

# TURKEY FOOT RIDGE SITE

A MOGOLLON VILLAGE

PINE LAWN VALLEY

WESTERN NEW MEXICO

PAUL S. MARTIN

JOHN B. RINALDO

FIELDIANA: ANTHROPOLOGY

VOLUME 38, NUMBER 2

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CHICAGO NATURAL HISTORY MUSEUM

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PAUL S. MARTIN

*Chief Curator, Department of Anthropology*

JOHN B. RINALDO

*Assistant in Archaeology, Department of Anthropology*

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## PREFACE

In 1948 we continued our archaeological investigations in western New Mexico in the Apache National Forest, Catron County. We carried on our work in the Pine Lawn Valley (Fig. 79), which lies between the San Francisco and the Saliz Mountains; our nearest town was Reserve, New Mexico, about seven miles to the east.

The archaeological work was conducted under a permit issued to Chicago Natural History Museum by the Forest Service, United States Department of Agriculture. We wish to thank Mr. R. B. Ewing, Forest Supervisor of the Apache National Forest, and Mr. Ray Swapp, Ranger of the Hood Ranger Station, for their co-operation and assistance.

While the excavating proceeded, Dr. Ernst Antevs, Research Associate, Department of Geology, continued his intensive investigation of the strata and deposition records in Wet Leggett Canyon, in which stone tools of the Chiricahua stage of the Cochise culture were found in 1947. During the course of Dr. Antevs' vigorous, thorough, and painstaking work, he discovered several new Cochise loci that yielded grinding tools and hearths.

We have planned to continue our work in the Pine Lawn Valley until we have completed the plan laid down several years ago—to investigate all phases of Indian occupation in the Pine Lawn Valley. From our present knowledge, the history of the valley will cover a span of time from about 1500 B.C. to about A.D. 1300, at which time the people of the Tularosa culture abandoned the area. We hope to discover what occurred during these 2,800 years of history. What became of the last settlers, why they left the area, and when they went are all grist for the mill. Some results have already been published covering the periods from 1500 to 500 B.C. and from A.D. 500 to 1000 (Martin, 1940, 1943; Martin and Rinaldo, 1947; Martin, Rinaldo and Antevs, 1949), and more will follow from time to time.

Without the continuing and profound interest of Mr. Stanley Field and Colonel Clifford C. Gregg, respectively President and Director of Chicago Natural History Museum, and the Board of

Trustees, our work would not be possible. We wish to express publicly our deep gratitude for their appreciation of the important work we are undertaking.

We also wish to thank the members of the camp staff for their devotion and zeal, without which our success would not have been possible: Mr. L. G. Johnson, Mr. W. T. Egan, Mr. Irving W. Wood, Jr., and Mrs. Martha Perry.

For five seasons, Mrs. Mary Crackel, proprietress of the Pine Lawn Tourist Camp and her assistant, Mr. George Spore, have given us generous assistance in ways too numerous to list. Perhaps their never-failing friendly neighborliness was their greatest contribution.

We wish to thank the men who dug for us: Willy Serna, Ruben Serna, Gregorio Jiron, George Jiron, Ed. A. Ulibarri, and Jake Snyder. We are also grateful to the two volunteers: Philip Olson and Earl Roethke.

More than three hundred specimens of charcoal from the excavated houses were shipped in 1948 to Dr. A. E. Douglass, Director of the Laboratory of Tree-Ring Research, Tucson, Arizona. It is hoped that he and his assistant, Mr. T. L. Smiley, will soon be able to release dates on our work in the Pine Lawn Valley.

Mrs. Charles Gillette traced the maps used in this report.

PAUL S. MARTIN  
JOHN B. RINALDO

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FIG. 79. Map showing location of Pine Lawn Valley, New Mexico.



## I. INTRODUCTION

### LOCATION OF SITE

The Turkey Foot Ridge site (Figs. 80, 81) is located in the Apache National Forest, on a high, rather narrow ridge (S.W.  $\frac{1}{4}$  Sec. 34, T. 7 S., R. 20 W., N.M.P.M.), about seven miles west of Reserve, New Mexico, the county seat of Catron County. The altitude is approximately 6,400 feet above sea level. The SU site is situated about four miles to the north.

### PHYSIOGRAPHIC AND BIOTIC CONDITIONS

The physiographic and biotic conditions for the area worked are the same as those given for the Wet Leggett site (see Martin, Rinaldo, and Antevs, 1949, pp. 34-43). There is an average precipitation of less than sixteen inches per year. The dominant trees are the yellow pine, juniper, and pinyon pine. The important food animals of the region are the mule deer, white-tailed deer, black bear, rabbit, tree squirrel, ground squirrel, chipmunk, wood rat, turkey, quail, and dove. In Hart Merriam's life zone classification the Pine Lawn Valley should be included in the Transition zone (open yellow pine forest). The valley ranges from 6,000 to 7,000 feet in elevation, has a midway divide at about 6,350 feet, and is drained to the San Francisco River by small intermittent streams passing through deep, narrow canyons at both ends.

### PROBLEMS

In general, the objective of the summer's excavations was to find and excavate some houses of the Georgetown and San Francisco phases, in order to fill in a postulated four-hundred-year gap in the local sequence in the Pine Lawn Valley. After having excavated houses and sites of the Pine Lawn, Three Circle, and Reserve phases, as well as some artifacts of the Chiricahua stage, we found that we needed more data from the Georgetown and San Francisco phases, to be able to make valid generalizations concerning the development and growth of the Mogollon culture in the Pine Lawn Valley. We

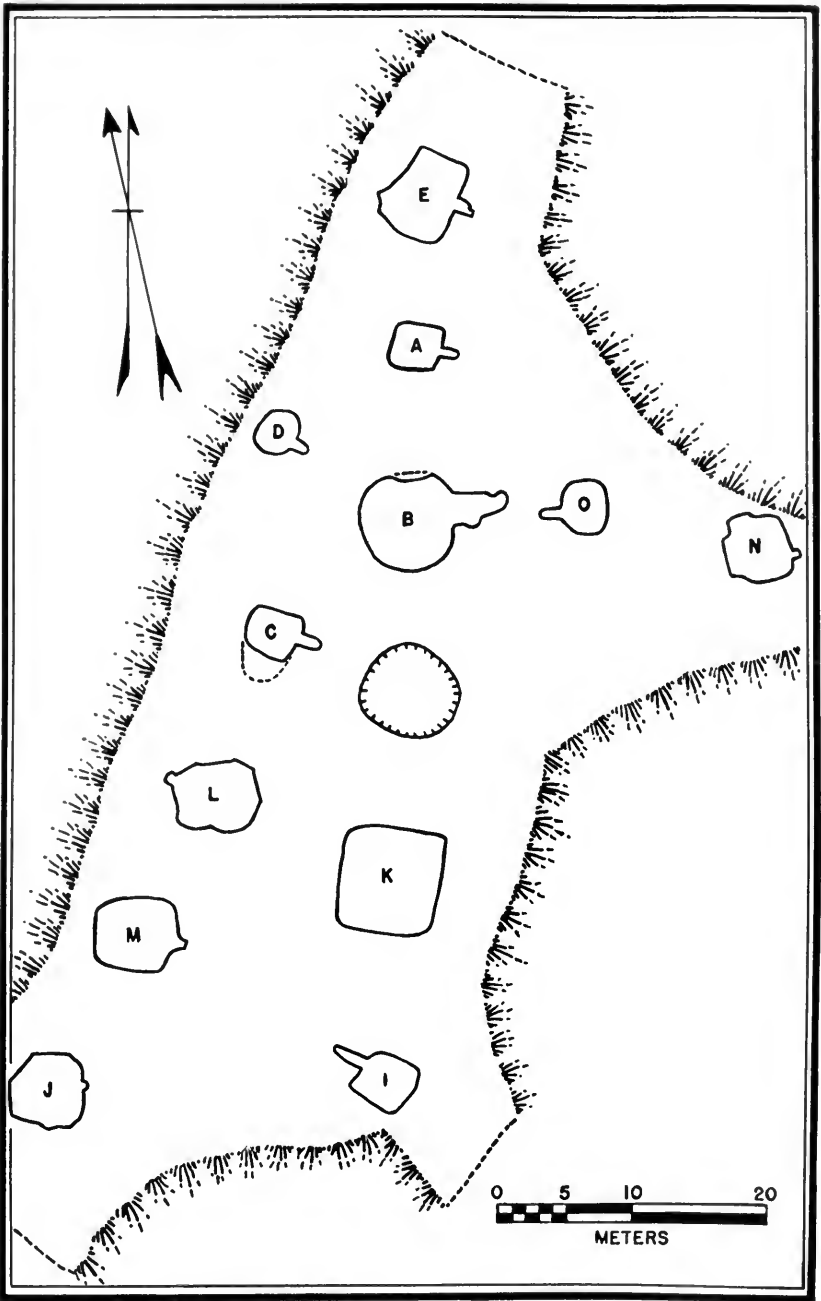


FIG. 80. Map of west half of Turkey Foot Ridge site showing locations of Pit-houses A-E and I-O. Narrow, unoccupied ridge 70 meters long between east and west halves.

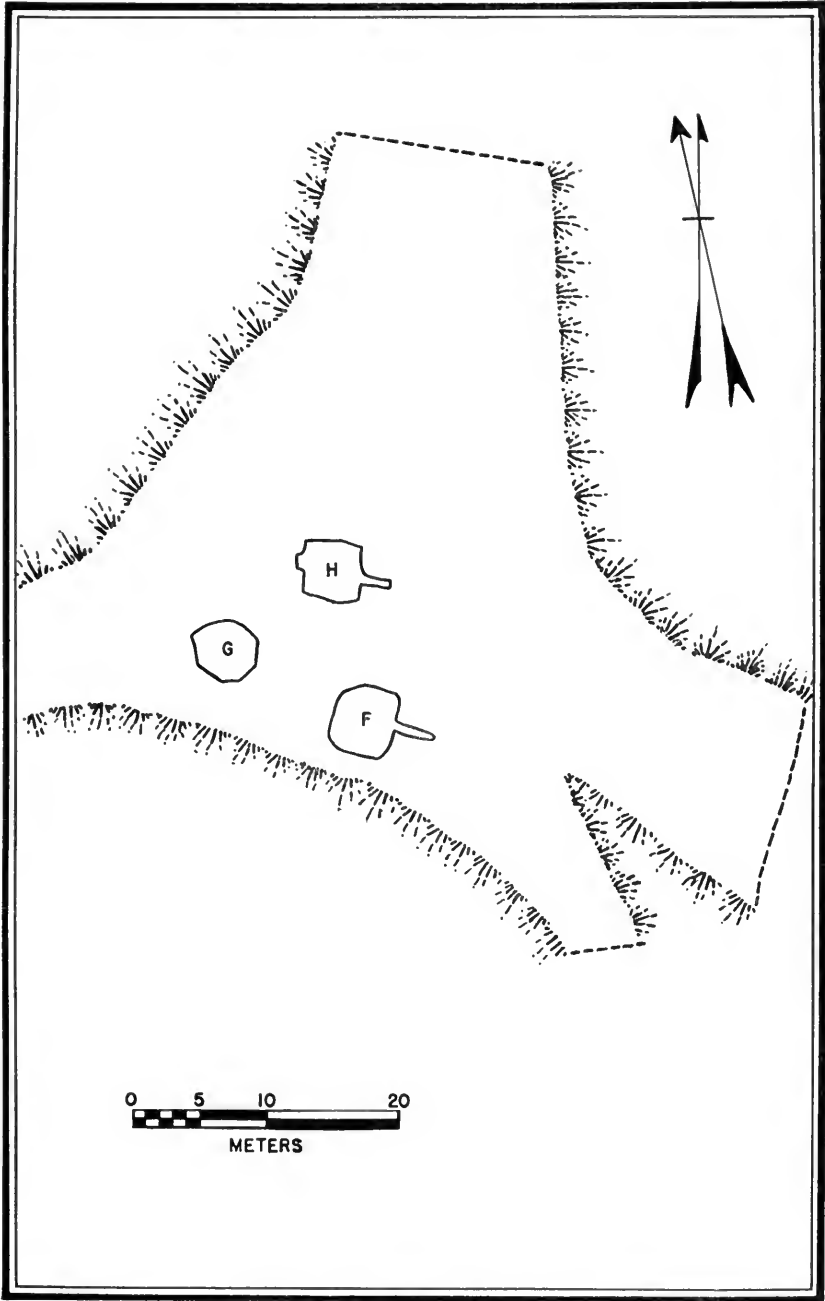


FIG. 81. Map of east half of Turkey Foot Ridge site showing locations of Pit-houses F, G, and H. Narrow, unoccupied ridge 70 meters long between east and west halves.

felt that local data added to that described by Haury and Nesbitt might fill certain gaps in the story of development of house structures and stone and bone tools.

A few of the more specific problems we had in mind are as follows:

(1) Were there transitional types of house structures between those of the Pine Lawn and Three Circle phases, in addition to those described by Haury (1936a) and Nesbitt (1938)?

(2) Was there evidence of an abrupt change in milling tools and methods, or was the change a gradual one?

(3) Could we find evidence of an increased use of agriculture as a means of subsistence?

(4) Was there any evidence in Pine Lawn Valley sites that Reserve Smudged pottery came into use previous to the Three Circle phase, as Haury suggested (Haury, 1940, p. 94)? Or did it make its first appearance during the Three Circle phase, as the evidence indicated in 1947?

(5) Did Alma Rough go out of use suddenly, with the coming into use of the textured wares such as Alma Neck Banded and Alma Scored?

(6) Did the Chiricahua people linger on in the Valley from about 1500 B.C. up to the beginning of the Pine Lawn phase? Were there more of their camp sites to be found? Were there any indications other than the similarities of stone tools that the Chiricahua people were the ancestors of the Pine Lawn people?

Some of these questions were answered, others were only partially answered, and still others not at all. The answers to some of these problems are embodied in the data and the discussions concerning the data in the following pages, and in the conclusions contained in the final summary.

## II. DESCRIPTION OF ARCHITECTURAL DETAILS

## PIT-HOUSE C

(Figs. 82-86)

*Shape.*—Rectangular; length, 3.7 meters; width, 3.5 meters.

*Walls* of unplastered, orange-colored native clay; rubble masonry in northwest corner, in upper south wall and around ventilator.

*Floor* of gravelly, pinkish native clay covered over with gray plaster; depth below present ground level, 1.2-1.35 meters; surface fairly even; gray plaster probably represents later alteration as original central posthole was plastered over.

*Firepit.*—One in south half of house; square with rounded corners; 41 cm. square and 18 cm. deep.

*Lateral Entrance.*—In the middle of east wall; length, 1.6 meters; provided with two steps. In later occupation of house, this entrance was converted to a ventilator by insertion of masonry to form tunnel and shaft.

*Pits.*—None found.

*Wall Niche* (not shown on map).—Oval in shape; dimensions, 1.5 meters by 90 cm.; depth, 35 cm. Floor of niche 37 cm. above floor of house. Posthole in center of niche floor; diameter, 12 cm.; depth, 6 cm. Found therein were two rubbing stones, two polishing stones, two pestles, two hammerstones, two grinding slabs, two worked slabs, a fragment of a metate. Opening of niche sealed with slab; niche apparently used with first occupation of house.

*Postholes.*—Five primary and two secondary; least diameter, 9 cm.; greatest diameter, 30 cm.; least depth, 6 cm.; greatest depth, 29 cm. Five of these postholes bisect house from north to south; one posthole in southwest corner, and one in northwest corner.

*Roof.*—Exact character unknown; probably like type 3 (Haury, 1936a, p. 83, fig. 26).

*Grooves in Floor.*—One just east of firepit for deflector or ladder; length, 30 cm.; width, 13 cm.; depth, 10 cm.

*Pottery.*—See chapter on pottery.

*Phases.*—San Francisco and Three Circle.

*General Comments.*—This house was apparently built in the San Francisco phase with characteristic entrance of that period. Later, passageway converted to ventilator; posts in north and south walls removed, postholes filled with rocks and plastered over; central posthole plastered over; wall niche sealed up with slab; and fill in top of south wall in northwest corner reinforced with rubble masonry. Pit-house C apparently has cut through section of earlier shallow house.

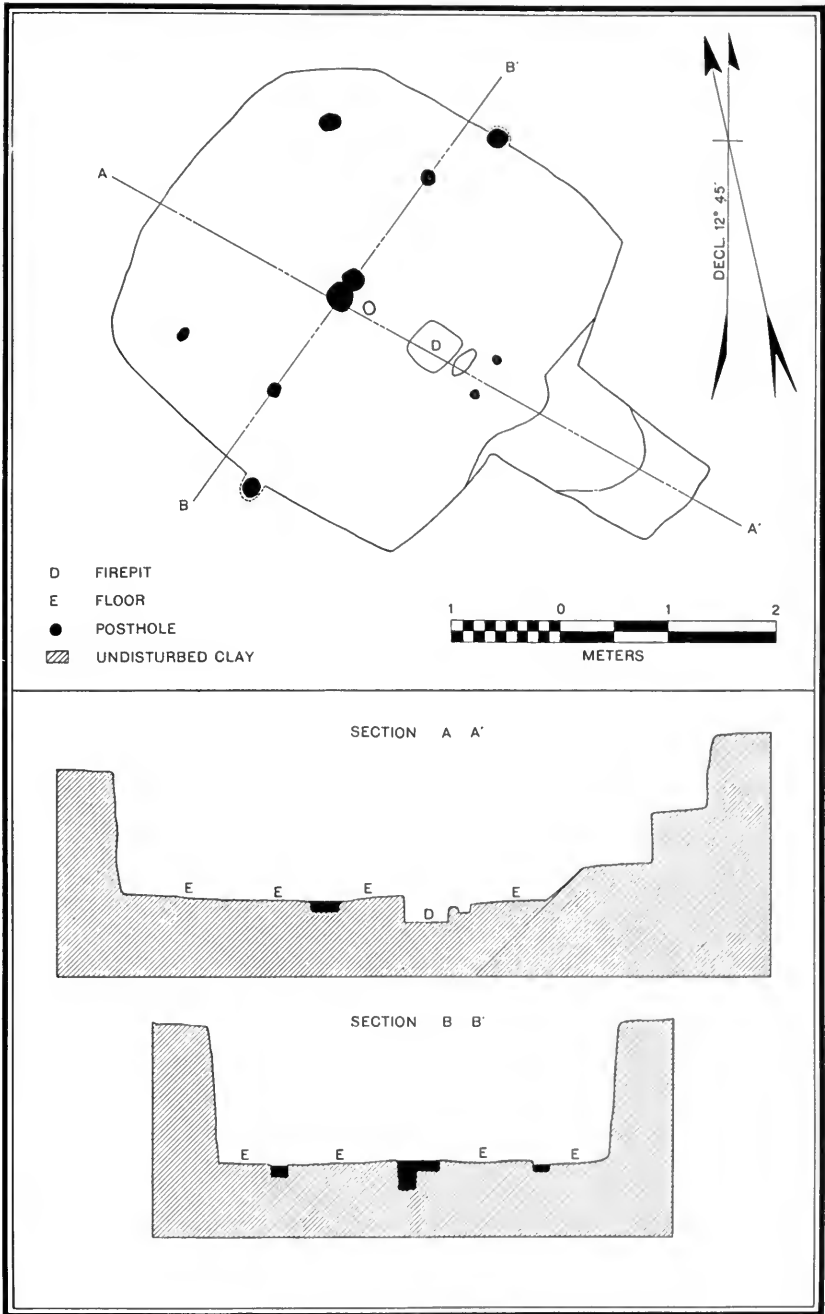


FIG. 82. Plan and sections of Pit-house C.



FIG. 83. Detail of masonry-filled post recess (outlined by dotted lines) in south wall of Pit-house C, and masonry in clay that formed upper part of adjacent wall.



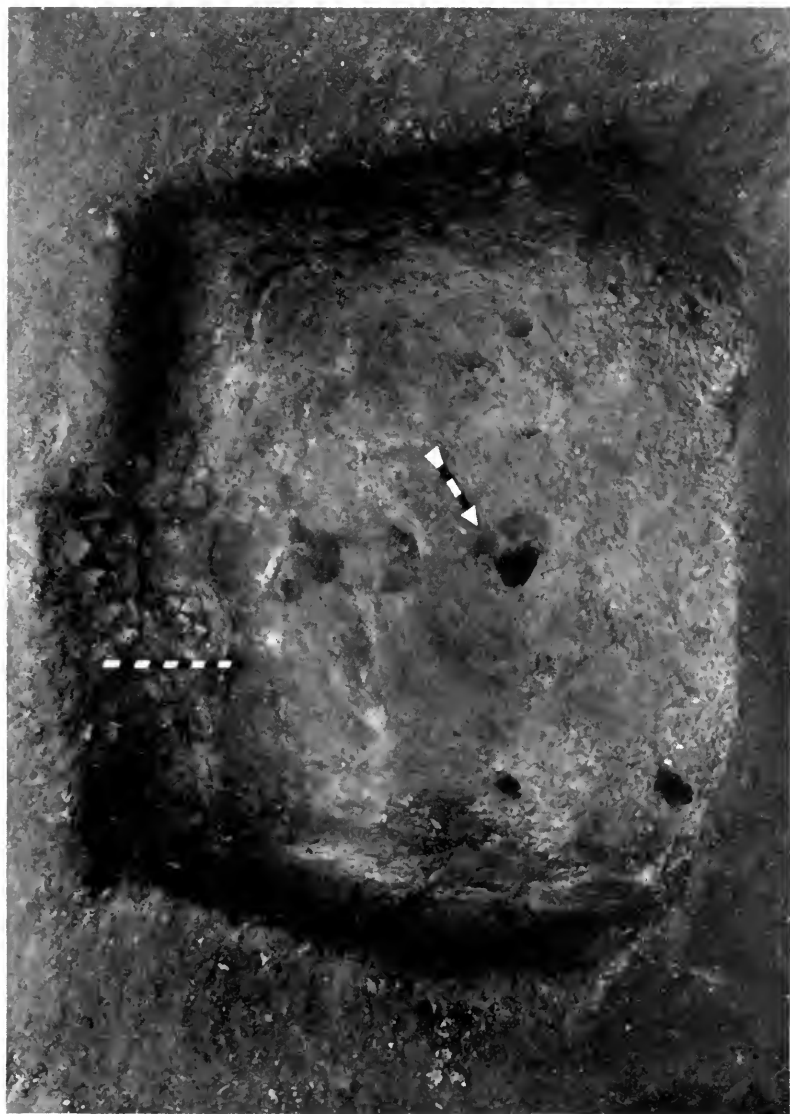


FIG. 84. Pit-house C. Arrow (50 cm. long) points north; meter stick in background.



FIG. 85. Stepped lateral entrance in center of east wall of Pit-house C, first occupation. Fireplace and deflector groove in foreground.



FIG. 86. Detail of masonry-lined ventilator tunnel and adjacent east wall of Pit-house C, last occupation.

## PIT-HOUSE D

(Figs. 87, 88)

*Shape*.—Roughly square, with rounded corners; length, 3.5 meters; width, 3 meters.

*Walls* of unplastered, native pink clay.

*Floor* of gravelly, yellow clay; 86 cm. below present ground level; uneven surface; no alterations.

*Firepit*.—Near entrance, in east half of house; very shallow ash-filled depression of irregular shape.

*Lateral Entrance*.—On east side, 1 meter in length.

*Pits*.—None found.

*Burials*.—One; bones scattered over large area.

*Postholes*.—Five primary and three secondary; least diameter, 11 cm.; greatest diameter, 40 cm.; least depth, 7 cm.; greatest depth, 15 cm.

*Roof*.—Exact character unknown; probably like that of Pit-house C.

*Pottery*.—See chapter on pottery.

*Phase*.—Three Circle.

*General Comments*.—This house burned.

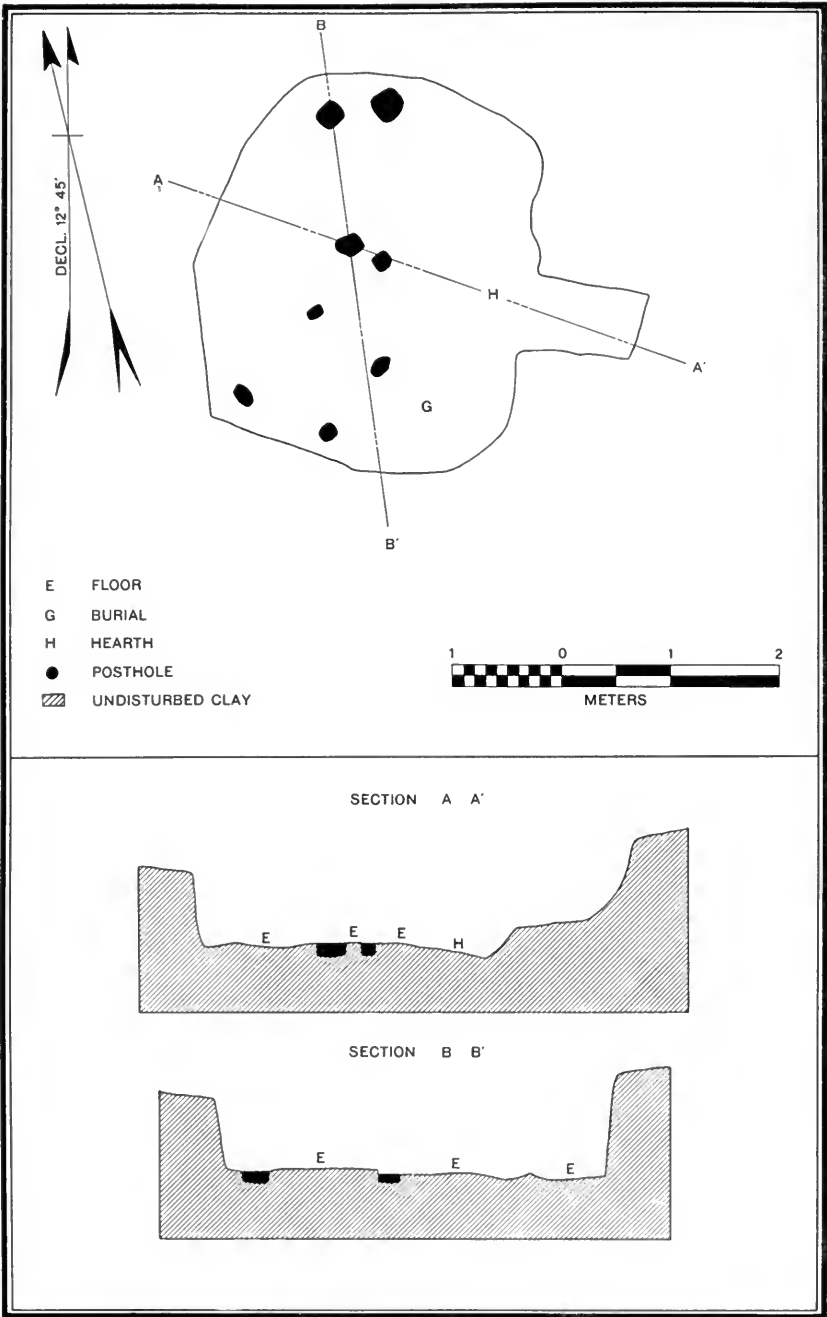


FIG. 87. Plan and sections of Pit-house D.



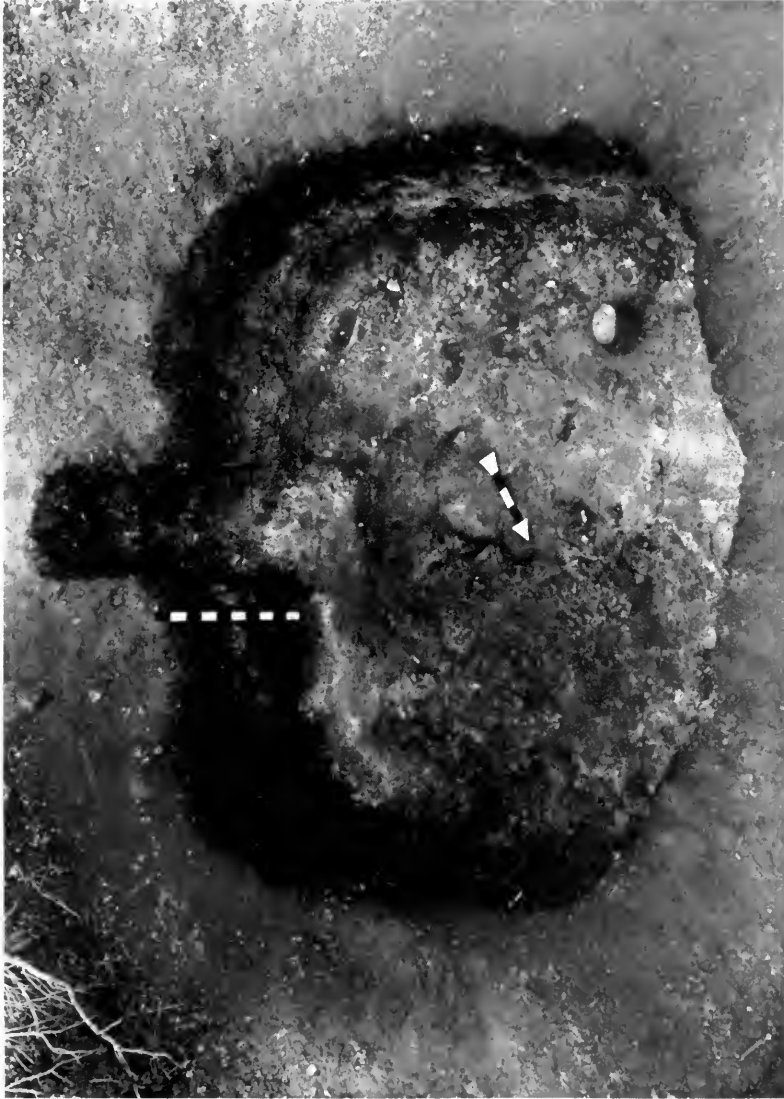


FIG. 88. Pit-house D. *Mano in situ*, right foreground. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE E

(Figs. 89, 90)

*Shape.*—Rectangular; 6.3 by 5.6 meters.

*Walls* of pinkish-orange-colored native clay, covered with gray plaster.

*Floor* of gravelly clay; fairly even; 28 to 82 cm. below present ground level. Covered with gray plaster.

*Firepit.*—None found.

*Lateral Entrance.*—In center of east wall; 1.65 meters long.

*Pits.*—None found.

*Postholes.*—Five primary, four secondary; least diameter, 29 cm.; greatest diameter, 42 cm.; least depth, 14 cm.; greatest depth, 55 cm.

*Roof.*—First a layer of beams; on top of this, poles or branches; outer layer, adobe. This evidence from burned clay and charcoal. Similar to type 4 (Haury, 1936a, p. 83, fig. 26).

*Pottery.*—See chapter on pottery.

*Phases.*—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments.*—This house burned. In west side of wall a niche(?) or irregularity; same as, or comparable to, niche in Pit-house H.



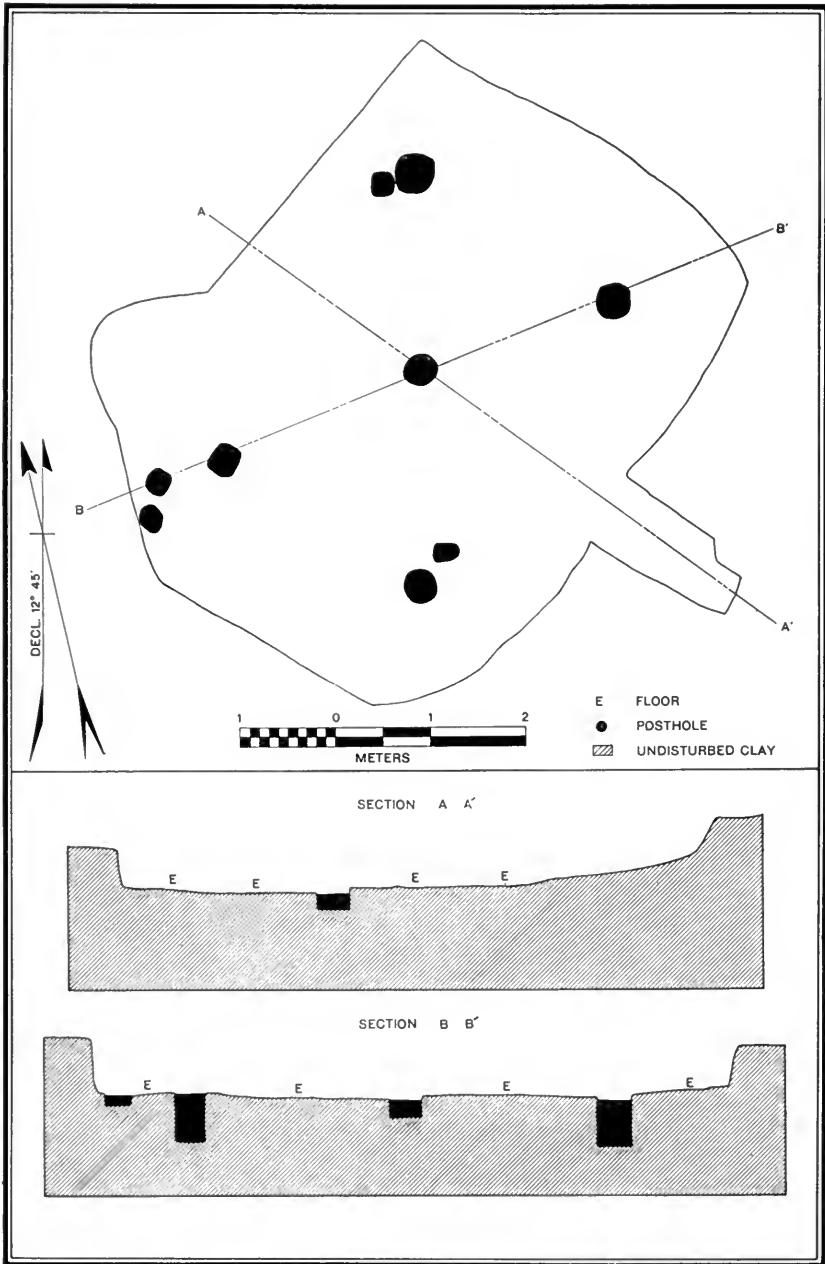


FIG. 89. Plan and sections of Pit-house E.





Fig. 90. Pit-house E. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE F

(Figs. 91, 92)

*Shape.*—Rectangular, with rounded corners; 4.85 by 5.4 meters.

*Walls* of orange-colored, gravelly clay.

*Floor* of same clay; uneven; depth below present ground level, 60 to 95 cm.

*Firepit.*—Round, with niche on east side and bulbous extensions on north and south sides.

*Lateral Entrance.*—In center of east wall; length, 3 meters.

*Pits.*—One; just west of firepit; diameter, 80 cm.; depth, 16 cm.; filled with grayish-brown dirt containing sticks of charcoal.

*Postholes.*—Seven primary and eight secondary; least diameter, 12 cm.; greatest diameter, 40 cm.; least depth, 11 cm.; greatest depth, 70 cm.

*Roof.*—Made of beams and branches covered with adobe; evidence obtained from charcoal and burned clay; probable that beams lay parallel with axis of lateral entrance.

*Pottery.*—See chapter on pottery.

*Phase.*—San Francisco.

*General Comments.*—This house burned. Low "bench," 20 to 45 cm. wide and 18 cm. high; around east, north and west walls.

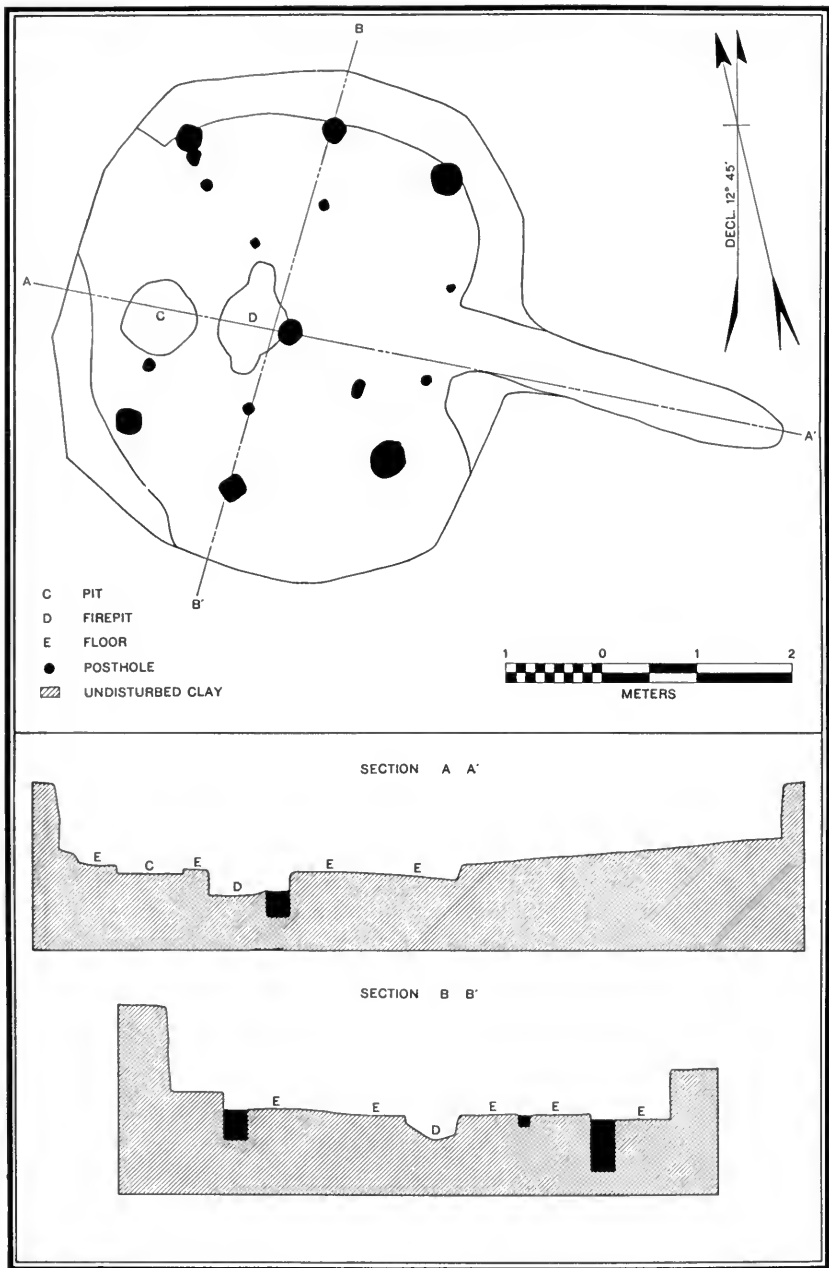


FIG. 91. Plan and sections of Pit-house F.





FIG. 92. Pit-house F. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE G

(Figs. 93, 94)

*Shape.*—Roughly hexagonal; 4.65 by 4.85 meters.

*Walls* of gravelly, orange-colored clay; unplastered.

*Floor* of same clay; fairly even; depth below present ground level, 45 to 75 cm.

*Firepit.*—None found.

*Lateral Entrance.*—Middle of east wall; length, 50 cm.

*Pits.*—Five in number; two oval, one rectangular, two circular; least diameter, 30 cm.; greatest diameter, 97 cm.; least depth, 14 cm.; greatest depth, 20 cm.; walls practically vertical, of gravelly, orange clay. Four manos found in rectangular pit in west wall; other pits contained only fill and sherds.

*Postholes.*—Twelve primary and four secondary; least diameter, 10 cm.; greatest diameter, 24 cm.; least depth, 9 cm.; greatest depth, 17 cm.

*Roof.*—Exact character unknown.

*Pottery.*—See chapter on pottery.

*Phase.*—Georgetown?

*General Comments.*—This house did not burn. Low "bench" on either side of door; greatest width of bench, 35 cm.; height above floor, 20 cm.



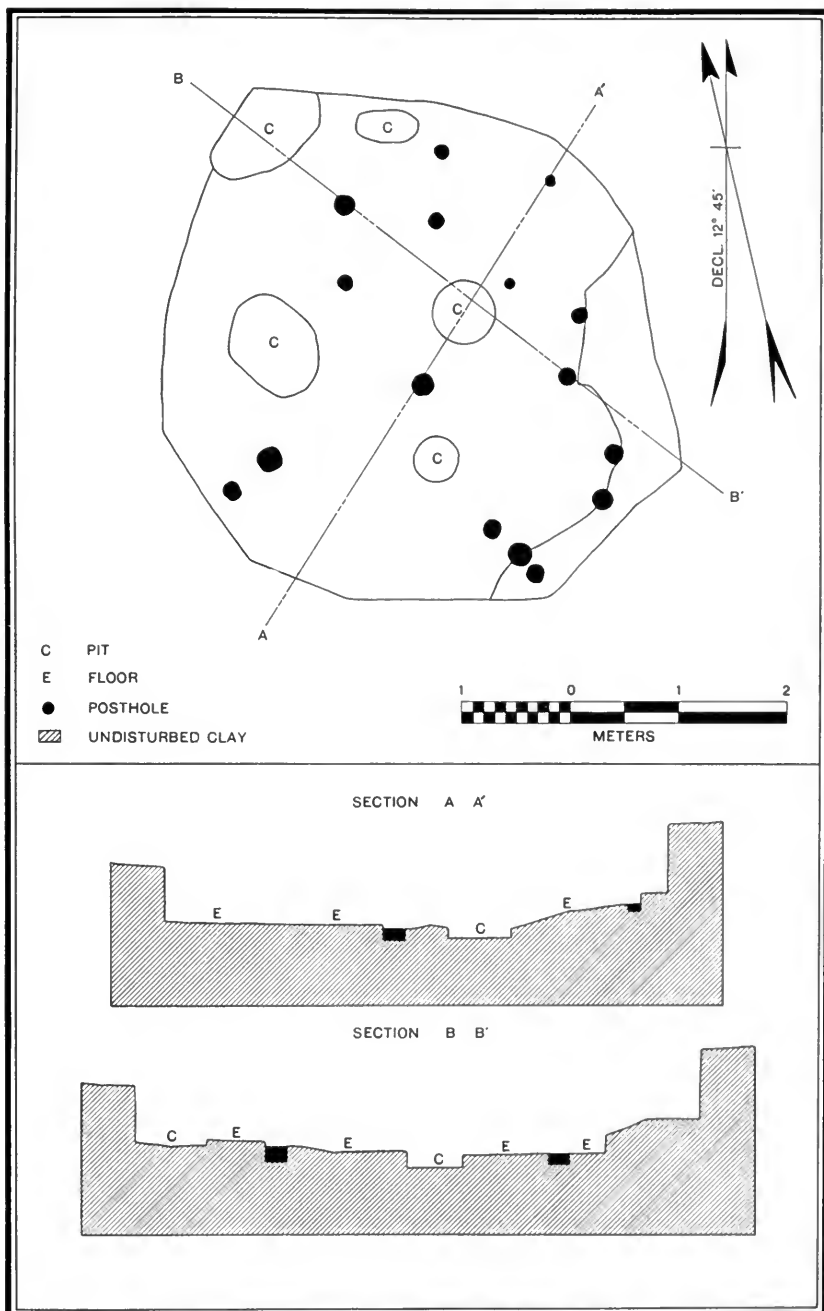


FIG. 93. Plan and sections of Pit-house G.



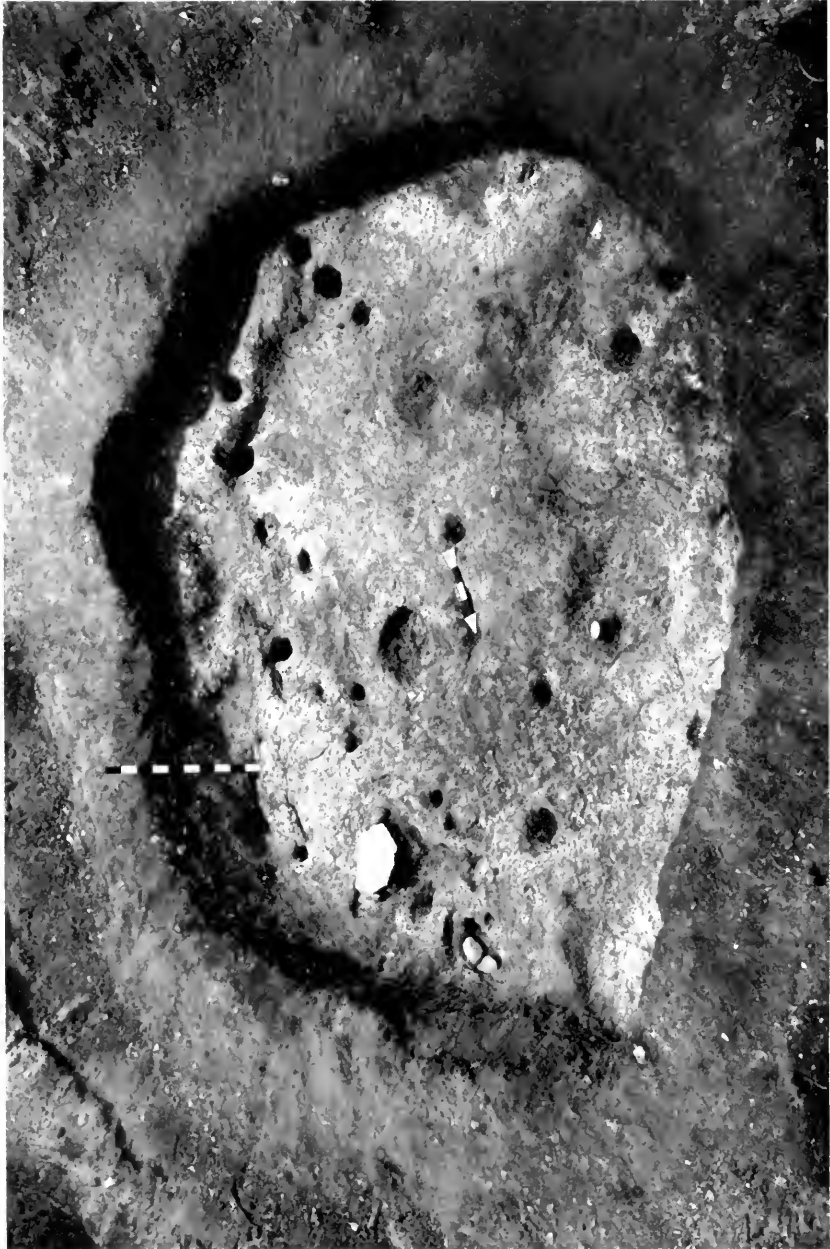


FIG. 94. Pit-house G. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE H

(Figs. 95, 96)

*Shape.*—Rectangular; 4.4 by 5 meters.

*Walls* of pink, gravelly clay; unplastered.

*Floor* of same clay; fairly even; plastered; depth below present ground level, 1 to 1.2 meters.

*Firepit.*—Oval; in east portion of room; deflector(?) made of fragment of trough-type metate.

*Lateral Entrance.*—Middle of east wall; 2.5 meters long.

*Pits.*—One; diameter, 30 cm.; depth, 4 cm.; contained ashes; probably a secondary firepit.

*Wall Niche.*—In west side of house; depth, 60 cm.; length, 1.6 meters; floor 30 cm. above house floor. Two postholes(?); diameters, 20 cm.; depths, 7 and 12 cm.

*Postholes.*—Four primary and 6 secondary; least diameter, 14 cm.; greatest diameter, 30 cm.; least depth, 10 cm.; greatest depth, 28 cm.

*Roof.*—Exact character unknown; some burned main beams and smaller cross poles found on floor; probably like type 3 (Haury, 1936a, p. 83, fig. 26).

*Pottery.*—See chapter on pottery.

*Phase.*—San Francisco.

*General Comments.*—This house burned. In floor at east end of entrance two small holes that might have been postholes or possibly ladder holes.

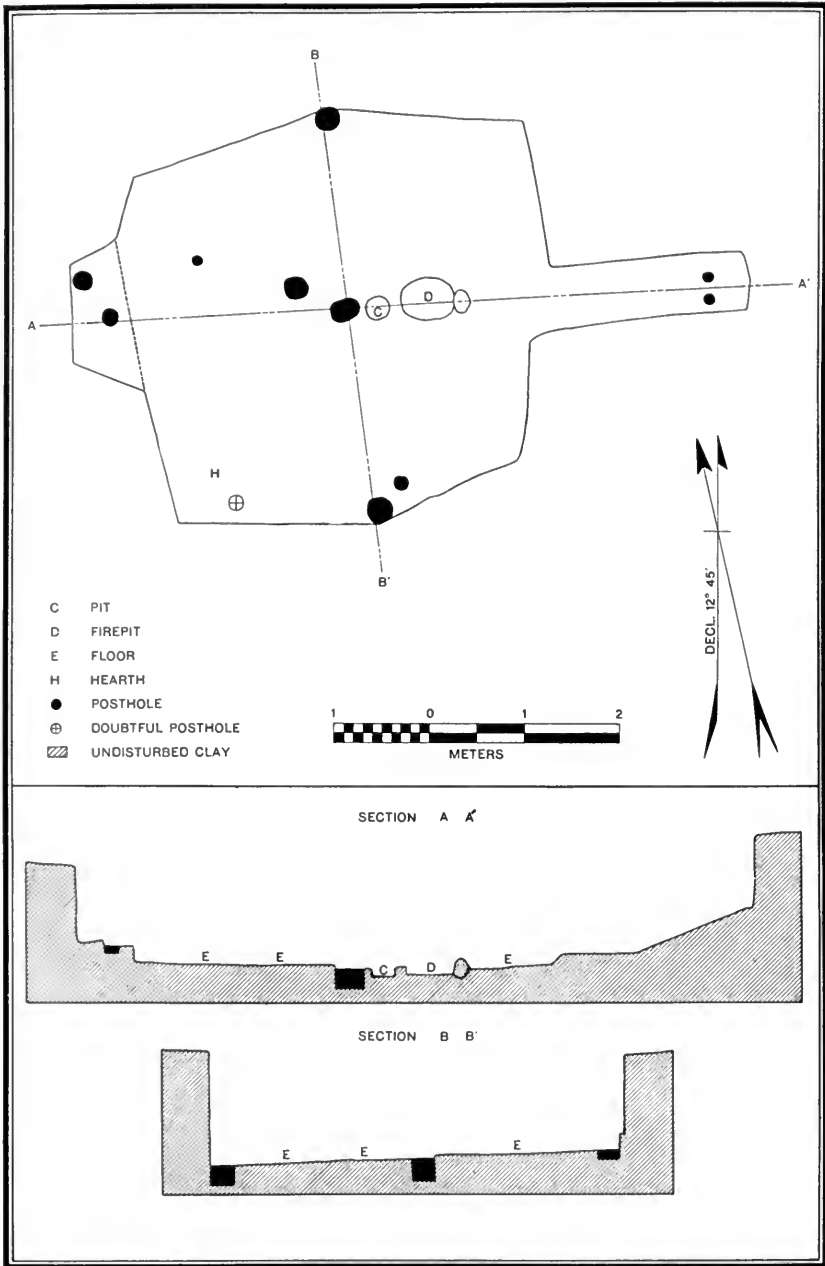


FIG. 95. Plan and sections of Pit-house H.



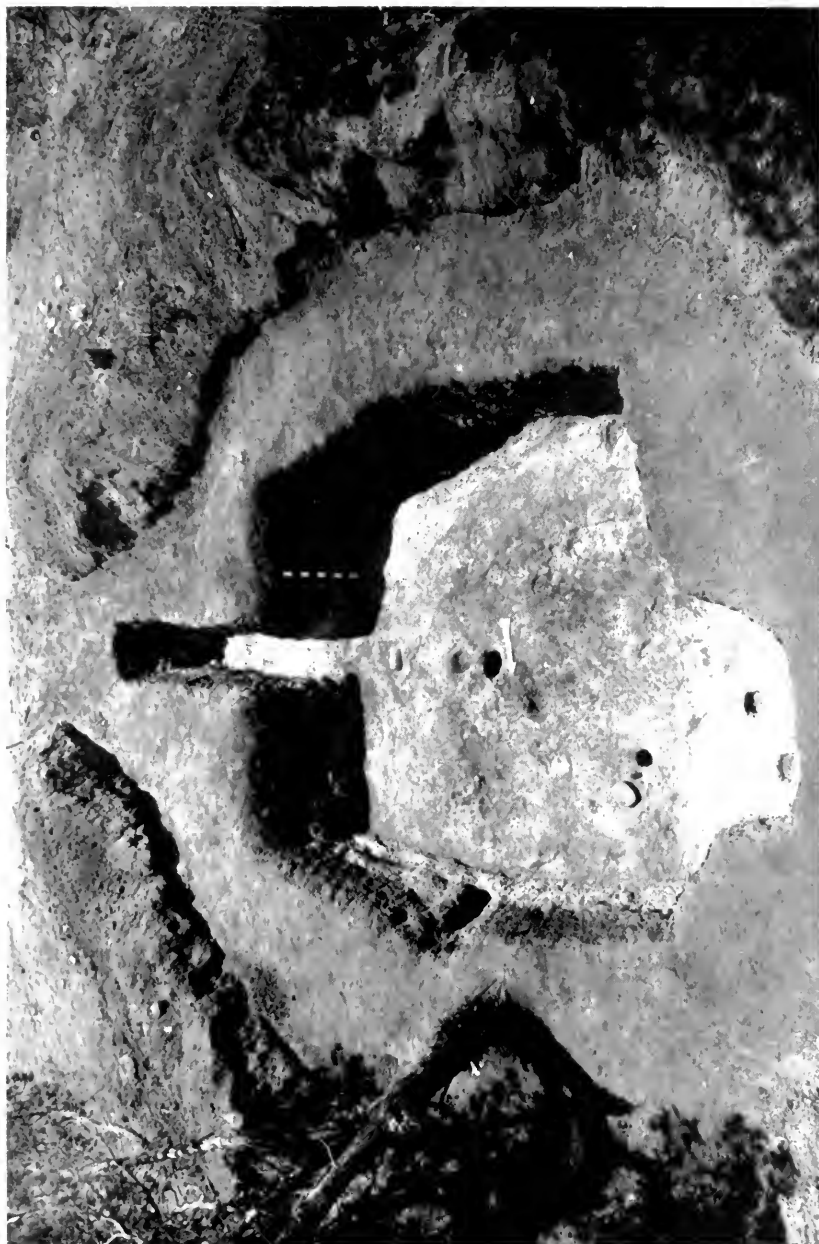


FIG. 96. Pit-house H. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE I

(Figs. 97, 98)

*Shape*.—Rectangular; 4.1 by 4.35 meters.

*Walls* of gravelly, orange-colored clay partly covered by one coat of adobe plaster.

*Floor* of same clay; fairly even; depth below present ground level, 70 cm. to 1.2 meters.

*Firepit*.—Circular; very close to entrance.

*Lateral Entrance*.—In middle of west wall; length, 2.3 meters; provided with two steps.

*Pits*.—None found.

*Postholes*.—Seven primary and two secondary; least diameter, 12 cm.; greatest diameter, 34 cm.; least depth, 5 cm.; greatest depth, 25 cm.

*Roof*.—Exact character unknown.

*Pottery*.—See chapter on pottery.

*Phases*.—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments*.—This house burned. Attention is called to the fact that the entrance is on the *west* side of the house—a rare occurrence (see Pit-house O). At foot of second riser are two holes that may have been postholes or ladder holes. Metates and manos were found *in situ* in southeast corner of house; manos unusually large.



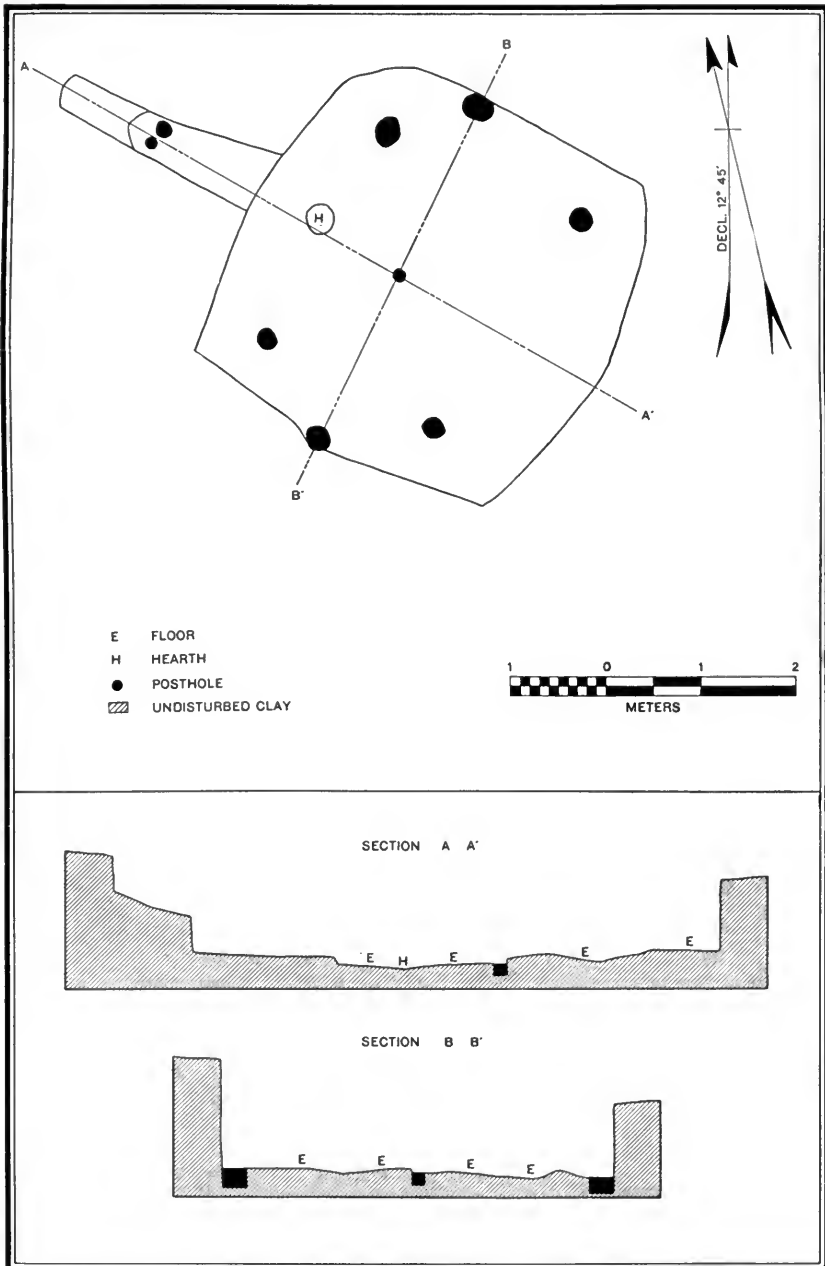


FIG. 97. Plan and sections of Pit-house I.



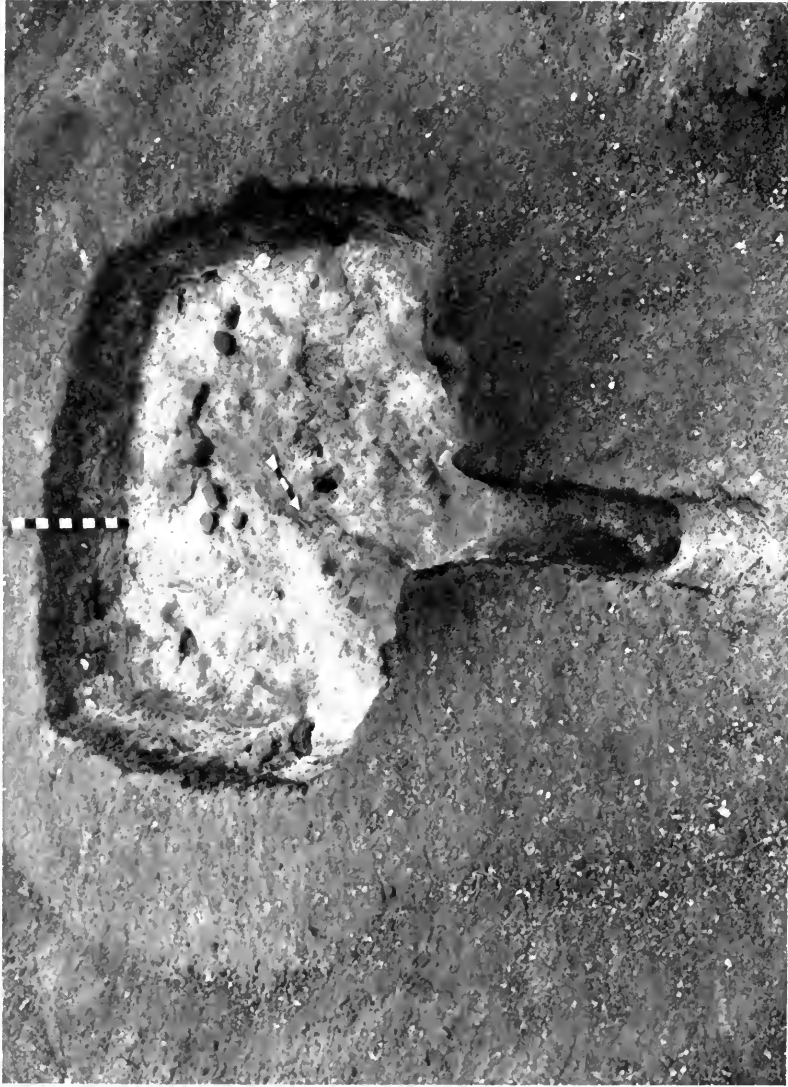


FIG. 98. Pit-house I. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE J

(Figs. 99, 100)

*Shape.*—Roughly circular; inner portion rectangular; greatest diameter, 5.45 meters.

*Walls* of gravelly, orange-colored clay.

*Floor* of same clay; fairly even; one coat of plaster 5 cm. thick; depth below present ground level, 70 cm. to 1 meter.

*Firepit.*—Circular.

*Lateral Entrance.*—Center of east wall; short and stubby; length, 50 cm.

*Pits.*—None found.

*Postholes.*—Twelve primary and six secondary; least diameter, 11 cm.; greatest diameter, 35 cm.; least depth, 8 cm.; greatest depth, 30 cm.

*Roof.*—Exact character unknown; from evidence of burned roof-clay, was composed of main beams, branches, and adobe covering.

*Pottery.*—See chapter on pottery.

*Phase.*—San Francisco.

*General Comments.*—This house burned. Long, wide “bench”(?) along east, south and north walls; greatest width (1.1 meters) in front of entrance; pinches out along north and south walls. Small recess(?) in west wall. Includes earlier house?

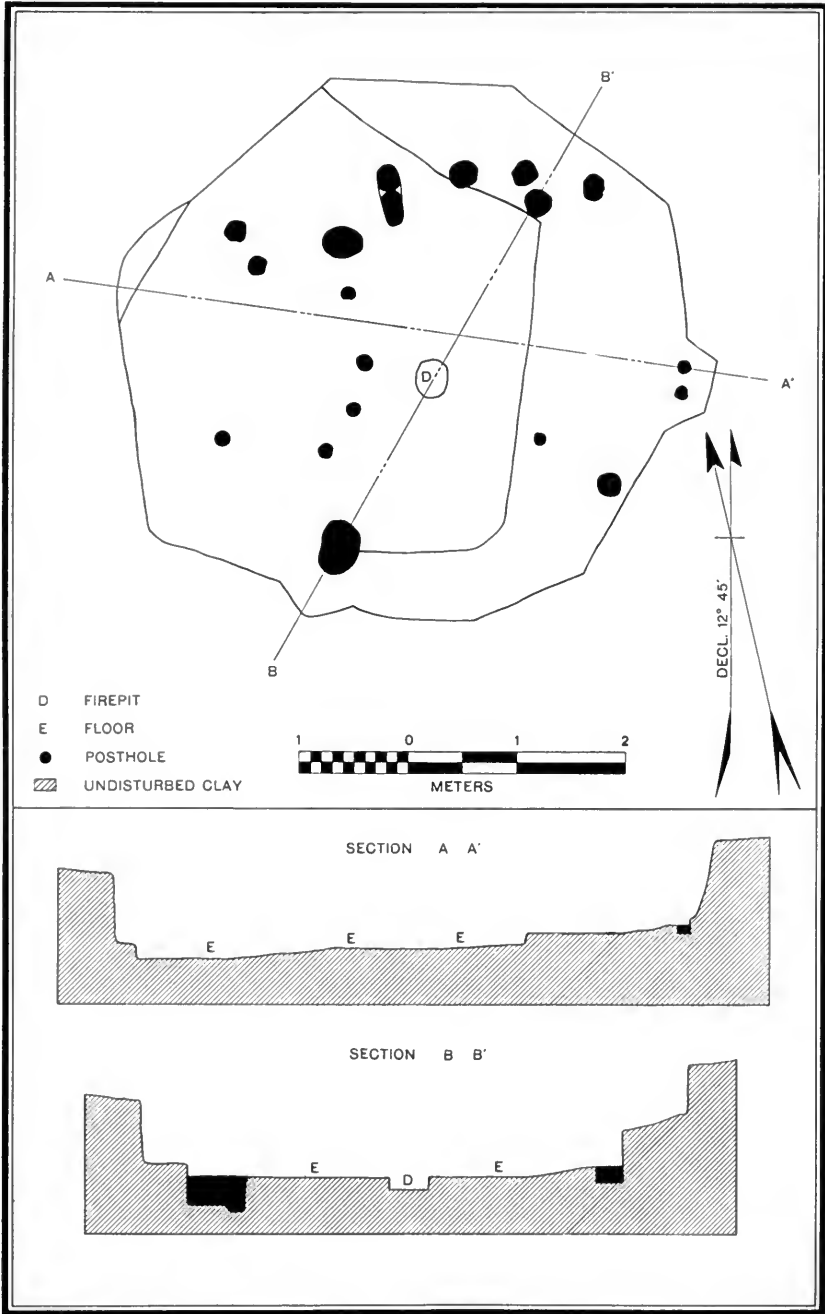


FIG. 99. Plan and sections of Pit-house J.





FIG. 100. Pit-house J. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE K

(Figs. 101, 102)

*Shape.*—Rectangular, with rounded corners; 7.5 by 8 meters.

*Walls* of unplastered, orange-colored, gravelly clay.

*Floor* of same clay; plastered; fairly even where plaster was intact, otherwise uneven; depth below present ground level, 75 cm. to 1.4 meters.

*Firepit.*—Oval, shaped like a dish.

*Lateral Entrance.*—None found.

*Pits.*—Two in number; one circular, one oval; diameters, 30 cm. and 45 cm.; depths, 12 cm. and 24 cm.; round pit has inward-sloping walls, oval pit has vertical walls and contained mano and metate.

*Postholes.*—Nine primary and three secondary; least diameter, 12 cm.; greatest diameter, 45 cm.; least depth, 7 cm.; greatest depth, 75 cm.

*Grooves.*—Four long ones, ranging in length from 1.6 to 3 meters, forming a large rectangle in center of house. In grooves were logs with floor plaster coming up and over them.

*Roof.*—Composed of beams, poles, brush, all covered by adobe; evidence from charred beams and impressions in burned clay.

*Pottery.*—See chapter on pottery.

*Phases.*—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments.*—This house burned. There was a "bench" along north and west walls, the greatest width of which was 80 cm., narrowing down to 37 cm. On east side of rectangular central area were two small holes that might have been ladder holes. Attention is called to central rectangular area defined by logs partly buried in grooves. This area may have served some special purpose. North groove contained fragment of charred log.



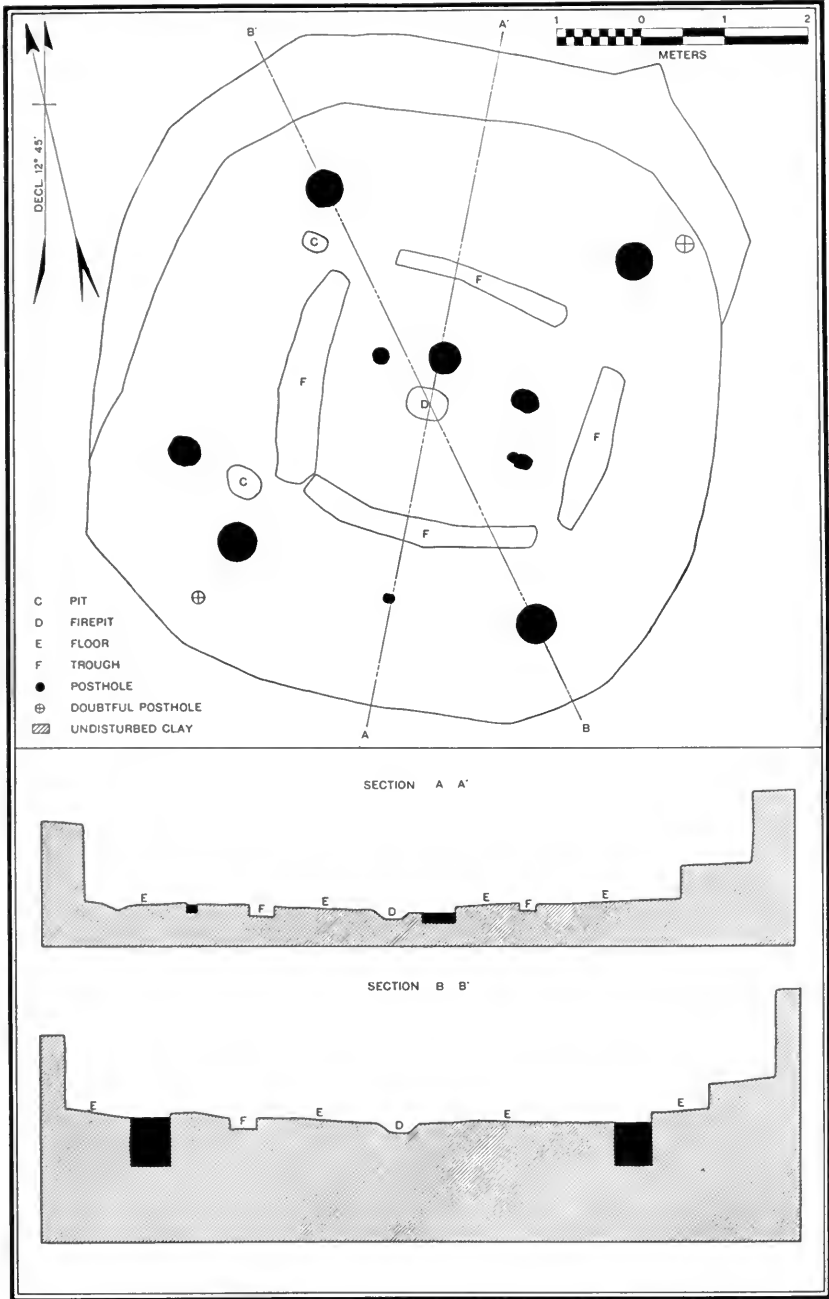


FIG. 101. Plan and sections of Pit-house K.





FIG. 102. Pit-house K. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE L

(Figs. 103, 104)

*Shape*.—Rectangular with rounded corners; width, 5 meters; length, 5.3 meters.

*Walls* of unplastered, gravelly, orange-colored clay.

*Floor* of same clay; unplastered; fairly even; depth below present ground level, 70 cm. to 1.2 meters.

*Firepit*.—None found.

*Lateral Entrance*.—None found.

*Pits*.—Two in number; one circular, diameter 50 cm., depth 13 cm.; one oval, 45 by 30 cm., and 15 cm. deep.

*Extra-mural Pits*.—Three in number; round to oval in shape; least diameter, 70 cm.; greatest diameter, 1.3 meters; floor 10 cm. above floor of house; west niche contained manos and hammerstones.

*Postholes*.—Nine primary and one secondary; least diameter, 13 cm.; greatest diameter, 30 cm.; least depth, 6 cm.; greatest depth, 35 cm.

*Roof*.—Exact character unknown.

*Pottery*.—See chapter on pottery.

*Phases*.—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments*.—This house did not burn. On east side of house portion of floor was burned and covered with thin layer of ashes. "Bench" on north side of house 40 cm. wide; another narrower one on east side of house; "bench" 10 cm. high.

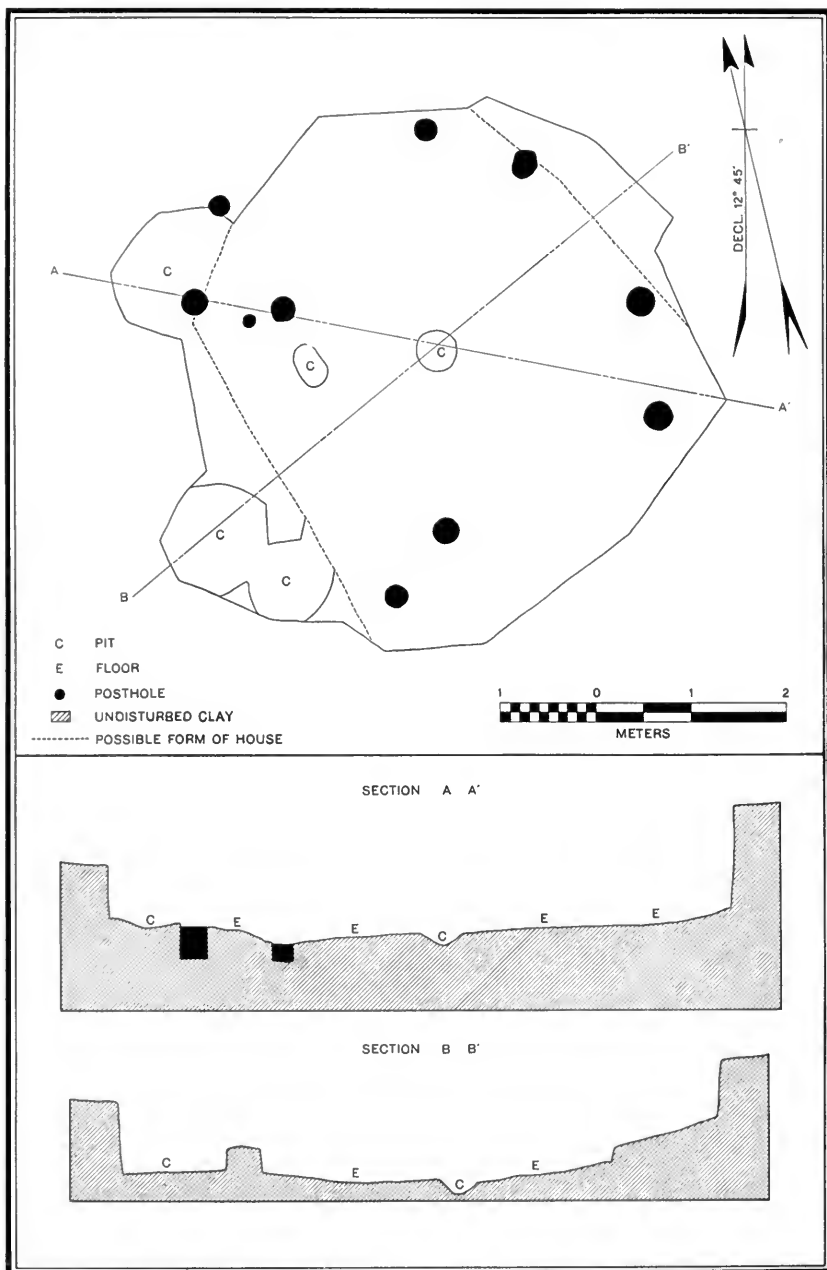


FIG. 103. Plan and sections of Pit-house L.



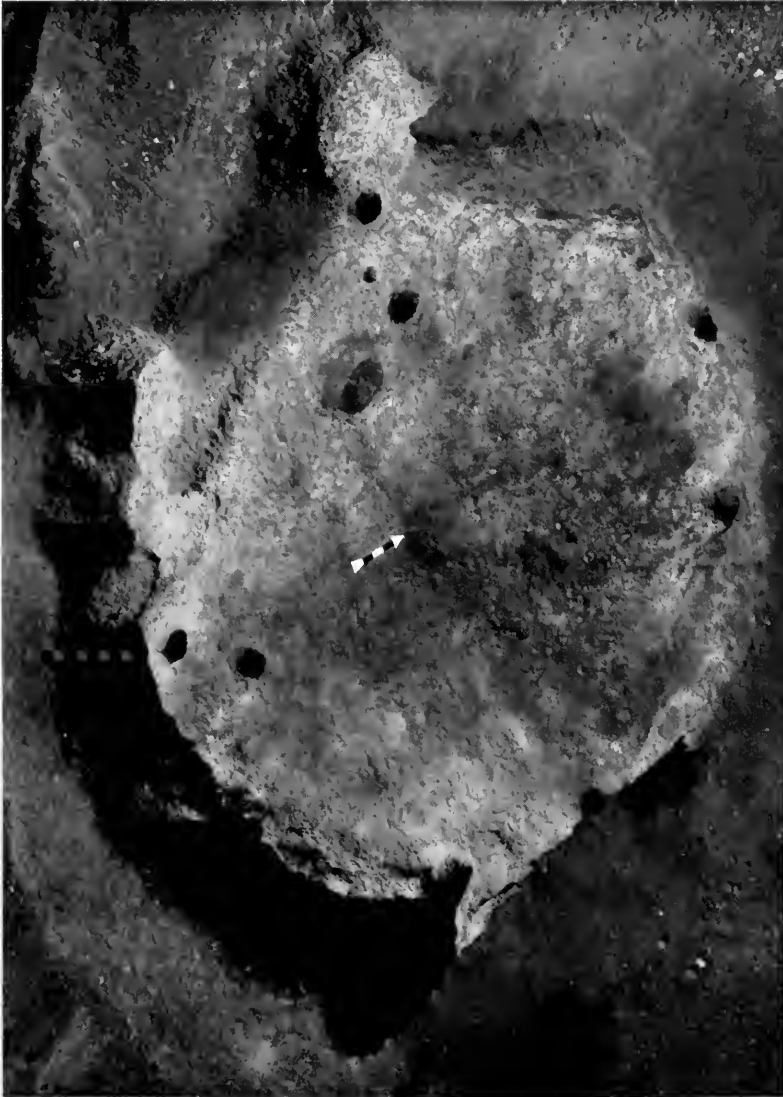


FIG. 104. Pit-house L. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE M

(Figs. 105, 106)

*Shape.*—Roughly circular; 5.7 by 6.7 meters.

*Walls* of unplastered, orange-colored, gravelly clay.

*Floor* of same clay; uneven and unplastered; depth below present ground level, 95 cm. to 1.2 meters.

*Firepit.*—Near entrance; a vaguely shallow, circular depression; diameter, 60 cm.; depth, 6 cm.

*Lateral Entrance.*—In middle of east wall; 1.3 meters long.

*Pits.*—Three in number; least diameter, 70 cm.; greatest diameter, 1 meter; least depth, 10 cm.; greatest depth, 45 cm.; two of these pits have undercut walls; fill was brown, although normal fill in house was black.

*Postholes.*—Six primary and seven secondary; least diameter, 10 cm.; greatest diameter, 35 cm.; least depth, 5 cm.; greatest depth, 29 cm.

*Roof.*—Composed of beams and branches covered with adobe; evidence obtained from charcoal and burned clay; probably similar to type 3 (Haury, 1936a, p. 83, fig. 26).

*Pottery.*—See chapter on pottery.

*Phases.*—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments.*—This house burned. Metates and manos *in situ* in north-west quadrant of house and in center of house; two-hand manos associated with slab type metate; one-hand mano associated with trough type metate, open at one end only; both metates rested on discarded manos and other stones. "Bench" around all sides of house except for opening of entrance; height ranging from 25 to 40 cm.; width ranging from 40 cm. to 1.25 meters. Main floor area rectangular as in Pit-house J; arrangement of pits similar to houses B and L on this site. Includes earlier house?



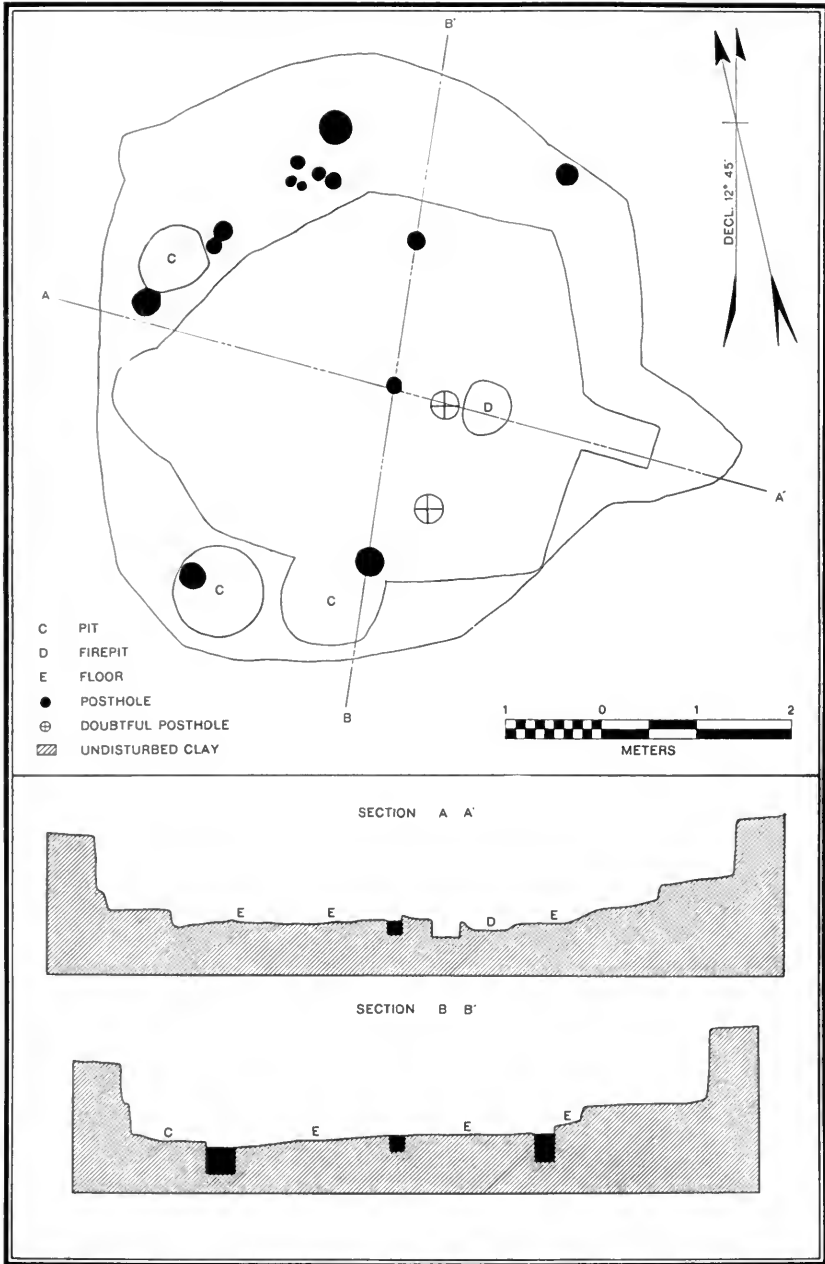


FIG. 105. Plan and sections of Pit-house M.



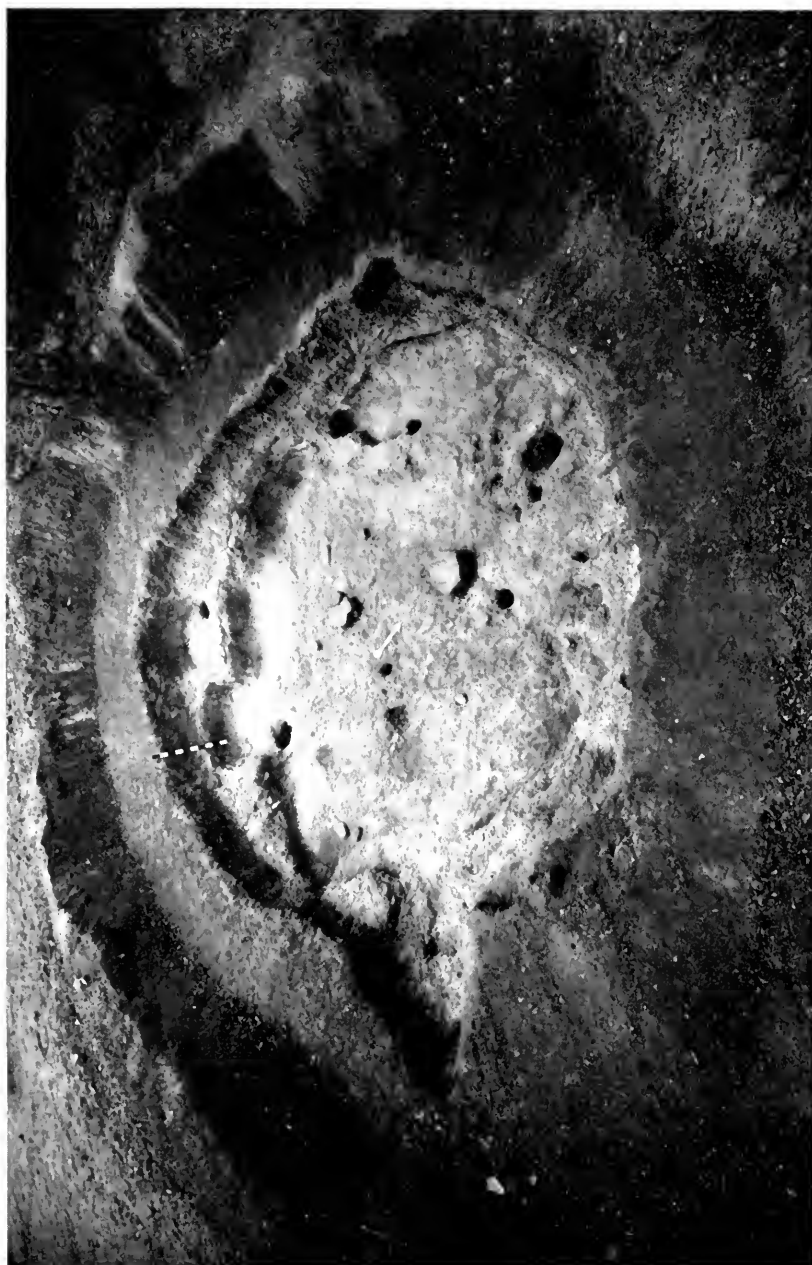


FIG. 106. Pit-house M. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE N

(Figs. 107, 108)

*Shape.*—Rectangular, with rounded corners; 3.65 by 4.35 meters.

*Walls* of unplastered, orange-colored, gravelly clay.

*Floor* of same clay; uneven in east half of house, with rocks protruding; depth below present ground level, 55 cm. to 1.2 meters.

*Firepit.*—None found.

*Lateral Entrance.*—On east side, toward south end of wall; floor or step 20 cm. above pit-house floor; length, 65 cm.

*Pits.*—One; oval-shaped; 80 by 95 cm.; depth, 20 cm. One mano on floor of pit.

*Postholes.*—Three primary and seven secondary; least diameter, 10 cm.; greatest diameter, 27 cm.; least depth, 6 cm.; greatest depth, 21 cm.

*Roof.*—Composed of beams and branches covered with adobe; evidence obtained from charcoal.

*Pottery.*—See chapter on pottery.

*Phases.*—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments.*—This house burned. Along west and north walls was a "bench" 21 cm. high and 30 to 65 cm. wide. Metates and manos *in situ* in south-east quadrant. Postholes in front of door may have held posts that supported deflector slab.

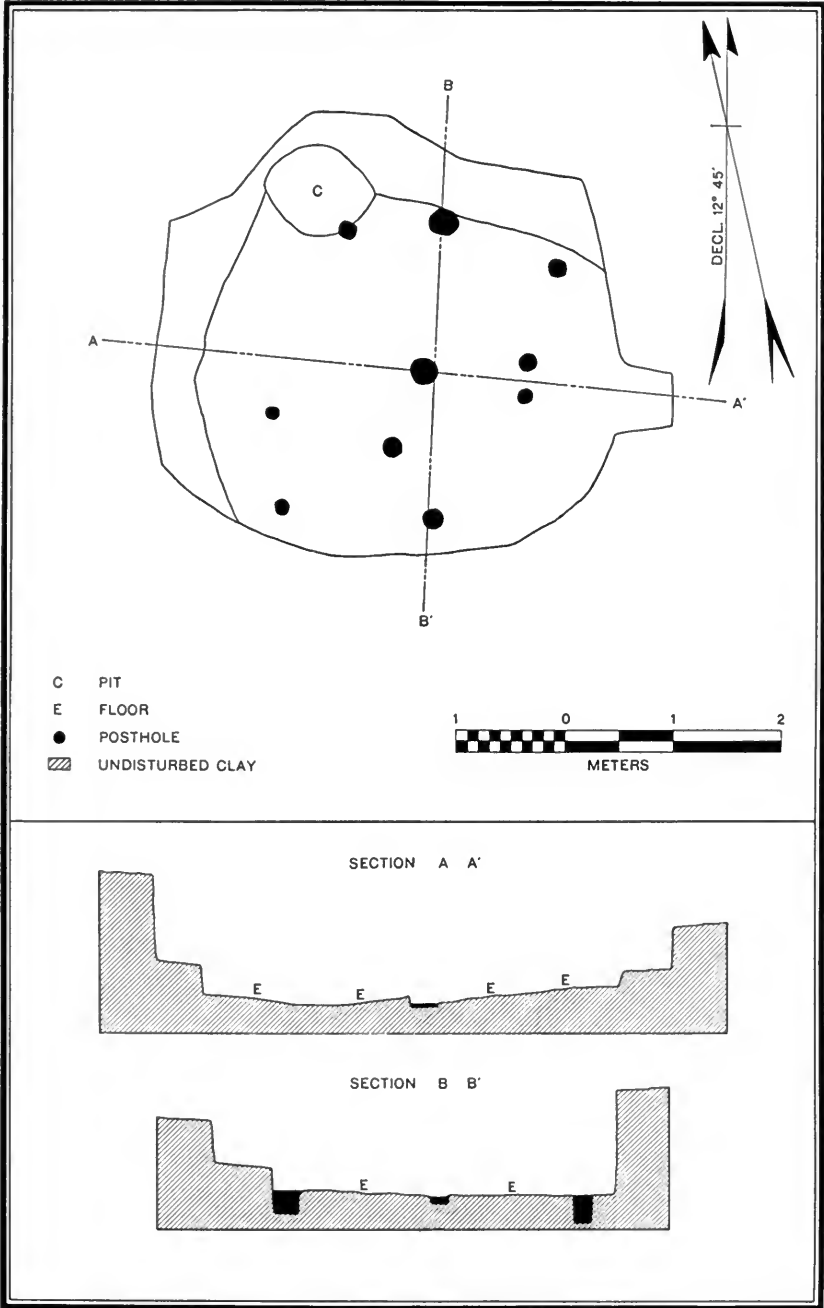


FIG. 107. Plan and sections of Pit-house N.





FIG. 108. Pit-house N. Arrow (50 cm. long) points north; meter stick in background.

## PIT-HOUSE O

(Figs. 109, 110)

*Shape.*—Rectangular, with rounded corners; 3.8 by 3.9 meters.

*Walls* of unplastered, gravelly, orange-colored clay.

*Floor* of same clay; uneven; depth below present ground level, 80 cm. to 1.35 meters.

*Firepit.*—Circular; located in west half of house near entrance.

*Lateral Entrance.*—In middle of west wall; greatest length, 1.4 meters; floor or step 29 cm. above floor of pit-house.

*Pits.*—None found.

*Postholes.*—Five primary and eight secondary; least diameter, 12 cm.; greatest diameter, 36 cm.; least depth, 6 cm.; greatest depth, 40 cm.

*Roof.*—Composed of beams and branches covered with adobe; evidence obtained from charcoal and burned clay.

*Pottery.*—See chapter on pottery.

*Phases.*—Construction, San Francisco. Occupation, San Francisco and Three Circle.

*General Comments.*—This house burned. Note should be made of the fact that the entrance is on the *west* side of the house—a rare occurrence (see Pit-house I). Slab metate found near north wall; trough metate near east wall.



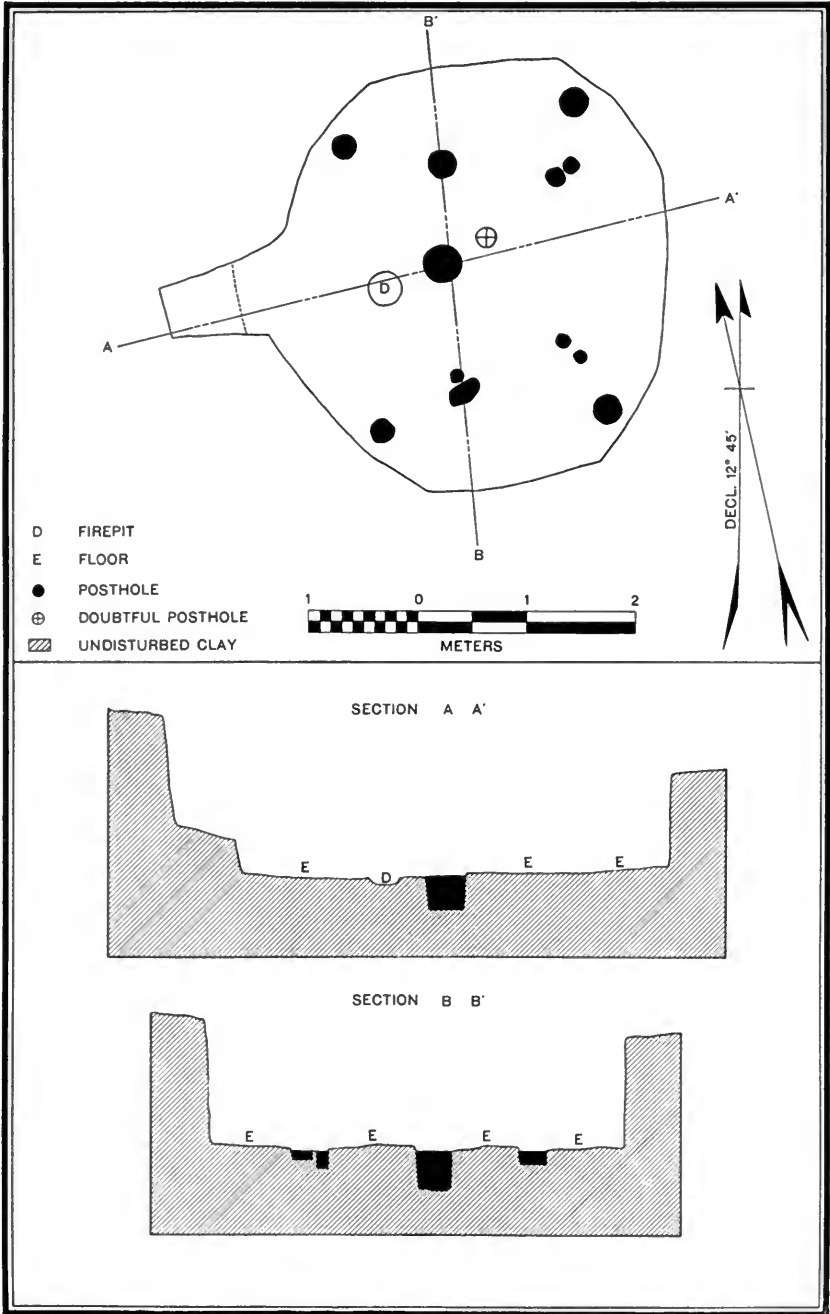


FIG. 109. Plan and sections of Pit-house O.

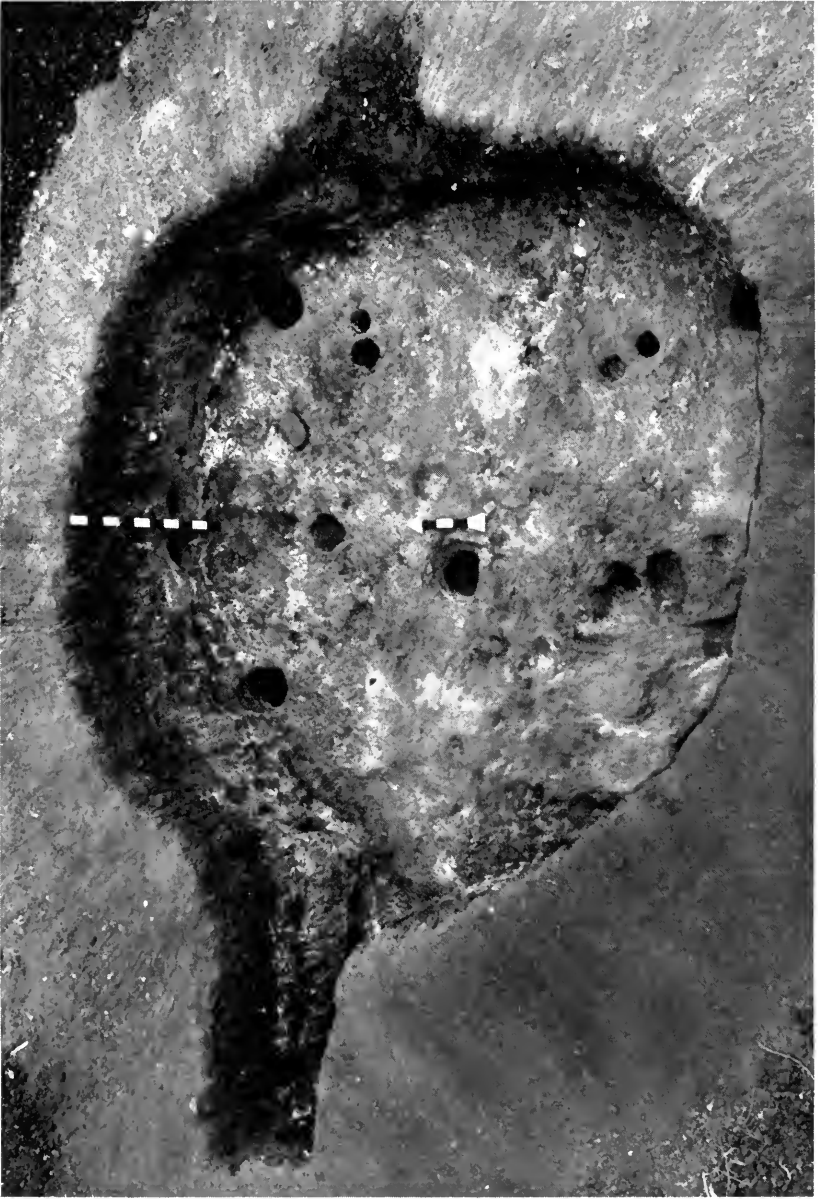


FIG. 110. Pit-house O. Arrow (50 cm. long) points north; meter stick in background.

### III. ARTIFACTS

On pages 309-358 the details of the artifacts are given in outline form. For convenience in comparison the artifacts have been grouped as follows:

#### LIST OF ARTIFACTS

Object	<i>Ground and Pecked Stone</i>	Number excavated
Handstones		
Manos.....		140
Rubbing stones.....		33
Pestles.....		7
Milling stones		
Metates.....		36
Small, metate-like grinding stones.....		8
Mortars.....		6
Worked stone slabs.....		9
Polishing stones.....		36
Hammerstones.....		16
Mauls.....		2
Axes.....		1
Stone dishes.....		1
Pipes.....		4
Stone ball.....		1
	<i>Chipped Stone</i>	
Projectile points.....		7
Knives.....		36
Scrapers.....		37
Choppers.....		3
Drills.....		2
Mauls.....		3
Ax.....		1
Hoes.....		2
	<i>Polished Stone</i>	
Pendant.....		1
	<i>Shell</i>	
Bracelets.....		2
Pendant.....		1
	<i>Bone</i>	
Awls.....		25
Needle.....		1
Flesher.....		1
Die.....		1
Tube.....		1
	<i>Clay</i>	
Worked sherds.....		32
Figurine.....		1
Miniature ladies.....		2

<i>Unworked Stone</i>	
Pigments.....	3
Crystals.....	4
Ceremonial objects(?).....	4
	470
Total number of artifacts.....	470

### DISCUSSION

The greater number of post Pine Lawn phase artifacts (artifacts of the Georgetown, San Francisco, and Three Circle phases) recovered through the complete excavation of the Turkey Foot Ridge site, provided considerable additional evidence to strengthen and modify the conclusions reached on the basis of the evidence available in 1947.

In general, the impression received from an examination of the early and late stone and bone artifacts of the Pine Lawn Valley is one of cultural continuity. This is evident from the uniformity of the stone artifacts from the Cochise levels up through Three Circle times, and of the bone and shell artifacts from at least Pine Lawn phase times. The majority of tools and other artifacts from the Turkey Foot Ridge site have their prototypes and frequently their counterparts in the implements and objects from the Pine Lawn phase as represented at the SU and Promontory sites. The primary artifact categories (such as manos, metates, mortars and mauls) and in many cases the secondary categories (such as pebble and boulder type mortars), remained the same. The differences between the artifacts of the Pine Lawn phase and those of the later phases lie in small but significant details and in the frequencies of certain types, in the addition of a few secondary artifact categories (such as through-trough type metates), and in the dropping out of a few old categories (for example, basin-type metates).

Basically and essentially there are greater stability and continuity in the stone and bone artifacts than in architecture or pottery types, for modifications in the artifacts are less radical and there are fewer of them; for example, the transitions from the use of only plain pottery to the use of both plain and decorated wares, or from large, vaguely circular pit-houses with side entrances, to small, rectangular pit-houses, seem more radical changes than any apparent in the artifact categories.

In order to implement a direct village-to-village and house-to-house comparison of artifact frequencies for the purpose of substantiating these impressions of change, a table was constructed (Table 9, pp. 356-358) showing artifact frequencies in each house of

Turkey Foot Ridge Village. This was then compared with a similar table constructed for the houses of the SU, Promontory and Twin Bridges sites (see Martin, Rinaldo and Antevs, 1949, Table 3, pp. 180-183).

It was immediately evident from this comparison that the primary categories of manos, metates, rubbing stones and the like remained much the same; for example, a comparison of primary artifact categories from twenty-three pit-houses later than the Pine Lawn phase (from the Turkey Foot Ridge and Twin Bridges sites) with those of twenty-three houses of the Pine Lawn phase (from the SU site) reveals in the Pine Lawn phase only four primary categories that are not represented in the Three Circle phase: bone pins, antler rubbers, abrading stones, and "bird" pendants. Moreover, these artifact types appeared so sporadically even in the Pine Lawn phase and are so few in number that their absence from the later list detracts very little from the basic continuity evident from the large number of categories common to both lists.

Of course the culture changes that are apparent from changes in architecture and pottery types are also evident in the artifact categories, although they are less pronounced; for instance, no basin metates (other than mortar-metates) were recovered from Turkey Foot Ridge Village, and attendant to this change is a corresponding decrease in the number of oval and oblong manos and rubbing stones. Conversely, the greater frequency of trough-type metates and the innovation of the through-trough-type metate is correlated with a greater frequency of rectangular manos. These changes, in addition to a marked decrease in the frequency of mortars and pestles in the Three Circle phase pit-houses, appear to be indicative of a general change in grinding methods. Other evidence of this change besides the changes in frequency of grinding-tool types, are changes in the troughs of trough-type metates. These troughs have straighter sides than those of the Pine Lawn phase trough-type metates and are striated lengthwise, indicating a straight back and forth motion with the mano. Furthermore, almost all of the Three Circle phase manos tend to be more convex end to end than across the short axis (side to side), and even those that are definitely rectangular in outline have rounded ends on the grinding surface such as would result from rubbing on the sides of the trough.

Although it is almost certain that there was this change in grinding methods, little additional evidence was obtained to substantiate the theory that this change was somehow tied up with a

closer dependence on agriculture as a means of subsistence. No corn or other domesticated plant produce was recovered from the houses of the Turkey Foot Ridge Village to substantiate this theory. However, fewer projectile points were recovered from the Three Circle phase houses, and less animal bone. Also, the projectile points that were recovered are more heterogeneous in type. These facts seem to be indicative of a decrease in the importance of hunting; and that in turn, in an indirect way, seems to indicate that agriculture was practiced, because it seems doubtful whether a larger Three Circle phase population could subsist on collecting alone. On the other hand, there is no increase in the number of hoes or other agricultural implements found, and so the evidence remains inconclusive.

Scrapers, knives and other chipped stone tools (other than projectile points) were recovered from the Three Circle phase houses in equal numbers to those recovered from the Pine Lawn phase houses. However, there is some evidence for another change in stone tools—the acceptance into use of the hafted ax in place of the chopper or hand ax. Very few choppers have been recovered from Three Circle phase houses. On the other hand, one dull three-quarter-groove ax was recovered from Pit-house K of the Turkey Foot Ridge Village, and one crudely chipped notched ax from Pit-house F of the same village. These tools possibly indicate a transition to the use of the hafted ax. The chipped ax is roughly equivalent to implements illustrated by Haury (1936a, p. 70) from Three Circle phase houses at the Harris Village. Furthermore, Nesbitt (1938, p. 103) found a very few grooved axes in pit-houses of the San Francisco phase at Starkweather Village. These grooved axes and the single grooved ax from Turkey Foot Ridge are alike only in that their cutting edges are battered and chipped. It is uncertain whether this chipping is due to their having been used as mauls (grooved mauls were made and used by these people even in Cochise times) or to a poorly directed attempt to sharpen them by chipping, as a chopper would be sharpened when it became dull. At least none of these axes was resharpened by polishing and grinding as was done in the areas where grooved and polished axes were more common.

Meanwhile the other categories of bone and shell artifacts remained static. Shell bracelets, bone dice and other miscellaneous bone and shell artifacts recovered from the Turkey Foot Ridge site were the same types as those recovered from the SU site.

## FUNCTIONS AND ASSOCIATIONS OF ARTIFACTS

In general, the implements from the Three Circle phase are more carefully worked than those from the earlier phases. Many of the manos, rubbing stones, and pestles, and all of the axes, mauls, and pipes show that all of their surfaces have been worked by pecking and grinding. A few other types such as polishing stones and oval rubbing stones and manos have only their working surfaces to differentiate them from natural pebbles. The pecking on these implements may have been done with a hammerstone. A graded series of such hammerstones was recovered, ranging from a sharp angular core to a rounded ball-like stone. The small crater-like pits made by such implements are to be found on most of the Three Circle phase ground stone artifacts.

A crude sort of percussion chipping continued to be the primary method for shaping chipped implements. There appears to be a definite decrease in the number of pressure-chipped implements, such as projectile points and blades, from the houses of the Three Circle phase as compared with those of the Pine Lawn phase, although the percussion-chipped implements do not decrease in frequency.

From the evidence at hand there was no drastic change in the manufacture of bone implements. All the bone artifacts with the exception of two small awls have their counterparts in the bone implements found at the SU site.

During the Three Circle phase the worked sherd scoop appears to have come into use. None of these unusually large worked sherds was recovered from Pine Lawn phase houses, although the other types of worked sherds are common in all periods.

We found several additional associations that contribute to our knowledge concerning the functions of artifacts. Manos were found in direct association with metates (usually beside or beneath the metate) in Pit-houses E, I, K, M, N, and O (see illustrations of these pit-houses, Figs. 90, 98, 102, 106, 108, 110). In most instances rectangular or oblong manos were in association with trough-type metates. An exception to this was in Pit-house M, where a disk-type mano was in association with a trough-type metate.

In Pit-houses G and J worked stone slabs apparently took the place of metates. For instance, in Pit-house G a mano and hammerstone were found in association with a worked stone slab, and several more manos were found in a small rectangular pit close by. The

worked stone slab gave evidence of having been used for grinding but was much thinner than the usual slab metate.

A full-groove maul was in direct association with a boulder mortar in Pit-house N. One might conjecture that the maul was used as a pestle in this instance.

Two bone awls were found together on the bench along the west wall of this same house. These undoubtedly comprise a set of awls such as have been found in several other instances in the Pine Lawn Valley. One awl from Pit-house C has small, regularly spaced notches or grooves along one edge. It has been conjectured that such grooves are indicative of the use of the awl in weaving.

Thus, in general, the stone, bone and shell artifacts exhibit a basic continuity and stability extending from very early times up through the Three Circle phase. Although there was an apparent change in the grinding pattern, which altered the central tools of the subsistence pattern somewhat, these changes in metates and manos are really not comparable to the rather drastic modifications in architecture and pottery types. Although a few innovations were accepted, such as the introduction of the hafted ax and the through-trough-type metate, such changes were relatively few and did not become firmly established in the culture until somewhat later.

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 Mrs. Dorothy B. Foss, Osteologist, Department of Zoology, Chicago Natural History Museum. The identification of the materials in the shell objects was made by Dr. Fritz Haas, Curator, Lower Invertebrates, Department of Zoology, Chicago Natural History Museum.



MANOS

(Figs. 111-113)

Manos with single grinding surface:

- (a) Oblong in outline, surfaces parallel, grinding surface convex. . . . . 3  
From Pit-houses D, H, I  
Lengths, 18.7, 19.2, 15.1 cm.; widths, 13.2, 15.1, 9.7 cm.; thicknesses, 5.6, 6.1, 7.1 cm.
- (b) Oblong in outline, surfaces parallel, grinding surface flat, worn slightly convex on ends. . . . . 6  
From Pit-houses D, E, H, I, O  
Length: maximum, 22.6 cm.; minimum, 15.3 cm.; average, 18.4 cm.  
Width: maximum, 13.4 cm.; minimum, 8.6 cm.; average, 11.1 cm.  
Thickness: maximum, 7.0 cm.; minimum, 3.4 cm.; average, 5.0 cm.
- (c) Oval in outline, five wedge-shaped in cross section, remainder with parallel surfaces, grinding surface convex lengthwise, slightly convex crosswise. . . . . 17  
From Pit-houses C, E, L, M, N, O, Surface House 1  
Length: maximum, 19.1 cm.; minimum, 11.5 cm.; average, 16.0 cm.  
Width: maximum, 14.1 cm.; minimum, 6.4 cm.; average, 11.2 cm.  
Thickness: maximum, 6.6 cm.; minimum, 2.4 cm.; average, 4.4 cm.
- (d) Oval in outline, surfaces parallel, grinding surface slightly convex (Fig. 111, b, e) . . . . . 11  
From Pit-houses E, F, G, I, N, Surface House 1  
Length: maximum, 21.2 cm.; minimum, 10.0 cm.; average, 14.1 cm.  
Width: maximum, 12.6 cm.; minimum, 8.0 cm.; average, 9.3 cm.  
Thickness: maximum, 7.1 cm.; minimum, 4.5 cm.; average, 5.7 cm.
- (e) Oval in outline, surfaces parallel, grinding surface flat. . . . . 6  
From Pit-houses C, L, M, Surface House 1  
Length: maximum, 20.3 cm.; minimum, 12.2 cm.; average, 16.0 cm.  
Width: maximum, 11.1 cm.; minimum, 9.2 cm.; average, 10.1 cm.  
Thickness: maximum, 7.1 cm.; minimum, 3.6 cm.; average, 5.2 cm.
- (f) Round in outline, surfaces parallel, grinding surface convex. . . . . 5  
From Pit-houses C, K, M, Surface House 1 (Fig. 111, a, c, d)  
Length: maximum, 16.5 cm.; minimum, 10.0 cm.; average, 12.8 cm.  
Width: maximum, 15.1 cm.; minimum, 10.0 cm.; average, 12.2 cm.  
Thickness: maximum, 7.9 cm.; minimum, 4.1 cm.; average, 6.5 cm.
- (g) Round in outline, surfaces parallel, grinding surface slightly convex. . . . . 2  
From Pit-houses L, M  
Lengths, 12.3, 10.9 cm.; widths, 11.0, 9.8 cm.; thicknesses, 6.7, 6.9 cm.
- (h) Rectangular in outline, surfaces parallel, grinding surface convex lengthwise, slightly convex crosswise, ends worn convex. . . . . 18  
From Pit-houses C, E, F, H, I, J, K, L, M, N  
Length: maximum, 21.7 cm.; minimum, 11.2 cm.; average, 17.1 cm.  
Width: maximum, 17.2 cm.; minimum, 9.7 cm.; average, 12.0 cm.  
Thickness: maximum, 9.0 cm.; minimum, 2.9 cm.; average, 5.4 cm.
- (i) Rectangular in outline, surfaces parallel, grinding surface convex, some with rounded ends (Fig. 112) . . . . . 19  
From Pit-houses C, E, F, G, H, I, K, M, O, Surface House 1  
Length: maximum, 23.3 cm.; minimum, 11.7 cm.; average, 16.2 cm.  
Width: maximum, 13.3 cm.; minimum, 8.4 cm.; average, 11.0 cm.  
Thickness: maximum, 8.8 cm.; minimum, 2.8 cm.; average, 5.6 cm.
- (j) Rectangular in outline, surfaces parallel, grinding surface flat, some with rounded ends, three specimens with small pit in center of upper surface for grip. . . . . 21  
From Pit-houses C, E, G, I, J, L, M, N, O, Surface House 1  
Length: maximum, 23.5 cm.; minimum, 10.6 cm.; average, 16.5 cm.  
Width: maximum, 13.7 cm.; minimum, 8.5 cm.; average, 11.0 cm.  
Thickness: maximum, 6.3 cm.; minimum, 3.1 cm.; average, 4.6 cm.

MANOS—*continued*

(Figs. 111–113)

- (k) Square in outline, surfaces parallel, grinding surface slightly convex . . . 3  
From Pit-houses G, I, M  
Lengths, 13.5, 16.1, 19.5 cm.; widths, 12.2, 13.2, 16.6 cm.; thicknesses, 4.3, 9.1, 3.8 cm.
- (l) Turtleback type; rectangular with rounded ends in outline, surfaces parallel, grinding surface convex lengthwise, slightly convex crosswise, upper surface convex (Fig. 113) . . . . . 7  
From Pit-houses E, I, O  
Length: maximum, 19.2 cm.; minimum, 17.0 cm.; average, 18.3 cm.  
Width: maximum, 15.5 cm.; minimum, 12.0 cm.; average, 13.8 cm.  
Thickness: maximum, 7.4 cm.; minimum, 3.9 cm.; average, 5.0 cm.
- (m) Triangular in outline, wedge-shaped in cross section, grinding surface slightly convex . . . . . 1  
From Pit-house M  
Length, 18.0 cm.; width, 15.5 cm.; thickness, 4.4 cm.

Manos with two grinding surfaces:

- (a) Roughly round in outline, surfaces parallel, one grinding surface convex, the other convex lengthwise, slightly convex crosswise . . . . . 1  
From Pit-house M  
Length, 11.7 cm.; width, 10.8 cm.; thickness, 3.4 cm.
- (b) Roughly round in outline, surfaces parallel, one grinding surface flat, the other slightly convex . . . . . 1  
From Pit-house J  
Length, 11.2 cm.; width, 9.7 cm.; thickness, 2.9 cm.
- (c) Oval in outline, surfaces parallel, grinding surfaces flat . . . . . 5  
From Pit-houses C, E, M  
Length: maximum, 15.0 cm.; minimum, 10.6 cm.; average, 12.4 cm.  
Width: maximum, 10.8 cm.; minimum, 8.3 cm.; average, 9.2 cm.  
Thickness: maximum, 6.7 cm.; minimum, 3.9 cm.; average, 5.5 cm.
- (d) Rectangular with rounded ends in outline; two specimens wedge-shaped in cross section, remainder with surfaces parallel, one grinding surface convex, the other convex lengthwise, slightly convex crosswise . . . . . 5  
From Pit-houses C, L, M, Surface House 1  
Length: maximum, 19.0 cm.; minimum, 12.2 cm.; average, 15.5 cm.  
Width: maximum, 12.7 cm.; minimum, 8.9 cm.; average, 11.2 cm.  
Thickness: maximum, 7.3 cm.; minimum, 3.4 cm.; average, 4.7 cm.
- (e) Rectangular in outline, surfaces parallel, grinding surfaces slightly convex . . . . . 3  
From Pit-houses C, F, I  
Lengths, 18.5, 12.8, 25.5 cm.; widths, 10.2, 9.6, 15.9 cm.; thicknesses, 4.7, 6.1, 7.5 cm.
- (f) Rectangular in outline, wedge-shaped in cross section, one grinding surface flat, the other slightly convex . . . . . 6  
From Pit-houses C, D, F, G, N, Surface House 1  
Length: maximum, 16.9 cm.; minimum, 10.5 cm.; average, 13.7 cm.  
Width: maximum, 11.3 cm.; minimum, 7.6 cm.; average, 9.4 cm.  
Thickness: maximum, 4.6 cm.; minimum, 3.1 cm.; average, 3.7 cm.

Materials: Granite, trachyte, quartzite

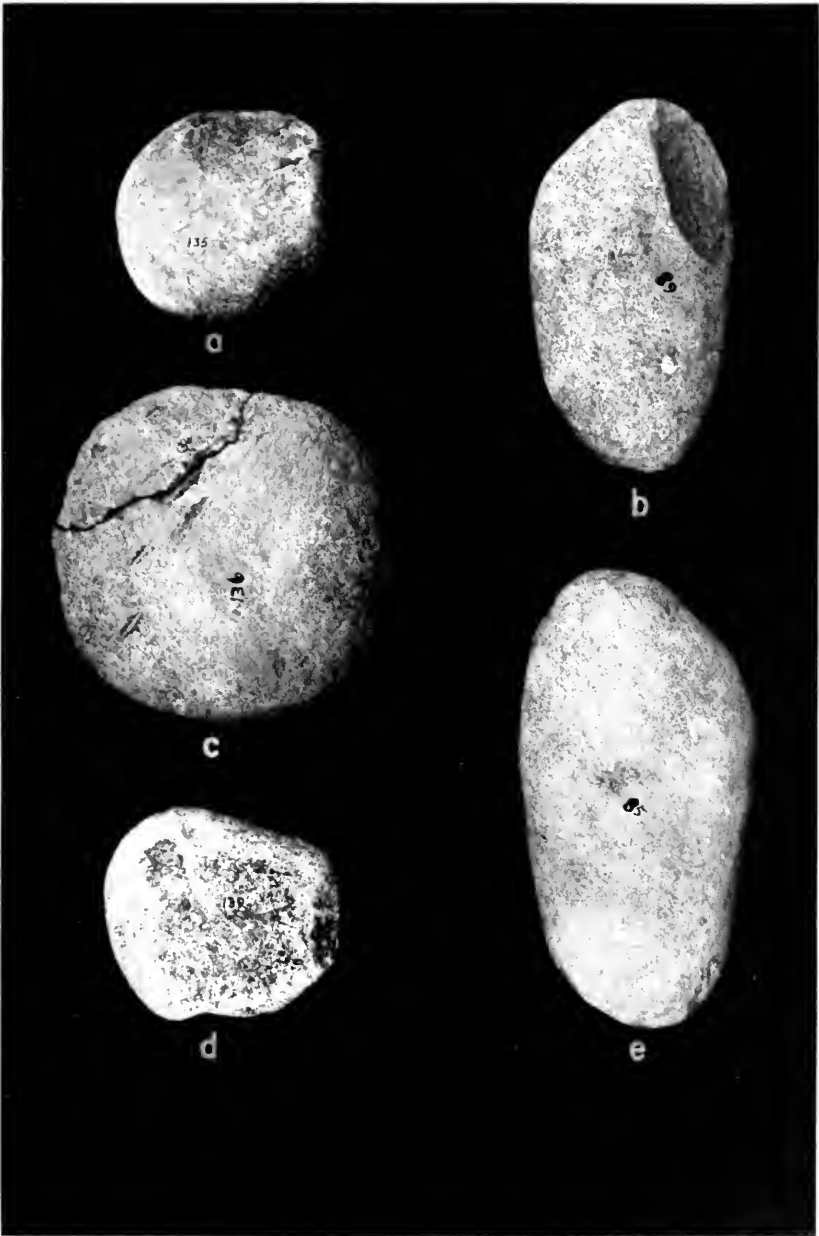


FIG. 111. Manos. Disk type (*a, c, d*) and oval, pebble type (*b, e*); length of *e*, 21.2 cm.



FIG. 112. Manos. Rectangular tabular type. Length of bottom specimen, 16.7 cm.



FIG. 113. Manos. Turtleback type showing upper surface. Length of lower specimen, 18.0 cm.

## RUBBING STONES

(Fig. 114)

Rubbing stones with single rubbing surface:

- |   |    |
|---|----|
| (a) Oval in outline, surfaces parallel, rubbing surface convex.....   | 3  |
| From Pit-houses M, N  |    |
| Lengths, 8.1, 10.5, 9.2 cm.; widths, 6.0, 8.3, 6.6 cm.; thicknesses, 4.2, 7.1, 5.2 cm.                          |    |
| (b) Oval in outline, surfaces parallel, rubbing surface slightly convex (Fig. 114, c, e).....                   | 2  |
| From Pit-houses G, J  |    |
| Lengths, 8.3, 9.4 cm.; widths, 5.5, 6.8 cm.; thicknesses, 3.4, 3.1 cm.  |    |
| (c) Oval in outline, surfaces parallel, rubbing surface flat.....   | 16 |
| From Pit-houses D, K, L, M, O, Surface House 1 (Fig. 114, a, b)   |    |
| Length: maximum, 10.2 cm.; minimum, 6.8 cm.; average, 8.7 cm.   |    |
| Width: maximum, 7.5 cm.; minimum, 3.5 cm.; average, 6.4 cm.   |    |
| Thickness: maximum, 4.3 cm.; minimum, 2.4 cm.; average, 3.1 cm.   |    |
| (d) Round in outline, surfaces parallel, rubbing surface slightly convex..                                      | 1  |
| From Pit-house M  |    |
| Length, 8.5 cm.; width, 8.5 cm.; thickness, 3.6 cm.   |    |
| (e) Rectangular in outline, wedge-shaped in cross section, rubbing surface flat (Fig. 114, d, f).....           | 4  |
| From Pit-houses C, I, N, O  |    |
| Lengths, 8.4, 8.3, 10.1 cm., one fragment; widths, 7.7, 7.0, 6.5, 5.5 cm.; thicknesses, 4.3, 3.1, 2.6, 3.1 cm.. |    |

Rubbing stones with two rubbing surfaces:

- |   |   |
|---|---|
| (a) Oval in outline, surfaces parallel, rubbing surfaces flat.....  | 6 |
| From Pit-houses H, I, M   |   |
| Length: maximum, 8.8 cm.; minimum, 7.1 cm.; average, 7.9 cm.  |   |
| Width: maximum, 6.9 cm.; minimum, 4.8 cm.; average, 5.9 cm.   |   |
| Thickness: maximum, 3.5 cm.; minimum, 1.6 cm.; average, 2.2 cm.   |   |
| (b) Rectangular with rounded ends in outline; surfaces parallel, one rubbing surface flat, the other slightly convex..... | 1 |
| From Pit-house M  |   |
| Length, 9.9 cm.; width, 7.8 cm.; thickness, 3.1 cm.   |   |

Materials: Limestone, sandstone, quartzite, basalt

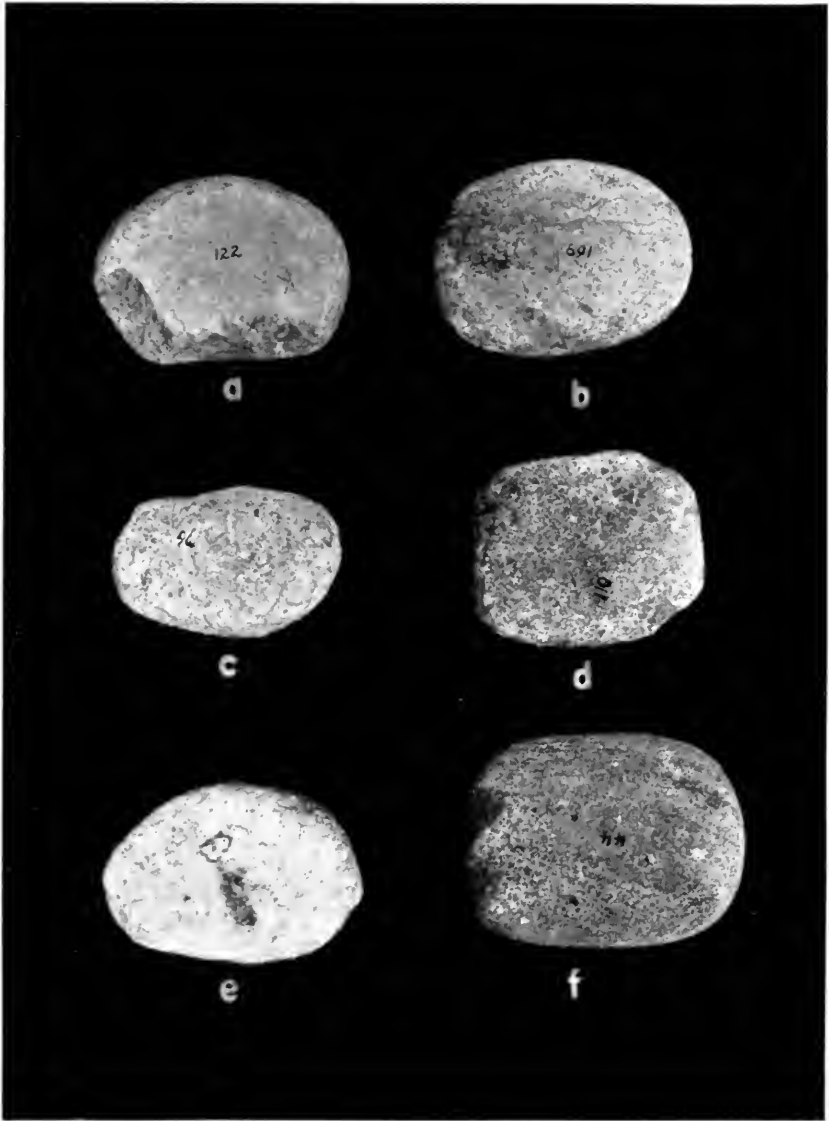


FIG. 114. Rubbing stones. *a-c, e*, oval type; *d, f*, rectangular type. Length of *e*, 9.4 cm.

PESTLES

(Fig. 115)

- (a) Angular type, long angular stone, rectangular in cross section, tapers from small to larger end; large and round, pecked and battered (Fig. 115, *g*)..... 2  
From Pit-house C, Surface House 1  
Lengths, 33.1, 15.4 cm.; widths, 6.3, 8.3 cm.; thicknesses, 9.6, 5.4 cm.
- (b) Roughly round or rectangular pebbles with some pecked, flat surfaces, and round, battered ends (Fig. 115, *a-f*)..... 5  
From Pit-houses E, N, Surface House 1  
Length: maximum, 13.2 cm.; minimum, 8.5 cm.; average, 10.6 cm.  
Width: maximum, 9.1 cm.; minimum, 7.1 cm.; average, 7.9 cm.  
Thickness: maximum, 8.8 cm.; minimum, 6.5 cm.; average, 7.7 cm.



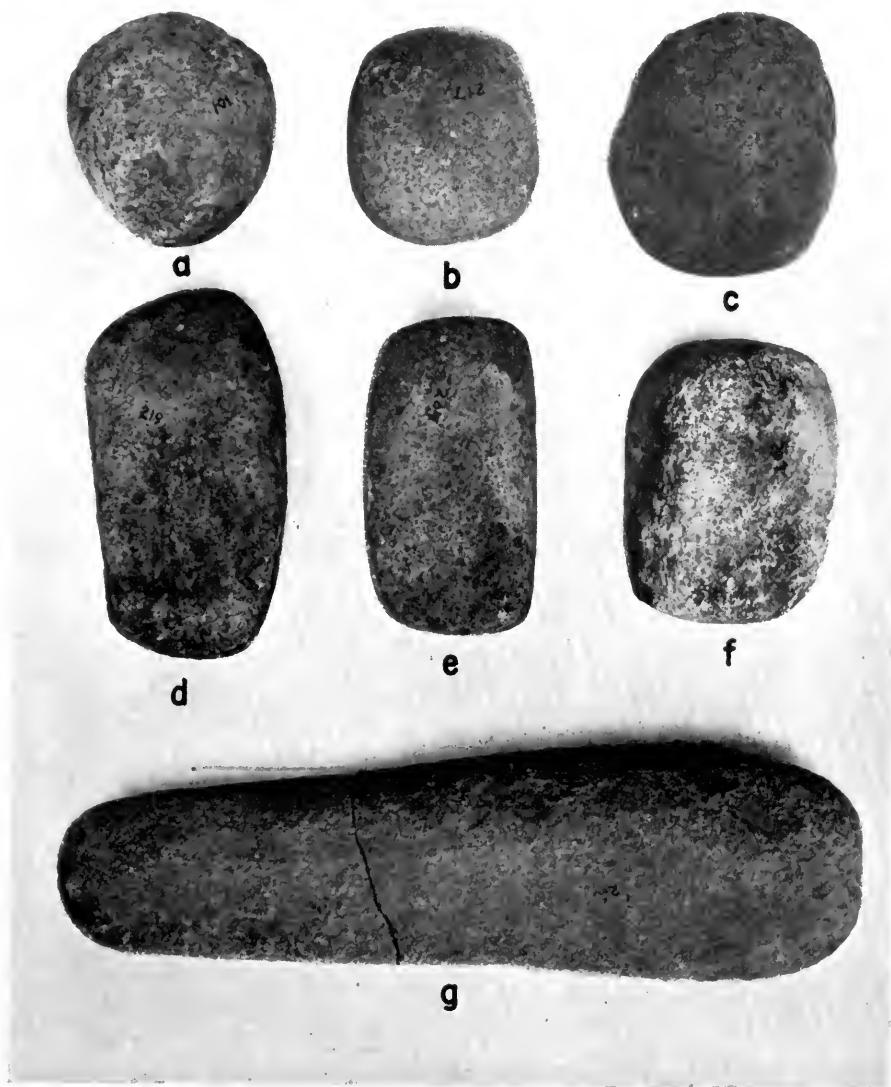


FIG. 115. Pestles. *a-c, e, f*, multifaced type; *d, g*, angular type. Length of *g*, 23.1 cm.

METATES

(Figs. 116-118)

- (a) Slab type, large slab, generally rectangular or oval in outline with flat or slightly concave upper surface; bottom and sides of slab unworked; grinding surface usually smooth, sometimes pecked. . . . . 8
  - From Pit-houses C, E, I, K, M, N, O
  - Length: maximum, 54.0 cm.; minimum, 27.0 cm.; average, 40.4 cm.
  - Width: maximum, 41.0 cm.; minimum, 21.1 cm.; average, 31.8 cm.
  - Thickness: maximum, 13.1 cm.; minimum, 6.0 cm.; average, 11.0 cm.
- (b) Basin type with secondary depression; unshaped blocks of stone with grinding surface worn to slight depression; small round cup-shaped hole in center of basin, bottom and sides of boulder usually unaltered; one specimen with basin grinding surface on both sides (Fig. 120) . . . 4
  - From Pit-houses C, M, N
  - Length: maximum, 50.1 cm.; minimum, 33.3 cm.; average, 40.5 cm.
  - Width: maximum, 40.2 cm.; minimum, 31.0 cm.; average, 35.6 cm.
  - Thickness: maximum, 18.0 cm.; minimum, 9.1 cm.; average, 14.3 cm.
  - Dimensions of cup-shaped hole:
    - Diameter: maximum, 10.8 cm.; minimum, 8.0 cm.; average, 10.3 cm.
    - Depth: maximum, 6.0 cm.; minimum, 2.6 cm.; average, 4.2 cm.
- (c) Trough type, open at one end only, unshaped oval or rectangular blocks of stone with trough-shaped grinding surface open at one end only; trough slopes up at closed end; sides of trough curve slightly; mano rest groove on shelf at closed end (Figs. 116, 117) . . . . . 21
  - From Pit-houses E, F, H, I, M, N, O, Surface House 1
  - Length: maximum, 54.0 cm.; minimum, 40.8 cm.; average, 46.9 cm.
  - Width: maximum, 43.0 cm.; minimum, 26.0 cm.; average, 35.7 cm.
  - Thickness: maximum, 19.0 cm.; minimum, 5.0 cm.; average, 12.2 cm.
  - Dimensions of trough:
    - Length: maximum, 37.0 cm.; minimum, 30.3 cm.; average, 34.1 cm.
    - Width: maximum, 26.0 cm.; minimum, 19.0 cm.; average, 22.8 cm.
    - Depth: maximum, 11.0 cm.; minimum, 1.0 cm.; average, 4.0 cm.
  - Dimensions of mano rest groove:
    - Length: maximum, 16.2 cm.; minimum, 8.0 cm.; average, 12.8 cm.
    - Width: maximum, 8.0 cm.; minimum, 3.8 cm.; average, 6.1 cm.
    - Depth: less than 1.0 cm.
- (d) Trough type open at both ends, made from symmetrical slabs with trough-shaped grinding surface open at both ends; bottom of trough pecked, flat; sides rounded (Fig. 118) . . . . . 3
  - From Pit-house C, Surface House 1
  - Lengths, 50.5, 43.7, 42.0 cm.; widths, 39.5, 28.0, 21.1 cm.; thicknesses, 11.1, 7.7, 12.0 cm.
  - Dimensions of troughs:
    - Lengths same as those of metates, see above; widths, 26.3, 17.7, 20.0 cm.; depths, 8.0, 0.5, 0.5 cm.



FIG. 116. Trough type metate, trough open at one end only. Length, 50.1 cm.



FIG. 117. Trough type metate, trough open at one end only; groove for mano rest in shelf above trough. Length, 40.8 cm.



FIG. 118. Trough type metate, trough open at both ends. Length, 50.5 cm.

SMALL, METATE-LIKE GRINDING STONES

(Fig. 119)

Small slabs of stone, asymmetrical in outline; with single flat or slightly concave grinding surface inclined at slight angle to bottom of slab; grinding surface generally smooth, occasionally pecked or striated lengthwise. . . . . 8

From Pit-houses C, E, M, N, Surface House 1

Length: maximum, 32.0 cm.; minimum, 20.3 cm.; average, 23.8 cm.

Width: maximum, 17.0 cm.; minimum, 9.6 cm.; average, 15.1 cm.

Thickness: maximum, 8.0 cm.; minimum, 5.5 cm.; average, 6.1 cm.



FIG. 119. Small, metate-like grinding stones. Length of lower specimen, 23.5 cm.

MORTARS

(Figs. 120, 121)

- (a) Boulder type (see metate of basin type with secondary depression)  
(Fig. 120)..... 4
- (b) Pebble type, large roundish pebble; exterior unworked, deep cup-  
shaped depression pecked in center of one face (Fig. 121)..... 1  
From Pit-house F  
Length, 28.0 cm.; width, 20.5 cm.; thickness, 16.2 cm.  
Diameter of depression, 17.4 cm.; depth, 10.4 cm.
- (c) Slab type, angular slab with shallow cup-shaped depression in each  
face; other surfaces rough..... 1  
From Pit-house M  
Length, 19.4 cm.; width, 12.7 cm.; thickness, 6.2 cm.  
Diameters of depressions, 8.7, 6.5 cm.





FIG. 120. Boulder mortar. Length, 50.1 cm.

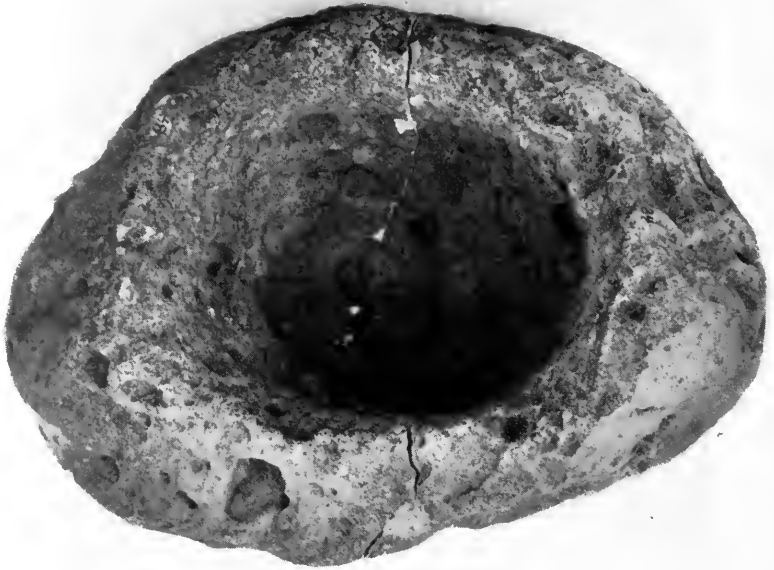


FIG. 121. Pebble mortar. Length, 28 cm.

STONE BOWL

(Not illustrated)

Section of stone bowl, exterior worked smooth; interior somewhat rough. . . . . 1  
From Pit-house O  
Length (fragment); width (fragment); thickness, 2.2 cm.  
Depth of interior, 3.3 cm.

STONE BALL

(Not illustrated)

Small round pebble with worked surfaces. . . . . 1  
From Pit-house N  
Diameter, 4.9 cm.

## WORKED STONE SLABS

(Fig. 122)

- (a) Thin stone slabs, irregular or rectangular in outline; edges and surfaces worked; surfaces generally smooth..... 5  
From Pit-houses C, G, J  
Length: maximum, 42.1 cm.; minimum, 20.0 cm.; average, 35.4 cm.  
Width: maximum, 35.7 cm.; minimum, 17.0 cm.; average, 30.4 cm.  
Thickness: maximum, 5.8 cm.; minimum, 1.5 cm.; average, 3.0 cm.
- (b) Thin stone slabs, circular in outline, with chipped edges and worked surfaces..... 4  
From Pit-houses D, M, Surface House 1  
Diameters, 35.8, 35.8, 43.1, 30.0 cm.; thicknesses, 2.5, 2.5, 4.5, 4.9 cm.

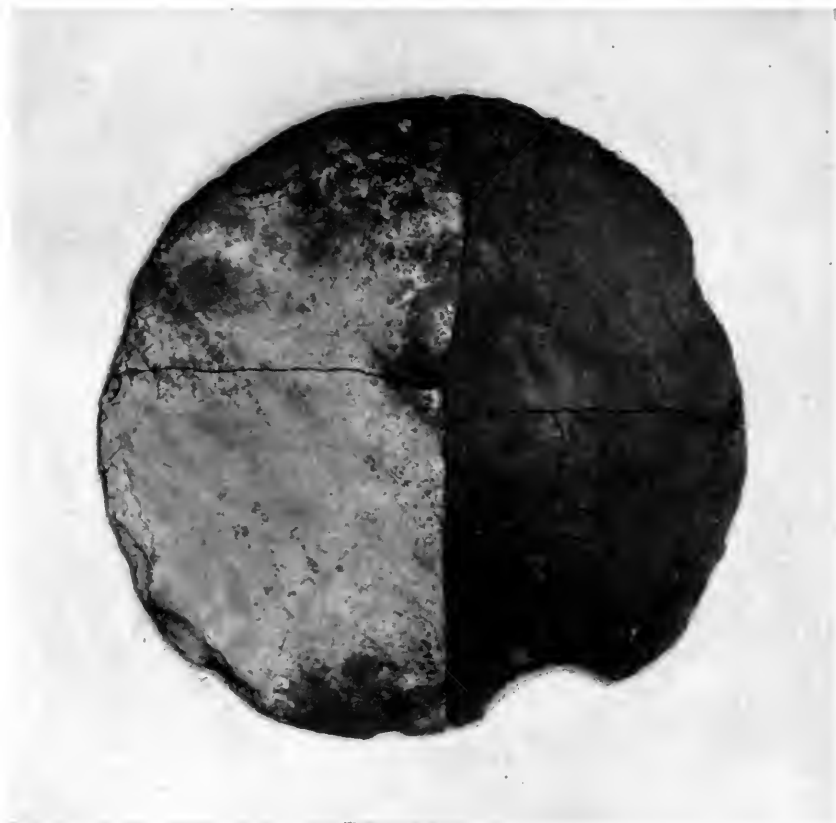


FIG. 122. Circular worked slab. Diameter, 35.8 cm.

## POLISHING STONES

(Fig. 123)

Oval or roundish in outline, with one or more smooth, flat, polishing surfaces... 36  
From Pit-houses C, D, F, G, I, J, K, L, M, N, O, Surface House 1  
Length: maximum, 7.7 cm.; minimum, 4.2 cm.; average, 5.6 cm.  
Width: maximum, 5.7 cm.; minimum, 2.6 cm.; average, 3.9 cm.  
Thickness: maximum, 3.2 cm.; minimum, 1.2 cm.; average, 2.1 cm.  
Materials: Limestone, quartzite, andesite, rhyolite



FIG. 123. Polishing stones. Length of lower right specimen, 6.2 cm.

## HAMMERSTONES

(Fig. 124)

Battered and pitted pebbles mostly of round and angular shapes. . . . . 16  
From Pit-houses C, E, G, H, J, L, N, O, Surface House 1  
Length: maximum, 10.6 cm.; minimum, 5.8 cm.; average, 7.8 cm.  
Width: maximum, 10.3 cm.; minimum, 5.4 cm.; average, 6.6 cm.  
Thickness: maximum, 7.5 cm.; minimum, 4.7 cm.; average, 5.8 cm.





FIG. 124. A series of hammerstones, graded from angular to smooth. Length of lower left specimen, 7.4 cm.

## MAULS

(Fig. 125)

- (a) Oval in outline, encircled by full groove five-eighths of distance from used end; used end battered, poll roughly flat..... 1  
From Pit-house N  
Length, 14.5 cm.; width, 9.2 cm.; thickness, 7.8 cm.
- (b) Rectangular in outline and cross section; three-quarters grooved around middle; ends roughly flat (Fig. 125, *c*)..... 1  
From Pit-house D  
Length, 10.1 cm.; width, 7.1 cm.; thickness, 6.8 cm.  
Materials: Limestone, basalt

## AX

(Fig. 125)

- Short, three-quarters grooved type; grooved two-thirds of distance from cutting edge to poll; poll short, round and battered; cutting edge battered and blunted; longitudinal groove along one side (Fig. 125, *e*)..... 1  
From Pit-house K  
Length, 9.8 cm.; width, 8.2 cm.; thickness, 4.6 cm.  
Material: Basalt

## CHIPPED MAULS

(Fig. 125)

- Roughly oval, rounded pebbles with notched edges and crude percussion chipping on all surfaces (Fig. 125, *b, d, f*)..... 3  
From Pit-houses I, J, M  
Lengths, 14.3, 9.2, 9.6 cm.; widths, 11.4, 7.3, 6.1 cm.; thicknesses, 8.0, 5.9, 3.4 cm.  
Material: Rhyolite

## CHIPPED AX

(Fig. 125)

- Roughly rectangular in outline; sides notched; some surfaces and cutting edges crudely chipped (Fig. 125, *a*)..... 1  
From Pit-house F  
Length, 16.8 cm.; width, 8.6 cm.; thickness, 6.3 cm.  
Material: Rhyolite

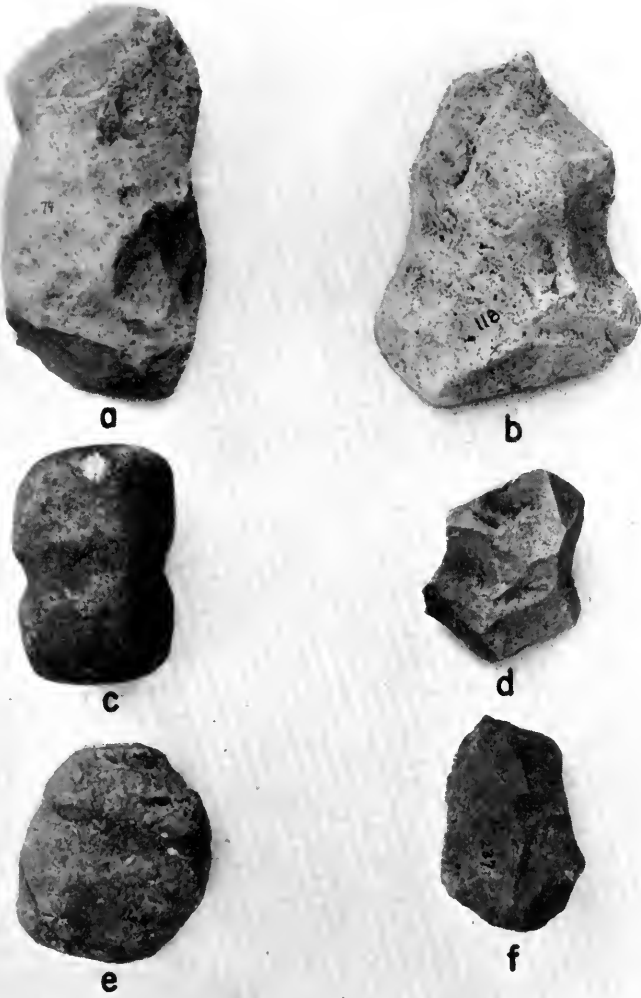


FIG. 125. Grooved and notched tools. *a*, notched ax; *c*, three-quarters grooved maul; *e*, three-quarters grooved ax; *b*, *d*, *f*, chipped, notched mauls. Length of *e*, 9.8 cm.

PIPES

(Fig. 126)

- (a) Tubular type, tapering slightly from larger bowl end to smaller stem end; greatest diameter about seven-eighths of distance from stem end; central perforation through pipe is narrower in middle of pipe (Fig. 126, *b, c*)..... 2  
From Pit-houses D, K  
Diameters, 2.7, 5.1 cm.; lengths, 4.0 cm., (fragment).
- (b) Conical type, tapering from large bowl end to small stem end; greatest diameter at bowl end; central perforation through pipe narrowest close to stem end (Fig. 126, *d*)..... 1  
From Pit-house M  
Diameter, 3.9 cm.; length, 5.8 cm.  
Diameter of bowl interior, 3.2 cm.  
Diameter of perforation near stem end, 0.5 cm.
- (c) Cylinder, one end flat, the other end slightly rounded; tapers slightly from flat to rounded end; possibly blank for tubular pipe (Fig. 126, *a*) 1  
From Pit-house M  
Length, 9.9 cm.; width, 4.7 cm.; thickness, 3.7 cm.

Materials: Sandstone, scoria

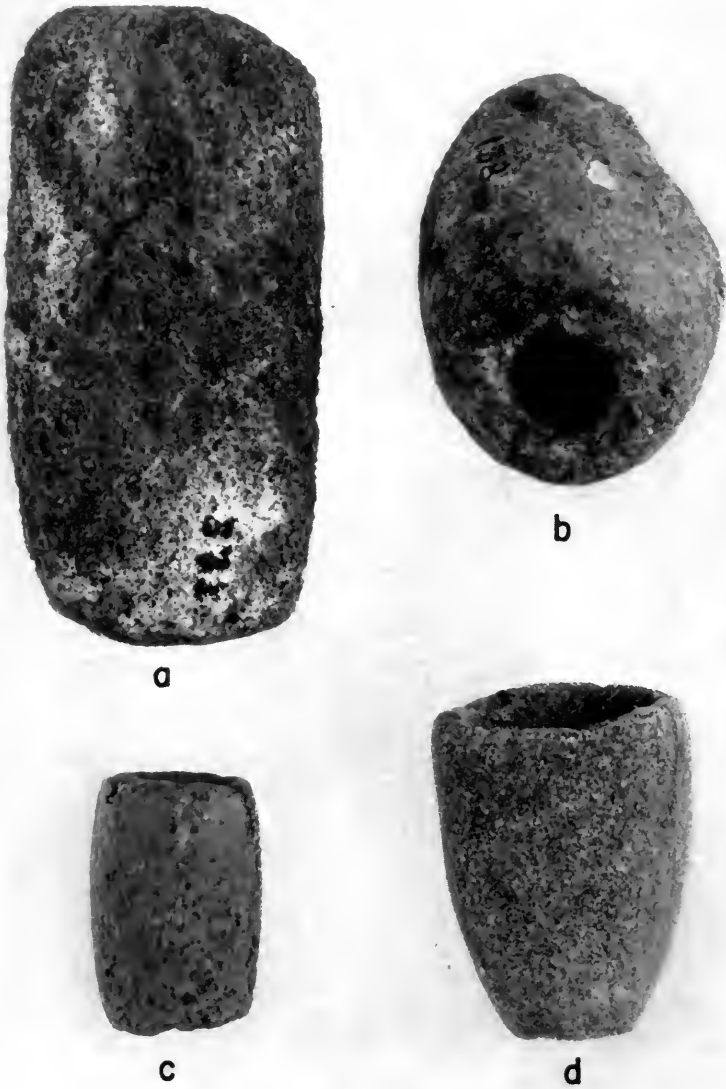


FIG. 126. Pipes (*b-d*) and cylinder pipe blank(?) (*a*). Length of *d*, 5.8 cm.

## PROJECTILE POINTS

(Fig. 127)

- (a) Triangular in outline, with serrated edges and concave base (Fig. 127, *d*)..... 1  
From Pit-house E  
Length, 3.5 cm.; width, 1.5 cm.; thickness, 0.6 cm.
- (b) Triangular or short leaf-shaped in outline, with slightly convex edges and straight base (Fig. 127, *a*)..... 1  
From Pit-house E  
Length, 3.5 cm.; width, 1.8 cm.; thickness, 0.4 cm.
- (c) Triangular in outline; lateral notched at right angles to long axis; base straight, one edge serrated (Fig. 127, *f*)..... 1  
From Pit-house L  
Length, 2.3 cm.; width, 1.4 cm.; thickness, 0.3 cm.
- (d) Short, triangular in outline, diagonal notched, with narrow stem tapering to a point (Fig. 127, *g*)..... 1  
From Pit-house J  
Length, 2.6 cm.; width, 1.7 cm.; thickness, 0.4 cm.
- (e) Lateral notched, expanding stem narrower than shoulder; slightly convex edges, and slightly concave to straight base (Fig. 127, *e*).. 1  
From Pit-house M  
Length, 4.6 cm.; width, 1.8 cm.; thickness, 0.3 cm.
- (f) Notched, with long, wide, straight stem and straight edges (Fig. 127, *i*) 1  
From Pit-house O  
Length, 5.2 cm.; width, 2.5 cm.; thickness, 0.5 cm.
- (g) Roughly leaf-shaped in outline; edges slightly convex, basal portion broken off (Fig. 127, *c*)..... 1  
From Pit-house M  
Length (fragment); width, 2.1 cm.; thickness, 0.5 cm.

Materials: Basalt, obsidian, chert

## DRILLS

(Fig. 127)

- (a) Long slender point with wide flanged base (Fig. 127, *b*)..... 1  
From Pit-house M  
Length, 5.0 cm.; width, 1.6 cm.; thickness, 0.6 cm.
- (b) Broad thin flake chipped to point at one end; plano-convex in cross section; convex surface only chipped; one sharp edge shows use as a knife also (Fig. 127, *h*)..... 1  
From Pit-house L  
Length, 5.9 cm.; width, 4.1 cm.; thickness, 1.2 cm.

Material: Flint

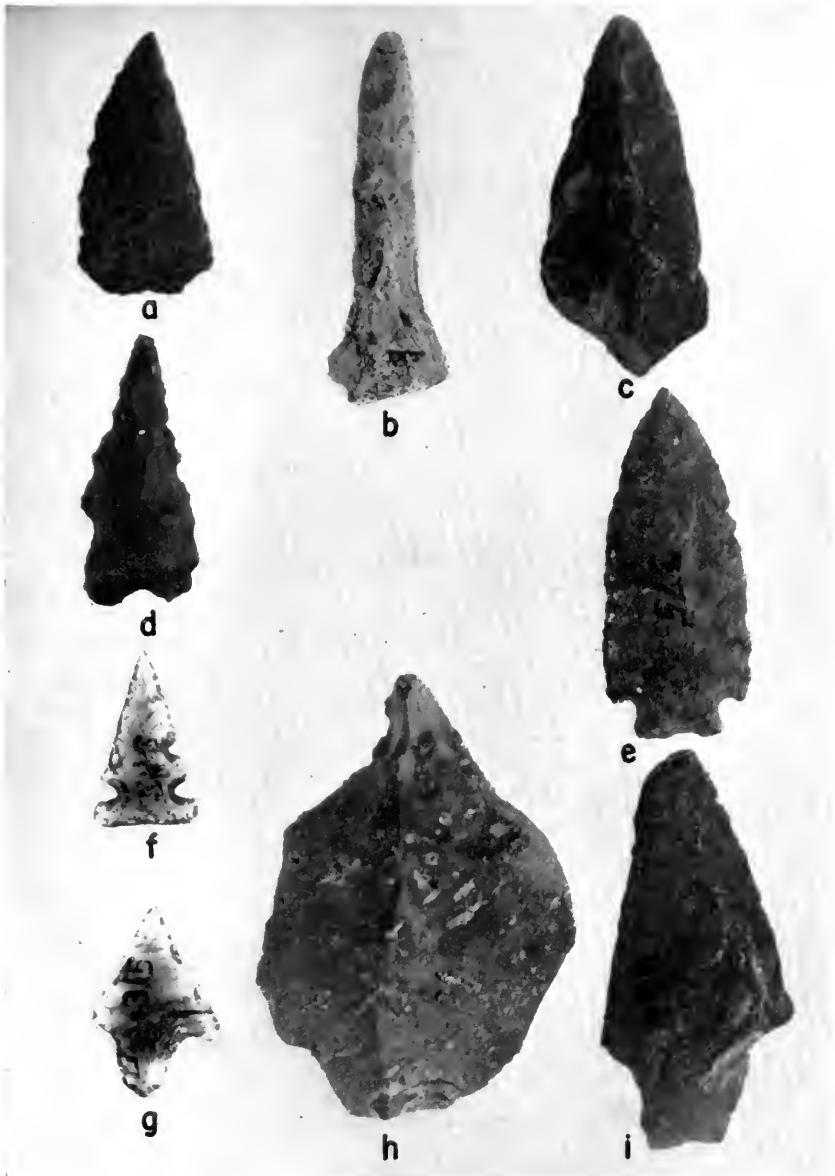


FIG. 127. Projectile points (miscellaneous types), *a, c-g, i*; drills, *b, h*. Length of *i*, 5.2 cm.

## KNIVES

(Fig. 128)

- (a) Random flake; any suitable thin flake slightly chipped along one edge generally through use; no regularity of outline (Fig. 128, *a, c, e, g*)..... 32  
From Pit-houses D, I, J, K, L, M, N, O, Surface House 1  
Length: maximum, 6.4 cm.; minimum, 2.2 cm.; average, 4.8 cm.  
Width: maximum, 5.3 cm.; minimum, 1.7 cm.; average, 3.1 cm.  
Thickness: maximum, 1.5 cm.; minimum, 0.4 cm.; average, 0.9 cm.
- (b) Blades; unnotched fragments with curved edges and secondary chipping on all major surfaces (Fig. 128, *b, d, f, h*)..... 4  
From Pit-houses K, L, M, N  
Lengths (all fragments); widths, 2.8, 2.4, 3.3, 2.4 cm.; thicknesses, 0.6, 0.8, 0.7, 0.8 cm.

Materials: Rhyolite, quartz-agate, chert, obsidian



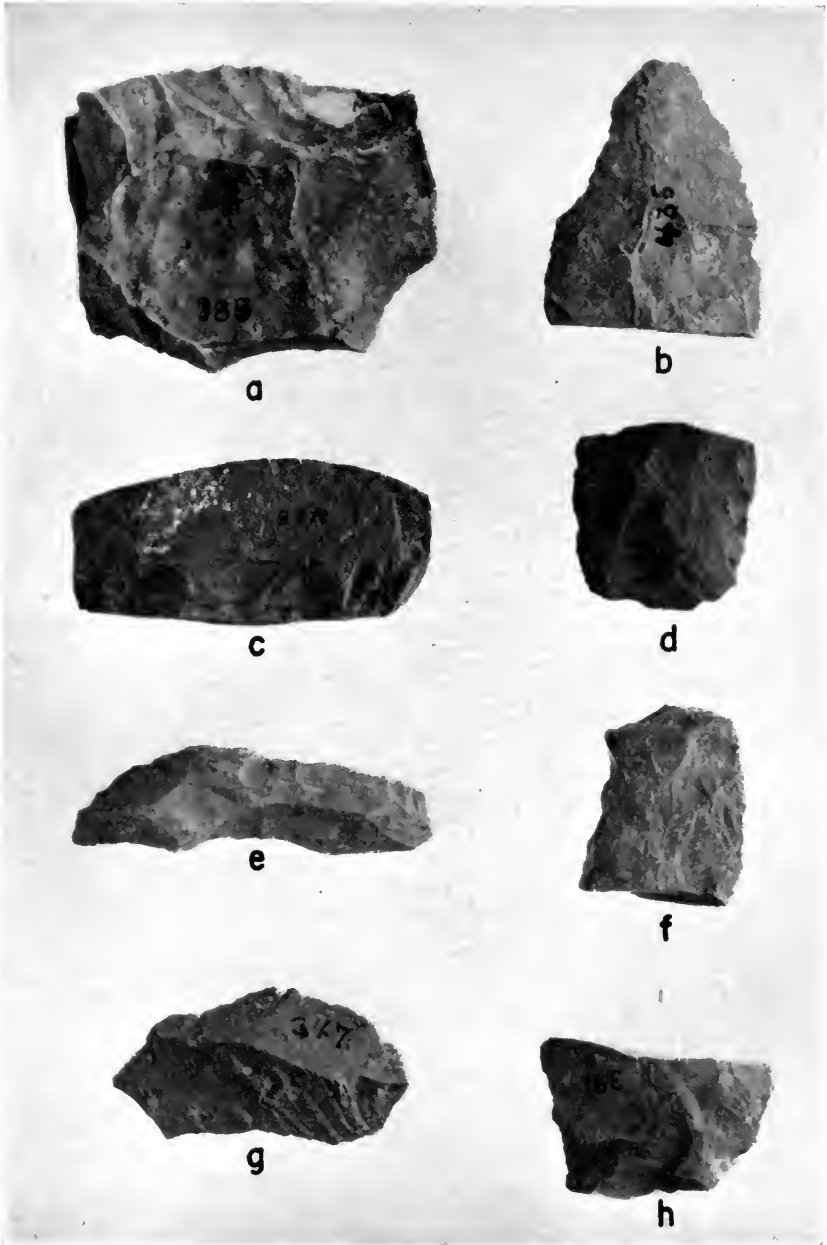


FIG. 128. Knives. *a, c, e, g*, random flake type; *b, d, f, h*, blades. Length of *g*, 4.5 cm.

## SCRAPERS

(Fig. 129)

- (a) Side scrapers; random thick flakes with percussion chipping on one or more surfaces and poorly directed retouch (possibly from use) along one or more edges; generally elongated, but no regularity of outline (Fig. 129, *a-c, e, g*)..... 33  
From Pit-houses D, J, K, L, M, N, Surface House 1  
Length: maximum, 11.4 cm.; minimum, 4.3 cm.; average, 6.8 cm.  
Width: maximum, 8.2 cm.; minimum, 3.2 cm.; average, 4.7 cm.  
Thickness: maximum, 4.6 cm.; minimum, 1.1 cm.; average, 2.1 cm.
- (b) Hollow-edged scrapers; random thick flakes with one or more deep indentations chipped into the edge (Fig. 129, *f, h*)..... 3  
From Pit-houses L, N, Surface House 1  
Lengths, 4.8, 6.4, 7.4 cm.; widths, 2.2, 4.5, 7.2 cm.; thicknesses, 1.1, 1.6, 2.6 cm.
- (c) End scraper; small random flake, thumb-nail shape, one end steeply chipped (Fig. 129, *d*)..... 1  
From Pit-house L  
Length, 3.9 cm.; width, 2.7 cm.; thickness, 0.7 cm.
- Materials: Rhyolite, quartzite, flint

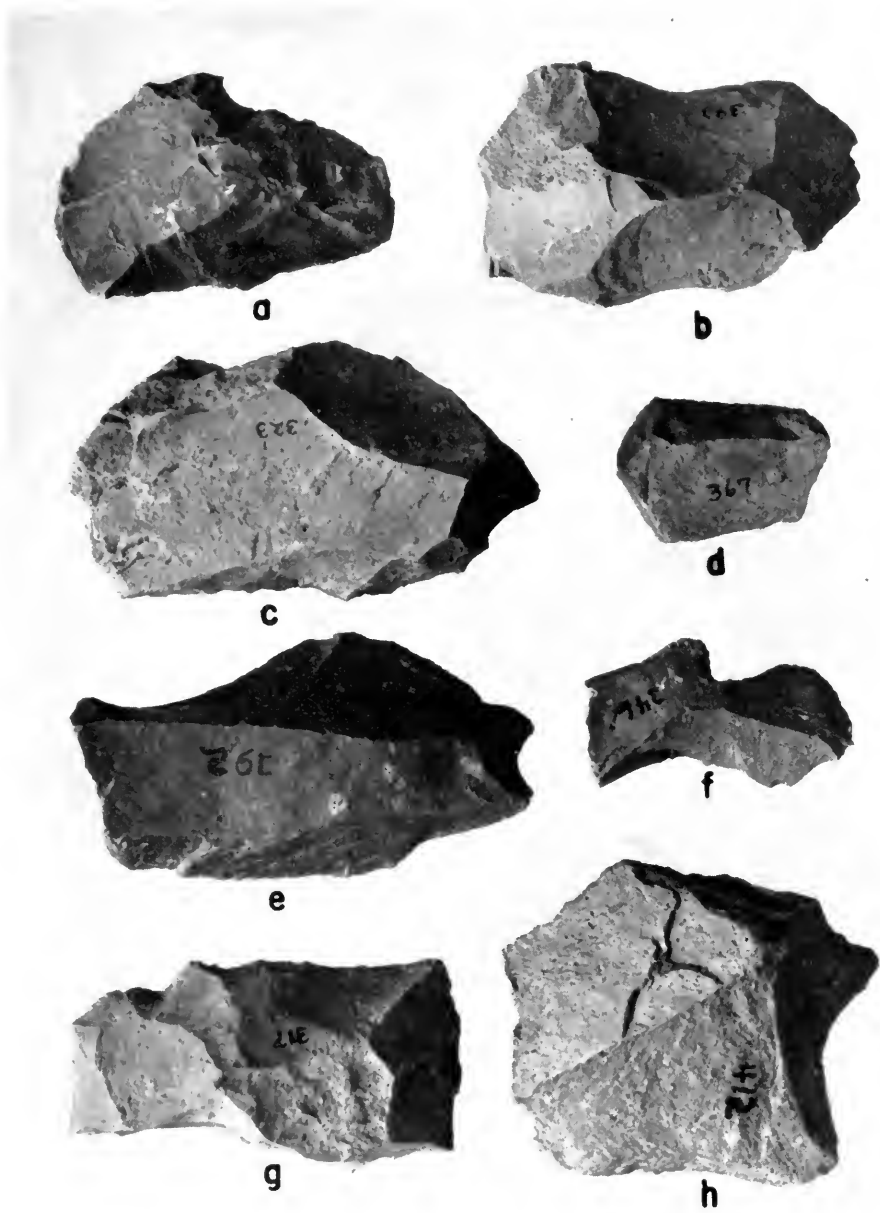


FIG. 129. Scrapers. *a-c, e, g*, side scrapers; *d*, end scraper; *f, h*, hollow-edged scrapers. Length of *g*, 7.1 cm.

CHOPPERS

(Fig. 130)

Large angular core implements having one or more sides flaked to a sharp  
wedge-shaped cutting edge..... 3  
From Pit-house C, Surface House 1  
Lengths, 8.8, 7.5, 9.9 cm.; widths, 6.7, 7.0, 8.9 cm.; thicknesses, 5.1, 5.1, 7.9 cm.  
Material: Rhyolite

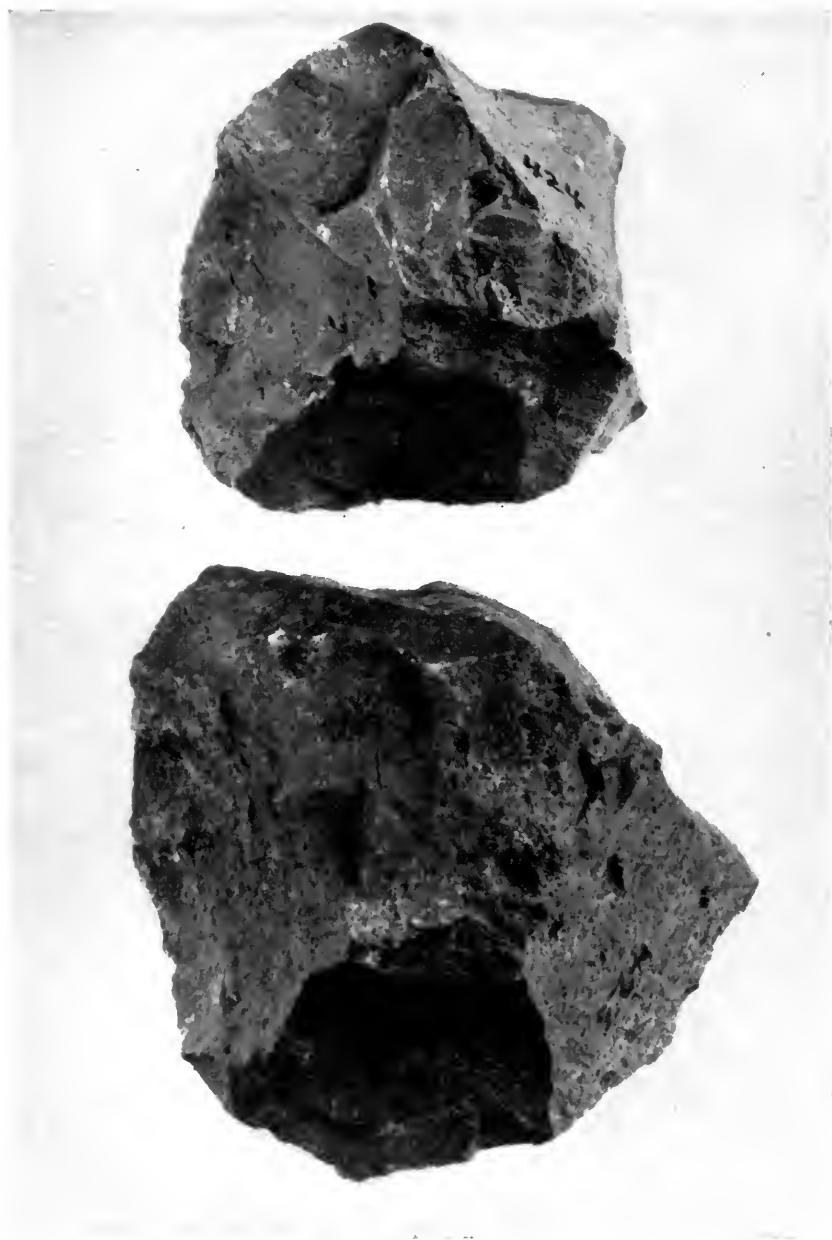


FIG. 130. Choppers. Length of lower specimen, 9.9 cm.

HOES

(Fig. 131)

Thin plates of stone roughly oblong in outline; broad ends chipped to edge and then worn smooth..... 2  
From Pit-houses G, M  
Lengths (fragments); widths, 12.1, 11.4 cm.; thicknesses, 0.8, 1.4 cm.  
Material: Basalt

PENDANT

(Not illustrated)

Tabular type, rectangular in outline, perforated near one end..... 1  
From Pit-house L  
Length, 1.0 cm.; width, 0.6 cm.; thickness, 0.3 cm.  
Material: Turquoise



FIG. 131. Hoe fragments. Width of lower specimen, 11.4 cm.

### BONE FLESHER

(Fig. 132, a)

Section of long bone split in half; head intact except for splitting; other end roughly beveled..... 1  
From Pit-house C  
Length, 17.4 cm.  
Material: *Odocoileus hemionus* (mule deer)

### BONE NEEDLE

(Fig. 132, b)

Flat section of split long bone ground and polished smooth; small hole drilled at blunt end for eye; drilled from both sides; bodkin-like in form; tip dull, flat, rounded..... 1  
From Pit-house F  
Length, 22.0 cm.

### BONE TUBE

(Fig. 132, c)

Short section of hollow long bone..... 1  
From Pit-house I  
Length, 3.5 cm.; width, 3.8 cm.  
Material: *Odocoileus* (deer)

### PENDANT

(Fig. 132, d)

Thin curved section of shell perforated at one end..... 1  
From Surface House 1  
Length, 4.8 cm.; width, 0.4 cm.; thickness, 0.3 cm.

### BRACELET

(Not illustrated)

Thin sections of shell; possibly represent edge of shell..... 2  
From Pit-houses C, I  
Lengths (fragments); widths, 0.4 cm.

### BONE DIE

(Fig. 132, e)

Lenticular slip of antler with hachured lines scratched on one surface..... 1  
From Pit-house K  
Length, 4.3 cm.; width, 1.1 cm.; thickness, 0.6 cm.  
Material: *Odocoileus* (fragment of deer antler)



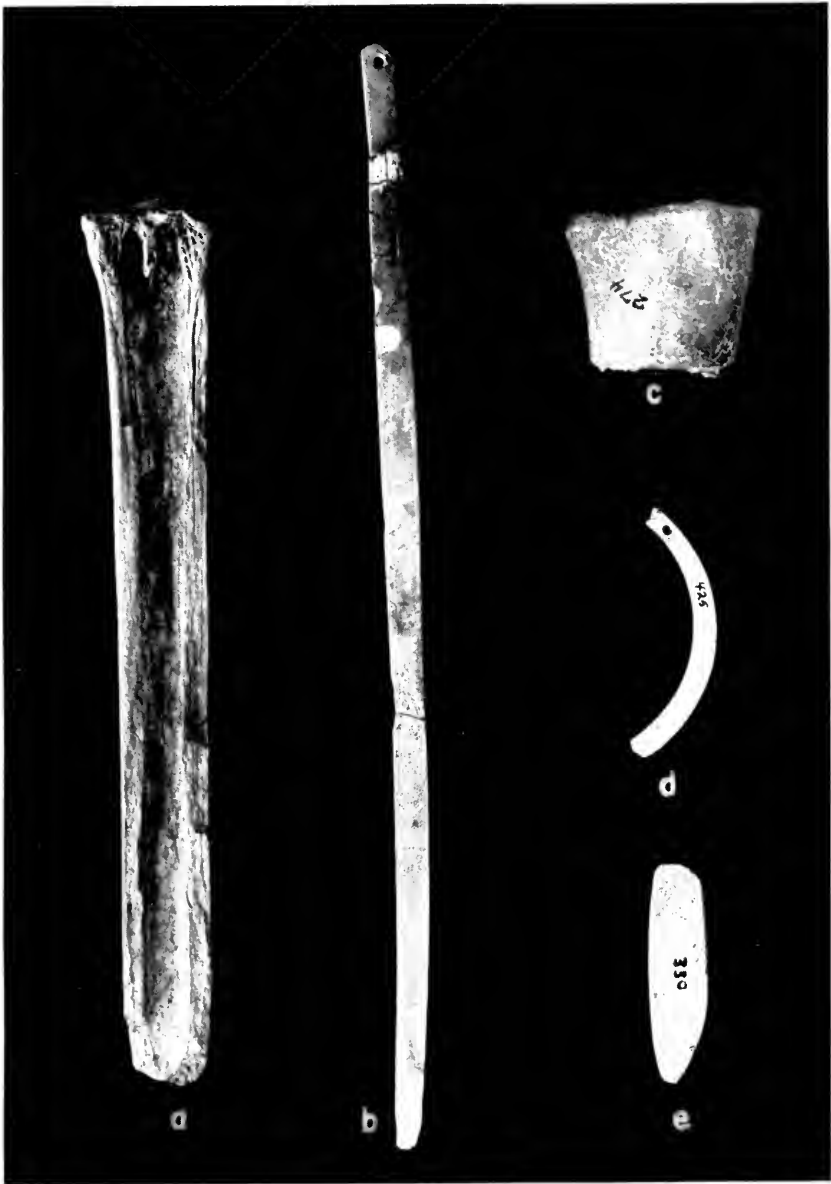


FIG. 132. Flesher (*a*), needle (*b*), tube (*c*), pendant (*d*), die (*e*). Length of *c*, 4.3 cm.

## BONE AWLS

(Fig. 133)

- |     |   |   |
|-----|---|---|
| (a) | Head of bone intact; shaft cut to point (Fig. 133, a, b).....   | 2 |
|     | From Pit-houses M, N  |   |
|     | Lengths, 5.6, 4.1 cm.   |   |
|     | Materials: <i>Lepus</i> (jack rabbit), <i>Sylvilagus</i> (cottontail rabbit)  |   |
| (b) | Head of bone unworked except by original splitting; other end ground and polished to sharp point; two have side notch; made from long bones split in half (Fig. 133, c, d)..... | 5 |
|     | From Pit-houses C, H, I, M  |   |
|     | Lengths, 10.1, 13.7, 10.2 cm. (others fragmentary)  |   |
|     | Material: <i>Odocoileus</i> (deer)  |   |
| (c) | Head of bone almost wholly removed; other end ground, polished and tapered to sharp point; made from long bones split into quarters (Fig. 133, e, f).....                       | 8 |
|     | From Pit-houses I, M, N, C  |   |
|     | Length: maximum, 17.0 cm.; minimum, 8.4 cm.; average, 13.7 cm.  |   |
|     | Materials: <i>Odocoileus</i> (deer), <i>Canis</i> (dog)   |   |
| (d) | Head of bone removed, other end ground and polished to sharp point; made from split long bone (Fig. 133, g, h).....   | 2 |
|     | From Pit-houses C, I  |   |
|     | Length, 14.6 cm. (other specimen fragmentary)   |   |
| (e) | Splinter type; bone splinter ground and polished to point (Fig. 133, j) .   | 1 |
|     | From Pit-house M  |   |
|     | Length, 7.0 cm.   |   |
| (f) | Points of bone awls made from split long bone: all fragments (Fig. 133, i).....   | 7 |
|     | From Pit-houses C, F, I, M  |   |
|     | Range in length: 3.3 to 8.9 cm.   |   |
|     | Materials: <i>Odocoileus</i> (deer), <i>Canis</i> (dog)   |   |

## DATA ON UNWORKED BONE FRAGMENTS

<i>Odocoileus</i> sp. (deer): 37 fragments from 8 houses	
<i>Lepus</i> sp. (jack rabbit): 8 fragments from 1 house	
<i>Meleagris gallopavo</i> (turkey): 6 fragments from 5 houses	
<i>Canis familiaris</i> (domestic dog): 4 fragments from 2 houses	
<i>Sylvilagus</i> (cottontail rabbit): 5 fragments from 3 houses	
<i>Thomomys</i> sp. (pocket gopher): 2 fragments from 2 houses	
<i>Cynomys</i> sp. (prairie dog): 2 fragments from 1 house	
<i>Colinus</i> sp. (quail): 1 fragment from 1 house	
<i>Cervus americanus</i> (elk): 1 fragment from 1 house	
<i>Branta canadensis</i> (Canadian goose): 1 fragment from 1 house	
<i>Bison</i> : 2 fragments from 1 house	
<i>Neotoma</i> sp. (wood rat): 1 fragment from 1 house	
Total of identifiable fragments.....	70
Unidentified bone fragments.....	16

The rabbit bone fragments represent at least six individuals. Although a few fragments of young rabbit and deer bone were found, the majority of the bone fragments are those of adult individuals. The deer bone fragments represent at least six individuals. Seven fragments of human bone were recovered from Pit-houses I and M.

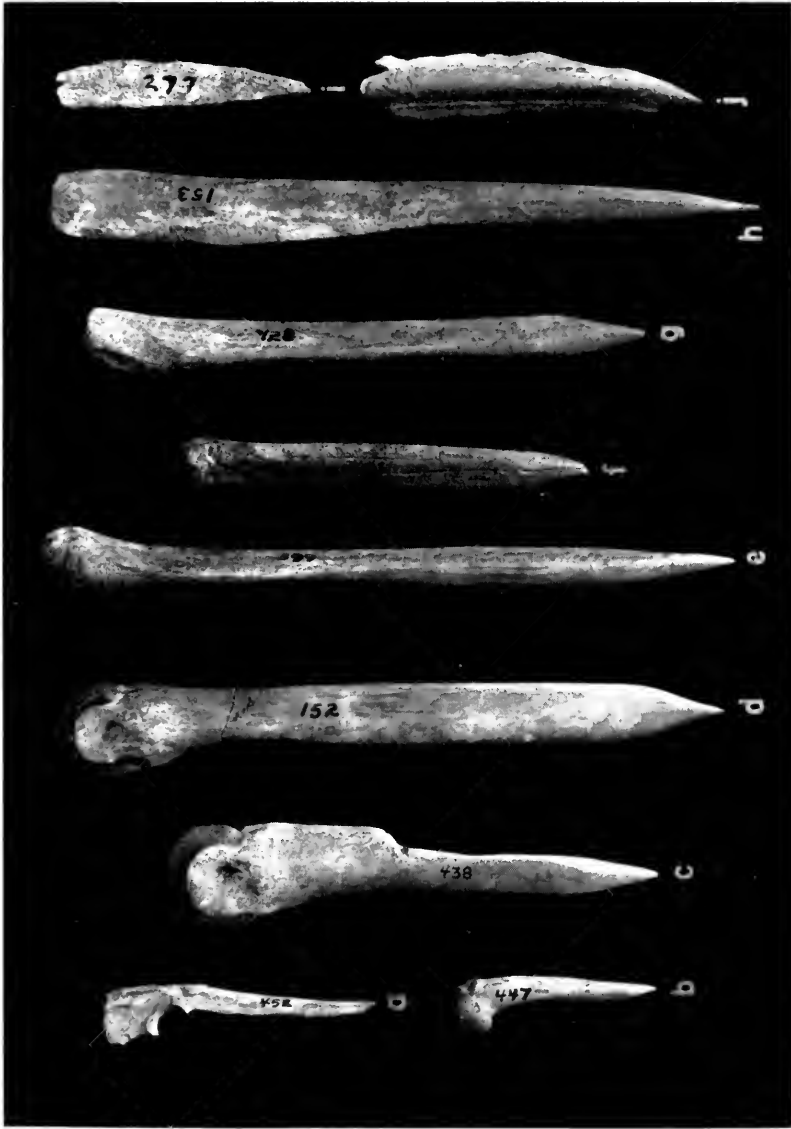


FIG. 133. Bone awls (miscellaneous types). Length of b, 4.1 cm.

## WORKED SHERDS

(Fig. 134, *b-d, f-n*)

- (a) Small pottery disks with edges ground smooth (Fig. 134, *d, h, l, n*) . . . 21  
From Pit-houses C, G, I, K, L, M, N, O  
Diameter: maximum, 8.0 cm.; minimum, 2.1 cm.; average, 4.6 cm.  
Thickness: maximum, 0.7 cm.; minimum, 0.3 cm.; average, 0.5 cm.  
Materials: Alma Plain, Reserve Smudged, Mogollon Red-on-Brown,  
Mimbres Bold Face Black-on-White
- (b) Pottery disks with edges ground smooth and hole drilled through the  
center; generally hole drilled from both sides (Fig. 134, *c, g, j, k*) . . . 7  
From Pit-houses C, D, I, K  
Diameter: maximum, 6.4 cm.; minimum, 4.0 cm.; average, 5.1 cm.  
Thickness: maximum, 0.6 cm.; minimum, 0.5 cm.; average, 0.5 cm.  
Materials: Alma Plain, Reserve Smudged, Three Circle Red-on-White
- (c) Oval sherds with edges ground smooth (Fig. 134, *i, m*) . . . . . 2  
From Pit-houses G, K  
Lengths, 5.3, 3.0 cm.; widths, 4.3, 2.5 cm.; thicknesses, 0.6, 0.4 cm.  
Material: Alma Plain
- (d) Sherds with one edge ground smooth at sharp angle to concave surface  
forming bevel; possibly rubbing tools (Fig. 134, *b, f*) . . . . . 2  
From Pit-house I  
Lengths, 4.2, 4.6 cm.; widths, 3.2, 2.8 cm.; thicknesses, 0.6, 0.5 cm.  
Material: Alma Plain

## HUMAN FIGURINE

(Fig. 134, *a*)

- Head and shoulders molded; no neck represented; "coffee bean" eyes; no  
mouth or nose represented; clay coarsely tempered . . . . . 1  
From Pit-house L  
Length (fragment); width, 3.5 cm.; thickness, 1.3 cm.

## MINIATURE LADLES

(Fig. 134, *e*)

- Bowl portion roughly round, handle rod-like . . . . . 2  
From Pit-houses C, L  
Lengths (fragment), 4.2 cm.; widths, 1.8, 2.2 cm.; thicknesses, 1.2, 1.0 cm.

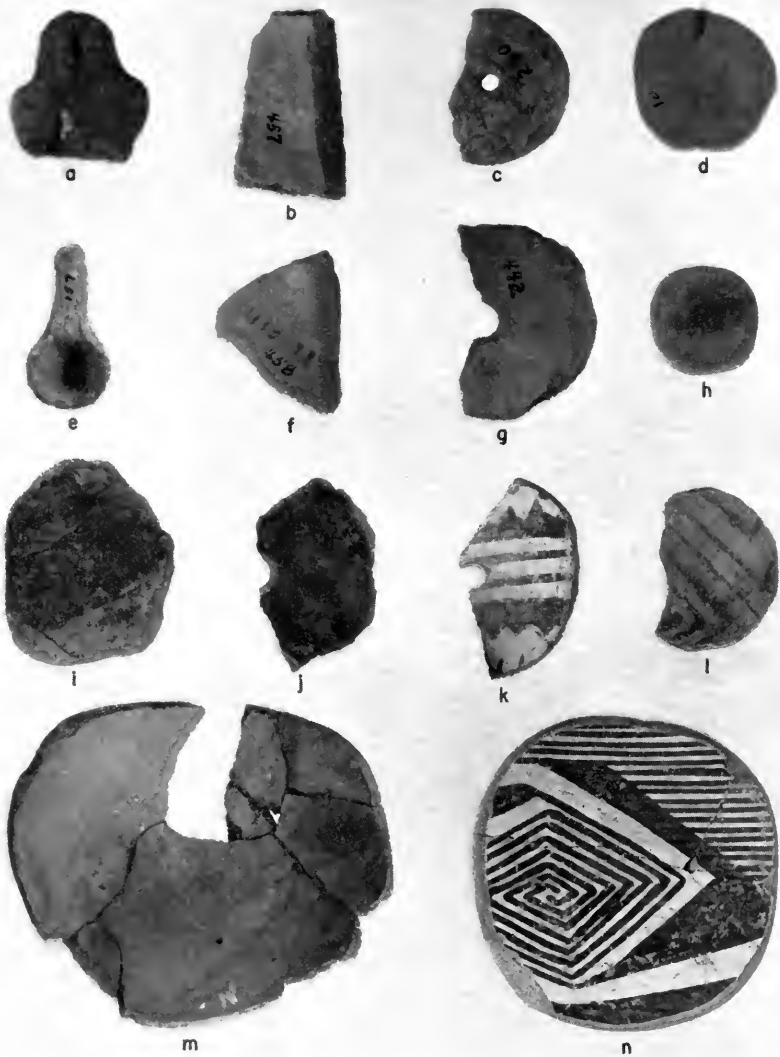


FIG. 134. Baked clay artifacts. *a*, figurine; *e*, miniature ladle; remainder, worked sherds. Length of *n*, 8 cm.

## UNWORKED STONE

(Fig. 135)

Pigments: Lumps of malachite, turquoise, limonite.....	3
From Pit-houses C, L	
Crystals: Hexagonal quartz crystals.....	4
From Pit-houses C, F	
Ceremonial objects(?): Roughly mushroom-shaped erosion remnants.....	4
From Pit-houses C, I, K	



FIG. 135. Ceremonial objects(?). Length of lower specimen, 18.5 cm.

TABLE 9.—OCCURRENCE OF ARTIFACTS BY PIT-HOUSES

ARTIFACT TYPE	SU—Pc	Three Ctr.	Turkey Foot Ridge													Twin Bridges				SU	Total Post Pine Lawn					
			G	J	F	H	I	O	M	E	L	C	N	A	B	K	D	Surf. Hse. 1	A			B	C	D	Y	W
Manos.....	225																									
Single grinding surface.....	201		8	3	9	4	12	7	25	18	6	20	5	3	31	4	4	9	1		14	4	2	16	14	219
Oblong, convex.....	24		7	2	7	4	11	7	23	17	6	15	5	3	30	4	3	8	1		11	3	1	14	14	196
Oblong, slightly convex.....	13			1											2		1					1		1	4	9
Oblong, flat.....	24			1	1	1				1				1	1	2					3	1				4
Oblong, wedge-shaped, flat.....	7													1							1					14
Oval, convex.....	32				1	5	2	1	5	2		7					1				1	1				2
Oval, slightly convex.....	10		1	3	2		2	2	1	1		5	2				2									29
Oval, flat.....	19					2	1	2	1	1		1		1	2		1				1			3		17
Round, convex.....	9						1	1	1						2		1									12
Round, slightly convex.....																						1				5
Round, flat.....	3														2							1		1		5
Rectangular, convex.....	13		1	1	1	2	1	3	5	1	2	1			2	1						1				3
Rectangular, slightly convex.....	7		3	3	1	1	3	1	3	1	3	1			3	1	2							3		25
Rectangular, flat.....	15		2	1		3	6	2	2	2	1	1			4		1									27
Squarish, convex.....	10		1			1			1															1		4
Turtleback, convex.....	11				2	1			4						2											12
Asymmetrical, convex.....	4														1		1									2
Two grinding surfaces.....	24		1	1	2	1		2	1		5				1	1	1						3	1	1	23
Round, flat or convex.....	6		1												1									1		3
Oval, slightly convex.....	10								1	1		3														7
Rectangular, flat or convex.....	7		1		2	1					2	1					1						2			12
Squarish, flat.....	1																									1
Rectangular, flat or convex.....	110		1	1	1	3	3	10	3	1	2	9			1	1	1						3			40
Rectangular, flat or convex.....	89		1	1	2	3	5		3	1	2	8			2	1	3						1	2		31
Single grinding surface.....	47		1	1	1	2	4		3		3				2	6	2	1					1	2		30
Oval, flat.....	24								1						1											3
Roughly round, flat.....																										
Roughly round, wedge-shaped, flat.....	8																									0
Oblong, flat.....	8																									2
Roughly square, flat.....	2																									3
Two rubbing surfaces.....	21				1	1		5							1									1		9
Oval, flat.....	9				1	1		4																		6
Oblong, flat.....	12								1						1											3



TABLE 9.—OCCURRENCE OF ARTIFACTS BY PIT-HOUSES—continued

ARTIFACT TYPE	Turkey Foot Ridge													Twin Bridges				SU				Total Post-Pine Lawn											
	SU-Pre-Three Cit.	G	J	F	H	I	O	M	E	L	C	N	A	B	K	D	Surf. Hse. 1	A	B	C	D		Y	W	X	A	B	C	D	Y	W	X	
Metates.....	95			2	1	2	4	2	7		3	8	4	9	1		2			2				4									51
Slab type.....	41			1	2	1	1	1	1	1	1	1	1	4	1																		13
Trough type, closed one end.....	26			2	1	1	2	1	6			7	1	1	1		1							3									26
Trough type, open both ends*	0										2	2	2	4		1			2													12	
Small, metate-like grinding stones.....	58					2	1	2	1	2	1	3	2	2		2							1									16	
Single grinding surface.....	45					2	1	2	1	2	1	3	2	2		2							1									15	
Two grinding surfaces.....	13																															1	
Paint grinding stone.....	19											2	1																			8	
Mortars.....	78			1		1					2	1											3									3	
Pebble type.....	70			1																			2									5	
Boulder type.....	8																															2	
Pitted pebbles.....	15										2	1																				5	
Pestles.....	76									1	1	1	1	3		4							1									14	
Angular.....	35																															5	
Multifaced.....	41									1	1	1	1	3		1																9	
Polishing stones.....	120	5	2	1	2	1	5		5	2	4		17	3	2	4							1									59	
Hammerstones.....	74	1	1	2		1		1	3	2	1		3		4																22		
Mauls.....	49																															3	
Oval, full groove.....	46																															1	
Oval, three-fourths groove.....	3																															1	
Rectangular, three-fourths groove.....																																1	
Rectangular, full groove.....																																6	
Pipes.....	21																															4	
Tubular.....	16																															2	
Cloud blower.....	3																															2	
Projectile points†.....	62	1				1	2	2	1				2																			12	
Lateral notch.....	16																															5	
Diagonal notch.....	7																															2	
Small corner notch.....	5																															1	

\* Twenty-eight basin-type specimens omitted here occur only in Pine Lawn phase.

† Thirty-four specimens omitted here occur only in Pine Lawn phase.

TABLE 9.—OCCURRENCE OF ARTIFACTS BY PIT-HOUSES—concluded

ARTIFACT TYPE	SU— Pre- Three Civ.	Turkey Foot Ridge													Twin Bridges					SU				Total Post Pine Lawn			
		G	J	F	H	I	O	M	E	L	C	N	A	B	K	D	Surf. Hsc.1	A	B	C	D	Y	W		X	W	X
Knives.....	66		4			3	3	2		9		7	10	8	4	3	1			2		1		1	1	2	60
Random plano-convex.....	59		4			3	3	1		8		6	8	8	3	3	1			2		1		1	1	2	53
Blades, secondary chipping.....	7								1	1		1	2											1	1		7
Scrapers.....	111		2	1				2		6		6	16	7	3	3	10			1	2			1	1	5	66
Random thick flakes.....	101		1					2		5		5	15	7	2	2	9			1	2			1	1	4	57
Large, rough, thick.....	10		1	1					1	1		1	1	1	1	1	1									1	9
Choppers.....	29									1		1	1			2										4	
Plano-convex.....	29																										4
Hoes.....	4		1							1				1											1		4
Beads, disk.....	1																										92
Bone tube.....	3					1																					1
Bone die.....	3																										1
Drills, expanding base.....	4							1		1			2	1												1	6
Ceremonial objects.....	1					1					2			1													4
Bone awls.....	45			1	2			5		2	2		1												2	1	16
Head of bone unworked.....	27			1	1			1		2			1												1	1	8
Head almost removed.....	11				1			4			2														1		8
Bone flesher.....	2									1																	1
Worked sherds.....	121			5	1	1		4	7	1		1	3	6	2									2	4	2	39
Disks.....	102		1			3	1	1		4	5	1	1	2	2												22
Perforated disks.....	6				1					2			1	2	2												9
Rectangular.....	13		1			1								2										2	4		10
Pot cover.....	6																										...
Miniature ladles.....	15								1	1															1		4
Pendants, tabular.....	1								1																		1
Bracelets, shell.....	5					1					1													1			3

## IV. POTTERY

### CULINARY POTTERY

The textured, corrugated and plain ware pottery types in the Turkey Foot Ridge Village correspond closely to the types found during the previous seasons at the Twin Bridges site and to those recovered from the Three Circle phase pit-houses at the SU site. These types (listed below and in Table 12, pp. 377-388) have been described; and the sherds from the Turkey Foot Ridge Village, as classified, fit within the range of the published descriptions. The predominant plain wares at this village are Alma Plain and San Francisco Red (for detailed descriptions of these types see Haury, 1936b, pp. 28-35). Other derivative types of Alma Plain found, also described by Haury (1936b, pp. 35-39), were Alma Neck Banded, Three Circle Neck Corrugated, and Alma Scored. These, like Reserve Smudged, Incised Corrugated, and Alma Rough, appear as minority types.

The sequence of pottery types for the various phases at the Turkey Foot Ridge Village follows closely the sequence established by Haury at the Harris and Mogollon villages, and by Nesbitt at the Starkweather Village (see Haury, 1936a, pp. 93-103, and Nesbitt, 1938, pp. 79-83), although it may appear to differ in minor respects. In particular it is to be noted that Reserve Smudged, Incised Corrugated, and Alma Rough are not listed in the series for these villages, although they are listed for the Turkey Foot Ridge Village. However, Reserve Smudged was certainly included in the Alma Plain category for these villages because it is a derivative type of Alma Plain. Indicative of this is Haury's statement in his description of Alma Plain, where he says (1936b, p. 32), "Smudging occurs rarely in bowl interiors," and again in his Forestdale report (1940, pp. 87-88), "In the Harris and Mogollon villages smudging on the basic Alma Plain type was very rare, but its occurrence there . . . was as early as the Georgetown Phase." Reserve Smudged as a type *per se* has never been described in detail. It is an early variant or antecedent of Nesbitt's Reserve Plain (see Nesbitt, 1938, p. 139), but it lacks the indented corrugated fillet rim of Nesbitt's type. It

should be noted here that we list a very rare type called Reserve Fillet Rim, a type that is apparently the antecedent of Tularosa Fillet Rim and can be differentiated only because it has a plain corrugated or banded fillet rather than the indented corrugated fillet of the later type. The smudged interiors of these bowls, like those of Reserve Smudged, are polished, sometimes to a high glossy finish. Reserve Smudged appears earliest in the Pine Lawn Valley in the San Francisco phase. (Although some earlier Alma Plain sherds have black interiors they are not polished and it is believed that this smudging is due to a fire cloud or other accidental source.) This type gradually increased in popularity during the Three Circle phase and by the beginning of the Reserve phase it was more popular than San Francisco Red.

Incised Corrugated is a late minor variant or derivative of Three Circle Neck Corrugated. It is simply Three Circle Neck Corrugated that has been incised over the fillets or corrugations. This incising generally forms a diagonal pattern. Nesbitt (1938, Pl. 38) illustrates this type although he does not describe it. Haury does not mention it as a separate type, but he mentions (1936b, p. 36) the frequent tooling of the lowest coil on the neck, which would indicate that the practice of decoration by tooling was not confined to Alma Incised and Alma Punctate even at the Harris and Mogollon villages. However, the occurrence of Incised Corrugated was relatively rare even in the latest houses of the Turkey Foot Ridge Site and this may account for the lack of specific mention of this type in Haury's reports.

Alma Rough is a type that was not recognized at the time that the investigations of the Mogollon, Harris, and Starkweather villages were made, so it seems highly probable that the few sherds of this type (see Martin, 1940 and 1943, for description) that might have occurred in the San Francisco phase and Three Circle phase houses at those villages would have been classified as Alma Plain at that time.

The pottery complex of Pit-house G, on the other hand, differs from the "standard" Georgetown phase pottery complex by lacking textured or corrugated sherds. Alma Plain and San Francisco Red were the only two plain wares from this house. In this respect it corresponds to Pit-house C, Starkweather. Furthermore, it is very little out of line even with the other houses of the Georgetown phase for which there are published pottery counts. Out of the nine Georgetown phase houses for which we have these counts, the largest

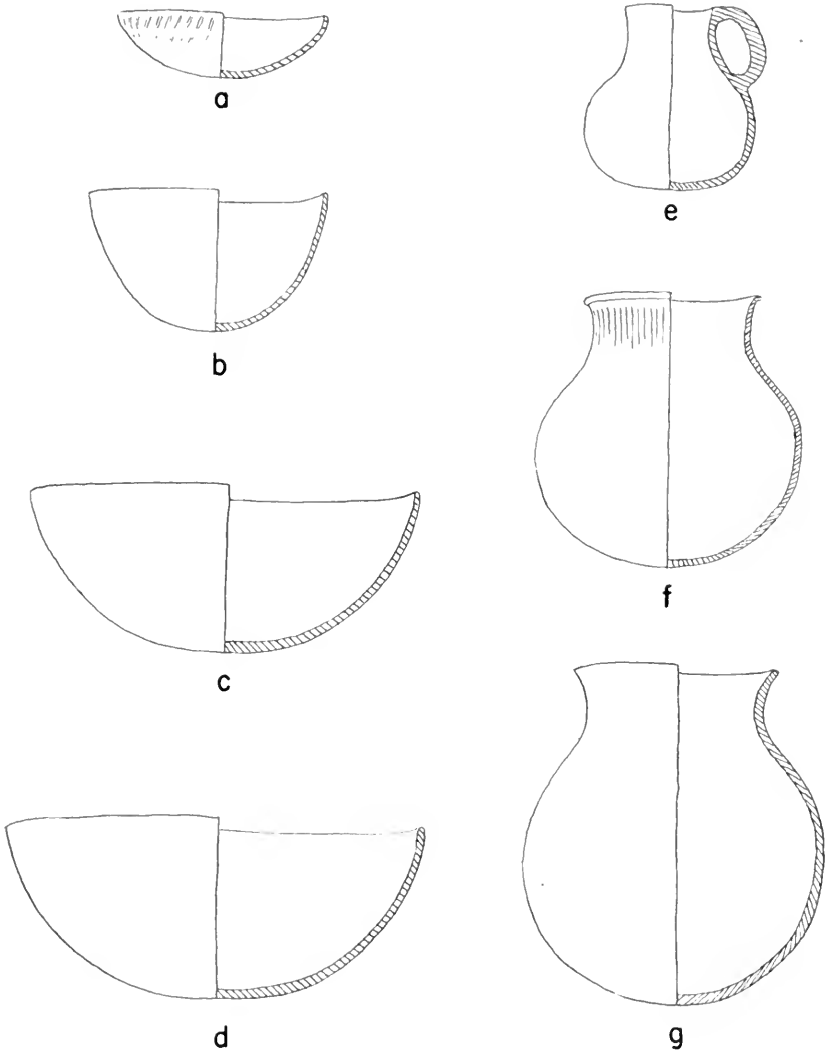


FIG. 136. Bowl and jar forms, culinary pottery. *a-d*, Reserve Smudged; *e, g*, Alma Plain; *f*, Alma Scored. *d* from San Francisco phase; remainder from Three Circle phase.

number of textured sherds found was eight and the average was four sherds per house.

In so far as could be determined from large sherds, rim sherds and restorable vessels, all the shapes (Fig. 136) represented in the collection of culinary pottery have been previously reported. As stated above, the paste, surface finish, treatment and the like of these culinary wares are identical with the published descriptions.

#### PAINTED POTTERY

The painted wares were minority types at the Turkey Foot Ridge Village. On the other hand, although they represented only a small proportion of the total sherds from the village, they were abundant enough numerically to constitute a significant sample. There were recovered more than two hundred sherds of Mogollon Red-on-Brown, and more than seven hundred sherds of Three Circle Red-on-White. In all characteristics such as paste, surface treatment, color and design these types fall within the range described by Haury (1936b, pp. 10-28).

Together these decorated types present a sequence that exhibits unusual unity in design development. Indicative of this unity is the fact that most of the principal design elements such as medium lines, solid triangles, and sawteeth (see Figs. 137, *q-t*, and 138, *a-h*) were used on all three types in very similar combinations. The most common of these combinations is that of solid triangles bordered by parallel lines (see Fig. 137, *m-t*).

A tabulation of the frequency of decorated sherds bearing various design elements shows differences indicative of certain trends in the use of these design elements (see Fig. 139 and Table 10, p. 366); for example, the greater frequency of sawtooth design elements on Mimbres Bold Face Black-on-White and Three Circle Red-on-White sherds would seem to indicate that this element was coming into greater use on the later pottery types; also, the greater frequency of sherds of Mogollon Red-on-Brown decorated only with parallel lines, in comparison with the lesser frequency of the same element on Three Circle Red-on-White and Mimbres Bold Face Black-on-White suggests that simple linear design was falling into disuse on the later types, perhaps being supplanted by the greater use of solids and open space, as Haury has indicated (1936b, p. 23).

At a few points, gaps in the information furnished by the Turkey Foot Ridge pottery are filled by the data on the Mogollon Village pottery; for example, Haury (1936b, Fig. 4, *c, j, m*) illustrates

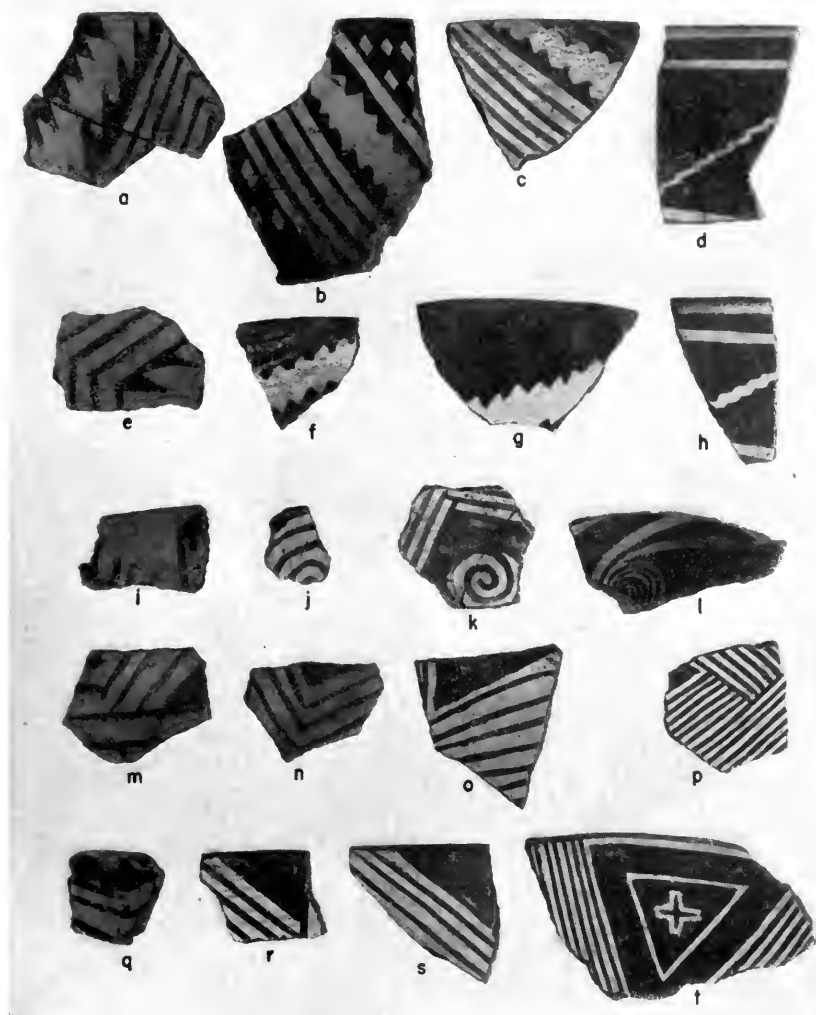


FIG. 137. Sequence of Mogollon pottery design. *a, e, i, m, q*, Mogollon Red-on-Brown; *b, f, j, n, r*, Three Circle Red-on-White; *c, g, k, o, s*, Mimbres Bold Face Black-on-White; *d, h, l, p, t*, Mimbres Black-on-White.

diamond cross-hatching, checkerboard and the spiral on Mogollon Red-on-Brown sherds. This occurrence suggests that these elements came into use earlier than is indicated by the Turkey Foot Ridge pottery. In this connection it should be noted that the spirals on the Three Circle Red-on-White pottery are generally of the non-interlocking variety (Fig. 137, *j*); whereas the spirals on

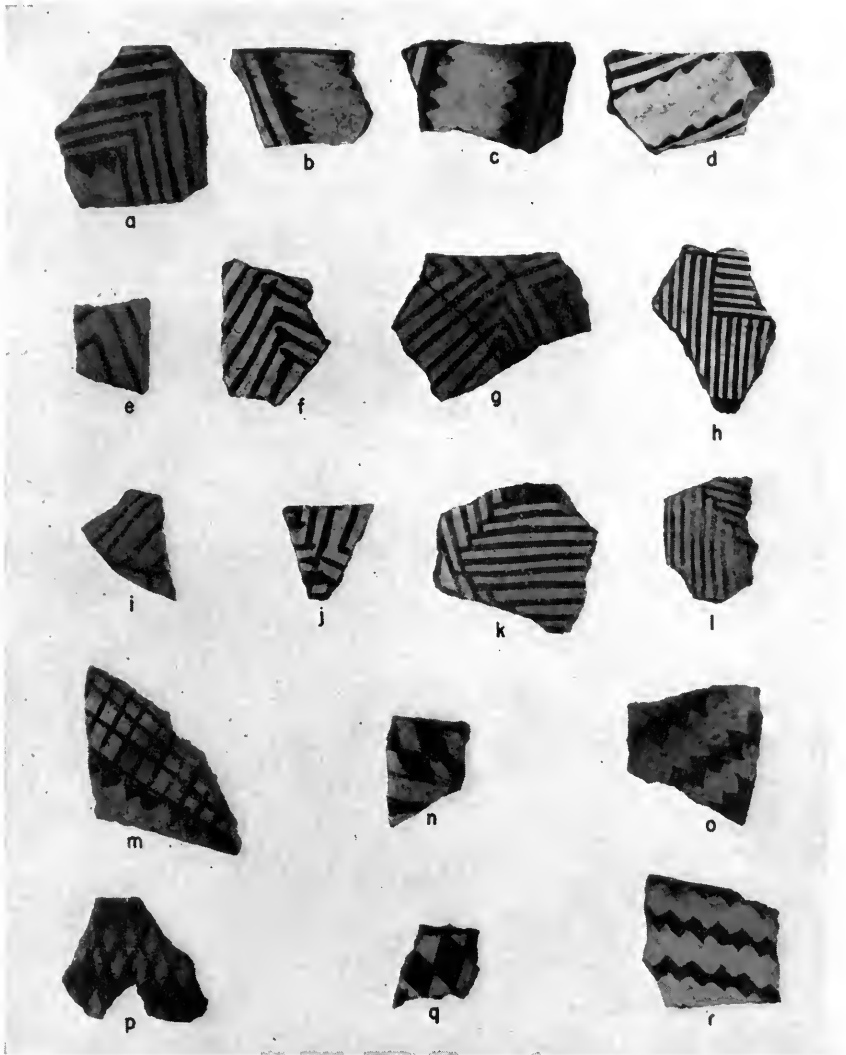


FIG. 138. Sequence of Mogollon pottery design. *a, e, i*, Mogollon Red-on-Brown; *b, f, j, m-o*, Three Circle Red-on-White; *c, d, g, k, p, q, r*, Mimbres Bold Face Black-on-White; *h, l*, Mimbres Black-on-White.

the Mimbres Bold Face Black-on-White are generally of the interlocking variety (Haury, 1936b, Pl. II, *e*). This would seem to substantiate Haury's statement (1936b, p. 24) that the interlocking spiral is a late importation from either the Anasazi or the Hohokam.

Further evidence of the unity of Mimbres pottery design development is furnished by the development of a common design element



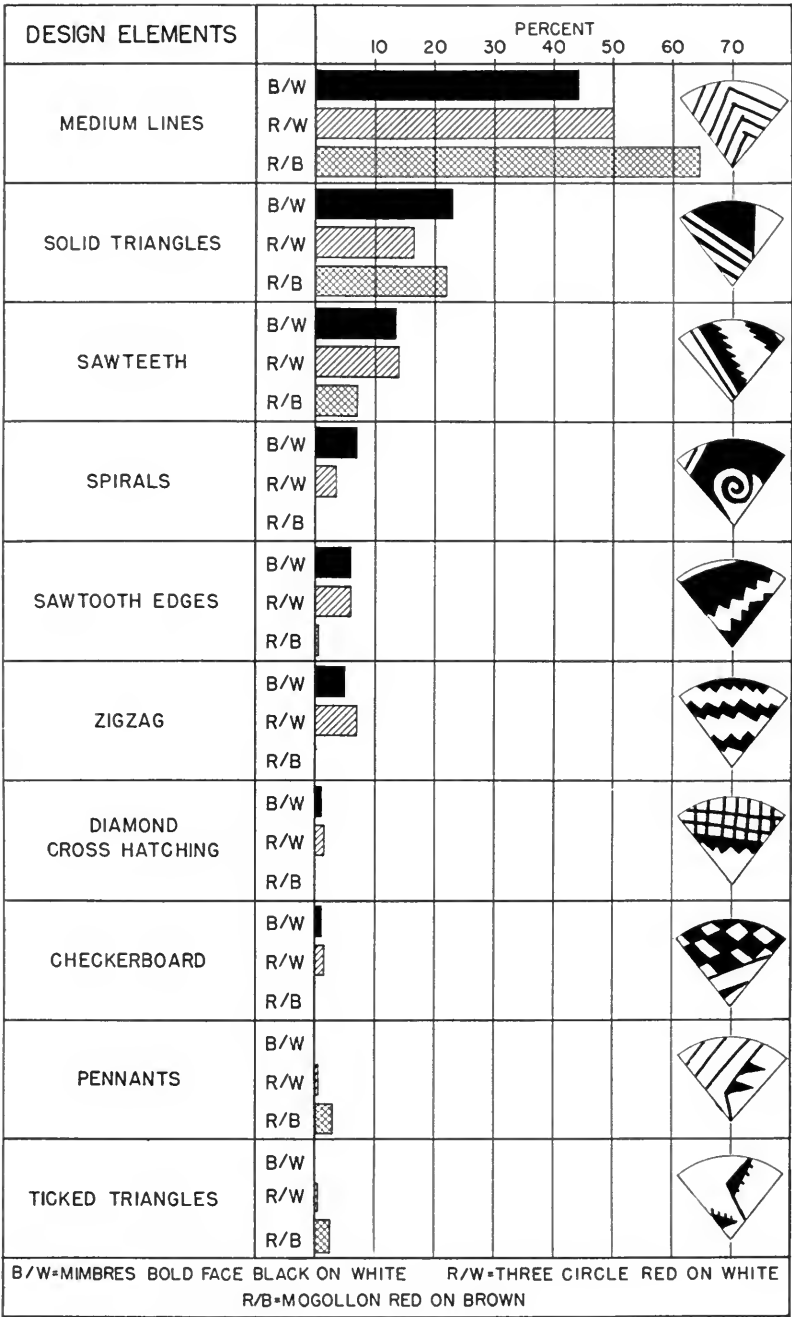


FIG. 139. Frequency of design elements on three early Mogollon pottery types.

on early Mimbres Black-on-White. This element is a white zigzag stripe formed by two opposed sawtooth-edged solid triangles (Fig. 137, *d*). This negative zigzag probably had its original source in a combination of elements appearing on Mogollon Red-on-Brown. On this type we have two series of fairly large opposed pendent triangles spaced about half an inch apart (Fig. 137, *a, e*). On a later variant of this design a reduction was made in the size of the triangles in series and the line joining their bases was made much thicker, thus forming either a sawtooth-edged band or a sawtooth edge on a much larger solid triangle (Fig. 137, *f, g*). Later still, these opposed sawtooth-edged elements appear on Three Circle Red-on-White and Mimbres Bold Face Black-on-White, but are still rather widely spaced so as to form between them a sawtooth-edged white band rather than a zigzag (Fig. 137, *b, c*). However, on Mimbres Classic Black-on-White—the last of the Mimbres painted series—these sawtooth-edged elements are so closely spaced that they form this negative zigzag between them (Fig. 137, *d, h*). Thus it may be seen that there was a consistent and persistent tradition of pottery design not only in pattern and combination of elements but also in the use of certain elements to the exclusion of others.

TABLE 10.—FREQUENCY OF DESIGN ELEMENTS OF  
THREE MOGOLLON POTTERY TYPES

<i>Design Element</i>	<i>Mogollon Red-on-Brown</i>		<i>Three Circle Red-on-White</i>		<i>Mimbres Bold Face Black-on-White</i>	
	No.	%	No.	%	No.	%
Parallel medium lines.....	145	64.44	356	49.85	252	44.05
Solid triangles.....	50	22.22	127	16.38	132	23.07
Sawteeth.....	16	7.11	100	14.00	77	13.46
Spirals.....	.....	.....	24	3.36	38	6.64
Sawtooth-edged solids....	1	0.44	43	6.02	34	5.94
Zigzag.....	.....	.....	50	7.00	29	5.06
Diamond cross-hatching....	.....	.....	11	1.54	5	0.87
Checkerboard.....	.....	.....	10	1.40	4	0.69
Pennants.....	7	3.11	2	0.28	1	0.17
Ticked triangles.....	6	2.66	1	0.14	.....	.....
Totals.....	225	99.98	724	99.97	572	99.95

Occasionally Three Circle Red-on-White vessels were painted on both interior and exterior surfaces. Rim and neck sherds collected indicate that some of the vessels so painted were wide-mouthed jars. Although body sherds with designs on both exterior and interior are common, we lack sherds that show enough of the vessel profile to tell us whether the jars were painted only on the inside of the neck and rim or all over the interior. It is possible that all the body sherds in this group come from bowls that could be painted

all over on both exterior and interior without the technical difficulty that would be encountered in painting the interior of a jar.

Another result of this design analysis was to find additional evidence for the differentiation between earlier and later variants of Mimbres Bold Face Black-on-White, which Haury mentions briefly (1936b, p. 24). The "early" variant of Mimbres Bold Face Black-on-White is, as Haury states, "decidedly reminiscent of Mogollon Red-on-Brown." However, this study has shown that it is even more like late Three Circle Red-on-White. In fact, the differentiation between the border-line specimens of Three Circle Red-on-White and Mimbres Bold Face Black-on-White was made almost entirely on the basis of the *color* of the paste, decoration, and slip, because these specimens were so similar in their other characteristics. (For a comparative description of early Mimbres decorated types see Table 11, pp. 368, 369.) The "early" variety of Mimbres Bold Face Black-on-White frequently has a chocolate-brown-on-white or a brownish-black-on-white decoration, whereas the "later" variant is generally decorated in solid black elements on a white background. The design of this later variant is characterized by narrower, more even lines and by fewer solid elements than are found on the "early" variant. The "late" variant appeared in a decided minority at the Turkey Foot Ridge Village. This may account for the fact that no wavy hatching was found on any of the sherds of this variant in our collection, although it was apparently very common on "late" Mimbres Bold Face Black-on-White from sites such as the Harris Village and the Swarts Ruin.

Some sherds of Mimbres Black-on-White were recovered from the fill of Pit-houses C, K, and L. It is believed that these sherds came from a small ruined pueblo situated between these pit-houses. These Mimbres Black-on-White sherds are for the most part decorated with geometric designs. Many of them are of the style in which the white of the background slip stands out in a design rather than the painted black design elements, thus resulting in "negative" white broad lines, zigzags and the like.

Only three sherds bearing naturalistic designs were recovered. One of these designs represents a fish, another possibly a lizard, and the third is too small a fragment to determine what might be represented.

#### INTRUSIVE POTTERY TYPES

In the fill of several of the pit-houses were found several black and white sherds foreign to the Reserve area (listed in the pottery

TABLE 11.—COMPARATIVE ANALYSIS OF CHARACTERISTICS  
OF MOGOLLON POTTERY\*

SAN LORENZO RED-ON-BROWN	MOGOLLON RED-ON-BROWN
	<i>Temper</i>
White crushed rock	Smaller, fewer white particles
Round quartz grains, minute to large	Quartz grains more frequent
	<i>Paste Color</i>
Dark gray core changes to reddish brown near surface	Core light gray merging to reddish brown near surface
	<i>Hardness</i>
Hardness 3.5–4.0	Hardness 3.5–4.5
	<i>Fracture</i>
Fracture devious, edges ragged	Fracture devious as in San Lorenzo
	<i>Interior Surface Finish</i>
Bowl interiors scraped, rubbed, tool polished	Unslipped variant as in San Lorenzo but better polished
	<i>Slip</i>
Unslipped	Slipped variant scraped but not polished
	<i>Background Color</i>
Brownish background	Light brown to pinkish brown
	<i>Exterior Surface Finish</i>
Exterior dented, lightly polished over slip. Polish marks show as bright streaks	Bowl exterior dented or smooth, slipped. Polished with tool strokes parallel to rim
	<i>Exterior Slip</i>
Thinly divided red hematite slip	Red hematite slip
	<i>Fire Clouds</i>
	Fire clouds prevalent
	<i>Vessel Shapes</i>
Bowls only known	Bowls have outcurving sides
	<i>Lip Form</i>
Both sharp and rounded lips	Both sharp and rounded lips Jar bodies rounded. Bowl to jar ratio 35:1
	<i>Color of Design Elements</i>
Decoration pigment reddish-brown, same as exterior slip	Same as San Lorenzo
	<i>Design Layout</i>
Entire interior decorated, slip from exterior forms framing line at rim.	All-over patterns
Rectilinear design	Quartered field
	<i>Brushwork</i>
Lines both broad and narrow set far apart	Brushwork improved but not precise
	<i>Polishing over Decoration</i>
Polishing over decoration	Polishing over decoration

\* Information in part from Haury (1936b).

TABLE 11.—COMPARATIVE ANALYSIS OF CHARACTERISTICS  
OF MOGOLLON POTTERY—*continued*

THREE CIRCLE RED-ON-WHITE	MIMBRES BOLD FACE BLACK-ON-WHITE
	<i>Temper</i>
Heterogeneous, fine	Coarse, angular, soft Some rounded quartz
	<i>Paste Color</i>
Dark to light brown	Gray changes to dull white toward surface
	<i>Hardness</i>
Hardness 4.0-5.0	Hardness 4.0-4.5
	<i>Fracture</i>
Fracture less devious than in Mogollon Red-on-Brown	Fracture as in Three Circle Red-on- White
	<i>Interior Surface Finish</i>
Bowl interiors scored from scraping, slip added	Well smoothed before slipped
	<i>Slip</i>
Well polished, sometimes crackled; tends to flake off	Thick, chalky, more tenacious, occa- sionally crackled
	<i>Background Color</i>
Ivory to pinkish; turns to gray when improperly fired	Light to dark gray
	<i>Exterior Surface Finish</i>
Exterior scraped, lightly polished, quite rough, coils occasionally traceable. Finger denting rare and faint	Same as in Red-on-White, but finger denting and slipping never occur
	<i>Exterior Slip</i>
About half of bowls have reddish-brown slip; many unslipped	Unslipped brown to gray, mostly slate gray
	<i>Fire Clouds</i>
Fire clouds large and common	Fire clouds occur
	<i>Vessel Shapes</i>
Few outcurving bowls. Deeper, more hemispherical bowls more common. Larger than Red-on-Brown bowls	Bowls hemispherical up to 30 cm. diam. Incurved and flare rims rare
	<i>Lip Form</i>
Lips universally rounded Bowl to jar ratio 6:1	Lips rounded or sharp Jars full bodied. Both small and large mouths, also "seed"
	<i>Color of Design Elements</i>
Pigment appears brighter because of light background	Black ideal decoration but chocolate brown by no means rare
	<i>Design Layout</i>
More solids and some open unpainted areas. May not have rim band Quartered field	Larger unpainted zones; decorated to rim; narrow band at rim Quartered field
	<i>Brushwork</i>
Brushwork improved markedly	Better brushwork
	<i>Polishing over Decoration</i>
Less polishing over decoration	No polishing over decoration

counts under Chacoan Black-on-White). Some of these are certainly Red Mesa Black-on-White; others might be classified as Puerco Black-on-White. Most of them are bowl fragments. The design elements on several of them are large solid black triangles with dotted edges (see Fig. 140). Longitudinal and vertical parallel lines in panels are also common. These parallel lines are narrow, but rather widely spaced. Panels of opposed solid black triangles forming negative diamonds between them are also common. This slip is generally a chalky white and the paste gray.

Because these sherds were found in the fill rather than the floor levels, they are of help only in placing an approximate terminal date on the occupation of the pit-houses. We do not know how much time elapsed between the day the houses were abandoned and the time they started to fill in. If we may assume that the pit-houses filled in during the time Red Mesa and Puerco Black-on-White were in use, we would place this approximate terminal date early in the tenth century. (For a discussion of the dating of the Red Mesa phase see Gladwin, 1945, pp. 59-63.)

#### TRENDS IN POTTERY POPULARITY

The percentages of each pottery type recovered from the floors of the pit-houses were graphed out on a separate bar graph for each house. These bar graphs were then fitted into the seriation columns of a graph showing the popularity of the various pottery types in each house of the several villages of the Mimbres Branch. The position of these houses in the graph (Fig. 141) indicates the approximate chronological position within the phase of each house as well as a more complete conception of the changes in popularity of each of the various pottery types. For example, this graph shows that Alma Rough continued in use up to the latter part of the ninth century although in very small amounts and possibly as heirloom pieces. It also shows that Reserve Smudged was made as early as the latter part of the San Francisco phase and generally increased in popularity during the Three Circle phase. Furthermore, it is evident that Mogollon Red-on-Brown continued in use throughout the earlier part of the Three Circle phase, and that Three Circle Red-on-White has a similar history but continued in use up to the end of the Three Circle phase—long after Mogollon Red-on-Brown fell into disuse. Then, after a certain time lag, Mimbres Bold Face Black-on-White came into use and assumed its greatest popularity later in the Three Circle phase, some time after Three Circle Red-on-White was the most popular type. Mimbres Bold Face Black-

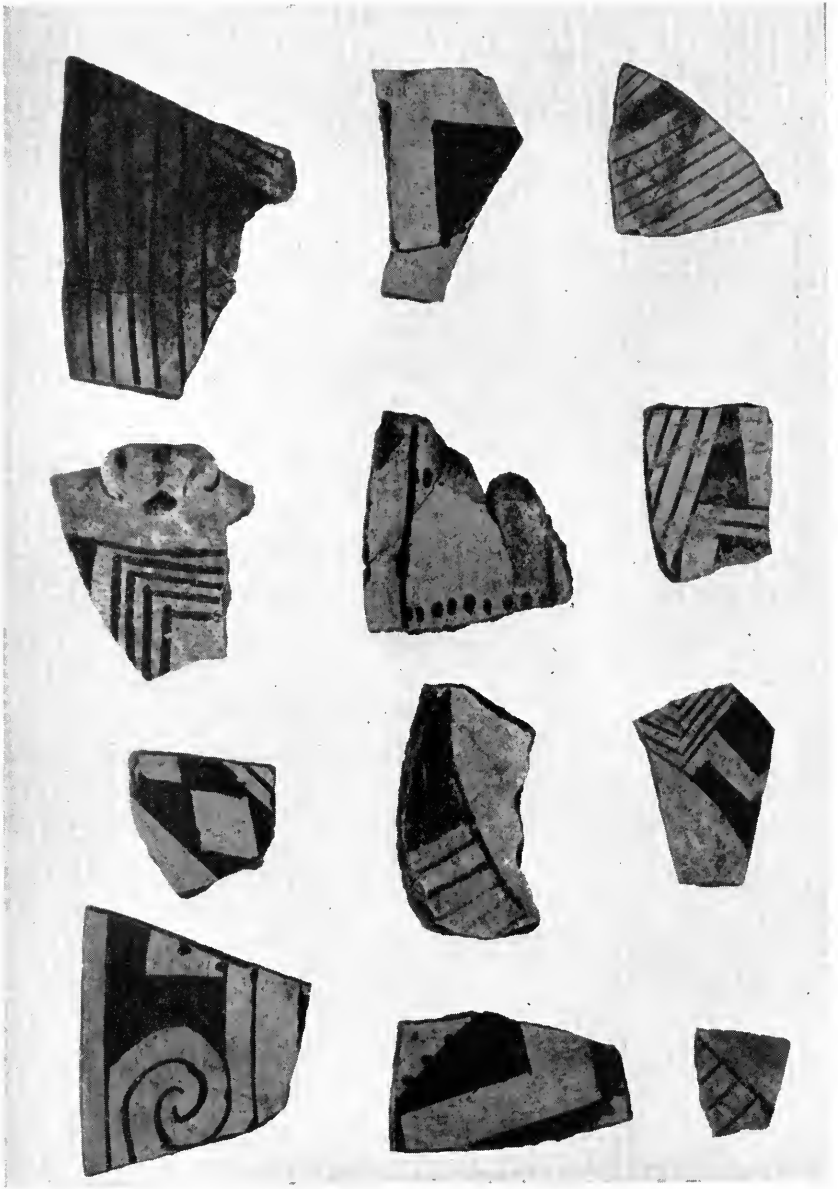


FIG. 140. Red Mesa and Puerco Black-on-White potsherds.

SITE	HOUSE	ALMA ROUGH	TEXTURED	ALMA PLAIN	SAN FRANCISCO RED	RESERVE SMUDGED	MCCOLLUM 3 RED ON BROWN	CIRCLE 3 RED ON WHITE	MIMBRES BOLD FACE B/W	RE-SERVE B/W	TOTAL SHERDS
OAK SPRINGS PUEBLO	F										112
	B										238
	A										69
RESERVE PHASE											
SU	X										465
	W										486
	Y										482
	C										74
	D										52
	B										72
	A										103
	I										252
	B										1261
	K										395
	N										410
	A										320
WHEATLEY RIDGE	7										
	2										
	8										
	6										
	C										
	L										
TURKEY FOOT RIDGE	D										
	E										
	7										
	2										
	9										
HARRIS	16										229
	13										570
	P										265
	M										441
STARKWEATHER	O										178
	J										162
	I										122
TURKEY FOOT RIDGE	I										197
	I										178
WHEATLEY RIDGE	I										102
	I										412
	I										71
	3										125
4										99	
THREE CIRCLE PHASE											
HARRIS	18										139
	20										76
	H										103
STARKWEATHER	H										
	IA										
WHEATLEY RIDGE	IA										
	IA										
	IA										
SAN FRANCISCO PHASE											



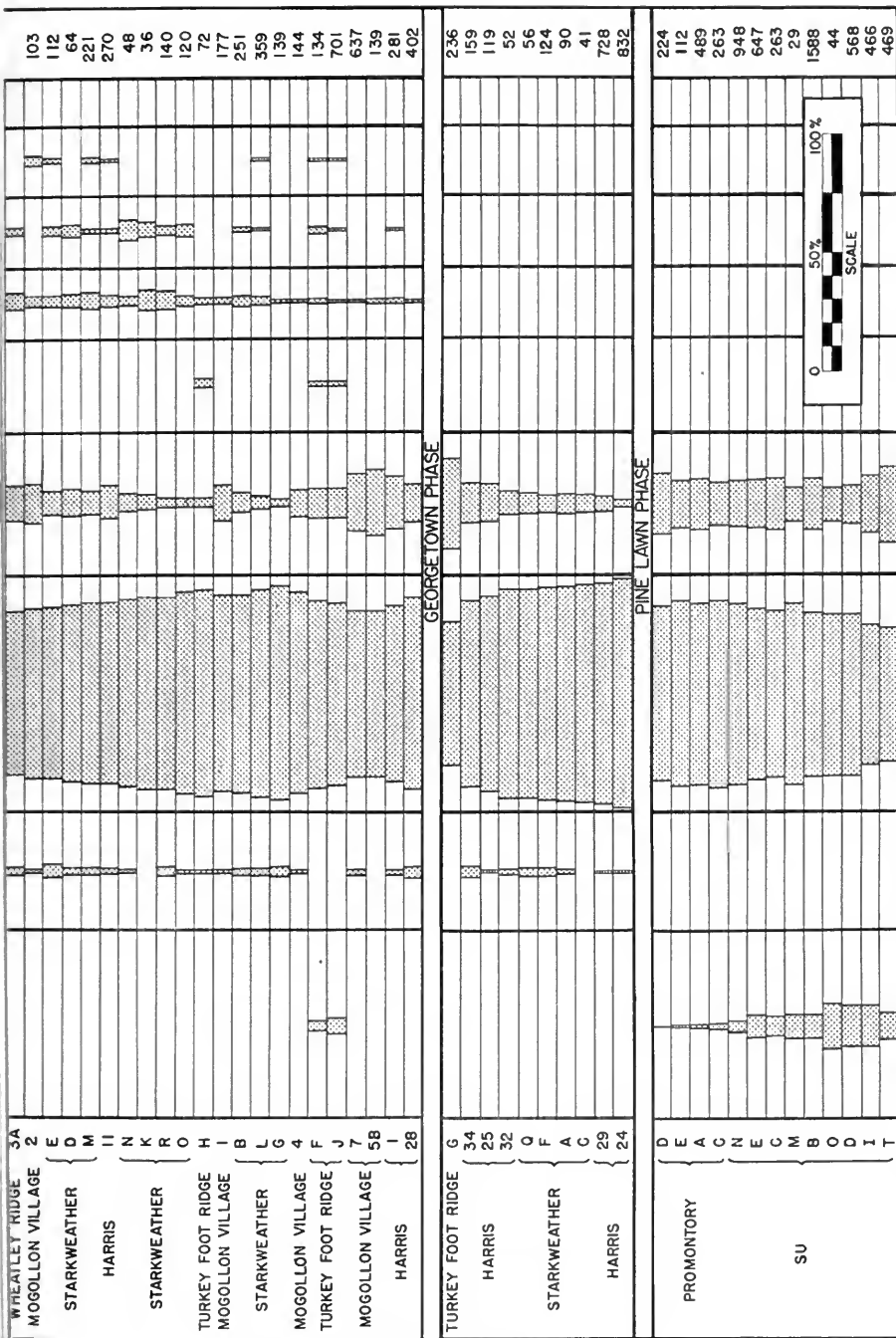


FIG. 141. Chart showing relationships of principal pottery types in Mogollon sites, western New Mexico.



FIG. 142. Three Circle Red-on-White bowl. Diameter, 31.0 cm.

on-White became more popular as Mogollon Red-on-Brown fell into disuse. This phenomenon, wherein the increase in popularity of one type is accompanied by a decline in another, occurs throughout the time space covered by the graph. It may be seen where Alma Plain declines in popularity as the corrugated and textured types come into use, and where San Francisco Red declines in popularity as Reserve Smudged approaches its maximum frequency.

#### CONCLUSIONS

The principal conclusions made concerning the pottery at the Turkey Foot Ridge Village may be recapitulated as follows:



FIG. 143. Mimbres Bold Face Black-on-White bowl. Diameter, 24 cm.

(1) Reserve Smudged had a greater popularity during the San Francisco phase than was previously known or realized.

(2) A type here termed Reserve Fillet Rim, characterized by flat rather than indented corrugated fillets, first appeared during the Three Circle phase as the forerunner of Tularosa Fillet Rim.

(3) The lack of textured pottery counts from Pit-house G, Turkey Foot Ridge, and Pit-house C, Starkweather, and the scarcity of textured pottery in other houses of the Georgetown phase seems to indicate that this phase was marked by a scarcity of Alma Rough and textured pottery and a predominance of Alma Plain pottery.

(4) The persistent popularity of certain design elements and combinations of design elements on Mogollon decorated wares of the Mimbres Branch, as indicated by their percentile frequency, reveals a more remarkable unity of development from Mogollon Red-on-Brown into Mimbres Black-on-White than was previously noted. We believe that this unusual unity of design indicates that houses at this site were occupied continuously during the San Francisco and Three Circle phases.

(5) A distinction can be made between two variants of Mimbres Bold Face Black-on-White, although the significance of this difference is not yet known.

(6) Intrusive black-on-white pottery types found in the fill of some of the Three Circle phase pit-houses would place this occupation of the Turkey Foot Ridge Village some time in the early tenth century.

TABLE 12.—SHERD ANALYSIS  
*Pit-house C, San Francisco and Three Circle Phases*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	2	0.22	1	0.13	...	...	...	...	3	0.15
Mimbres Black-on-White.....	40	4.36	27	3.61	3	1.31	1	1.41	71	3.61
Mimbres Bold Face Black-on-White.....	34	3.70	20	2.67	6	2.62	2	2.82	62	3.15
Three Circle Red-on-White.....	24	2.61	14	1.87	10	4.37	...	...	48	2.44
Mogollon Red-on-Brown.....	4	0.44	4	0.53	2	0.87	1	1.41	11	0.56
Three Circle Neck Corrugated.....	65	7.08	60	8.02	11	4.80	9	12.68	145	7.88
Alma Neck Banded.....	6	0.65	6	0.80	1	0.44	...	...	13	0.66
Incised Corrugated.....	1	0.11	1	0.13	...	...	...	...	2	0.10
Alma Scored.....	7	0.76	4	0.53	2	0.87	2	2.82	15	0.76
Alma Plain.....	606	66.01	443	59.22	151	65.94	43	60.56	1243	63.22
Alma Rough.....	15	1.63	12	1.60	3	1.31	1	1.41	31	1.58
San Francisco Red.....	74	8.06	72	9.63	29	12.66	6	8.45	181	9.21
Reserve Smudged.....	28	3.05	74	9.89	8	3.49	5	7.04	115	5.85
Reserve Fillet Rim.....	...	...	...	...	...	...	...	...	...	...
Smudged Decorated.....	...	...	...	...	...	...	...	...	...	...
Indeterminate White (NDS)*.....	12	1.31	10	1.34	3	1.31	1	1.41	26	1.32
Total.....	918		748		229		71		1966	

\* No design shown.

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house D, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Black-on-White.....	3	0.35	2	0.52	4	1.51	.....	.....	9	0.57
Mimbres Bold Face Black-on-White.....	29	3.37	3	0.79	5	1.89	1	1.41	38	2.41
Three Circle Red-on-White.....	25	2.90	10	2.62	7	2.64	3	4.23	45	2.85
Mogollon Red-on-Brown.....	6	0.70	2	0.52	2	0.75	1	1.41	11	0.70
Three Circle Neck Corrugated.....	24	2.79	13	3.41	9	3.40	3	4.23	49	3.11
Alma Neck Banded.....	10	1.16	6	1.57	3	1.13	.....	.....	19	1.20
Incised Corrugated.....	1	0.12	.....	.....	2	0.75	.....	.....	3	0.19
Alma Scored.....	2	0.23	.....	.....	.....	.....	1	1.41	3	0.19
Alma Plain.....	659	76.54	289	75.85	171	64.53	52	73.24	1171	74.21
Alma Rough.....	1	0.12	10	2.62	1	0.38	1	1.41	13	0.82
San Francisco Red.....	54	6.27	26	6.82	22	8.30	6	8.45	108	6.84
Reserve Smudged.....	38	4.41	17	4.46	37	13.96	3	4.23	95	6.02
Reserve Fillet Rim.....	2	0.23	1	0.26	.....	.....	.....	.....	3	0.19
Smudged Decorated.....	.....	.....	2	0.52	2	0.75	.....	.....	4	0.25
Indeterminate White (NDS).....	7	0.81	.....	.....	.....	.....	.....	.....	7	0.44
Total.....	861	.....	381	.....	265	.....	71	.....	1578	.....

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house E, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	1	0.29	.....	.....	1	11.11	2	0.17
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White.....	9	2.59	9	2.57	21	4.76	.....	.....	39	3.40
Three Circle Red-on-White.....	10	2.87	12	3.43	22	4.99	.....	.....	44	3.83
Mogollon Red-on-Brown.....	5	1.44	3	0.86	9	2.04	.....	.....	17	1.48
Three Circle Neck Corrugated.....	11	3.16	6	1.71	.....	.....	.....	.....	17	1.48
Alma Neck Banded.....	6	1.72	4	1.14	15	3.40	.....	.....	25	2.18
Incised Corrugated.....	.....	.....	1	0.29	.....	.....	.....	.....	1	0.09
Alma Scored.....	.....	.....	.....	.....	2	0.45	.....	.....	2	0.17
Alma Plain.....	280	80.46	270	77.14	295	66.89	5	55.56	850	74.04
Alma Rough.....	5	1.44	8	2.29	.....	.....	.....	.....	13	1.13
San Francisco Red.....	16	4.60	29	8.29	31	7.03	2	22.22	78	6.79
Reserve Smudged.....	1	0.29	7	2.00	46	10.43	1	11.11	55	4.79
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	4	1.15	.....	.....	.....	.....	.....	.....	4	0.35
Indeterminate White (NDS).....	1	0.29	.....	.....	.....	.....	.....	.....	1	0.09
Total.....	348		350		441		9		1148	

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house F, San Francisco Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White.....	1	1.02	.....	.....	1	0.75	.....	.....	2	0.45
Three Circle Red-on-White.....	1	1.02	.....	.....	2	1.49	.....	.....	3	0.68
Mogollon Red-on-Brown.....	1	1.02	1	0.55	2	1.49	.....	3.70	5	1.13
Three Circle Neck Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Neck Banded.....	1	1.02	4	2.20	.....	.....	.....	14.81	9	2.04
Incised Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Scored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Plain.....	70	71.43	136	74.73	105	78.36	14	51.85	325	73.70
Alma Rough.....	7	7.14	3	1.65	6	4.48	.....	.....	16	3.63
San Francisco Red.....	16	16.33	34	18.68	15	11.19	8	29.63	73	16.55
Reserve Smudged.....	1	1.02	4	2.20	3	2.24	.....	.....	8	1.81
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	98		182		134		27		441	



TABLE 12.—SHERD ANALYSIS—continued

*Pit-house G, Georgetown(?) Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White.....	.....	.....	.....	.....	1	0.42	.....	.....	1	0.23
Three Circle Red-on-White.....	1	0.79	.....	.....	.....	.....	.....	.....	1	0.23
Mogollon Red-on-Brown.....	1	0.79	1	7.69	.....	.....	.....	.....	2	0.45
Three Circle Neck Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Neck Banded.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Incised Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Scored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Plain.....	90	71.43	.....	.....	143	60.59	63	96.92	296	67.27
Alma Rough.....	10	7.94	.....	.....	.....	.....	2	3.08	12	2.73
San Francisco Red.....	24	19.05	12	92.31	92	38.98	.....	.....	128	29.09
Reserve Smudged.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	126		18		236		65		440	

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house H, San Francisco Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White.....	5	2.35	3	1.68	.....	.....	.....	.....	8	1.61
Three Circle Red-on-White.....	3	1.41	3	1.68	.....	.....	2	6.06	8	1.61
Mogollon Red-on-Brown.....	4	1.88	4	2.23	2	2.78	.....	.....	10	2.01
Three Circle Neck Corrugated.....	.....	.....	1	0.56	.....	.....	.....	.....	1	0.20
Alma Neck Banded.....	4	1.88	1	0.56	1	1.39	.....	.....	6	1.21
Incised Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Scored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Plain.....	157	73.71	135	75.42	62	86.11	28	84.85	382	76.86
Alma Rough.....	1	0.47	2	1.12	3	4.17	.....	.....	6	1.21
San Francisco Red.....	24	11.27	22	12.29	2	2.78	2	6.06	50	10.06
Reserve Smudged.....	14	6.57	8	4.47	2	2.78	1	3.03	25	5.03
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	1	0.47	.....	.....	.....	.....	.....	.....	1	0.20
Total.....	213		179		72		33		497	

TABLE 12.—SHERD ANALYSIS—continued  
*Pit-house I, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	1	0.11	.....	.....	.....	.....	.....	.....	1	0.06
Mimbres Black-on-White.....	7	0.78	2	0.36	.....	.....	.....	.....	9	0.57
Mimbres Bold Face Black-on-White....	57	6.32	32	5.70	5	5.05	2	6.90	96	6.03
Three Circle Red-on-White.....	69	7.65	31	5.53	7	7.07	2	6.90	109	6.85
Mogollon Red-on-Brown.....	15	1.66	11	1.96	1	1.01	2	6.90	29	1.82
Three Circle Neck Corrugated.....	17	1.88	9	1.60	.....	.....	1	3.45	27	1.70
Alma Neck Banded.....	8	0.89	4	0.71	.....	.....	.....	.....	12	0.75
Incised Corrugated.....	1	0.11	.....	.....	.....	.....	.....	.....	1	0.06
Alma Scored.....	4	0.44	3	0.53	.....	.....	.....	.....	7	0.44
Alma Plain.....	603	66.85	352	62.75	71	71.72	18	62.07	1044	65.62
Alma Rough.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco Red.....	81	8.98	81	14.44	12	12.12	2	6.90	176	11.06
Reserve Smudged.....	25	2.77	26	4.63	2	2.02	1	3.45	54	3.39
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	4	0.44	.....	.....	.....	.....	.....	.....	4	0.25
Indeterminate White (NDS).....	10	1.11	10	1.78	1	1.01	1	3.45	22	1.38
Total.....	902		561		99		29		1591	

TABLE 12.—SHERD ANALYSIS—continued  
*Pit-house J, San Francisco Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White.....	3	0.99	2	0.46	6	0.86	.....	.....	11	0.76
Three Circle Red-on-White.....	2	0.66	2	0.46	7	1.00	.....	.....	11	0.76
Mogollon Red-on-Brown.....	2	0.66	2	0.46	4	0.57	.....	.....	8	0.55
Three Circle Neck Corrugated.....	1	0.33	4	0.91	.....	.....	.....	.....	5	0.35
Alma Neck Banded.....	.....	.....	3	0.68	.....	.....	.....	.....	3	0.21
Incised Corrugated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Scored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alma Plain.....	204	67.55	257	58.54	536	76.46	.....	.....	997	69.14
Alma Rough.....	12	3.97	77	17.54	49	6.99	.....	.....	138	9.57
San Francisco Red.....	68	22.52	79	18.00	84	11.98	.....	.....	231	16.02
Reserve Smudged.....	7	2.32	.....	.....	12	1.71	.....	.....	19	1.32
Reserve Fillet Rim.....	.....	.....	.....	.....	3	0.43	.....	.....	3	0.21
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	3	0.99	13	2.96	.....	.....	.....	.....	16	1.11
Total.....	302		439		701				1442	

TABLE 12.—SHERD ANALYSIS—continued

	TRENCH		FILL		FLOOR		EXTRA-MURAL PITS		TOTAL		FLOOR	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	12	0.94	10	0.63	...	...	...	...	22	0.62	...	...
Mimbres Black-on-White.....	38	2.99	64	4.02	11	1.93	3	2.73	116	3.27	...	...
Mimbres Bold Face Black-on-White.	25	1.97	27	1.69	8	1.40	...	...	60	1.69	19	4.81
Three Circle Red-on-White.....	23	1.81	14	0.88	9	1.58	...	...	46	1.30	3	0.76
Mogollon Red-on-Brown.....	10	0.79	4	0.25	5	0.88	1	0.91	20	0.56	...	...
Three Circle Neck Corrugated.....	116	9.13	198	12.42	64	11.23	3	2.73	381	10.75	16	4.05
Alma Neck Banded.....	7	0.55	6	0.38	...	...	...	...	13	0.37	3	0.76
Incised Corrugated.....	7	0.55	8	0.50	4	0.70	...	...	19	0.54	2	0.51
Alma Scored.....	19	1.49	22	1.38	8	1.40	...	...	49	1.38	...	...
Alma Plain.....	797	62.71	1008	63.24	356	62.46	85	77.27	2246	63.36	300	75.95
Alma Rough.....	30	2.36	21	1.32	...	...	...	...	51	1.44	...	...
San Francisco Red.....	79	6.22	90	5.65	52	9.12	16	14.55	237	6.69	19	4.81
Reserve Smudged.....	94	7.40	88	5.52	42	7.37	2	1.82	226	6.38	32	8.10
Reserve Fillet Rim.....	...	...	...	...	...	...	...	...	...	...	...	...
Smudged Decorated.....	...	...	...	...	...	...	...	...	...	...	...	...
Indeterminate White (NDS).....	14	1.10	32	2.01	11	1.93	...	...	57	1.61	...	...
Alma Punched.....	...	...	2	0.13	...	...	...	...	2	0.06	1	0.25
Total.....	1271		1594		570		110		3545		395	

Pit-house K,  
Three Circle  
Phase

Pit-house L, Three Circle Phase

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house M, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	1	0.10	1	0.11	...	.....	.....	.....	2	0.09
Mimbres Black-on-White.....	...	.....	1	0.11	...	.....	.....	.....	1	0.04
Mimbres Bold Face Black-on-White....	21	2.17	26	2.83	15	3.64	.....	.....	62	2.70
Three Circle Red-on-White.....	32	3.31	35	3.81	24	5.83	.....	.....	91	3.96
Mogollon Red-on-Brown.....	5	0.52	7	0.76	4	0.97	.....	.....	16	0.70
Three Circle Neck Corrugated.....	10	1.03	22	2.39	11	2.67	.....	.....	43	1.87
Alma Neck Banded.....	6	0.62	8	0.87	5	1.21	.....	.....	19	0.83
Incised Corrugated.....	...	.....	3	0.33	1	0.24	.....	.....	4	0.17
Alma Scored.....	2	0.21	3	0.33	1	0.24	.....	.....	6	0.26
Alma Plain.....	704	72.73	663	72.14	288	69.90	.....	.....	1655	71.99
Alma Rough.....	7	0.72	8	0.87	...	.....	.....	.....	15	0.65
San Francisco Red.....	102	10.54	93	10.12	30	7.28	.....	.....	225	9.79
Reserve Smudged.....	60	6.20	39	4.24	29	7.04	.....	.....	128	5.57
Reserve Fillet Rim.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	18	1.86	10	1.09	4	0.97	.....	.....	32	1.39
Total.....	968		919		412		.....	.....	2299	

TABLE 12.—SHERD ANALYSIS—continued

*Pit-house N, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	2	0.23	.....	.....	.....	.....	.....	.....	2	0.10
Mimbres Black-on-White.....	.....	.....	1	0.14	1	0.24	.....	.....	2	0.10
Mimbres Bold Face Black-on-White....	20	2.26	34	4.63	17	4.15	.....	.....	71	3.50
Three Circle Red-on-White.....	47	5.30	42	5.72	11	2.68	.....	.....	100	4.93
Mogollon Red-on-Brown.....	6	0.68	4	0.54	5	1.22	.....	.....	15	0.74
Three Circle Neck Corrugated.....	13	1.47	11	1.50	3	0.73	.....	.....	27	1.33
Alma Neck Banded.....	3	0.34	9	1.23	3	0.73	.....	.....	15	0.74
Incised Corrugated.....	.....	.....	3	0.41	1	0.24	.....	.....	4	0.20
Alma Scored.....	3	0.34	1	0.14	.....	.....	.....	.....	4	0.20
Alma Plain.....	620	69.98	539	73.43	314	76.59	.....	.....	1473	72.56
Alma Rough.....	15	1.69	.....	.....	.....	.....	.....	.....	15	0.74
San Francisco Red.....	95	10.72	48	6.54	22	5.37	.....	.....	165	8.13
Reserve Smudged.....	47	5.30	34	4.63	21	5.12	.....	.....	102	5.02
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	15	1.69	8	1.09	12	2.93	.....	.....	35	1.72
Total.....	886		734		410				2030	

TABLE 12.—SHERD ANALYSIS—concluded  
*Pit-house O, Three Circle Phase*

	TRENCH		FILL		FLOOR		ENTRY		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Chacoan Black-on-White.....	.....	.....	4	0.97	.....	.....	.....	.....	4	0.39
Mimbres Black-on-White.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mimbres Bold Face Black-on-White....	15	2.71	16	3.87	2	2.82	.....	.....	33	3.18
Three Circle Red-on-White.....	33	5.96	16	3.87	8	11.27	.....	.....	57	5.49
Mogollon Red-on-Brown.....	11	1.99	4	0.97	1	1.41	.....	.....	16	1.54
Three Circle Neck Corrugated.....	12	2.17	21	5.08	2	2.82	.....	.....	35	3.37
Alma Neck Banded.....	7	1.26	1	0.24	.....	.....	.....	.....	8	0.77
Incised Corrugated.....	.....	.....	2	0.48	.....	.....	.....	.....	2	0.19
Alma Scored.....	2	0.36	2	0.48	.....	.....	.....	.....	4	0.39
Alma Plain.....	418	75.45	281	68.04	47	66.20	.....	.....	746	71.87
Alma Rough.....	5	0.90	10	2.42	.....	.....	.....	.....	15	1.45
San Francisco Red.....	32	5.78	35	8.47	5	7.04	.....	.....	72	6.94
Reserve Smudged.....	17	3.07	16	3.87	5	7.04	.....	.....	38	3.66
Reserve Fillet Rim.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smudged Decorated.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indeterminate White (NDS).....	2	0.36	5	1.21	1	1.41	.....	.....	8	0.77
Total.....	554		413		71				1038	



## V. SUMMARY

As a result of the laboratory analysis of the records and artifacts from the field work of the 1948 season in New Mexico, several important observations may be emphasized and summarized here.

### ARCHITECTURE

(1) During the San Francisco phase, the shape of pit-houses changed from round to rectangular (as pointed out by Haury, 1936a), although there are important exceptions: Pit-houses D and X at the SU site; B at Twin Bridges site; B and M at Turkey Foot Ridge—all of which are round. Do these exceptions indicate a conservatism that persisted through the Three Circle phase?

(2) Haury (1936a) established three principal types of roof supports in Mogollon houses: (a) Central and peripheral or marginal uprights; (b) three uprights set across long axis of house to support a ridge pole; (c) four uprights, one in each corner of house.

In addition to these three types, we found that the roof supports of some Pine Lawn Valley houses were a combination of types *b* and *c* (supra); that is, three uprights on each side of house and one in center (for example, Houses I, O, and N).

(3) The houses of Georgetown, San Francisco, and Three Circle times tend to have fewer or no floor pits; instead, the San Francisco and Three Circle houses are provided with wall niches or extra-mural pits.

(4) The houses of the Pine Lawn phase average 6.2 meters in diameter, whereas those of the Three Circle phase average only 5.3 meters. Thus, there is a gradual decrease in house size in later times.

(5) In houses of the Three Circle phase (House C, first occupation) and houses of the San Francisco phase (House H), kiva features were found (deflector, ventilator, fireplace, and sipapu[?]).

### ARTIFACTS

(1) The primary categories of tools remained practically unchanged from the Pine Lawn phase through the Three Circle phase with the following exceptions: (a) after the Pine Lawn phase, bone

pins, antler rubbers, abrading stones and bird pendants disappeared; (b) the grooved ax put in its first appearance in the Three Circle phase, replacing the chopper.

(2) A change in grinding methods beginning in the Pine Lawn phase was noted in the decrease in the number of mortars and pestles and basin metates and an increase in the number of straight "scoop" and through-trough metates; likewise the rectangular manos (which are adapted to use with the through-trough metate) increase in frequency, while the oval manos (used for circular grinding with the basin metates) decrease.

(3) Sherd scoops appear after the Pine Lawn phase.

(4) Fewer projectile points and animal bones are found after the Pine Lawn phase. Do these observations suggest that greater dependence was placed on vegetable subsistence?

(5) In Wet Leggett Canyon, a new locus was discovered that yielded two hearths and twelve more tools of the Cochise culture.

#### POTTERY

(1) Reserve Smudged enjoyed a greater popularity in the San Francisco phase than heretofore.

(2) Reserve Fillet Rim appeared during the Three Circle phase and was the forerunner of Tularosa Fillet Rim.

(3) Textured and Alma Rough pottery were scarce or non-existent during the Georgetown phase, and Alma Plain was the most popular.

(4) Certain design elements and combinations of these, which are present on Mogollon Red-on-Brown pottery (San Francisco phase), persist with remarkable tenacity for at least 500 years and appear in variations on all later Mogollon decorated pottery; that is, Three Circle Red-on-White, Mimbres Bold Face, and Mimbres Black-on-White. Such a clear relationship between pottery types can rarely be so easily demonstrated.

(5) It is possible to distinguish between an early variant and a late variant of Mimbres Bold Face Black-on-White, but the significance of this difference is not known.

(6) From the evidence of dated intrusive Anasazi pottery, we would date the Three Circle phase (as manifested at Turkey Foot Ridge in Pine Lawn Valley) in the early part of the tenth century.

The significance of these points just enumerated in relation to the Mogollon culture of the Pine Lawn Valley is not now entirely

clear to us. We feel that these observations and discoveries are important and meaningful, but their complete significance will not become apparent until all phases in the Reserve, New Mexico, area have been investigated and the relationships of one phase to another have been integrated. We hope eventually to have data enough to permit us to make a synthesis of the history of Pine Lawn Valley.

These conclusions appear significant and important because of their bearing on the construction of a more realistic picture of the way of life of the Mogollon peoples, especially during those intermediate periods between the relatively pure early Pine Lawn phase and the later Reserve phase, when they had become adapted to the Anasazi type of life. However, the value of these observations lies not only in the way in which they illuminate the limited sector of development to which they are immediately related, but, more than that, in the light which they cast upon past and future developments in the prehistory of Pine Lawn Valley—in the problems that they suggest and the vistas that they open up.

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