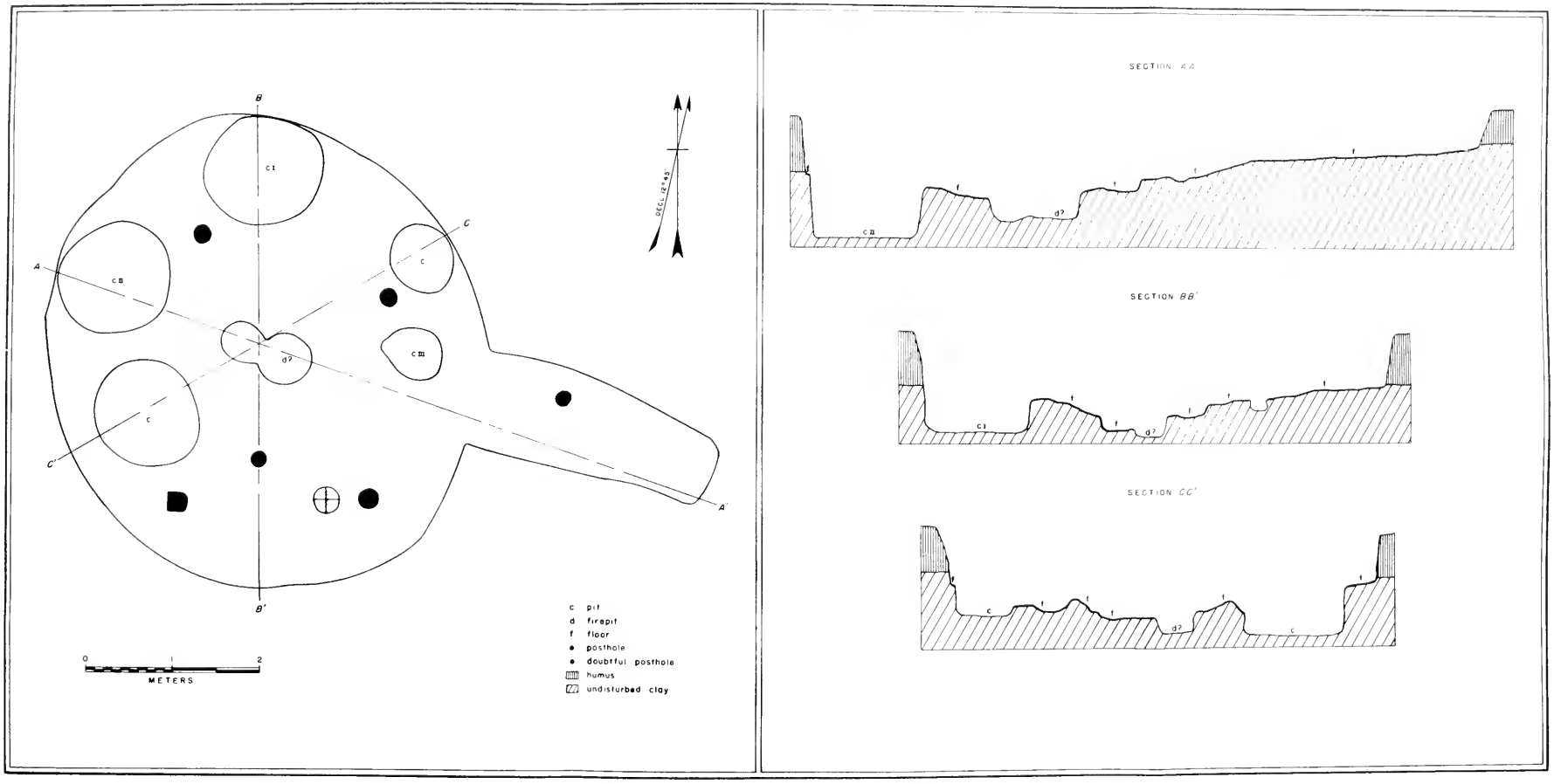




Map 5. GROUND PLAN AND SECTIONS OF PIT HOUSE B

FIG. 4. Pit House B; showing pits, post-holes, and eastern lateral entrance. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE C, SITE 1

(Fig. 5 and Map 6)

Shape.—Pear-shaped; greatest diameter (north–south), 7.75 meters.

Walls of native, gravelly earth; no plaster found.

Floor of smoothed adobe and gravel; depth below old ground level, 40 cm.

Firepit(?).—Shallow depression in middle of house might be firepit.

Deflector.—None.

Lateral Entrance on east side; width at east end, 1.7 meters; length, 2.15 meters; floor gradually rises towards east.

Pits.—Twelve in number; two pits contained burials. Shape of pits, round; walls, vertical. It is possible that all these pits existed while the house was occupied.

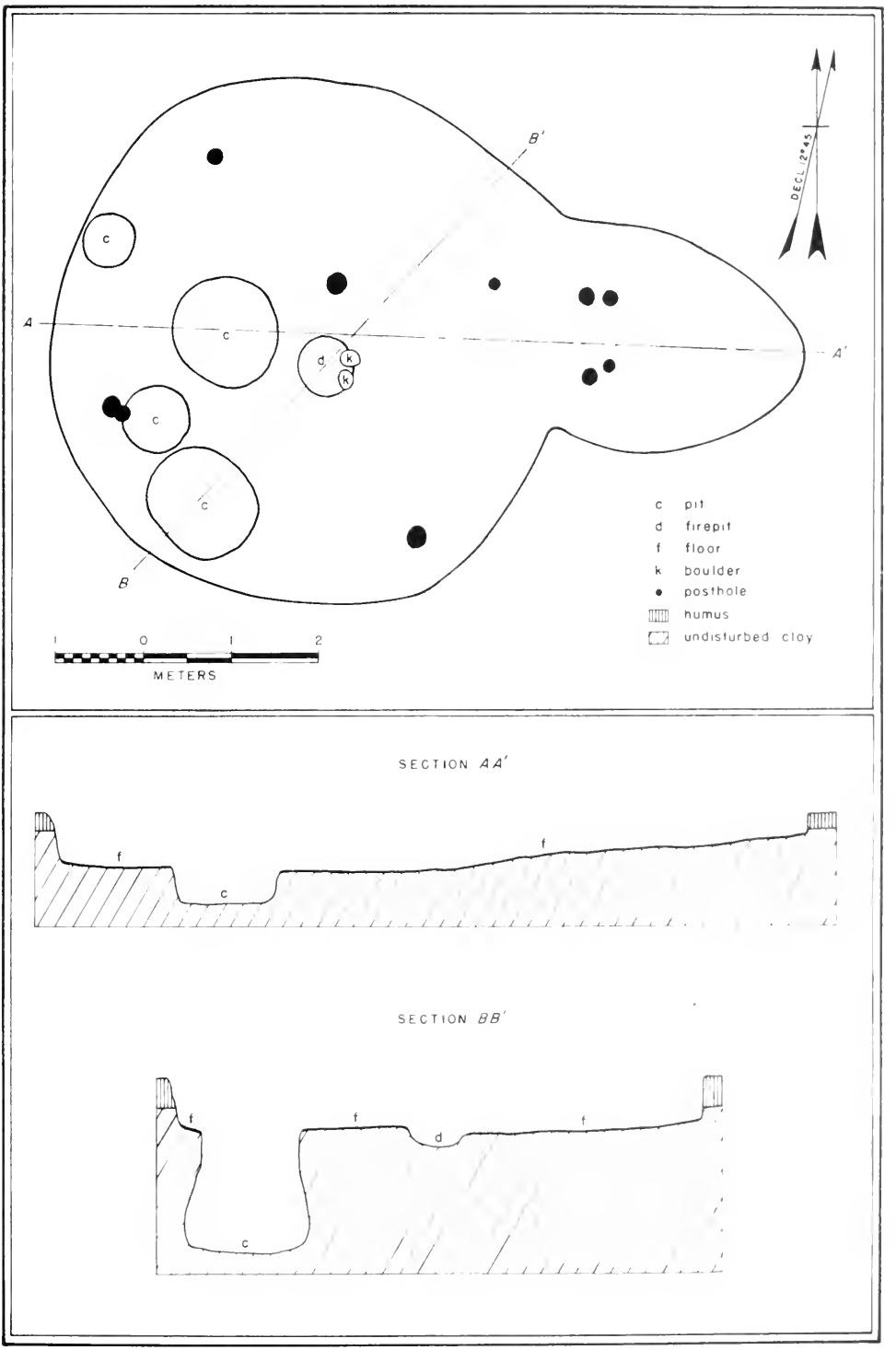
Post-holes.—Nineteen found in main portion of house; nine, in entrance-way. Diameters ranged from 10 cm. to 36 cm.; depths ranged from 10 cm. to 48 cm. None found on old ground level outside of pit house.

Roofs.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—Pit House C did not burn.



Map 6. GROUND PLAN AND SECTIONS OF PIT HOUSE C

FIG. 5. Pit House C; showing pits, post-holes, and eastern lateral entrance (at left). Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSES D AND D-1

(Figs. 6–8 and Map 7)

Shape.—Round; greatest diameter (northeast–southwest), 8.25 meters.

Walls of native gravelly earth; no plaster found.

Floors of smoothed adobe in south half and gravel in north half; depth below old ground level, 32 cm. to 50 cm.

Firepit.—Not definitely located.

Deflector.—None.

Lateral Entrance.—On east side; consists of narrow passageway leading into round antechamber. Passageway, 2 meters wide; diameter of antechamber, 5.6 meters north and south and 4.1 meters east and west.

Pits.—Twelve in number; diameters range from 45 cm. to 1.6 meters; depths, from 16 cm. to 50 cm. Four of these pits contained burials.

Burials.—Five in number; one each in pits 1, 2, 3, and 4; one on floor in antechamber. With burial No. 22 in pit 3 were a bone bead, a stone pipe, and a bone awl; with infant burial No. 25 in pit 4 were 19 turquoise beads.

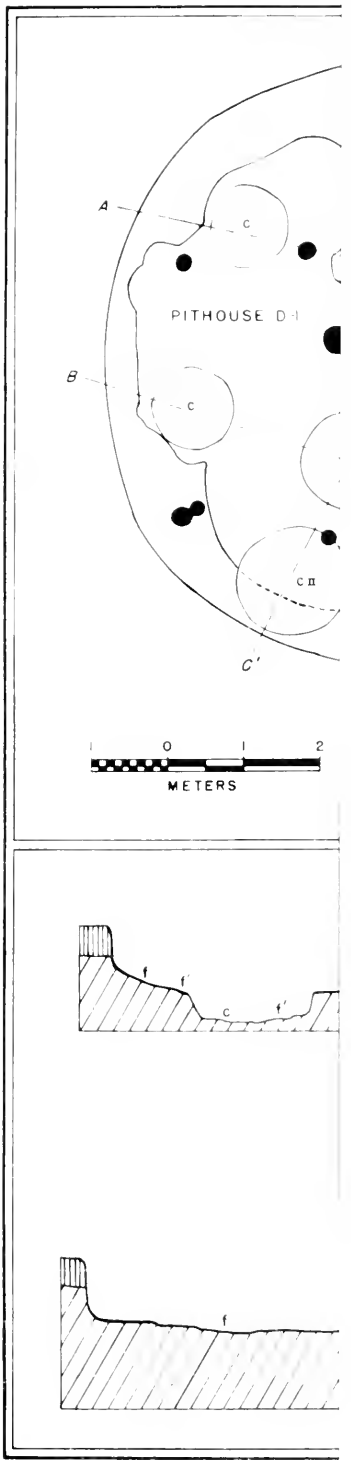
Post-holes.—Seventeen in number; diameters ranged from 16 cm. to 65 cm.; depths, from 9 cm. to 48 cm. (some of these post-holes may have belonged to earlier Pit House D-1).

Roof.—Exact character unknown.

Pottery.—Unpolished Brown, Polished Red, Alma Plain, Three Circle Red-on-White, Forestdale Smudged, Alma Scored, Alma Neck Banded. (Note: these pottery types are later and correspond to what Haury and Nesbitt have reported.)

Phases.—Late Three Circle and Pre-Georgetown?

General Comments.—Pit House D burned. On the ground plan it is evident that we found one house inside another. The smaller, earlier one has been called D-1. It is certain that Pit House D-1 is the earlier one because the floor of the larger, later pit house partly covered the smaller house and also partly covered pit 2. It should be noted that pit 2 certainly belongs to the earlier pit house or perhaps antedated it. That would also apply to burial No. 24 found in pit 2. Pit House D-1 had a short, eastern entrance-way. Beyond stating that and noting that Pit House D-1 was approximately 6 meters in diameter it is impossible to say more because many of the earlier features (post-holes, pits, firepits) were destroyed by the later occupants or covered by their floor.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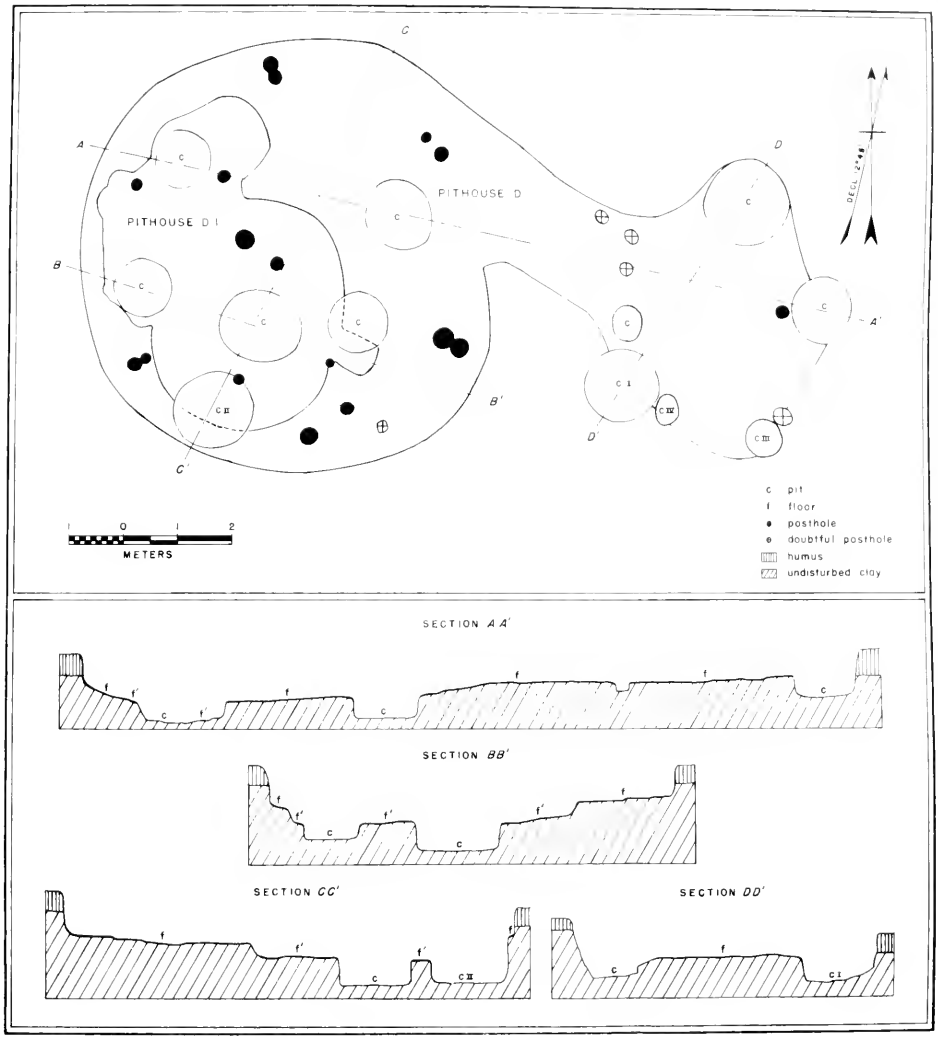


Map 7. GROUND PLAN AND SECTIONS OF PIT HOUSES D AND D-1

FIG. 6. Pit houses D and D-1; in background, earlier pit house (D-1), burned roof logs of later pit house, and metates in foreground; later pit house (D) before complete excavation, and mortar; entrance to left. Arrow 50 cm. long, points north; meter stick in D-1 edge (cut).

FIG. 7. Pit Houses D and D-1, completely excavated. In background, pits dug by later inhabitants, post-holes of later pit house, and pit (with meter stick) which antedated both houses. In foreground, storage pit, post-holes, and entrance (at left) to antechamber. Arrow (50 cm. long) points north; meter stick in background.

FIG. 8. Pit House D; showing antechamber. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE E, SITE 1

(Fig. 9 and Map 8)

Shape.—Roundish; greatest diameter, 9.28 meters.

Walls of native, gravelly earth; no plaster found.

Floor of smoothed adobe and gypsum; depth below old ground level, 1 meter.

Firepit.—Oval in shape; lined with burned rocks and native clay.

Deflector.—None.

Lateral Entrance on east side; length, 2.8 meters; width at east end, 1.4 meters; floor slopes gradually upwards toward east end.

Pits.—Seven in number; diameters range from 54 cm. to 1.55 meters; depths range from 15 cm. to 1 meter; largest pit in southwest quadrant, lined with gravel.

Burials.—None found.

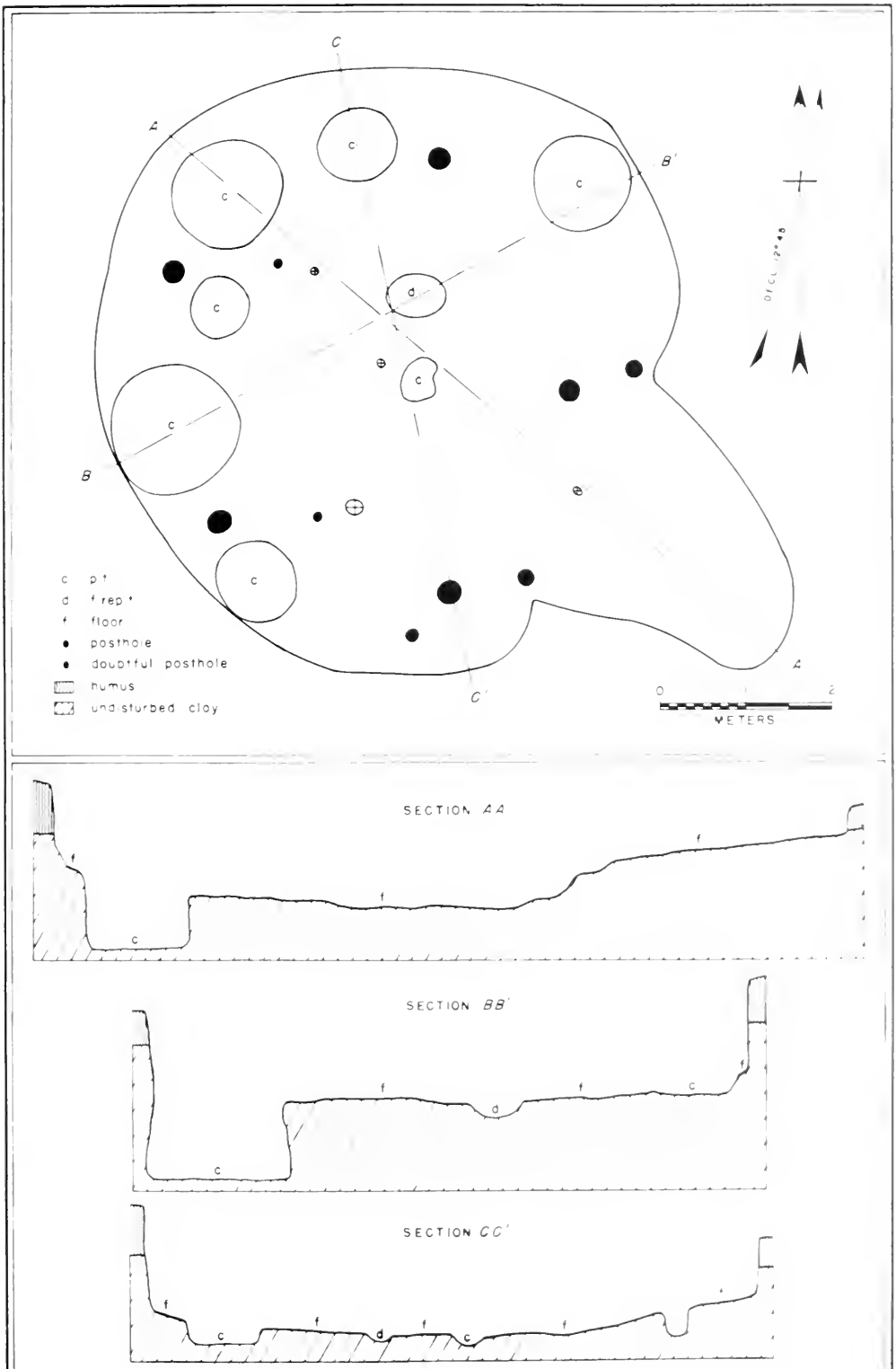
Post-holes.—Ten found; diameters ranged from 7 cm. to 35 cm.; depths ranged from 6 cm. to 37 cm.

Roof.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—Pit House E did not burn.



MAP 8. GROUND PLAN AND SECTIONS OF PIT HOUSE E

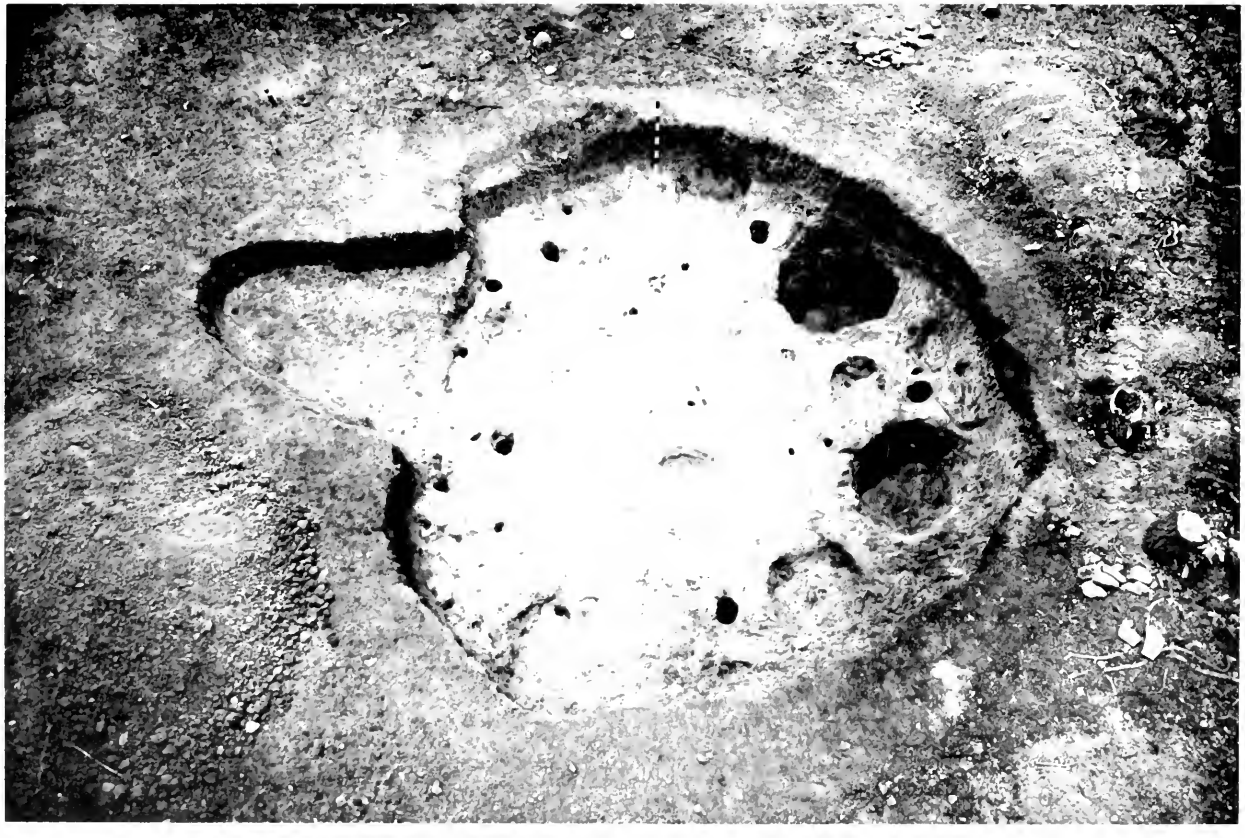


FIG. 9. Pit House E; showing pits, post-holes, and eastern lateral entrance. Arrow (50 cm. long) points north; meter stick in background.

PIT HOUSE F, SITE 1

(Fig. 10 and Map 9)

Shape.—Roundish; greatest diameter (north to south), 6.24 meters.

Walls of native, gravelly earth; no plaster found.

Floors of smoothed, gravelly adobe; depth below ground level, about 40 cm.

Firepit.—Round; slight trace of ashes.

Deflector.—None.

Lateral Entrance on east side; shaped like a Gothic arch; greatest width, 2.2 meters. Floor rises gradually toward the east.

Pits.—Four in number; diameters range from 47 cm. to 1.32 meters; depths range from 15 cm. to 1.44 meters. Bottom of largest pit in southwest quadrant (the deepest one) lined with slabs; under the slabs, 2 inches of ashes. On the slabs two small pots, one basin-shaped metate, a clay pipe, and burned animal bones found. Stone figurine found in pit D.

Burials.—None found.

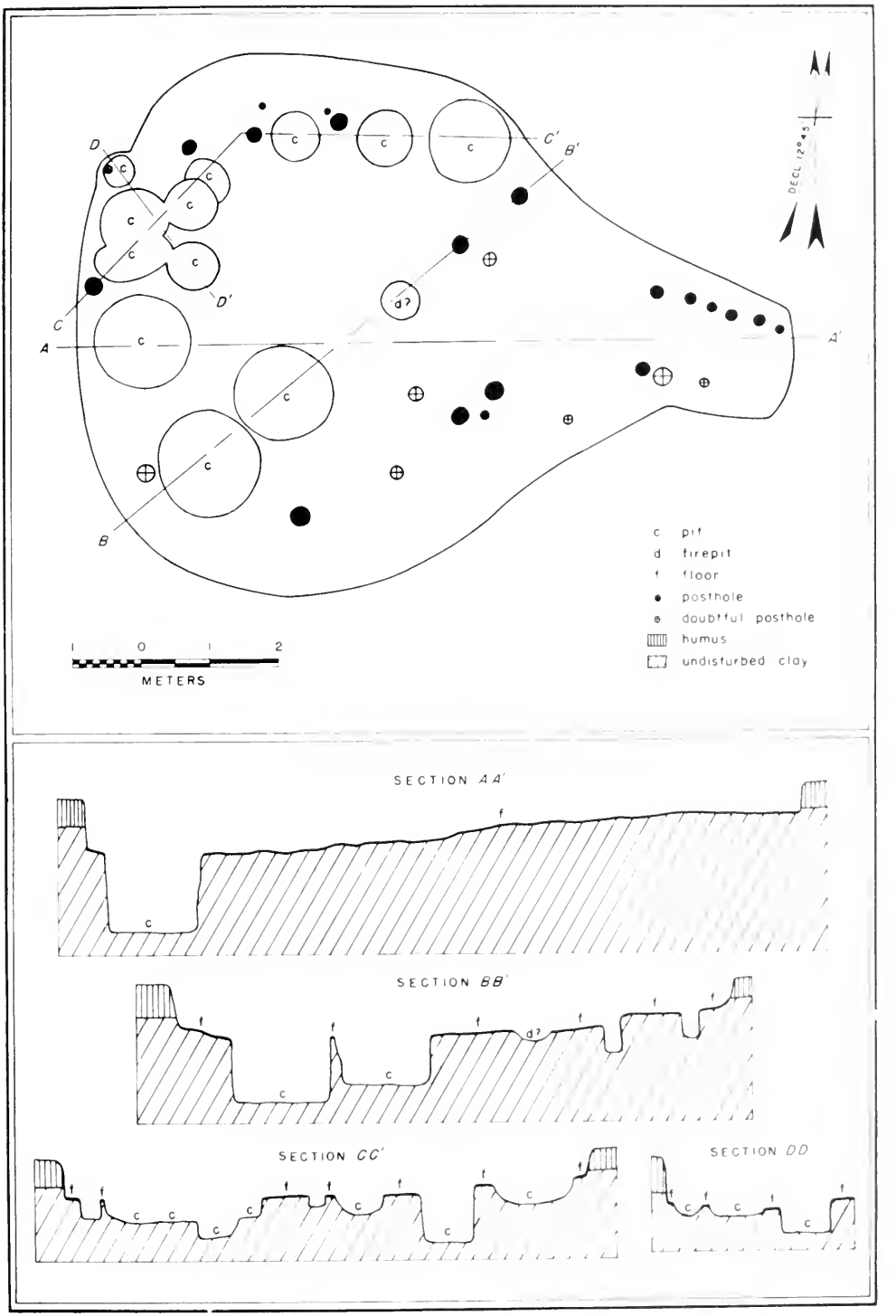
Post-holes.—Ten in number; diameters range from 14 cm. to 34 cm.; depths, from 14 cm. to 53 cm.

Roof.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—Pit House F burned.



MAP 9. GROUND PLAN AND SECTIONS OF PIT HOUSE I

FIG. 10. Pit House F; showing pits, post-holes, eastern lateral entrance, and mortar and metate *in situ*. Arrow (50 cm. long) points north.

PIT HOUSE G, SITE 1

(Fig. 11 and Map 10)

Shape.—Roundish; greatest diameter, 7 meters.

Walls.—Of native, gravelly earth; no plaster found.

Floor of smoothed adobe; depth below old ground level.

Firepit.—None located.

Deflector.—None.

Lateral Entrance not found, although two entire days were devoted to searching for it; possibly one on north side.

Pits.—Eight in number; diameters range from 56 cm. to 1.43 meters; depths, from 10 cm. to 78 cm.

Pot-rests.—Five found.

Burials.—None found.

Post-holes.—Eight in number; diameters range from 8 cm. to 33 cm.; depths, from 7 cm. to 40 cm.

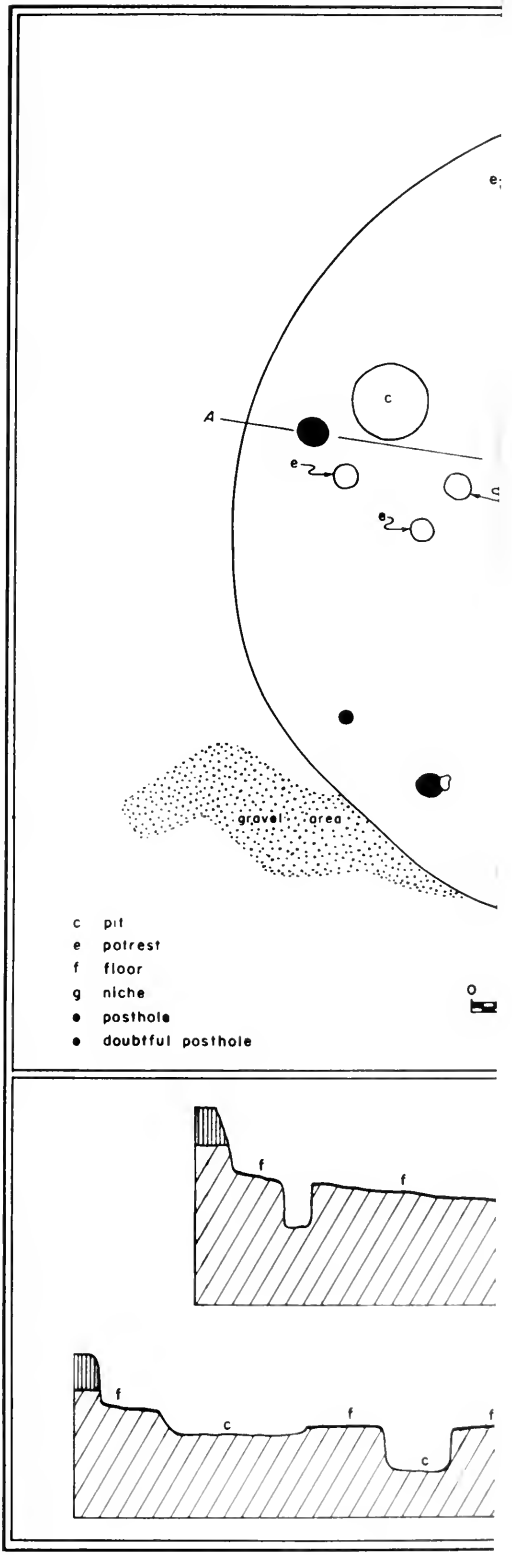
Roof.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

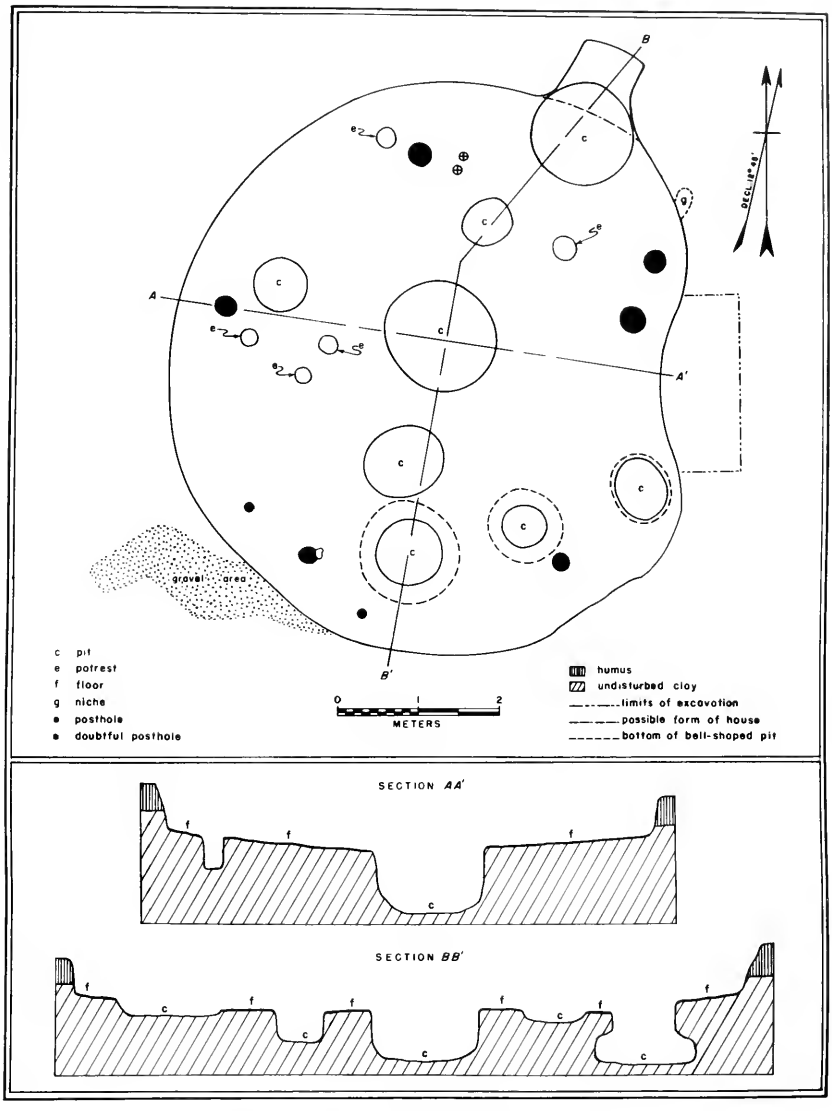
Niches.—One found in northeast quadrant, running north into wall; 12 cm. below floor level; 22 cm. in width; 30 cm. high.

Phase.—Pre-Georgetown.

General Comments.—Pit House G burned.



Map 10. GROUND PL



Map 10. GROUND PLAN AND SECTIONS OF PIT HOUSE G

FIG. 11. Pit House G; showing pits and post-holes. Arrow (50 cm. long) points north; meter stick in background.

SURFACE ROOM 1, SITE 1

(Fig. 12 and Map 11)

Shape.—Roundish; greatest diameter, 5.46 meters.

Walls.—Of native, gravelly earth; no plaster found.

Floor.—Of smoothed adobe and gravel. Depth below old ground level on south side, 36 cm.; on east side, flush with old ground level.

Firepit.—Round; greatest diameter, 1 meter; depth, 18 cm.; coping of large stones set around periphery.

Deflector.—None.

Lateral Entrance.—None.

Pits.—Two in number; diameters range from 64 cm. to 1 meter; depths, from 32 cm. to 50 cm.

Burials.—None found.

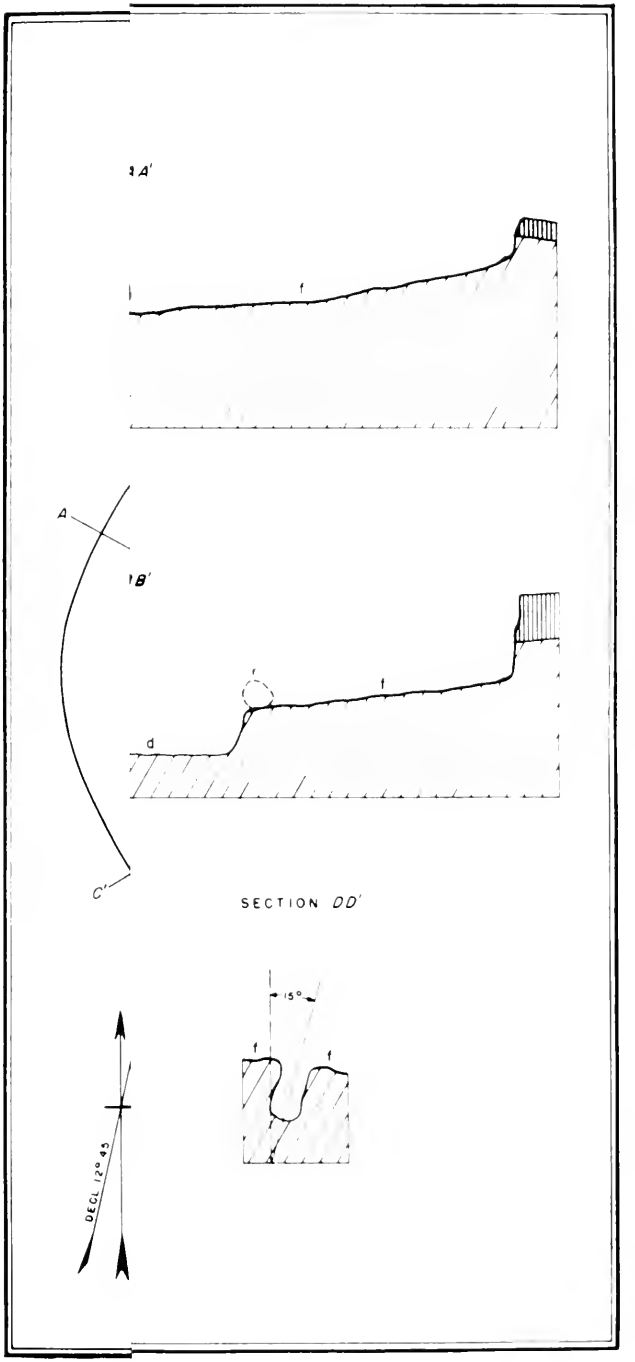
Post-holes.—Fourteen in number; diameters range from 10 cm. to 27 cm.; depths, from 6 cm. to 35 cm. Post-holes 1 and 2 set at an angle of 70° so as to tilt inward.

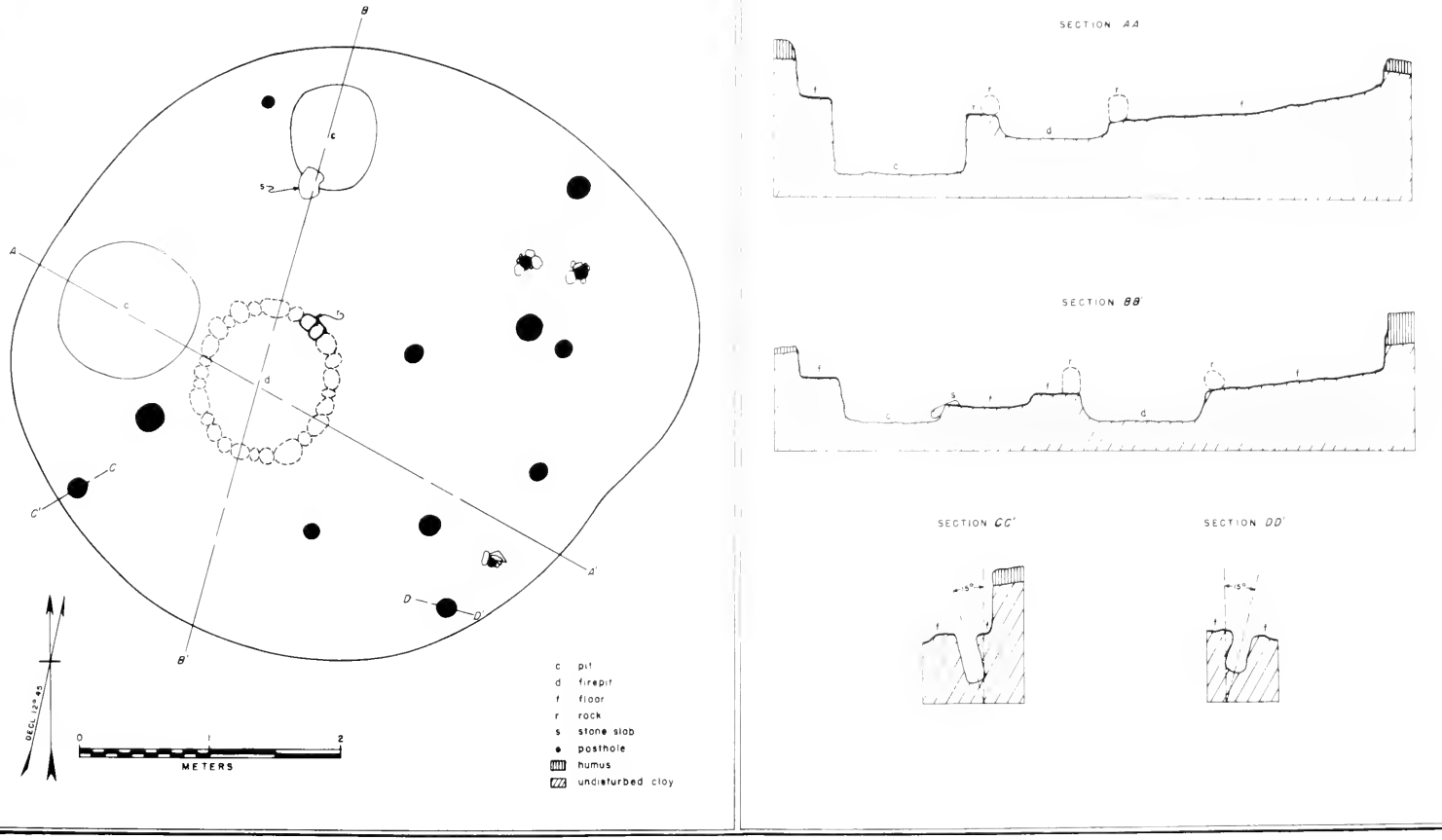
Roof.—Exact character unknown.

Pottery.—Alma Plain, Unpolished Brown, and Polished Red.

Phase.—Pre-Georgetown.

General Comments.—This room burned, and was the only one which could not truly be called a pit house. Although the entire floor was not depressed as in the case of the pit houses, this house contained most of the features found in a typical pit house.


A'
f
A
B'
f
f
d
C'
SECTION DD'
15°
f
f
DECL 12° 45



Map 11. GROUND PLAN AND SECTIONS OF SURFACE HOUSE 1

III. ARTIFACTS

BY

JOHN RINALDO

On pages 38 76 the details of the artifacts are given in outline form. For convenience the artifacts have been grouped as follows:

Object	Number excavated
Ground and Pecked Stone	
Hand stones	
Manos	63
Rubbing stones	36
Milling stones	
Metates	25
Mortars	28
Pestles	21
Polishing stones	29
Hammer stones	5
Mauls	14
Pitted pebble	1
Stone bowls	6
Paint grinding stones	6
Abrading stones	3
Ball	1
Cylinder	1
Disk	1
Chipped Stone	
Projectile points	30
Knives	11
Scrapers	3
Choppers	5
Crystals	3
Pigments	4
Pendants	20
Shell	
Bracelets	5
Bone	
Beads	3
Dice	2
Needle	1
Awls	19
Pins or skewers	3
Antler	
Flakers	2
Rubbers	4
Clay	
Worked sherds	37
Pipes	7
Jar cover	1
Total artifacts	400

From the evidence afforded by the number of implements used in an agricultural economy, such as milling stones, in comparison with the quantity of unworked bone, bone implements, projectile points, and other implements directly related to a hunting economy, it would seem that the people who inhabited the SU site had advanced somewhat beyond the stage where they depended entirely on hunting and seed-gathering for their livelihood. Milling stones and hand stones were found in sufficient numbers and in such well-developed types that it is evident that these people had begun to practice agriculture; and this fact is further borne out by the discovery of a few bits of charred corn in the dwellings. However, the majority of milling stones and hand stones were of simple types such as are used by historic seed-gathering peoples, and the quantity of corn recovered was so small as to indicate that the Mogollon peoples had only begun to practice agriculture at this stage.

A small minority of the metates and manos were worked all over. The rest were unshaped stones which could be differentiated from other stones in the fill only by faceted surfaces, pecking, and other marks of use. The majority of the metates were of the slab and basin kinds which are typologically early and which are analogous to those types used by hunting and seed-gathering peoples such as the Mohave. (Specimens in Field Museum collections.) Only a small number of troughed metates were found. Most of the manos from the SU site are also of simple types. Those manos belonging to the turtleback type and other developed types are in a minority when compared with the simple oval types. Furthermore, relatively few rubbing stones were found of the rectangular type found at Mogollon Village (Mogollon 1:15; Haury, 1936a, pp. 34–35). Most of the rubbing stones from the SU site are simple, oval, utilized stones differing from the simple, oval manos only in size.

A fairly large number of rough stone bowls were found. None of these were carved with any kind of pattern and few were finished on the exterior as are those from the Mogollon Village site. The number of these exceeds that reported from any other known Mogollon site and may indicate a continuation of dependence on stone for vessels from an earlier phase which was without pottery. The number of mortars and pestles compared with the number of metates and manos furnishes even more evidence that seed-gathering still played an important part in the economy of these peoples.

A few objects were recovered from Pit Houses C, D, and E which possibly might be considered as intrusive from the Basket

Maker horizon inasmuch as they are characteristic Basket Maker artifacts and occur only in single instances at this site. These are bone dice, a bone disk bead, a stubby metapodial awl, and a fragment of a bone needle. However, with the accumulation of more evidence from early sites, all these may prove to be equally characteristic of Mogollon.

As might be expected, certain types of artifacts which were found frequently in late Mogollon horizons at the Mogollon and Harris villages, appeared relatively infrequently at the SU site. For example, only two notched bone awls and none of the short, broad, diagonal-notched projectile points were found. On the other hand, the scarcity of these types of artifacts might be explained as a local peculiarity.

It is interesting to note that the only shell work from the SU site consisted of thin shell bracelets which could have come in only by trade. This type of shell bracelet is the common type throughout the early stages of Mogollon. I cannot explain the absence of other shell work.

The pipes recovered are also of interest inasmuch as the stone pipes are of the cylindrical, or tubular, two-piece variety, consisting of stone bowl and bone stem, whereas the clay pipes are of the single-piece, conical, "cloud blower" type. The tubular type occurs most frequently in Mogollon, the "cloud blower" type most frequently in Basket Maker–Pueblo; it is, therefore, possible that the clay pipes represent the diffusion of an idea from the Basket Makers (Roberts, 1931, p. 150).

The identification of materials in the stone objects was made by Mr. Sharat K. Roy, Curator of Geology at Field Museum. The identification of the unworked bone and the bone used in the bone implements was made by Mr. Edmond N. Gueret, Curator of Anatomy and Osteology at Field Museum.

MANOS

(Fig. 13)

Manos with single grinding surfaces:

(a) Oblong, surfaces parallel, grinding surface convex 14
From Pit Houses C, D, F, and Grinding Bin
Length: maximum, 23 cm.; minimum, 13.9 cm.; average, 17 cm.
Width: maximum, 12.2 cm.; minimum, 9 cm.; average, 10 cm.
Thickness: maximum, 6.3 cm.; minimum, 3 cm.; average, 3.5 cm.

(b) Disk type, roundish in outline, surfaces parallel, grinding surface convex 6
From Pit Houses B, C, E, and Surface House
Length: maximum, 13.2 cm.; minimum, 9.6 cm.; average, 11 cm.
Width: maximum, 11.3 cm.; minimum, 9.2 cm.; average, 10.5 cm.
Thickness: maximum, 7 cm.; minimum, 3 cm.; average, 5 cm.

(c) Pebble type, oval in outline, surfaces parallel, grinding surface convex .. 14
From Pit Houses B, D, E, F
Length: maximum, 17.6 cm.; minimum, 10.7 cm.; average, 14 cm.
Width: maximum, 14 cm.; minimum, 7.5 cm.; average, 11 cm.
Thickness: maximum, 9.8 cm.; minimum, 3.7 cm.; average, 6 cm.

(d) Oblong with rounded ends, surfaces parallel; grinding surface slightly convex 12
From Pit Houses C, D, E, G
Length: maximum, 18.4 cm.; minimum, 12.3 cm.; average, 17 cm.
Width: maximum, 12.8 cm.; minimum, 8.6 cm.; average, 10 cm.
Thickness: maximum, 4 cm.; minimum, 2.7 cm.; average, 3.5 cm.

(e) Turtleback type, squarish with rounded ends in outline, surfaces parallel, upper surface convex, grinding surface convex lengthwise, slightly convex crosswise 10
From Pit Houses C, D, E, F, G, and Surface House
Length: maximum, 16 cm.; minimum, 10.7 cm.; average, 13 cm.
Width: maximum, 12.6 cm.; minimum, 9 cm.; average, 11 cm.
Thickness: maximum, 6.8 cm.; minimum, 3.4 cm.; average, 4.5 cm.

(f) Oblong in outline, with one rounded end and one squarish end, wedge shape in cross section, grinding surface convex 1
From Pit House D
Length, 12.9 cm.; width, 9.2 cm.; thickness, 4.1 cm.

Manos with two grinding surfaces:

(a) Oval to roundish in outline, tendency to wedge shape in cross section; surfaces slightly convex 4
From Pit House C
Length: maximum, 13.7 cm.; minimum, 11.5 cm.; average, 13 cm.
Width: maximum, 11.5 cm.; minimum, 9.8 cm.; average, 10 cm.
Thickness: maximum, 4.5 cm.; minimum, 3.2 cm.; average, 3.5 cm.

(b) Oblong in outline, surfaces parallel, smooth, flat 2
From Pit House G and Grinding Bin
Length, 20.5 cm.; width, 10.5 cm.; thickness, 3.5 cm.
Length, 18 cm.; width, 12.2 cm.; thickness, 3 cm.

Materials: limestone, granite, quartzite, trachyte

Manos with one edge curved inward for grip 2

Manos with pit in upper surface for finger grip 5

FIG. 13. Manos. Upper left, turtleback type; upper right, pebble type; middle right, disk type; lower left, oblong type; lower right, wedge-shaped type. Scale 1:3.

RUBBING STONES

(Fig. 14)

Rubbing stones with single grinding surfaces:

(a) Oval or roundish in outline, surfaces parallel; grinding surface generally flat 29
From Pit Houses B, C, D, E, F, G, and Grinding Bin
Length: maximum, 11.5 cm.; minimum, 7.1 cm.; average, 9 cm.
Width: maximum, 10.3 cm.; minimum, 5.5 cm.; average, 7.3 cm.
Thickness: maximum, 5.3 cm.; minimum, 2.2 cm.; average, 3 cm.

(b) Ball shape, with one surface smooth and flat 1
From Trench 3
Diameter, 6.2 cm.; thickness, 5.5 cm.

Rubbing stones with two grinding surfaces:

(a) Rectangular, with ends slightly rounded in outline, surfaces parallel, smooth, slightly convex 6
From Pit Houses D, F, G
Length: maximum, 12 cm.; minimum, 7 cm.; average, 10 cm.
Width: maximum, 9.5 cm.; minimum, 7.8 cm.; average, 8 cm.
Thickness: maximum, 5.6 cm.; minimum, 3 cm.; average, 5 cm.

Materials: limestone, sandstone, quartzite, trachyte

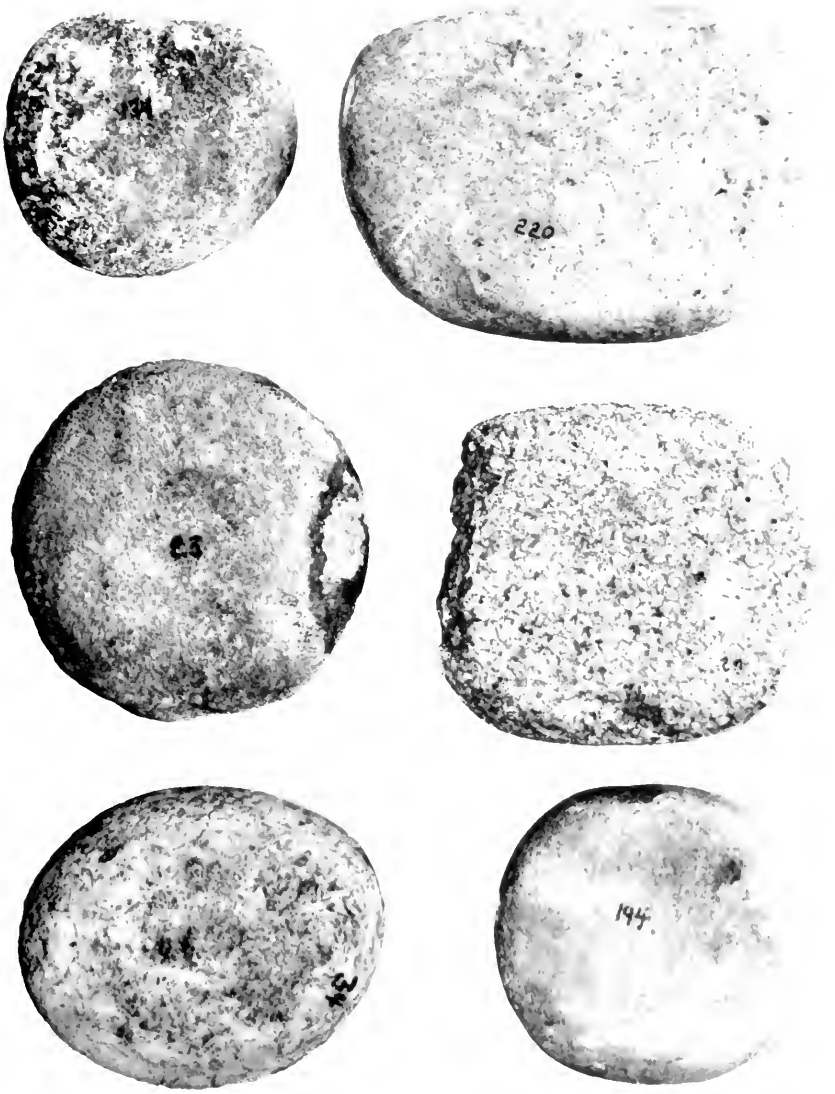


FIG. 14. Rubbing stones. Left column, oval or roundish in outline; right column, rectangular with slightly rounded ends. Scale 1:2.

METATES

(Figs. 15–19)

(a) Slab type, large slab, generally oblong or oval in outline with slightly concave, smooth, upper surface; bottom and sides of boulder unworked; concavity usually less than 1.5 cm. deep 10

From Pit Houses C, D, G, and Grinding Bin

Length: maximum, 80 cm.; minimum, 25 cm.; average, 40 cm.

Width: maximum, 45 cm.; minimum, 20 cm.; average, 23 cm.

Thickness: maximum, 18 cm.; minimum, 4 cm.; average, 7 cm.

(b) Basin type, irregularly shaped boulder with concave upper surface; basin fills all of upper surface and is about 3 cm. deep 5

From Pit Houses B, F, and Surface House

Length: maximum, 47 cm.; minimum, 27 cm.; average, 37 cm.

Width: maximum, 35 cm.; minimum, 23 cm.; average, 27 cm.

Thickness: maximum, 18 cm.; minimum, 8 cm.; average, 10 cm.

(c) Trough type, made from unshaped blocks of stone, trough open at one end only; sides of trough slightly constricted at this end; trough slopes up steeply at other end 8

From Pit Houses A, D, F, G

Length: maximum, 52 cm.; minimum, 38 cm.; average, 46 cm.

Width: maximum, 42 cm.; minimum, 27.5 cm.; average, 8 cm.

Thickness: maximum, 18 cm.; minimum, 8 cm.; average, 15 cm.

Length of trough: maximum, 48 cm.; minimum, 30 cm.; average, 39 cm.

Width of trough: maximum, 28 cm.; minimum, 14 cm.; average, 21 cm.

Depth of trough: maximum, 12 cm.; minimum, 1.5 cm.; average, 8 cm.

(d) Basin type with secondary depression, oval slabs with basin in upper surface and conical secondary depression in center of basin 2

From Pit House G, Trench 5

Length, 42 cm.; width, 30 cm.; thickness, 14 cm.

Length of basin, 30 cm.; width, 18.5 cm.; depth, 3 cm.

Diameter of secondary depression, 10 cm.; depth, 3 cm.

Materials: granite, trachyte

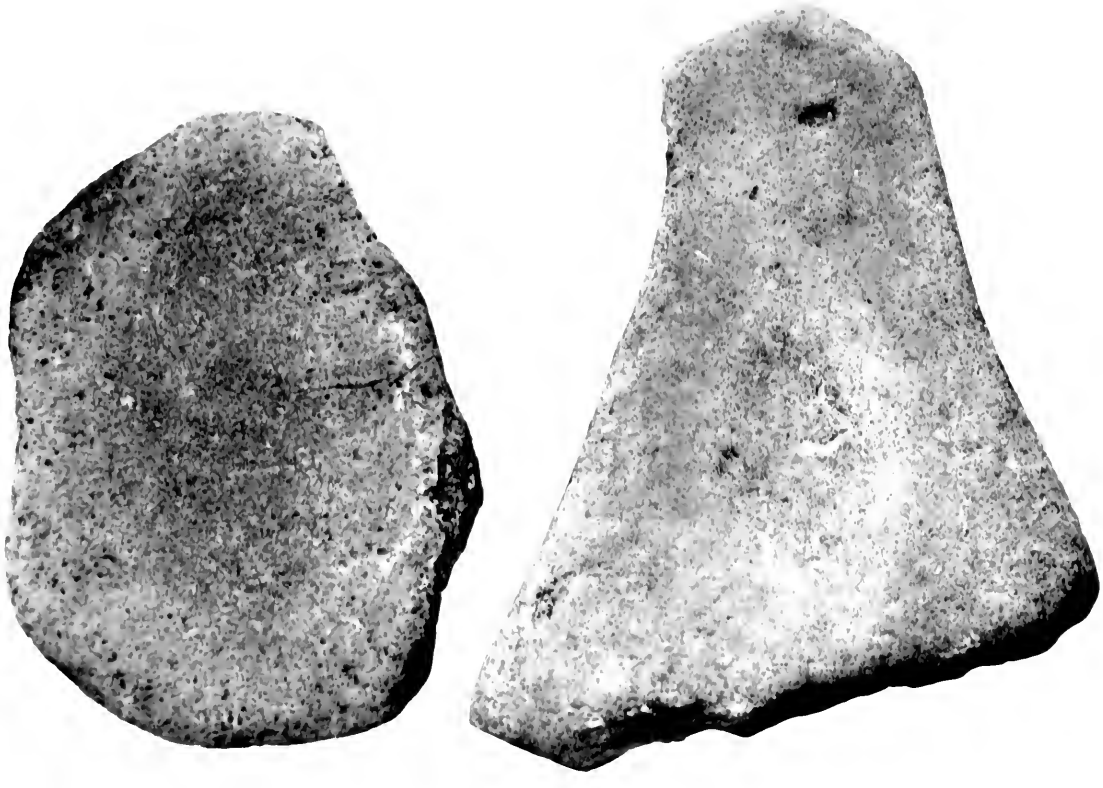


FIG. 15. Metates, slab type. Scale 1:4.

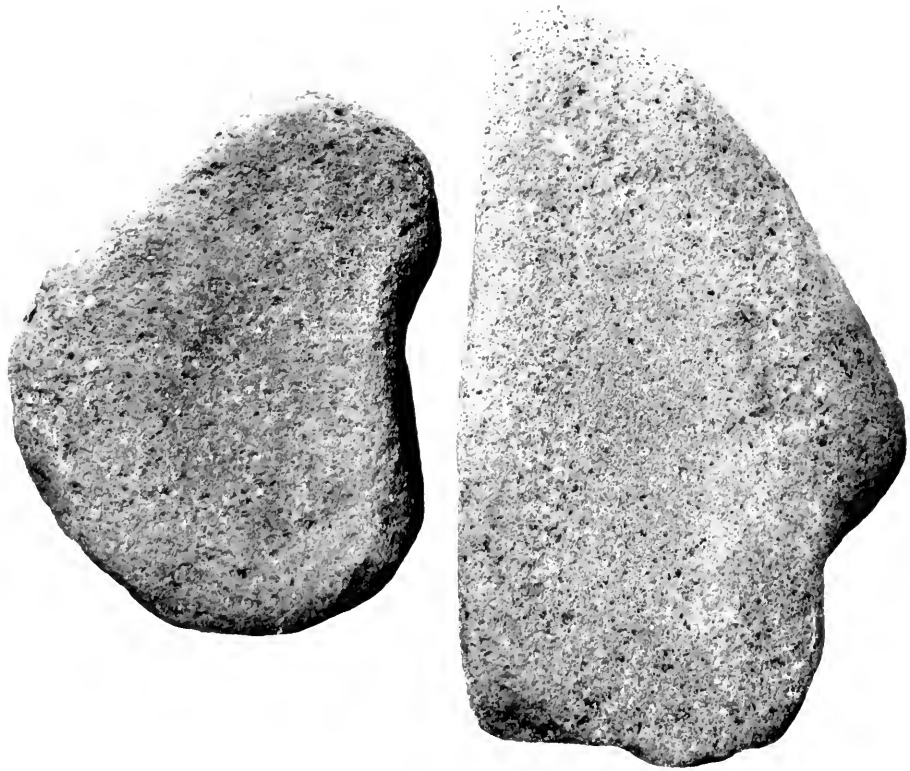


FIG. 16. Metates, slab type. Scale 1:5.

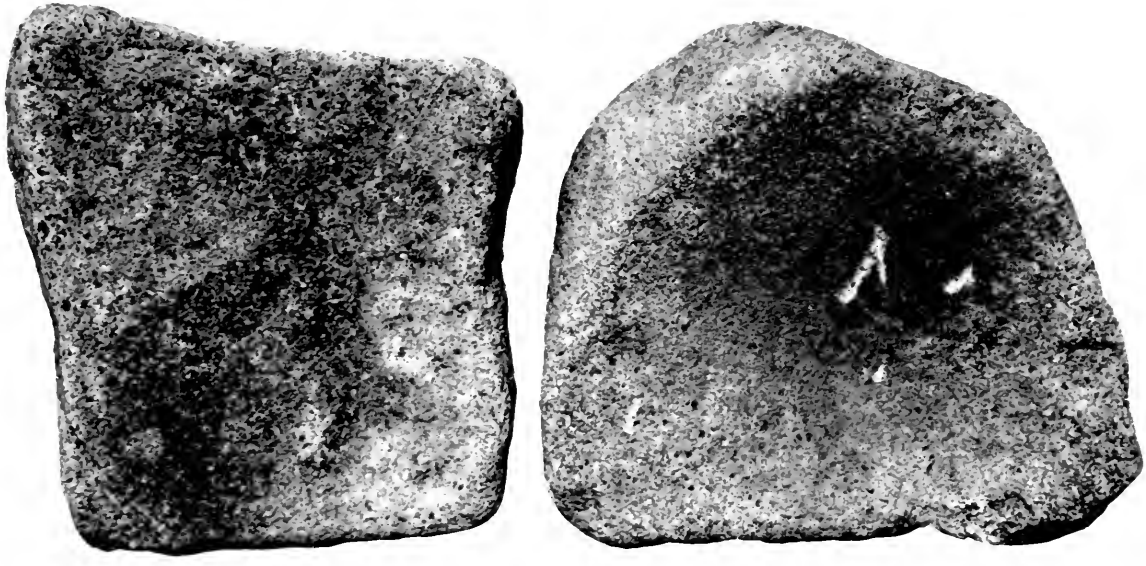


FIG. 17. Metates, basin type. Scale 1:3.

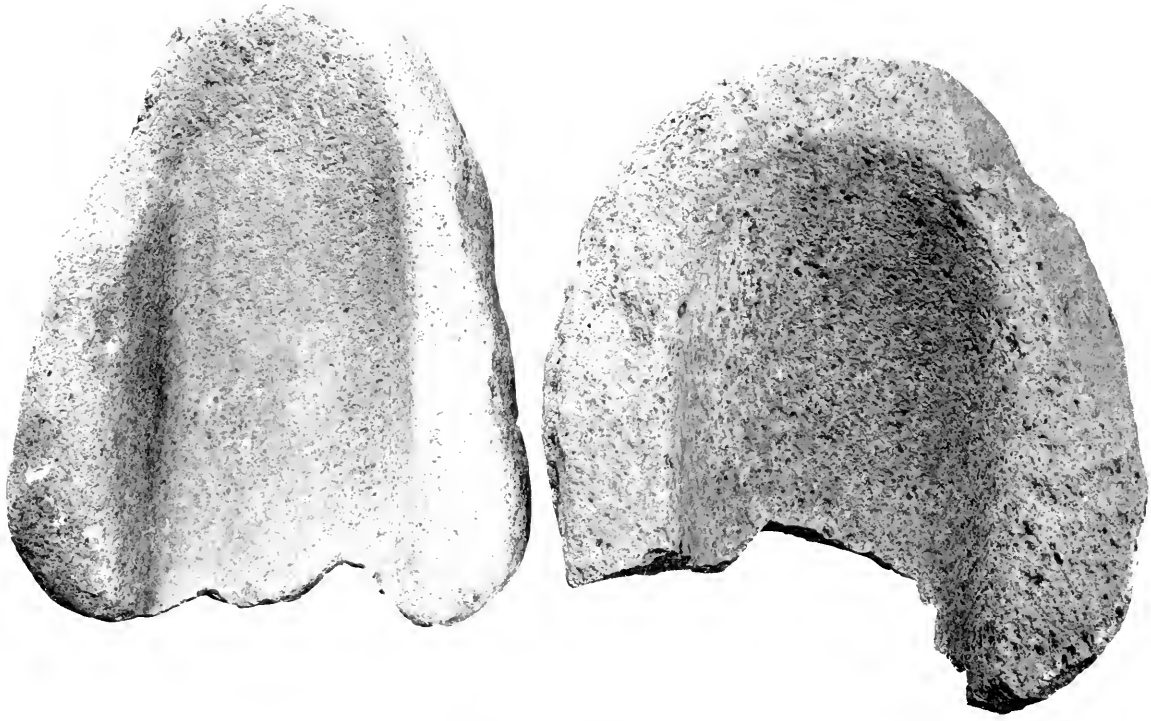


FIG. 18. Metates, trough type. Scale 1:5.

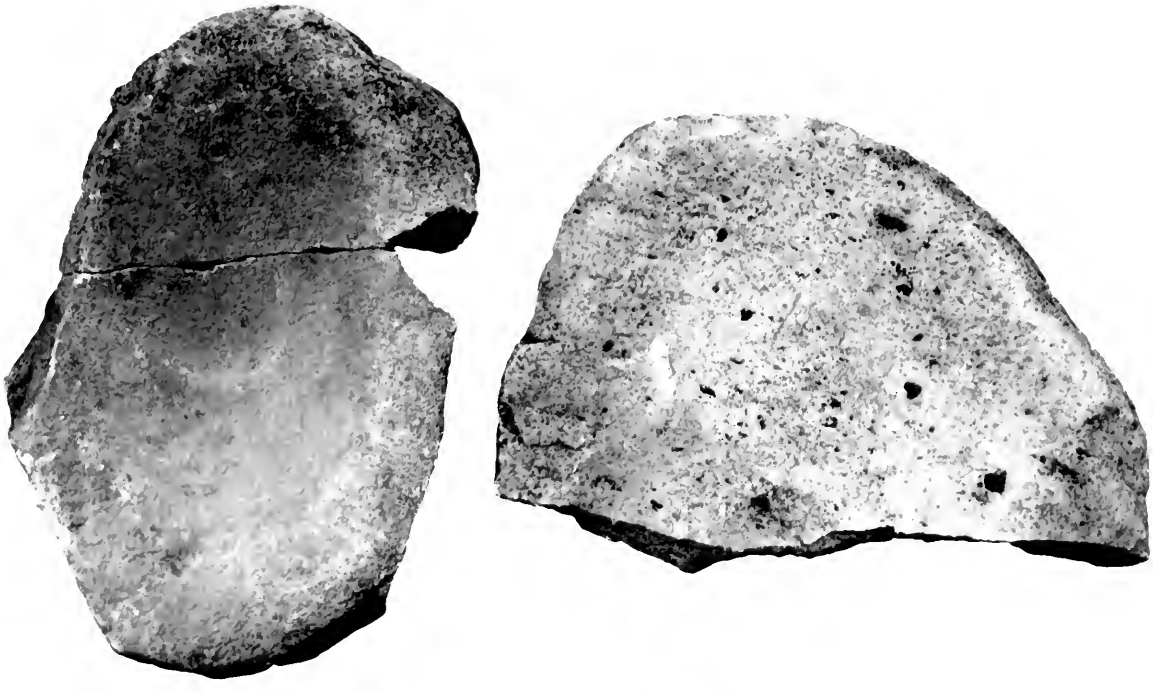


FIG. 19. Metates, basin type, with secondary depression. Scale 1:5.

MORTARS

(Figs. 20–22)

(a) Boulder type, large, roundish or rectangular, unshaped boulders with conical-shaped depression pecked in center of flattish face 4

From Pit Houses D, F, G

Length: maximum, 45 cm.; minimum, 43 cm.

Width: maximum, 45 cm.; minimum, 34 cm.

Thickness: maximum, 27 cm.; minimum, 9 cm.

Diameter of depression: maximum, 17 cm.; minimum, 10 cm.

Depth of depression: maximum, 7 cm.; minimum, 1.5 cm.

Materials: granite, trachyte

(b) Pebble type, large, rough, roundish pebbles with deep, cup-shaped depression in one face, depression pecked; pebble unworked except for depression ... 24

From Pit Houses A, B, D, E, F, G

Length: maximum, 26.3 cm.; minimum, 16 cm.; average, 20 cm.

Width: maximum, 21.3 cm.; minimum, 12 cm.; average, 18 cm.

Thickness: maximum, 16 cm.; minimum, 7.4 cm.; average, 11 cm.

Materials: limestone, tuff

STONE BOWLS

(Figs. 21–22)

Roundish or oval pebbles with depression in one face, depth of depression variable, generally worked all over 6

From Pit Houses D, E, F

Length: maximum, 16 cm.; minimum, 8 cm.; average, 10 cm.

Width: maximum, 13 cm.; minimum, 7 cm.; average, 9 cm.

Thickness: maximum, 5 cm.; minimum, 2.1 cm.; average, 3.5 cm.

Material: tuff

PITTED PEBBLE

(Fig. 22)

Rough, roundish boulder with small, pecked depression in one face 1

From Pit House D

Length, 13.5 cm.; width, 13.5 cm.; thickness, 9.7 cm.

Diameter of depression, 5 cm.; depth, 2.5 cm.

Material: tuff

FIG. 20. Mortar, boulder type. Scale 1:4.

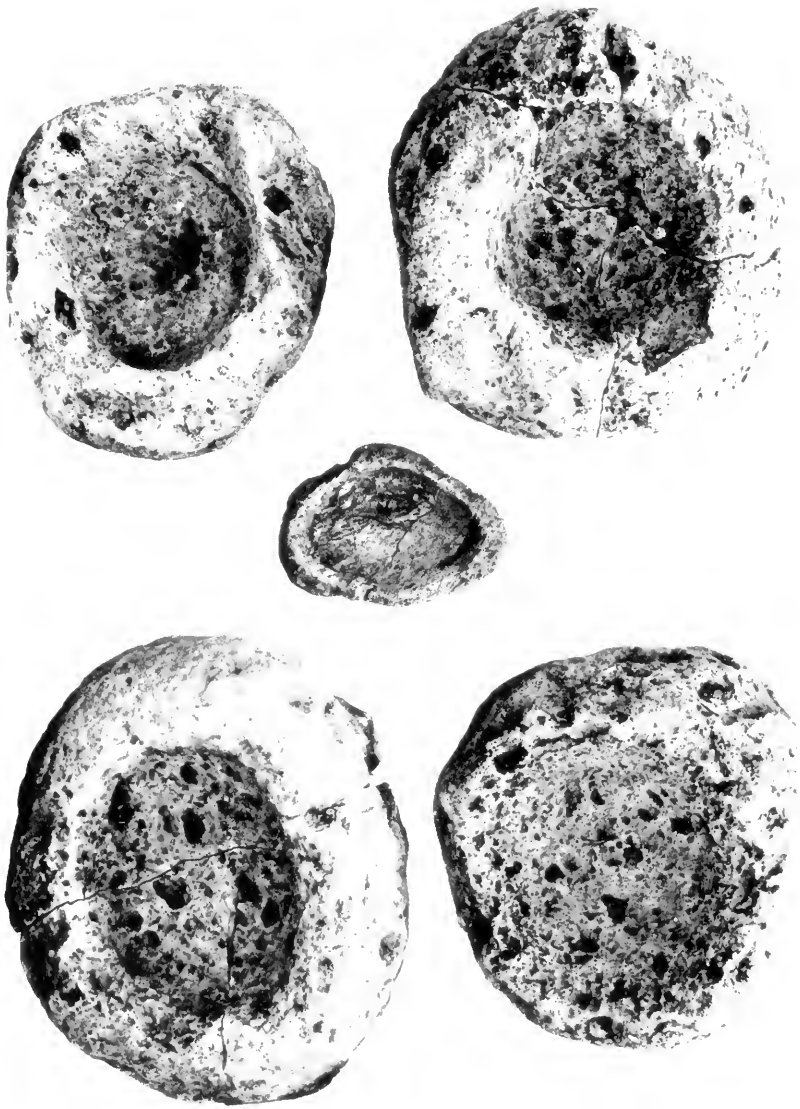


FIG. 21. Mortars, pebble type; center, stone bowl. Scale 1:4.

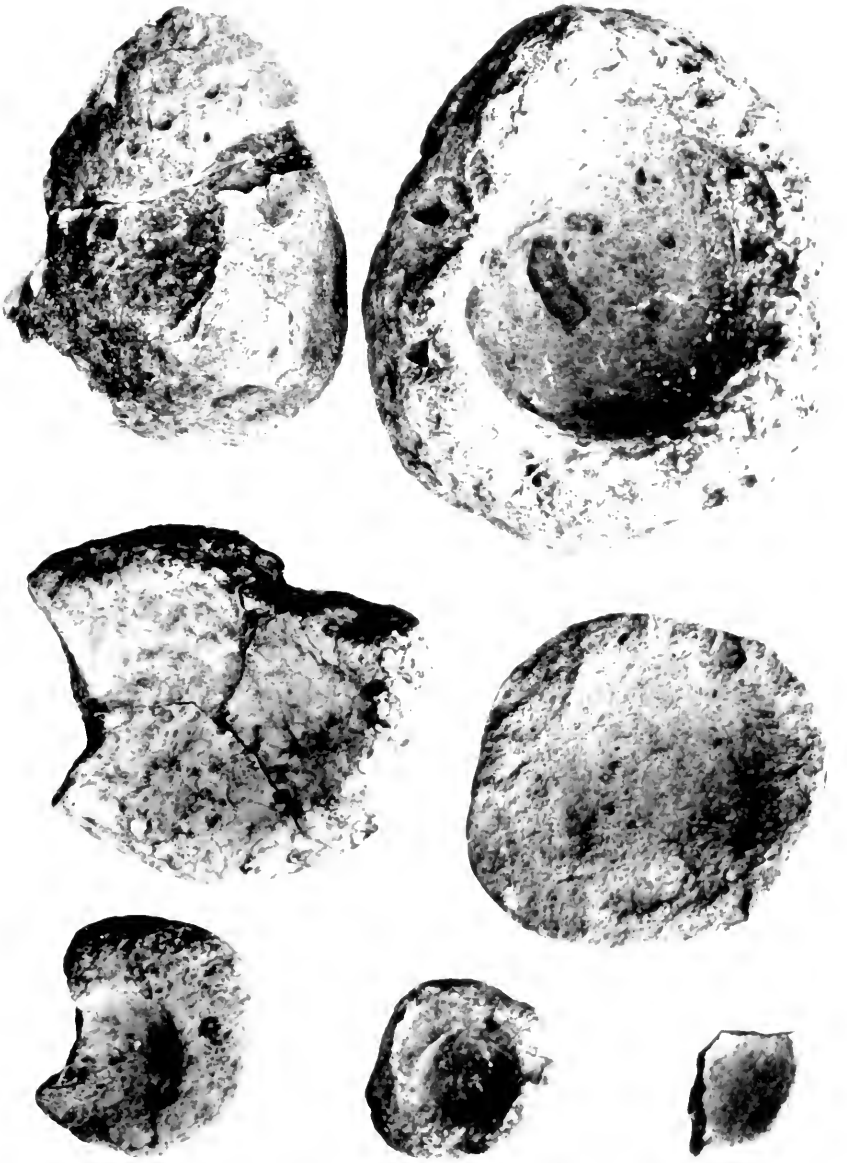


FIG. 22. Upper left, pitted pebble; upper right, pebble mortar; remainder, stone bowls. Scale 1:4.

PESTLES

(Fig. 23)

(a) Multifaced type, roundish pebbles with some pecked and battered flat surfaces 11

From Pit Houses B, C, E, F, G, and Grinding Bin

Length: maximum, 12.6 cm.; minimum, 7.7 cm.; average, 10 cm.

Width: maximum, 11.8 cm.; minimum, 7.5 cm.; average, 9 cm.

Thickness: maximum, 9.6 cm.; minimum, 6.4 cm.; average, 9 cm.

(b) Angular type, handy, long, angular stones, not especially shaped except at one end, which is round and pecked 6

From Pit Houses D, E, F, G

Length: maximum, 25.3 cm.; minimum, 16.8 cm.; average, 20 cm.

Width: maximum, 9.8 cm.; minimum, 6.5 cm.; average, 8.3 cm.

Thickness: maximum, 8.6 cm.; minimum, 5 cm.; average, 7 cm.

(c) Cylindrical type, long roundish, generally cylindrical stones, with pecked surfaces and ends 4

From Pit House F and Grinding Bin

Length: maximum, 25.2 cm.; minimum, 8.4 cm.; average, 7 cm.

Width: maximum, 9.3 cm.; minimum, 7 cm.; average, 8 cm.

Thickness: maximum, 7 cm.; minimum, 4.5 cm.; average, 6 cm.

Material: trachyte

FIG. 23. Pestles. Upper row, angular and cylindrical types (second from left, cylindrical type); lower row, multifaced type. Scale 1:4.

HAMMER STONES

(Fig. 24)

Irregularly shaped, battered and pitted pebbles, mostly roundish and angular... 5
From Pit House D
Length: maximum, 10.7 cm.; minimum, 4.6 cm.
Materials: flint, quartzite

CHOPPERS

(Fig. 24)

Irregularly shaped pebbles, crudely chipped and battered, plano-convex in cross section, one end of core intact..... 5
From Pit Houses B, C
Length: maximum, 13 cm.; minimum, 6.6 cm.
Material: flint

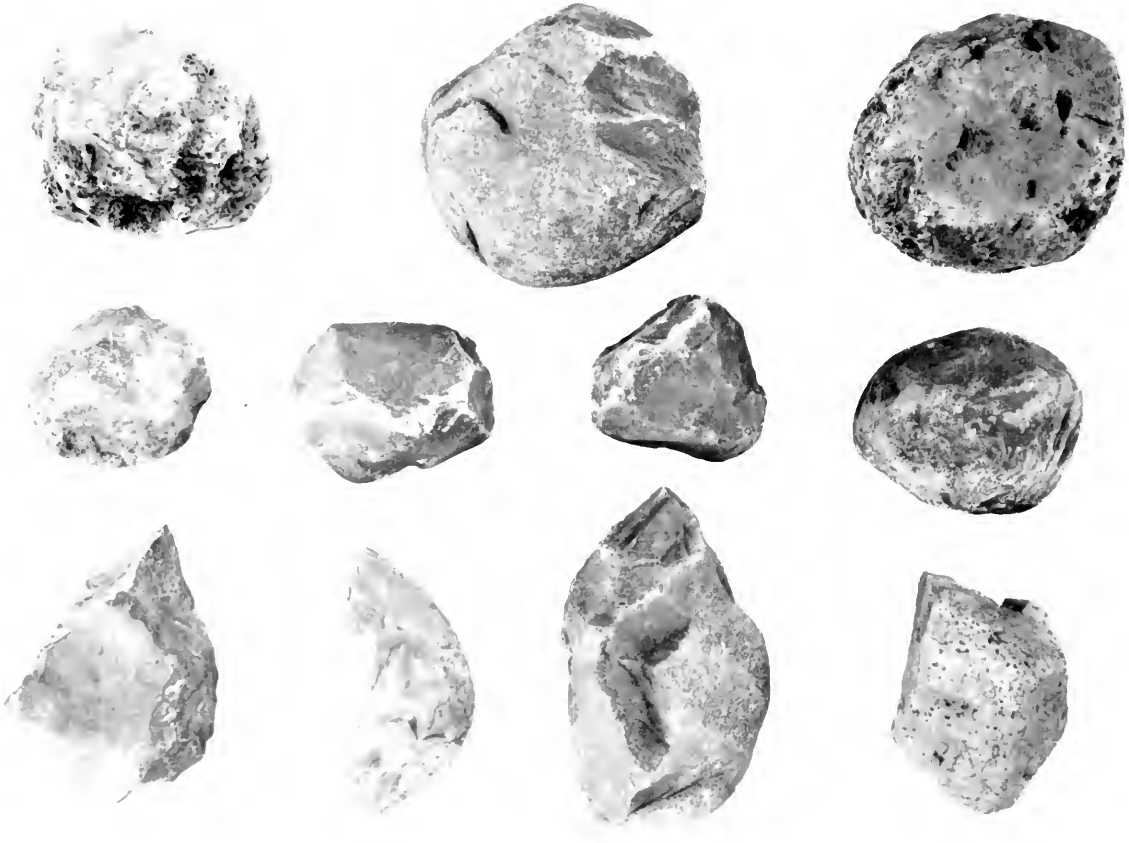


FIG. 24. Upper two rows, hammer stones; lowest row, choppers. Scale 3:8.

MAULS

(Fig. 25)

(a) Oval roundish pebbles with full groove around middle, two laterally flattened 10
From Pit Houses A, B, C, D, E, F, G
Length: maximum, 15.3 cm.; minimum, 12 cm.; average, 12.5 cm.
Width: maximum, 12.1 cm.; minimum, 7.5 cm.; average, 9.5 cm.
Thickness: maximum, 8.6 cm.; minimum, 5.9 cm.; average, 7 cm.

(b) Oval roundish pebbles with three-quarters groove around middle 2
From Pit Houses C, D
Length, 11.8 cm.; width, 8.5 cm.; thickness, 6.5 cm.
Length, 11 cm.; width, 7.5 cm.; thickness, 7 cm.

(c) Oblong in outline with notched sides, otherwise unshaped 2
From Pit House B
Length, 16.5 cm.; width, 11.6 cm.; thickness, 6.8 cm.
Length, 8.6 cm.; width, 7.9 cm.; thickness, 3.9 cm.
Materials: limestone, trachyte

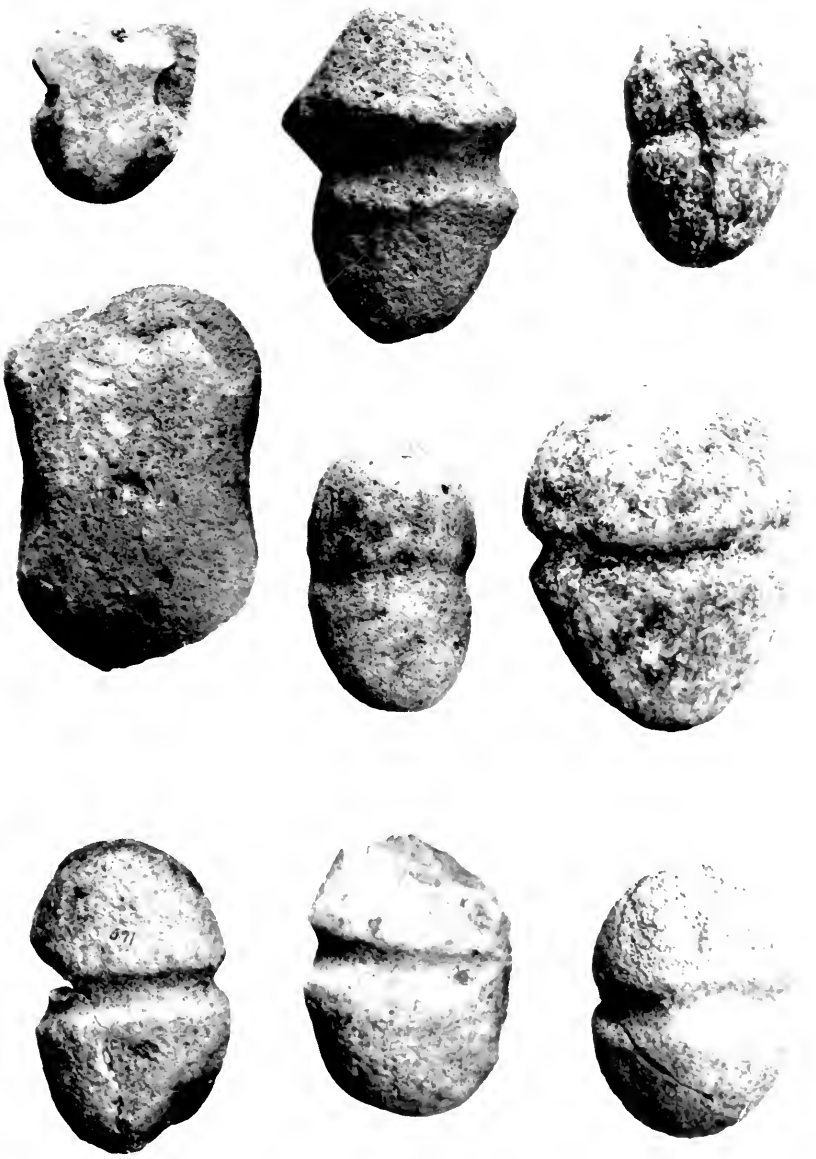


FIG. 25. Mauls. Scale 3:10.

POLISHING STONES

(Fig. 26)

Oval or roundish polished pebbles with smooth, faceted surfaces 13
From Pit Houses B, C, D, E, F, G
Length: maximum, 8.8 cm.; minimum, 4.6 cm.
Materials: quartzite, trachyte, limestone

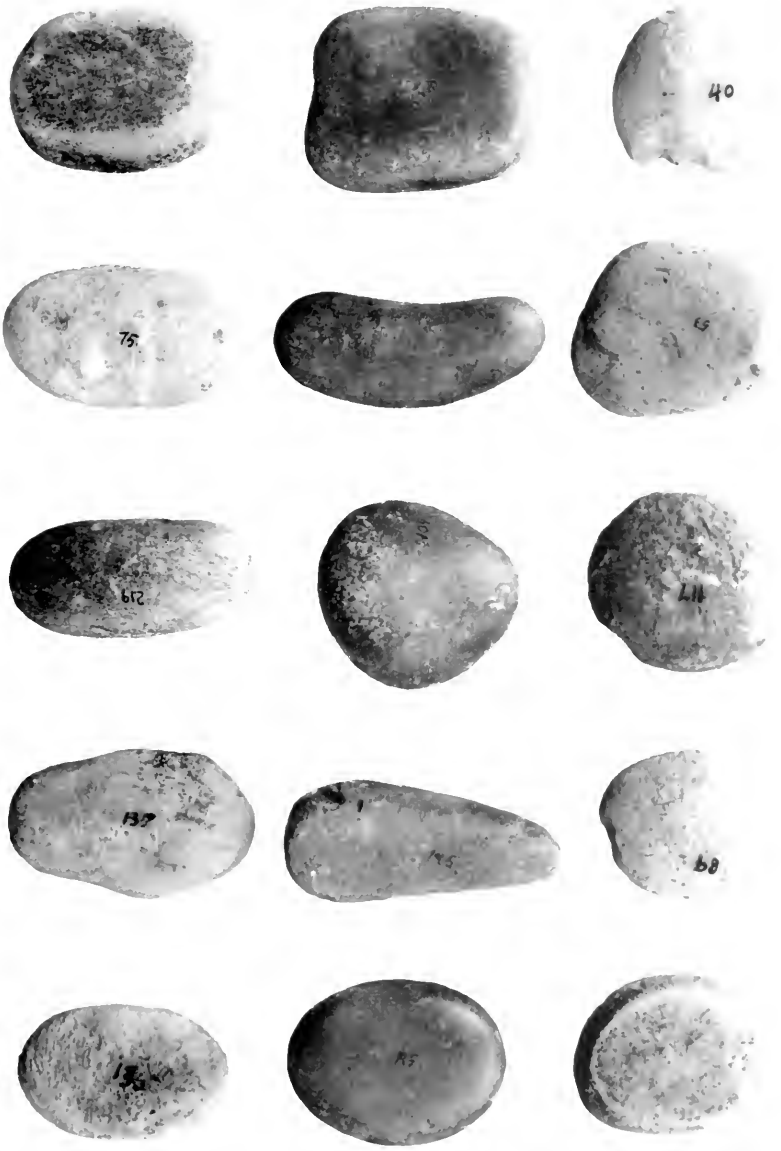


FIG. 26. Polishing stones. Scale 3:8.

PAINT GRINDING STONES

(Fig. 27)

Oblong stones with smooth, slightly concave upper surfaces generally showing traces of pigment, surfaces parallel 6

From Pit Houses A, D, E, F

Length: maximum, 23 cm.; minimum, 13.5 cm.; average, 15.1 cm.

Width: maximum, 11.6 cm.; minimum, 10.5 cm.; average, 10.6 cm.

Thickness: maximum, 9.2 cm.; minimum, 1.7 cm.; average, 3 cm.

Material: trachyte

FIG. 27. Paint grinding stones. Scale 1:2.

ABRADING STONES

(Fig. 28)

(a) Oblong pebble with rounded ends, upper surface concave, lower surface flattish 1
From Pit House G
Length, 8.4 cm.; width, 4 cm.; thickness, 2.1 cm.
Material: limestone

(b) Roughly triangular stone with grooves which show use for grinding 1
From Pit House E
Length, 8 cm.; width, 8 cm.; thickness, 1.9 cm.
Material: sandstone

STONE BALLS

(Fig. 28)

Stone spheroids, possibly natural formations 2
From Pit House F
Diameter, 4.2 cm.
Material: trachyte

CYLINDER

(Fig. 28)

Cylindrical stone, one end roundish, the other end squarish, possibly a pipe blank 1
From Pit House F
Length, 8.4 cm.; diameter, 3.6 cm.
Material: scoria

DISKS

(Fig. 28)

(a) Small stone disk with edges ground smooth 1
From Pit House B
Diameter, 3.8 cm.; thickness, 0.6 cm.
Material: fine-grained sandstone

(b) Thin stone slab, roughly oval in outline, surfaces flattish, edges slightly rounded 1
From Pit House D
Length, 21.2 cm.; width, 17.5 cm.; thickness, 2.3 cm.
Material: trachyte

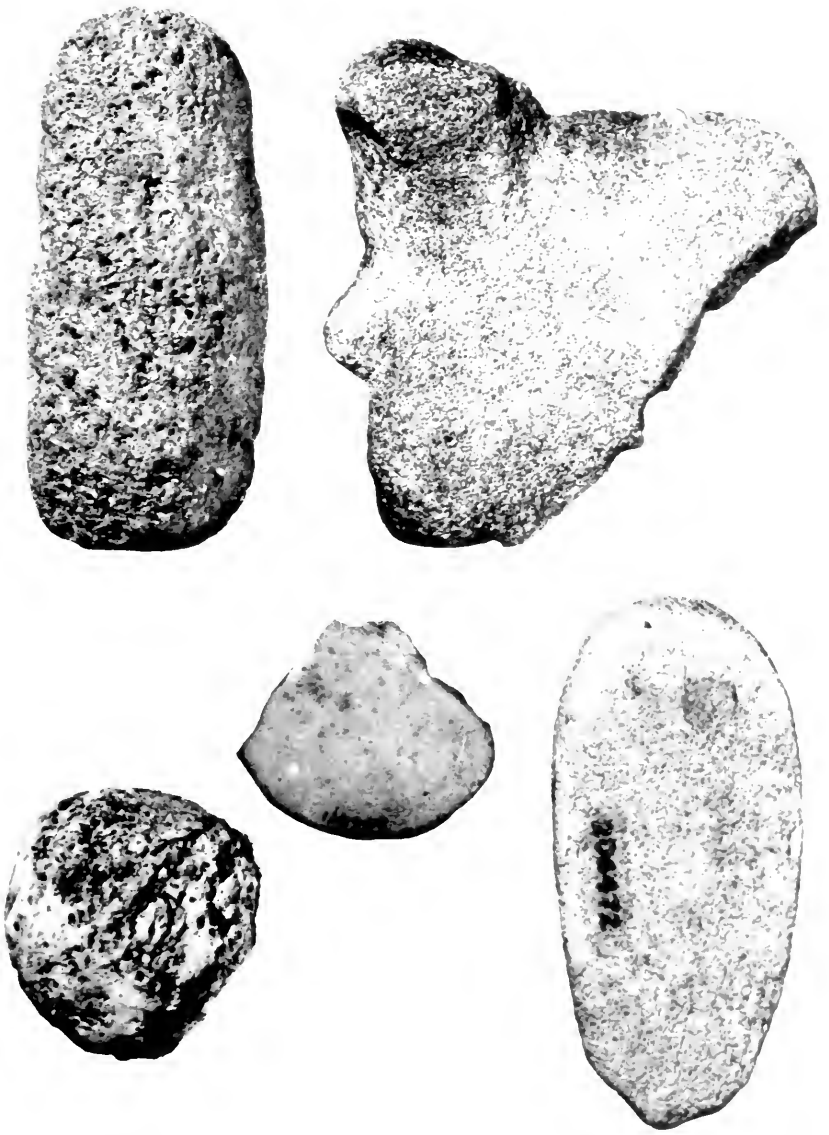


FIG. 28. Upper left, cylinder; upper and lower right, abrading stones; center, disk; lower left, ball. Scale 7:8.

PROJECTILE POINTS

(Fig. 29)

(a) Notched, expanding stem narrower than shoulder, base slightly rounded, or straight, rarely rounded 10
From Pit Houses B, C, D, F, G, and Trenches 3, 5
Length: maximum, 5.3 cm.; minimum, 2.7 cm.; average, 4 cm.

(b) Notched, with straight stem; slender, relatively thin specimens with straight edges 2
From Pit Houses D, E
Lengths: 3.2 cm., 3.5 cm.

(c) Leaf-shaped, with straight or rounded base 12
From Pit Houses B, C, D, G, Trench 3, and Grinding Bin
Length: maximum, 4.9 cm.; minimum, 2.8 cm.; average, 4.2 cm.

(d) Projectile point tips, mostly with convex edges, one with deeply serrate edges 6
From Pit Houses A, B, C, and Surface House
Materials: flint, jasper, chert, quartz, obsidian

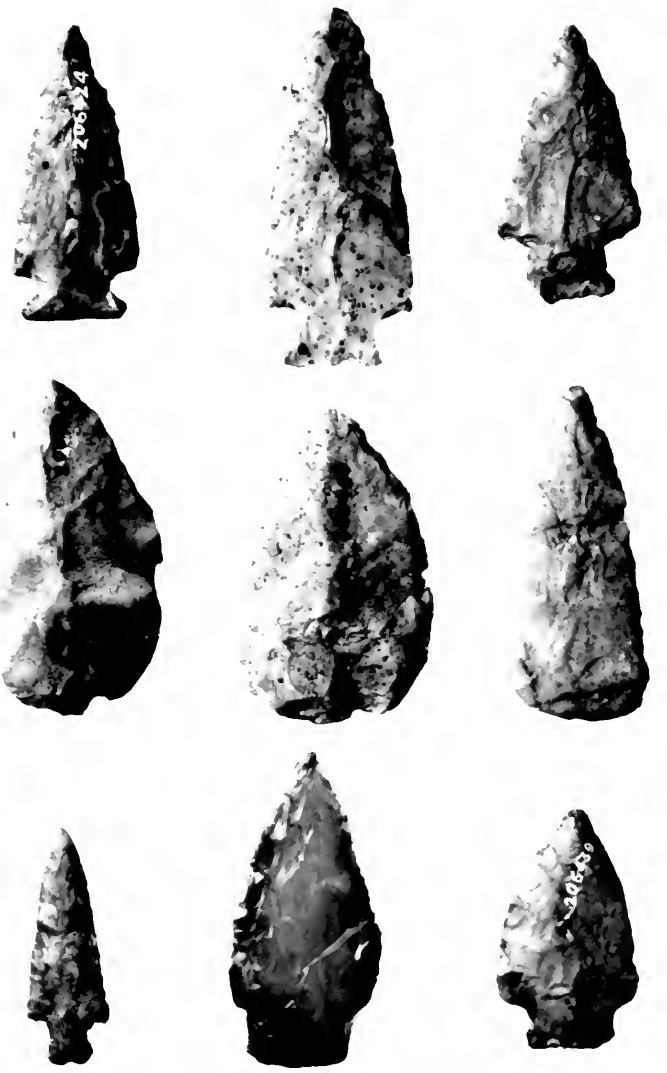


FIG. 29. Projectile points. Upper row, notched, expanding stem; middle row, leaf-shaped; lower row, notched, straight stem. Scale 1:1.

KNIVES

(Fig. 30)

(a) Longitudinal flakes, oblong in outline, with secondary retouch along edges, one spoon-shaped in outline, all plano-convex in cross section 4
From Pit Houses A, B, D, and Trench 3
Lengths: 2.7 cm., 3.2 cm., 3.5 cm., 3.6 cm.

(b) Core implement, leaf shape in outline with rounded base, retouch along edges, percussion chipping on surfaces, made from small core 2
From Pit Houses C, E
Lengths: 4.9 cm., 5 cm.

(c) Finely chipped, notched blades, with secondary chipping on all major surfaces, expanding stem narrower than shoulder, base slightly convex... 2
From Pit House E
Lengths: 7.4 cm., 7.5 cm.

(d) Oblong fragments of blades with secondary chipping on all surfaces..... 3
From Trenches 2, 3
Lengths: 3 cm., 3.4 cm., 4 cm.
Materials: flint, chert, jasper, chalcedony, quartz, obsidian

SCRAPERS

(Fig. 30)

Flake implements with percussion chipping on surfaces and retouch along one edge..... 3
From Pit Houses B, E, F
Lengths: 3.9 cm., 5 cm., 6.7 cm.
Materials: flint, jasper, quartzite

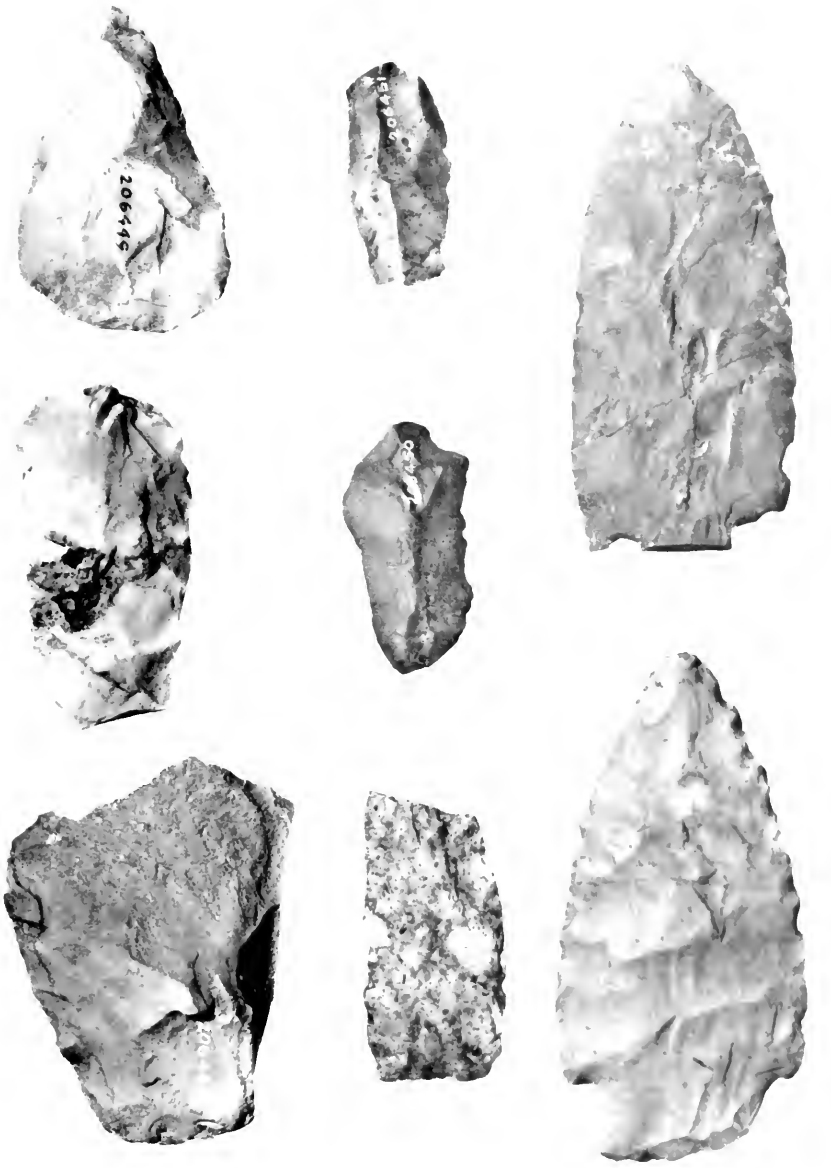


FIG. 30. Knives and scrapers. Upper and middle left, core implements; upper and middle center, longitudinal flakes; right column, notched blades; lower left, scraper; lower center, fragment of oblong type. Scale 6:7.

PENDANTS

(Fig. 31)

(a) Zoomorphic image, carved in round, wings folded, head crested, incisions on wings and tail to represent feathers, hole drilled through body for suspension 1

From Pit House F

Length: 5 cm.; width, 2 cm.; height, 2.5 cm.

Material: soapstone

(b) Tabular pendants, rectangular in outline, perforated near one end or in center, hole drilled from one side 19

From Pit House D and Antechamber

Length: maximum, 1.3 cm.; minimum, 7 mm.

Width: maximum, 1.3 cm.; minimum, 5 mm.

Material: turquoise

BRACELETS

(Fig. 31)

Thin sections of shell 5

From Pit Houses B, C, with burials

Diameters: 6.5 cm., 7.2 cm., 8.2 cm.

Material: *Petuneulus giganteus* Reeve. (Identified by Dr. F. Haas, Curator of Lower Invertebrates at Field Museum.)

BEADS

(Fig. 31)

(a) Disk of bone perforated through center, hole drilled from one side, scratched across one surface, other surface smooth 1

From Pit House E

Diameter: 1.2 cm.

(b) Short sections of hollow shaft of long bone, ends polished smooth 2

From Pit Houses D, E

Lengths: 2 cm., 3 cm.

Diameters: 1.4 cm., 9 mm.

DICE

(Fig. 31)

Elliptical slips of bone with scratches across one surface, the other surface smooth and polished 2

From Pit House E

Lengths: 2.2 cm., 2.6 cm.

Widths: 1 cm., 1.2 cm.

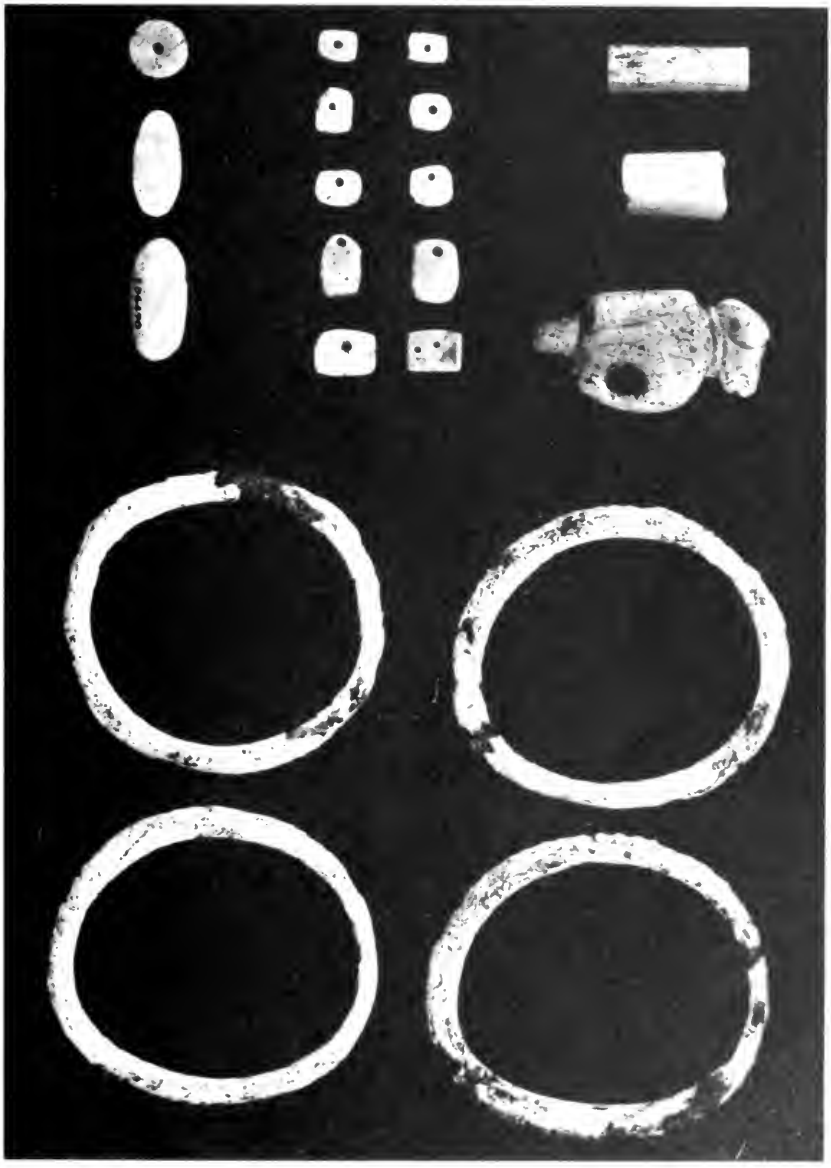


FIG. 31. Ornaments. Upper left, disk bead and discs; upper center, turquoise pendants; upper right, tubular bone beads and stone bird-effigy; lower two rows, shell bracelets. Scale 2/3.

AWLS

(Fig. 32)

(a) Head of bone unworked except by original splitting, other end ground and polished to sharp point, two with side notch, remainder without..... 9

From Pit Houses C, D, E

Length: maximum, 20.5 cm.; minimum, 4.9 cm.; average, 16 cm.

Materials: *Odocoileus hemionus* (mule deer); *Canis?*

(b) Head of bone almost wholly removed, other end ground and polished to sharp point, made from split bone..... 1

From Pit House C, with burial 13

Length: 13 cm.

Material: *Canis?*

(c) Section of split long bone, head of bone wholly removed, other end ground and polished to sharp point, two with blunt end cut off at angle, three with squarish blunt end..... 5

From Pit House C and Trenches 3, 5

Length: maximum, 12.5 cm.; minimum, 10 cm.; average, 11 cm.

(d) Sharpened bone splinters..... 2

From Pit House C, Trench 3

Lengths: 6.8 cm., 7.7 cm.

PINS OR SKEWERS

(Fig. 32)

Split long bone, carefully worked, head wholly removed, worked to blunt rounded end, other end ground and polished to point, roundish in cross section..... 4

From Pit House C

Lengths: 20.7 cm., 18.8 cm., 12.1 cm., 9 cm. (fragment)

NEEDLE

(Fig. 32)

Flattish section of split long bone with eye drilled through from one side; 3 mm. from rounded blunt end, other end broken..... 1

From Pit House C

Length: 8.8 cm.

FIG. 32. Bone tools. Upper left, first two, awls, type *c*; upper right, last four, awls, type *a*; lower left, first three, pins; lower center, awl, type *b*; lower row, fifth object, needle; lower row, last two, awls, type *d*. Scale 1:2.

ANTLER FLAKER

(Fig. 33)

Ends of antler tines which show use as flakers 2
From Pit House C
Lengths: 5.2 cm., 12.9 cm.
Material: *Odocoileus hemionus* (deer antler)

ANTLER RUBBER OR POLISHER

(Fig. 33)

Section of antler, one end of which is slightly beveled and polished; one specimen includes basal portion and burr 4
From Pit Houses C, D, G, and Surface House
Lengths: 7.3 cm., 6 cm., 5.6 cm., 4.6 cm.
Widths: 3.1 cm., 2.8 cm., 2.7 cm., 2.3 cm.
Material: *Odocoileus hemionus* (deer antler)

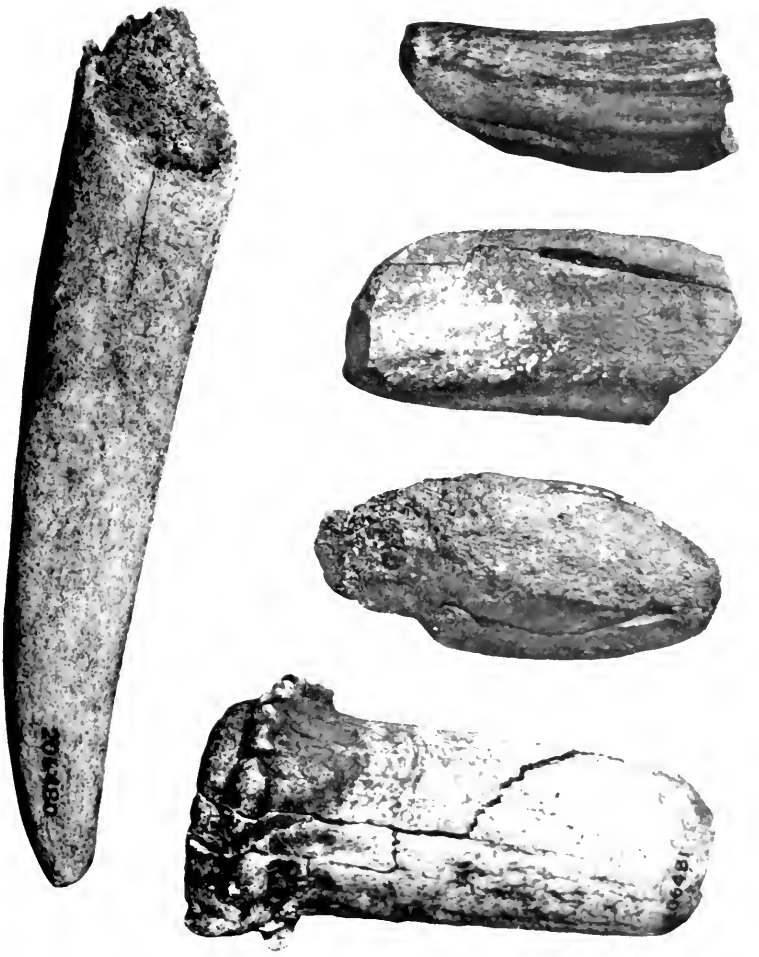


FIG. 33. Antler tools. Left, flaker; right, polishers. Scale 1:1.

WORKED SHERDS

(Fig. 34)

(a) Small pottery disks with edges ground smooth 25
From Pit Houses A, C, D, E, F, and Trenches 2, 6
Diameter: maximum, 4.5 cm.; minimum, 2.7 cm.; average, 3 cm.
Materials: Unpolished Brown, Polished Red, Alma Plain

(b) Large pottery disks with edges ground smooth 3
From Pit Houses C, D
Diameters: 6.3 cm., 6.6 cm., 7.2 cm.
Material: Alma Plain

(c) Pottery disks perforated through center, edges ground smooth 5
From Pit Houses C, D, F, G, and Trench 3
Diameters: 3.7 cm., 3.4 cm., 4.1 cm., 2.7 cm., 3.7 cm.
Material: Polished Red

(d) Irregularly shaped sherds with large number of holes drilled through, possibly from bottom of colander 2
From Pit House D, Trench 3
Lengths: 5.7 cm., 2.8 cm.
Widths: 2.4 cm., 4.4 cm.
Material: San Francisco Red

(e) Keystone-shaped sherds with edges ground smooth, possibly scoops 2
From Pit House D
Lengths: 8.3 cm., 7.9 cm.
Widths: 7.7 cm., 6.2 cm.
Material: San Francisco Red

PIPES

(Fig. 34)

(a) "Cloud Blower" type, conical or funnel shape, greatest diameter at bowl end, tapering from bowl to stem end, minute hole at stem end, bowl and stem in one piece, one with bowl decorated with punctate design 3
From Pit Houses C, G, F
Lengths: 3.5 cm., 4.5 cm., 5.8 cm.
Diameters: 2.6 cm., 3.7 cm.
Material: Alma Plain

(b) Cylindrical or tubular, tapering slightly towards bowl end, greatest diameter about seven-eighths distance from stem end 4
From Pit Houses C, D, E, F
Lengths: 7.7 cm., 5.3 cm., 3 cm., 6.7 cm. (broken)
Diameters: 5.4 cm., 5.3 cm., 4.6 cm., 2.3 cm.
Material: scoria, rhyolite

JAR COVER

(Not illustrated)

Lump of clay which has been pressed into jar mouth, mushroom shape, shows impression of jar rim 1
From Surface House
Diameter, 10.6 cm.; thickness, 4.5 cm.
Material: baked clay

FIG. 34. Miscellaneous objects. First and second columns, worked sherds; third column, pipes; fourth column, miniature vessels. Scale 1:2.

LOCATIONS AND ASSOCIATIONS OF ARTIFACTS BY PIT HOUSES

Pit House A: Metate, pebble mortar, maul, paint grinding stone, projectile point, knife, worked sherd.

Pit House B: Mano, rubbing stone, metate, pebble mortar, pestle, chopper, maul, polishing stone, disk, projectile point, knife, scraper, bracelets.

Pit House C: Mano, rubbing stone, metate, pestle, chopper, mauls, polishing stone, projectile point, knife, bracelet, antler flaker, antler rubber, awls, pins, needle, worked sherd, pipe.

Pit House D: Mano, rubbing stone, metate, boulder mortar, pebble mortar, stone bowl, pestle, hammer stone, mauls, polishing stone, paint grinding stone, projectile points, knife, pendants, beads, antler rubber, awls, worked sherds, pipe.

Pit House E: Mano, rubbing stone, metate, pebble mortar, stone bowl, pestle, maul, polishing stone, paint grinding stone, abrading stone, projectile point, knife, scraper, beads, dice, awl, worked sherds, pipe.

Pit House F: Mano, rubbing stone, metate, boulder mortar, pebble mortar, stone bowl, pestle, maul, polishing stone, paint grinding stone, stone ball, cylinder, projectile point, scraper, pendant, worked sherd, pipe.

Pit House G: Mano, rubbing stone, metate, boulder mortar, pebble mortar, pitted pebble, pestle, maul, polishing stone, abrading stone, projectile point, antler rubber, worked sherd, pipe.

Surface House: Mano, metate, projectile point, antler rubber, jar cover.

IDENTIFICATION OF UNWORKED BONE

Canis latrans (coyote)
Canis familiaris (domestic dog)
Odocoilcus hemionus (mule deer)
Odocoilcus virginianus (white-tailed deer)
Ovis canadensis (mountain sheep)
Felis sp. (possibly lynx)
Thomomys sp. (possibly pocket gopher)
Meleagris galloparo (turkey)
Some fragments, possibly sage hen

GLOSSARY

Abrading stone. A grooved stone of granular texture, probably used for grinding arrow and atlatl-dart shafts smooth.

Antler flaker. An antler tip tool, the tip of which shows the sort of bevel and wear that results from chipping flint.

Antler polisher. A section of antler, one end of which has been rounded, beveled, and polished by use in polishing hides.

Awl. A bone implement with a fine point, usually made from bird or animal long bones.

Bead. A small, ornamental object, perforated through the center and possibly strung in a necklace.

Bowl (stone). A small, deeply concave stone object, characteristically worked all over.

Bracelet. A ring of large enough diameter to be slipped over the hand and used as an arm, or wrist, ornament.

Chopper. A crudely chipped core implement with a sharp edge and point, shaped much like the earlier forms of European coup-de-poing.

Hammer stone. A small, rough, rounded, battered pebble which shows marks of use.

Mano. The upper milling stone used in conjunction with the metate. It has one or more flat or slightly curving grinding surfaces, with a minimum length of about 10 cm. and a width of about 8 cm.

Maul. A stone implement with rounded blunt ends, grooved or notched for hafting in the middle.

Metate. The nether milling stone used in conjunction with the mano; a large slab of stone with a troughed or shallow basin, grinding surface usually running lengthwise of the slab.

Milling stone. Any stone implement used in grinding grain, seeds, nuts, pigments, tempering material for pottery, etc.

Mortar. A stone with a concavity large enough to contain the material to be ground and which shows marks of use in conjunction with the pestle.

Paint grinding stone. A stone about the size and shape of a mano with a slightly concave upper surface which usually shows signs of pigment.

Pendant. A small, perforated, ornamental object to be worn hanging from a cord. The perforation is usually off center.

Pestle. A hand stone with a rounded blunt end, the upper milling stone usually used in conjunction with the mortar.

Pin (bone). A long, straight, slender, pointed object, usually round or oval in cross section.

Pitted pebble. A large, roundish pebble with a small depression in one face.

Rubbing stone. A small mano usually less than 10 cm. and more than 7 cm. long.

IV. POTTERY

BY

JOHN RINALDO

Three main types of pottery were found at the SU site: Alma Plain, already well-known and described, and two new types.

I have not assigned permanent names to these new types because they may be identical with types first found but not yet described by the staff of Gila Pueblo. It is contrary to the dictates of common sense and to the ethics of responsible archaeologists to call one pottery type by two different names. Therefore, since the staff of Gila Pueblo has not yet made public its names and descriptions of these types, and since the identity of these types has not been established to the satisfaction of all concerned, we have decided that it is better temporarily to call our types as follows: Unpolished Brown Pottery and Polished Red Pottery. Then, when the identity of these types has been either established or disproved and more complete descriptions published, we shall adopt permanent names. When I say that the SU pottery is "identical" with undescribed types, I am basing that statement on the careful study of our 12,000 sherds and on direct comparison with the sherds at Gila Pueblo. The accompanying descriptions are only of the pottery found at SU site and should not be construed as applying to the pottery at Gila Pueblo until this identity has been established.

Slightly over one-half of all the pottery recovered was Alma Plain, a little more than one-quarter Unpolished Brown, and the remainder Polished Red. The exact percentages may be learned by consulting the table on page 84.

The color standards herein used are from Maerz and Paul (1930).

UNPOLISHED BROWN

(Temporary Name)

PASTE:

Color: The color of the core, when not uniform throughout, changes from gray to brown about 2 mm. from the surface. Typical color is Cork (12B7); the range is through the browns such as Beaver (15A6) to black.

Inclusions: Coarse, rounded and angular fragments ranging over 1 mm. in diameter, typically white, silver, and black. The white fragments are dull and opaque, the silver and black highly lustrous.

Texture: Granular and slightly friable, paste heavily tempered.

Fracture: Devious; fragments break off at slight angle to the vessel's surface.

FIG. 35. Upper left, Unpolished Brown, globular jar; remainder, Alma Plain, globular jar, bowl, and wide-mouth jar. Scale 1:2.

SURFACE FEATURES:

Color: Typical color Cork (12B7), range to lighter browns and tans and to darker browns such as Beaver (15A6), also to gray and black. Fire clouds occur frequently.

Hardness: 3.5–4.5 (Mohs' scale).

Evenness: Surfaces are not slipped or polished, but they are smoothed and the coiling lines are obliterated. They present a matte surface through which the tempering material protrudes. Brush and scraping marks show frequently on the interiors of jars and occasionally on the exteriors.

Texture: Slightly granular, uneven. No intentional scoring or texturing.

Lustre: Dull.

Slip: None.

THICKNESS OF VESSEL WALLS: 5 mm. to 11 mm., average 7 mm.

FORMS: Globular jar without neck, hemispherical bowls, wide-mouth jars, ladles (Fig. 35).

COMPARISON: Unpolished Brown differs from Alma Plain in the following characteristics: it is unpolished, is tempered with coarser material, is provided with thicker walls, and has no textured variants.

ALMA PLAIN

This type has already been described in great detail by Haury (1936b, p. 32) and others. The pottery of this type from the SU Canyon site corresponds in every particular, except possibly form, to that described. Certain forms appear more frequently in this period than in later periods. These forms are globular jars without necks, hemispherical bowls, narrow-mouth jars with oral part drawn out from the body, and wide-mouth jars with flaring rims (Fig. 35).

POLISHED RED

(Temporary Name)

(Fig. 36)

PASTE:

Color: Typical color Army Brown (6A10), or a brown with more red in it (6A11). A thin gray core 2 mm. in thickness, changing to brown towards the surface, was found in about one-third of the sherds examined.

Inclusions: Both rounded and angular fragments, generally opaque white in color, but there are also some silvery, lustrous, semi-transparent fragments.

Texture: Granular, moderately tempered with occasional very coarse fragments more than 1 mm. in diameter. Most of the inclusions are smaller.

Fracture: Devious, but the edges are not friable.

SURFACE FEATURES:

Color: Typical color rosy red (5H8, 7H8), ranging through brownish red (6I10).

Hardness: 3.5 to 4.5 (Mohs' scale).

Evenness: Occasional slightly undulating surface, but dimpled surface lacking. Interior surfaces of jars show scraping marks.

Texture: Smooth, polished.

Lustre: Medium lustrous.

FIG. 36. Polished Red narrow-mouth jar. Scale 1:3.

Slip: A thin layer of clay of different color from the body clay is apparent on examination with a ten-power lens.

Defects: Abrasion of slip quite frequent.

THICKNESS OF VESSEL WALLS: 4 mm. to 9 mm., average 6 mm.

FORMS: Shallow bowls, narrow-mouth jars with oral part drawn out from the body. Lip surfaces rounded, rims direct.

COMPARISON: The following characteristics of Polished Red differentiate it from San Francisco Red: lack of finger-dented surfaces, deeper rose color, rarity of marks of polishing tool, coarser paste, less highly polished and less lustrous surface, narrow-mouth jar form.

FIG. 37. Left, Alma Scored wide-mouth jar; right, Alma Plain wide-mouth jar. Scale 1:3.

MISCELLANEOUS AND LATER TYPES

In the reoccupied pit house (Pit House D), sherds and portions of vessels of three other pottery types were found. These pottery types are transitional variants of Three Circle Red-on-White, Alma Scored, and Alma Neck Banded.

A half bowl and twelve other sherds of Three Circle Red-on-White were found. The half bowl presents a quartered design

FIG. 38. Three Circle Red-on-White bowl. Scale 1:2.

made up of non-interlocking scrolls (Fig. 38). The colors are the gray and red firing variants of the usual colors. The design and colors of these sherds indicate that they were made in a transitional period between Three Circle Red-on-White and Mimbres Bold-face times when curvilinear designs were being introduced, but before the interlocking scroll came into use, and when the Mogollon people were still experimenting at producing Black-on-White. The other sherds (all

from one jar), also show a curvilinear design, with one exception. This sherd shows a solid element with a serrate edge. The color in these sherds corresponds more closely to the usual Red-on-White.

Half of a wide-mouth jar of Alma Scored and half a jar of Alma Neck Banded were also recovered from this same pit house.

One large sherd showing a basketry impression was found in Pit House E. With the exception of this basketry-impressed sherd, all sherds which did not fall into the three main categories were found within Pit House D. No other painted, scored, or decorated sherds were recovered from any of the other pit houses, the surface house, or the trenches. All of the sherds from these locations are plain and undecorated and fall within the three categories of those pottery types thought to be basic to the later Mogollon types.

TABLE 1

Trench	Alma Plain		Unpolished Brown		Polished Red		Total
	No.	Per cent	No.	Per cent	No.	Per cent	
I	78	**64**	33	**27**	11	**9**	122
III	326	**41**	337	**43**	125	**16**	788
IV	6	**43**	4	**28.5**	4	**28.5**	14
V	82	**74**	17	**15**	12	**11**	111
VI	4	**44.5**	5	**55.5**	...	....	9
VII	54	**43**	57	**45**	15	**12**	126
VIII	36	**57**	19	**30**	8	**13**	63
IX	27	**41**	21	**32**	18	**27**	66
Pit House A							
Fill	260	**30.5**	415	**48.5**	179	**21**	854
Floor	20	**10.5**	132	**68.5**	40	**21**	192
Pit House B	1087	**68.5**	162	**10**	339	**21.5**	1588
Pit House C							
Fill	1063	**65**	222	**13.5**	349	**21.5**	1634
Floor	183	**70**	22	8	58	**22**	263
Pit House D							
Fill	431	**55**	244	**31**	111	**14**	786
Floor	384	**67.5**	97	**17**	87	**15.5**	568
Pit House E							
Fill	692	**42.5**	574	**35**	364	**22.5**	1630
Floor	465	**72**	55	**8.5**	127	**19.5**	647
Pit House F							
Fill	190	**34**	280	**49.5**	93	**16.5**	563
Floor	97	**43**	83	**37**	46	**20**	226
Pit House G							
Fill	430	**43.5**	310	**31.5**	246	**25**	986
Floor	40	**49**	17	**21**	25	**30**	82
Surface Room	122	**28**	248	**57**	65	**15**	435
Grand total	6077	**52**	3354	**28.5**	2322	**19.5**	11,753

V. SUMMARY

The excavation of the SU site (named after a near-by canyon and ranch) during the 1939 field season revealed seven pit houses, one surface house, several burials located outside as well as inside the houses, and a number of pits. Numerous bone and stone artifacts and about twelve thousand sherds of plain, undecorated pottery were recovered.

The shapes of the pit houses were round or variations of round; none were square. Every house (except G) was provided with a side entrance on the east. House floors consisted generally of gravel and adobe. In the floors of all houses were pits of various shapes and varying depths. In these pits were calcined stones and bones. It is assumed that some of these pits were used for cooking. The lower portions of the walls of all houses were of native earth. A few firepits were uncovered, but none of them showed much use or contained much ash. Deflectors of any sort, such as are found in early Anasazi houses and later kivas, were entirely absent.

The arrangement of upright roof supports of the pit houses did not correspond to that of houses of later periods, so far as is now known. The main posts were set well out from the walls, generally with one post to each quadrant. The top layers of the roof, as shown by burned bits of adobe, consisted of mud and branches. In Pit House A, the upright roof-supports may have stood on horizontally laid logs placed in special grooves located in the outer zone.

Two new types of pottery were recovered. Temporarily we refer to them as Unpolished Brown and Polished Red. Unpolished Brown is a thick, undecorated, coarse-textured pottery occurring most commonly in the shapes of globular jars without neck, and hemispherical bowls. Polished Red is also an undecorated pottery of coarse texture. It occurs most commonly in the shapes of narrow-mouth jars and shallow bowls. These vessel shapes (with the exception of the narrow-mouth jars) appear to be the prototypes of later Mogollon pottery shapes.

It is certain that Three Circle Red-on-White, Alma Scored, and Alma Neck Banded are later than our Unpolished Brown and Polished Red potteries. This was proven by the stratigraphic evidence obtained in Pit Houses D and D-1.

The majority of bone and stone artifacts recovered were of simple, unspecialized types such as basin and slab metates, simple oval manos, and split bone awls.

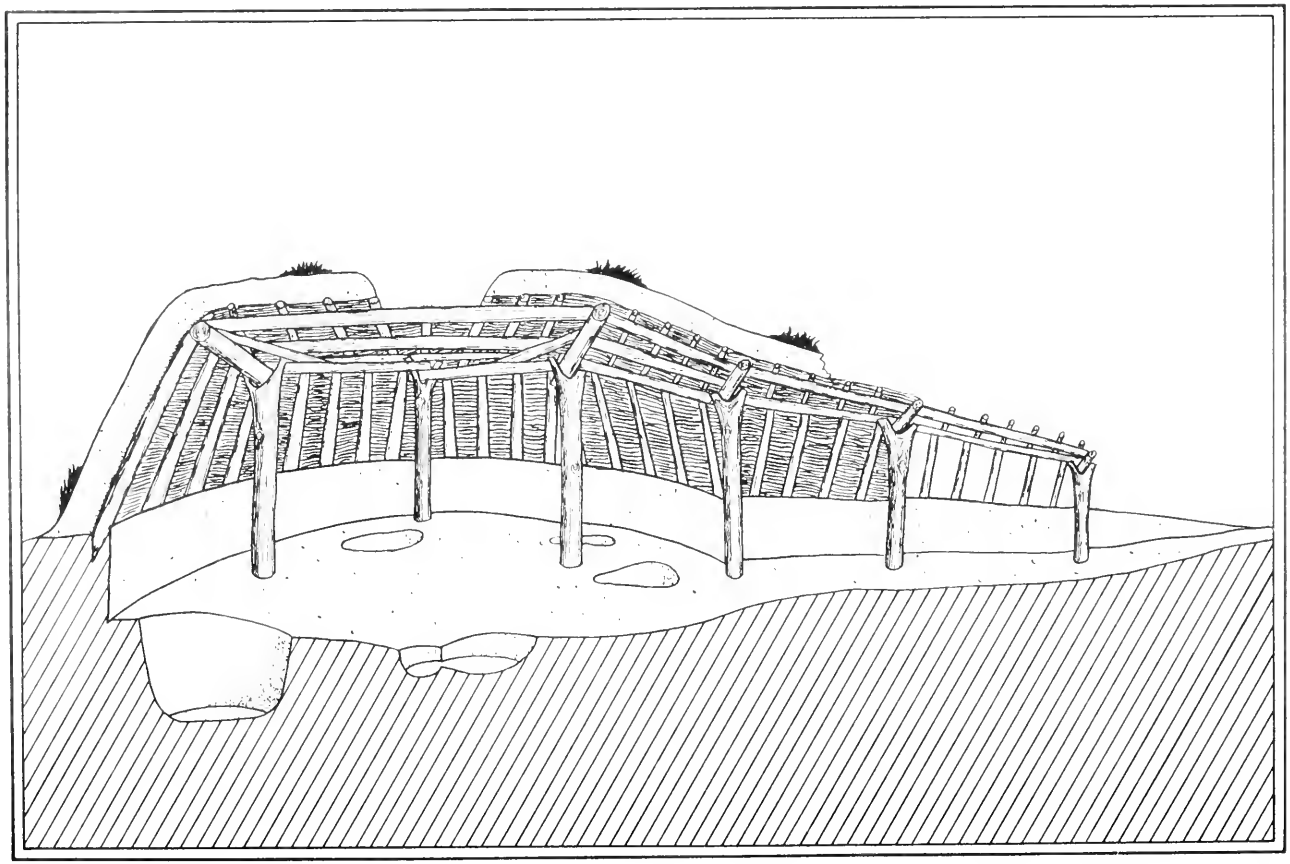


FIG. 39. Postulated method of pit-house construction, showing roof supports and layers of brush and adobe on roof and walls.

The other types of artifacts recovered fall into two groups. The first group is composed of such types as the notched bone awls, rectangular rubbing stones, and trough-type metates, examples of which are found in greater numbers for succeeding periods. The second group is represented by a few singular specimens, such as the bone dice, bone needle, and carved stone pendant. On the whole this latter group shows greater finish, a finer degree of workmanship, a little more care in shaping, than the general run of artifacts. Objects that show modification other than a little essential shaping, and abrasion through use are the exception rather than the rule. In general, then, the material culture represented is relatively crude and shows that its makers were inclined to use the shapes of stone and bone objects that they found at hand.

Twenty-six burials were discovered: five outside of houses; nine on or near house floors; and twelve in sub-floor pits. These burials were made by the inhabitants of the site, but some of them may have been placed shortly after the houses were deserted. The physical type appears to be Puebloid (see Appendix).

The charred wood obtained from several houses was sent to Mr. Harold S. Gladwin for examination and possible dating. Unfortunately, all the wood was juniper, a type which does not lend itself (at present) to dendrochronological techniques. Therefore, no dates were secured. I would guess that the SU site (except Pit Houses D and D-1) would belong to a pre-Georgetown phase and would date at about A.D. 500 or before. How much earlier, I cannot at present state.

I have refrained from making any synthesis or reconstruction in this report because more data must be obtained before the affiliations and history of the SU site can be stated.

APPENDIX: REPORT ON THE SKELETAL MATERIAL

BY

MARJORIE KELLY

Twenty-six burials were uncovered at the SU site during the summer of 1939. Five of these were located outside the pit houses and were found while digging the test trenches. The other twenty-one burials were located in the houses, twelve in the large pits that had previously been used for cooking and storage purposes, and nine on the floor, or in the fill only two or three inches above the floor. All were surrounded by the normal fill containing charcoal and miscellaneous sherds. Bracelets were found on two of the skeletons; also a pipe and bone awl in association with one of them. Small turquoise pendants were found with a child burial in the antechamber of the reoccupied pit house (Pit House D). A miniature clay bowl was associated with another burial in this same antechamber. No objects had been placed with the remaining skeletons. The burials were flexed. Those in the pits seem to have been placed leaning against the wall of the pit. The majority of those on the floor, or in the fill, lay on their backs. There was apparently no customary direction of orientation.

There had been considerable posthumous shifting of the bones, apparently by burrowing animals, and in several instances many parts of the skeletons were missing (Burial Nos. 2, 7, 10, 16, and 17). Their location in pits and pit houses with clay and gravel floors and walls (which readily hold the frequent rains in this mountainous country) only served to increase their state of decay. In still more instances the roots of trees and shrubs hastened their destruction. These combined circumstances made the skeletal material so fragmentary that of the twenty-six burials uncovered only thirteen were complete enough to be sent back to the Museum laboratory for further study. The material was cleaned and mended at the laboratory but it was broken in too many pieces to allow of many measurements. Consequently, it is not deemed advisable to publish a complete series of measurements and observations on so small and shattered a series of crania. A more complete report on the skeletal material will be made subsequent to further excavations at the SU site whereby it is hoped that the series may be supplemented.

All that can be said at this time is that these skulls differ markedly from the skull from the Mogollon Village which was excavated by Haury and described by Woodbury (Haury, 1936a, pp. 111–115).

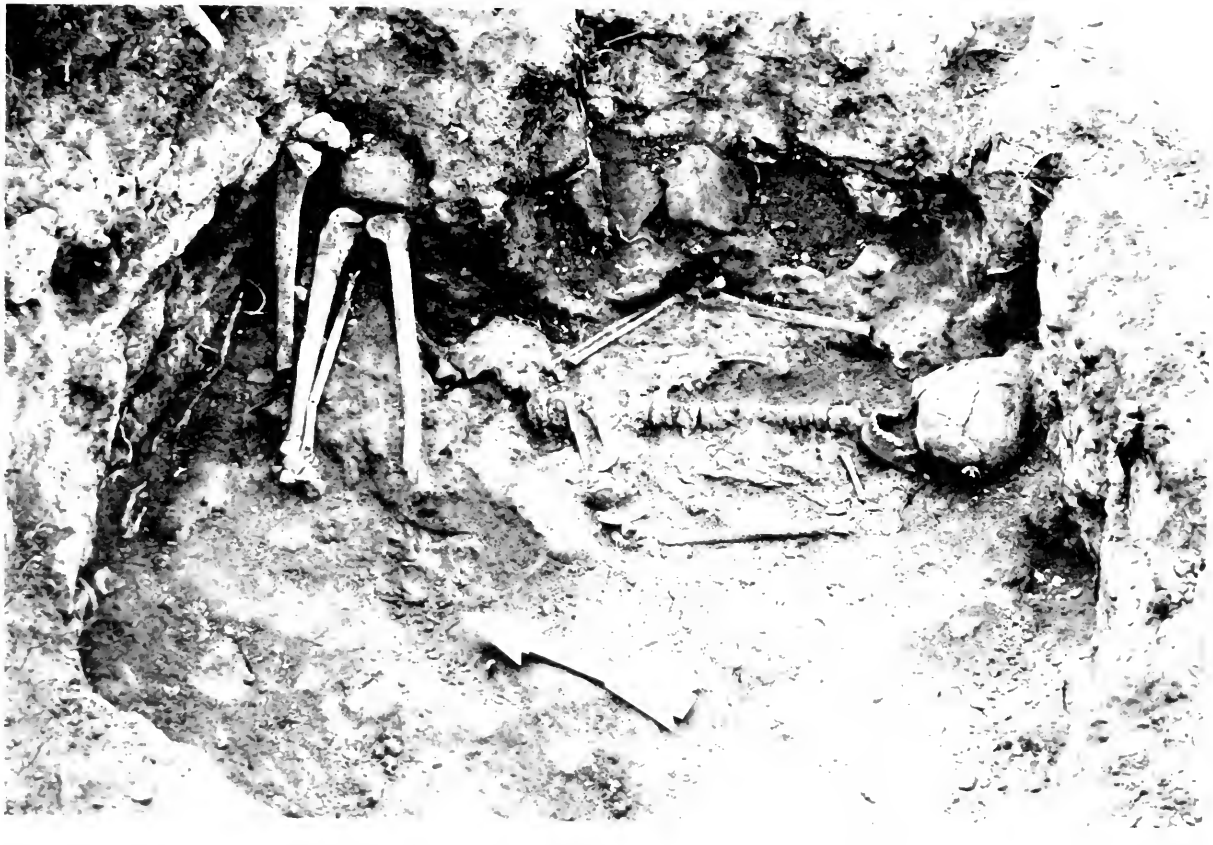


FIG. 40. Flexed burial, in pit 1, Pit House B. Young adult female. Shell bracelets on left arm (see Fig. 31). Arrow (30 cm. long) points north.

FIG. 41. Flexed burial, in fill, Pit House C. Adult male. Arrow (30 cm. long) points north.

Woodbury set up the Mogollon Village skull as a type skull and on the basis of similarities with historic Caddo and Wichita material postulated a Caddoan type for the inhabitants of the Mogollon and Harris villages. When a comparison is made between this skull and those from the SU site it is at once apparent that there is very little resemblance either morphologically or metrically between them. The SU skulls are brachycranial, with a mean cranial index of 83.5 (taken on five skulls), are hypsicranial, and conform in these features as well as in facial characters to skulls of the Pueblo type. Some of the crania exhibit a slight amount of occipital cradleboard deformation. Mr. Georg Neumann of the Department of Anthropology, University of Michigan, agrees with my conclusions.

I wish to thank Mr. Neumann and Dr. Wilton Krogman of the University of Chicago for the help they gave me while I was working over the material.

TABLE 2

Skull No.	Sex	Age according to sutures	Age according to teeth	Cradleboard deformation	Warping due to natural cause	Vault	Parts missing
1	♂	45–47	45–50	Slight	Slight	High	Basilar and facial bones
2	?	Under 2	..	?	?	?	Fragmentary
3	♀	29–35	30	?	?	?	All except skull cap and mandible
4	♂	47–51	50	None	None	High	All except skull cap
5	♂	.....	45–50	...	.	...	All except skull cap and mandible
6	♂	35–41	40	Slight	.	?	All except skull cap
7	♂	35–40	..	...	.	...	All except skull cap
8	♀	29–35	30–35	None	Marked	High	Nasal bone, one-half of mandible
9	♂	47–51	40	Trace	Little	High	Basilar and facial bones, mandible
12	♂	26–35	35	None	None	High	Basilar bones
14	♂	51+	Ca. 50	None	Slight	High	Basilar bones, orbits, nasal bone
18	♂	Ca. 35	35–40	Small	None	High	Basilar and nasal bones
24	♀	35–41	35–40	Trace	None	High	Lower facial and nasal bones

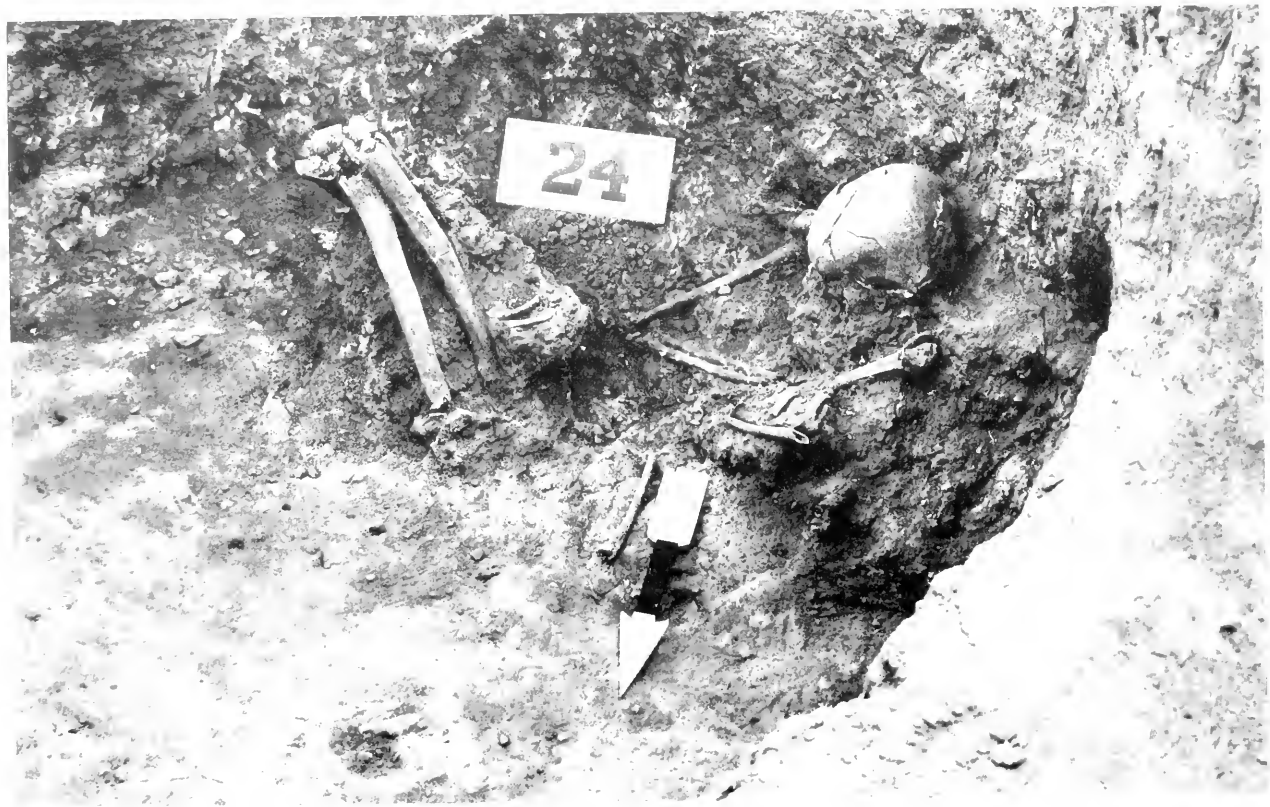


FIG. 42. Flexed burial, in pit 2, Pit Houses D and D-1. Pit antedates both houses. Arrow (30 cm. long) points north.

TABLE 3

Burial No.	Location	Position	Skull facing	Age	Associated artifacts
1	Trench I, pit	Flexed	SE	Ca. 47	Sherds, flint chips
2	Trench III, refuse	.....	NW	Infant	Turkey bones, sherds
3	Pit House B, pit	Flexed	W	Ca. 30	4 shell bracelets
4	Pit House B, pit	Tightly flexed	S	Ca. 50	Sherds, projectile point
5	Pit House B, pit	Tightly flexed	NE	Ca. 45	Sherds
6	Pit House B, floor	Flexed	NE	Ca. 40	Sherds
7	Pit House B, pit	.....	E?	Ca. 37	Sherds
8	Trench V, refuse	Flexed	NE	Ca. 32	Sherds, bone awl, projectile point
9	Pit House C, fill	Flexed	W	Ca. 45	Sherds, projectile point
10	Trench VIII, pit	.....	?	Adult	None
11	Trench VIII, pit	Flexed	W	Ca. 45	Sherds
12	Pit House C, fill	Flexed	E	Ca. 30	Sherds, crystal drill, bone awl
13	Pit House C, fill	Flexed	?	Adult	Shell bracelet, sherds
14	Pit House C, fill	Flexed	S	Ca. 50	Sherds, bone awl
15	Pit House C, fill	Flexed	N	Adult	Sherds
16	Pit House C, floor	?	?	Infant	Sherds
17	Pit House C, pit	?	?	Adult	Sherds
18	Pit House C, pit	Flexed	NE	Ca. 37	None
19	Pit House C, pit	?	NW	Adult	Sherds
20	Pit House C, pit	Flexed	?	Adult	Dog skull, 2 projectile points, bone awl
21	Pit House C, post-hole	Flexed	SE	Young	Sherds, clay pipe
22	Antechamber—Pit House D, fill	Semi-flexed	?	Middle-aged	Bone awl, bone bead, stone pipe, sherds
23	Antechamber—Pit House D, pit	.....	W	Child	Sherds, clay bowl (miniature)
24	Pit House D, pit	Flexed	E	Adult	Sherds
25	Antechamber—Pit House D, pit	?	?	Infant	18 turquoise beads
26	Pit House C, fill	?	?	Infant	None

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