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THE COOMBS SITE

By ROBERT H. LISTER

With a Chapter, POTTERY, by Florence C. Lister

CHARLES E. DIBBLE, *Editor*

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ANTHROPOLOGICAL PAPERS

The University of Utah Anthropological Papers are a medium for reporting to interested scholars and to the people of Utah research in anthropology and allied sciences bearing upon the peoples and cultures of the Great Basin and the West. They include, first, specialized and technical record reports on Great Basin archeology, ethnology, linguistics, and physical anthropology, and second, more general articles on anthropological discoveries, problems and interpretations bearing upon the western regions, from the High Plains to the Pacific Coast, insofar as they are relevant to human and cultural relations in the Great Basin and surrounding areas.

For the duration of the archeological salvage project for the upper Colorado River Basin which the University has undertaken by contract agreement with the National Park Service, reports relating to that research program are being published as a series within a series, bearing numbers in the general sequence of the papers as well as their own identifying numbers.

The Glen Canyon subseries will represent a wider range of the sciences and humanities than the parent series itself. The project provides for studies of the natural history of the Glen Canyon area and its inhabitants so that the relations of the prehistoric cultures and their settings will be understood in depth. As contact with Western peoples and cultures has had a varying effect upon the native Americans and the land, some papers will be concerned with the Colorado in the more recent past. Most of the Glen Canyon publications, however, will be archeological reports.

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Department of Anthropology

University of Utah

Glen Canyon Reservoir

Upper Colorado River Basin

The Coombs Site

as a part of the

Upper Colorado River Basin Salvage Program

in accordance with the

Memoranda of Agreement

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between the

U. S. National Park Service and the University of Utah

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University of Utah

PREFACE

Excavations at the Coombs site were undertaken as an adjunct to that part of the Upper Colorado River Basin Archeological Salvage Project for which the University of Utah is responsible through contract agreement with the United States National Park Service. However, digging at this site was not a salvage operation. It will be 45 mi. from the nearest waters of the reservoir to be created by the Glen Canyon dam on the Colorado River. It was chosen for excavation because, from surface indications and from the small amount of work done there previously, it appeared to be the largest and most significant site within or adjacent to the areas that will be flooded west of the Colorado River. The archeological survey of the reservoir area proper failed to locate any sites that would compare with the Coombs site either in size or in volume of cultural contents. But the survey did indicate that pottery found in many of the rock shelters and on numerous small open sites along the Colorado River and its tributaries was similar to sherds profusely scattered over the surface of the Coombs site. Furthermore, it was apparent that architectural remains, a feature rarely found at sites within the reservoir area, were present at the Coombs site. Therefore, the decision was made to conduct excavations at the Coombs site in hope of obtaining information that would enable us to better understand the archeological remains in the region to be inundated by reservoir waters. Additional importance was assigned the site because of its intermediate position between the Anasazi culture area to the south and the territory of the Fremont culture to the north.

Six weeks of June and July, 1958, were spent in excavation. Work was initiated, and conducted for two weeks, by a crew of seven volunteers from the St. Marks School for Boys, Salt Lake City, under the direction of Jesse D. Jennings and James H. Gunnerson, of the University of Utah, assisted by William Lipe. During the remainder of the season, the work was continued by 12 students enrolled in the Archeological Field Session of the University of Colorado, under my direction. This course is designed to train students in archeological techniques by having them participate in all phases of an actual field project.

The success of this program directly reflects the very conscientious labors of these two groups of students. To each of the participants my appreciation for a job well done is extended. The students from St. Marks

were: Joseph Bernalfo, Patrick Gibbons, Robert Jager, John Merkley, David Schwartz, Robert Wissmar, and Carl Woolsey. William Purdy, teacher of history at the school, accompanied the group. Members of the University of Colorado Field Session were: Ardelle Anderson, William Buckles, Wayne Coon, Loudell Fromme, James Haug, Wilfred Husted, George King, Richard Ross, Robert Walsh, all from the University of Colorado; Audrey Buell, from the University of New Mexico, Mary Mulroy from Barnard College, and Ellen Sparry, from Columbia University. Special thanks are due the department of anthropology, University of Utah, for the fine cooperation and assistance rendered the University of Colorado group.

I am most appreciative of the assistance given by J. Richard Ambler, who served as my assistant in directing the field work; by George King, who assisted in the mapping of the site and prepared plans used in the preparation of several of the maps in this report; and by Mary Mulroy, who helped in the laboratory analysis of the specimens from the site. Identification of certain specimens kindly has been furnished by University of Utah personnel. The mammal bones were studied by Stephen D. Durrant, Professor of Zoology, and by M. Raymond Lee, graduate student in zoology. Identification of stone utilized for artifacts was made by Norman C. Williams, Associate Professor of Geology.

My wife, Florence Cline Lister, has contributed immeasurably to the project, both in the field and in the laboratory. Her analysis of the large collection of potsherds is a significant contribution and is basic to an understanding of the cultural affiliations and age of the Coombs site.

Our field camp was established on the property of Jim Haws, and the site is located on land belonging to Eph Coombs. We are most grateful to Mr. Haws for letting us set up our camp, and use the buildings, on his property, and to Mr. Coombs for permission to excavate on his land. Other residents of Boulder, Utah, especially Mr. and Mrs. Doyle Moosman and Irene King, were generous in their assistance throughout our stay in the field.

Our notions relative to the importance of the Coombs site, held prior to excavation, were intensified during the digging season and even more so during the laboratory analysis of the materials recovered. Since the 1958 season allowed for the exploration of only a part of the ruin, plans have been made to return during the summer of 1959 in order to continue

the excavation program. Therefore, this report must be considered preliminary, since it deals only with the results of the first season's activities. It primarily will be a descriptive account. Conclusions must await the additional field work. For a fuller statement of the Glen Canyon project and its history and design, see Jennings (1959).

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INTRODUCTION

The archeological site at Boulder, Garfield County, southern Utah, which we have named the Coombs site (Fig. 1), was visited by parties from the Peabody Museum, Harvard University, as early as 1927. It first was reported upon by Noel Morss in 1931. This account (Morss, 1931) is basically a description of the Fremont culture, but it includes a brief reference to the Coombs site (referred to as Site 1, by Morss) and the small-scale excavations undertaken there in 1928.

Morss noted the location of the site upon a small hillock, pointed out that there are remnants of several groups of masonry rooms at the top of the hill, and described the finding of three burials in a sandy drift along the southern face of the hill. He also mentioned that several burials had been uncovered on this slope, by local diggers, prior to his explorations.

The sherds collected by Morss from the surface of the site were characterized by a preponderance of corrugated ware. He also obtained small amounts of black-on-white, red, polychrome, and gray sherds. He identified the designs on the black-on-white pottery as similar to designs on Pueblo II pottery of the "Proto-Kayenta" period of northern Arizona. The polychrome sherds also were identified as belonging to the "Proto-Kayenta or Tusayan polychrome period." Thus Morss believed that the pottery at the Coombs site indicated that the village had been occupied by Pueblo (Anasazi) peoples whose culture resembled that present in the Kayenta area of northern Arizona in Pueblo II times. In addition, he noted that the remains at the Coombs site differed from those of the Fremont culture drainage to the north. Our 1958 excavations add support to these general assumptions made by Morss.

Following Morss's visit additional burials were removed from the southern slope of the site by local pot hunters. This activity was stimulated, in part, by the widening of a road along the base of the hill by a road grader. The road cut exposed deposits of refuse as well as several burials. Most of the pottery vessels recovered from these burials still are in the possession of residents of Boulder. A few shallow pits were dug on the top of the hill but were abandoned as unproductive before doing damage to any of the house remains.

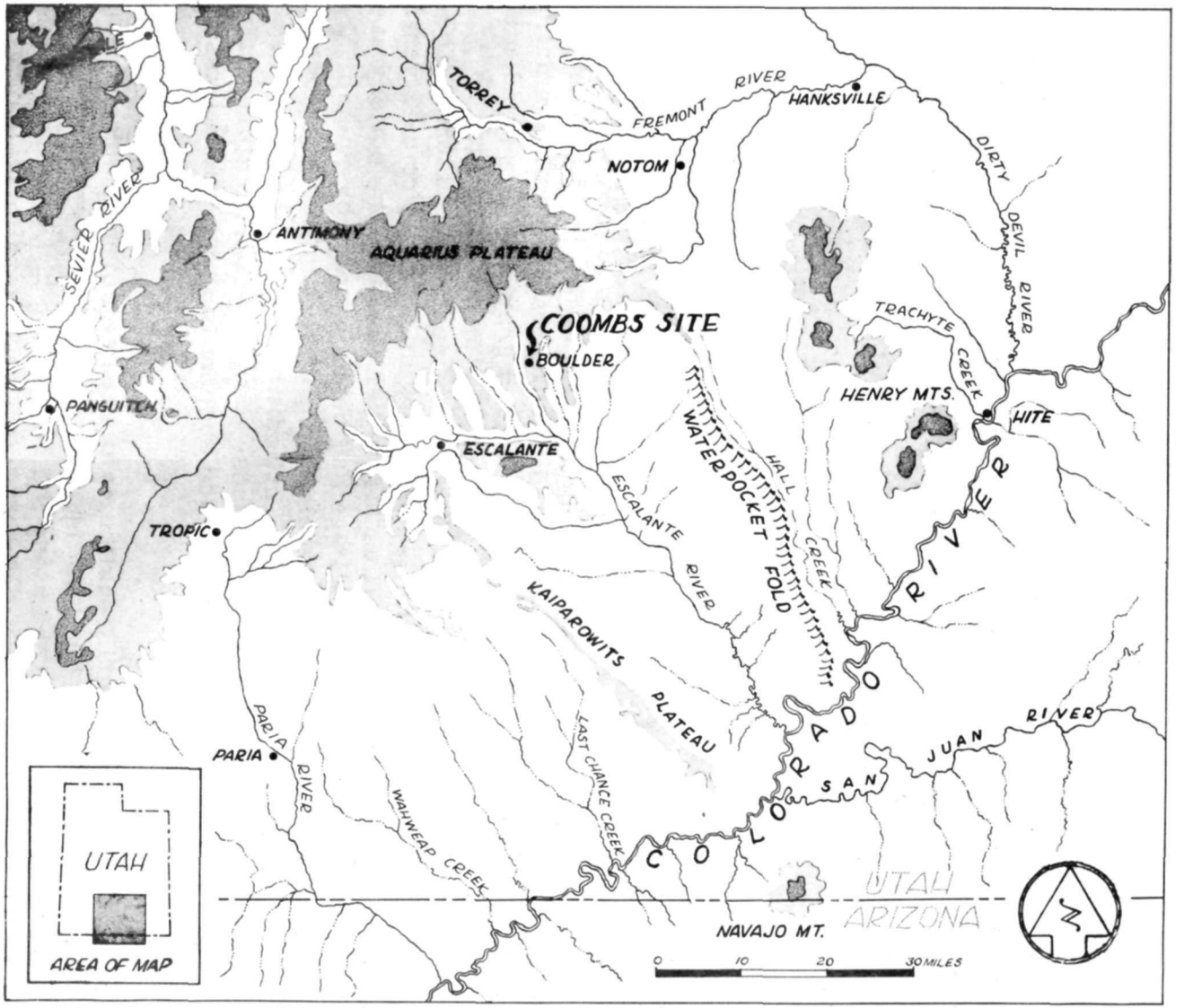


Fig. 1. General location map.

In 1955 the Coombs site was examined by James H. Gunnerson during a reconnaissance conducted by the Utah Statewide Archeological Survey for the department of anthropology of the University of Utah. The concern of that particular reconnaissance, as reported by Gunnerson in 1957, was within the area of the Fremont culture, hence little mention is made of the Coombs site except to note that material from the site does not closely resemble Fremont material.

The reasons for selecting the Coombs site for excavation in 1958 have been outlined in the preface to this paper. The site is located in the small, unincorporated community of Boulder. It occupies the top of a hill which rises about 20 ft. above the surrounding terrain on the north, south, and east sides. On the west, the hill is not as sharply defined since it slopes to higher ground in that direction. A dirt road runs along the southern edge of the hill, and a fenced easement for a road extends north-south across the top of the hill and over the site. The latter, however, has never been used as a road. Excavations in 1958 were confined to the area east of the unused roadway which is utilized as a pasture for livestock by Eph Coombs. It is obvious from surface indications that the site extends west across the roadway and onto the property of Jim Haws. Several buildings on the Haws' property are built upon ruins of the site.

Today, there are meadows, alfalfa fields, and garden plots around the hill on which the site is located. All of these are recent developments made possible by the construction of an irrigation system which brings water to the lands of the community from nearby streams. Formerly the hill, and the country around it, probably was covered with scattered growth of sagebrush, greasewood, junipers, and grasses.

Boulder is situated on the southern flank of the Aquarius Plateau, sometimes locally referred to as Boulder Mountain, in the transitional zone between the fairly smooth, well watered, vegetation-clad slopes of the plateau and the rugged, sere, barren canyon lands that border the Colorado River. Elevation is approximately 6700 ft. Boulder Creek, a rushing mountain stream tributary to the Escalante River, flows through the community a short distance west of the site.

The location is one which would have been quite amenable to settlement by Anasazi people. Farming was basic to Anasazi culture, and in the Boulder area there are arable lands and water. There is even the possibility

that irrigation was practiced by the Indians, since local residents speak of having found what appeared to be evidences of ditches when the region was first settled by the present occupants. The nearby Aquarius Plateau undoubtedly was an excellent hunting territory. It still supports a large population of deer and other mammals. Building materials, in the form of sandstone and caliche, were abundant, and pottery clay must have been available, judging from the large amount of pottery recovered from the site. Igneous rocks and chalcedonies, which occur in the vicinity, were suitable for grinding, cutting, and piercing implements. The climate of the locality is favorable to year round occupation. The elevation is sufficient to produce pleasant summers, but the region is not high enough to experience severe winters.

The attractiveness of the area for Indian occupation is exemplified by the number of sites found near Boulder. A hasty survey recorded 28 sites within a radius of 1 1/2 mi. of the Coombs site (Fig. 2). Although none of these sites are as extensive as the Coombs site, there are five sites where architectural remains were observed. In addition, there are eight campsites and numerous locations identified as chipping areas, where stone implements and flakes of stone were observed. Pottery found on the habitation sites and on the campsites belongs to the same complex of wares obtained at the Coombs site.

Standard excavation procedures were employed at the Coombs site. Exploratory trenches were dug, and all features revealed by this technique were excavated as completely as was allowed by the time limit imposed by the length of the field session. Two long trenches were dug at a right angle to one another across the eastern part of the site in order to expose the surface of the hill upon which the village was constructed as well as to locate any features that might occur within them. These will be referred to as the north-south trench and the east-west trench. Seven additional shorter trenches were placed across promising areas on the eastern portion of the hilltop. All notes, photographs, and specimens resulting from the excavations were sent to the Laboratory of Anthropology, University of Utah, where they were processed and filed or stored. The laboratory analysis of these materials, and the preparation of this report, were begun in December, 1958.

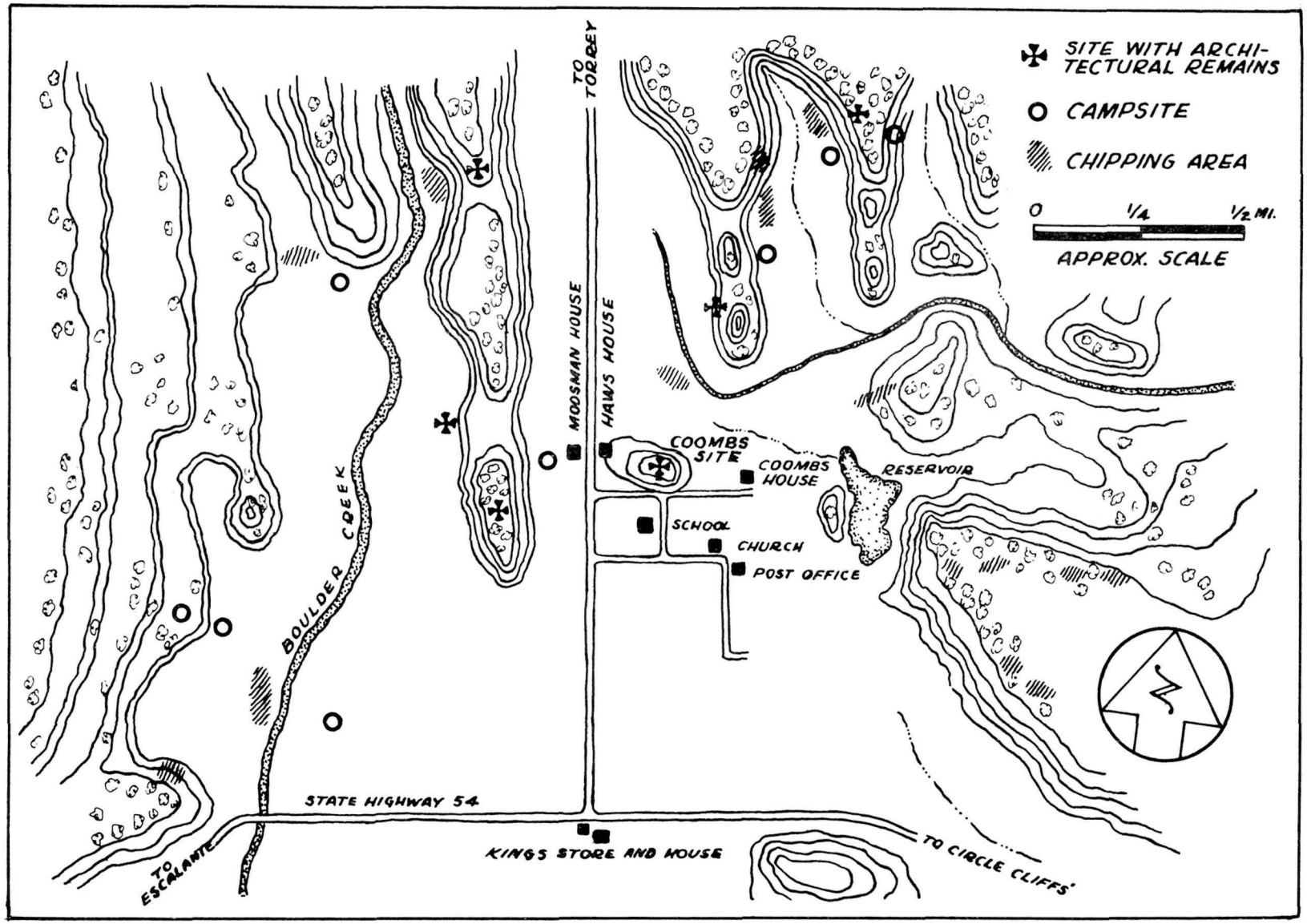


Fig. 2. Sites in immediate vicinity of Boulder, Utah.

Fig. 3. Coombs site and environs from Schoolhouse Ridge. Site is located in center of photograph to left of road. Looking east.

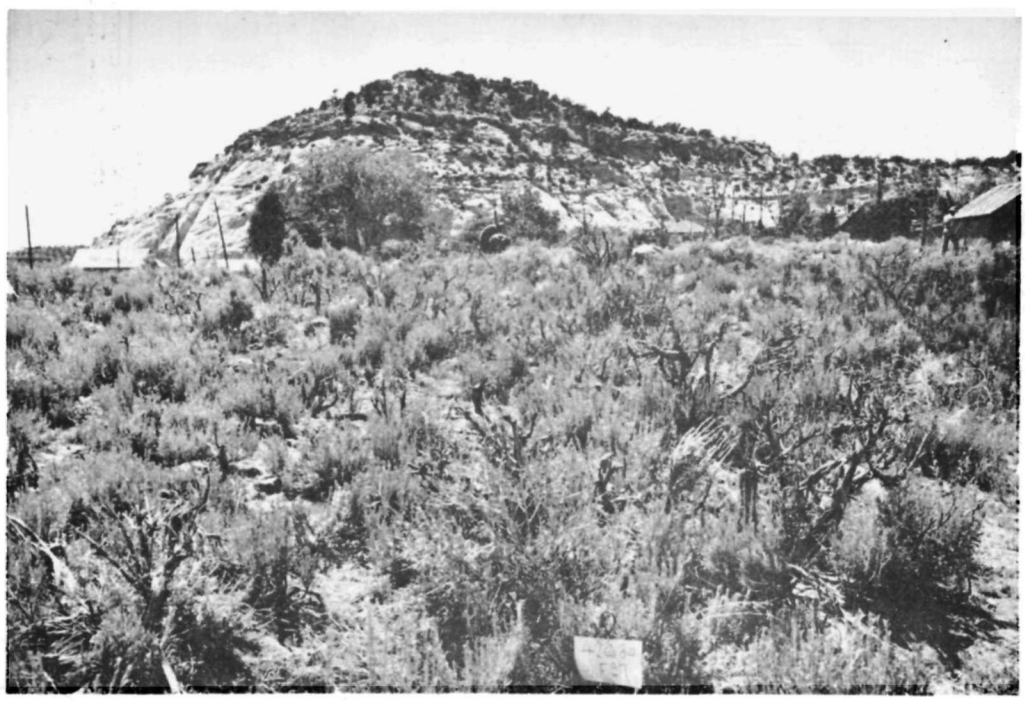


Fig. 4. Coombs site prior to excavation. Schoolhouse Ridge in distance. Looking west.

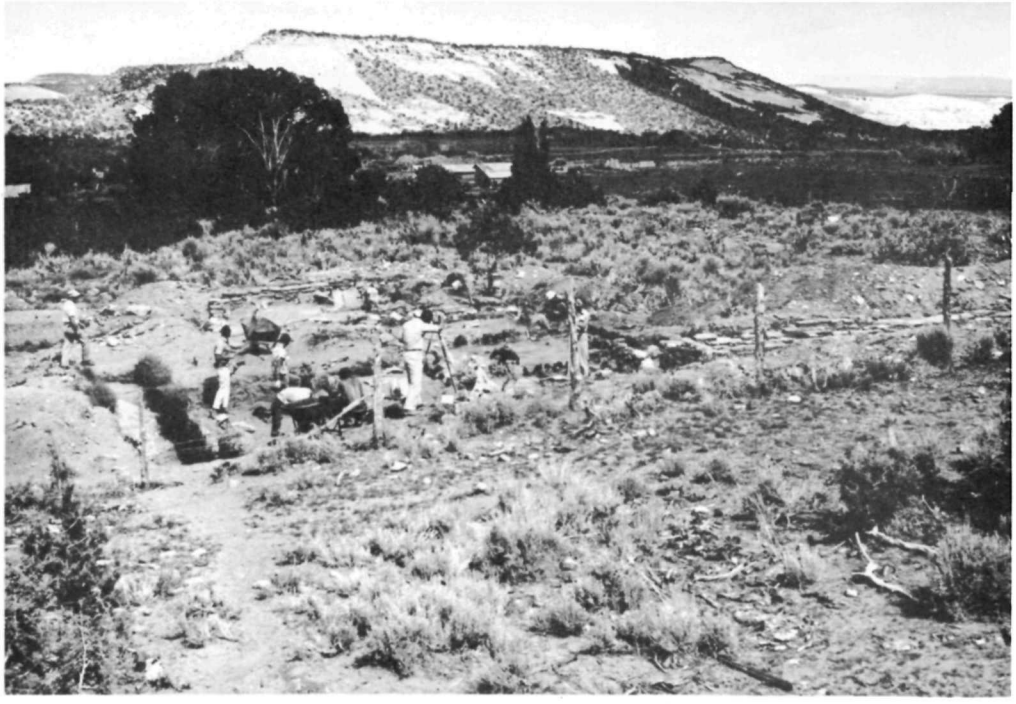


Fig. 5. Coombs site during excavation. Looking west.

Fig. 6. Initial exploratory trenches. Looking north.

SYNOPSIS OF THE 1958 SEASON

Six weeks of investigations at the Coombs site during the summer of 1958 resulted in the excavation of the following features:

1. Nine exploratory trenches were dug at various localities in the eastern part of the site. These succeeded in locating three structures and a borrow pit from which caliche had been dug and which subsequently was filled with refuse. Furthermore, the trenches revealed the nature of the cultural and natural deposits at the site.

2. The three structures located by the test trenches were excavated, and approximately half of the midden deposit in the borrow pit was removed.

3. Structure A is an L-shaped unit containing nine small rooms, believed to have been used primarily for storage purposes, and five larger rooms which served as habitations. It is constructed of stone masonry and jacal, and grew by accretion.

4. Structures B and C are single-roomed, isolated dwellings, built of jacal.

5. Two structures which appear to post date the structures listed above were partially excavated.

The excavations of the test trenches, borrow pit, and three structures have produced a large collection of specimens.

1. Potsherds obtained totaled 23,668. Over 19,000 of these are corrugated, predominately Moenkopi Corrugated. Also present are sherds of Tusayan White Ware, Tsegi Orange Ware, San Juan Red Ware, Tusayan Gray Ware (other than corrugated), Sevier Gray Ware, and Fremont ware. A small quantity of intrusive sherds of Cibola White Ware and San Juan White Ware were obtained. Sixty whole or partially restorable vessels are in the collection from the site.

2. Chipped stone implements, all of which were made of chalcedony, include blades and points, drills, and notched flakes. A small, narrow, triangular blade with concave base occurred most frequently. All drills are

equipped with expanded bases. The notched flakes probably served as saw-like cutting implements.

3. Ground stone implements are represented by metates and manos, mortars and pestles, mauls, and one axe. Metates and manos exhibit a variety of shapes. However, the dominant type of metate is a slab with a shallow, oval grinding depression. Among the manos, two types were present in greatest numbers. One is a thick, rectangular, single-faced block of vesicular basalt with grooved edges; the other is a thin, rectangular, single-faced mano of trachyte. The axe is full-grooved.

4. Splinters of animal bone were used for awls and for scraping tools. Tines of deer antler served as implements for flaking stone.

5. Ornaments were rare. A single pendant of stone was recovered.

6. Two specimens of perishable material (a piece of cordage and a fragment of a sandal) were collected. Both had been preserved through carbonization.

7. Burials of three individuals, two infants and one child, were taken from the refuse in the borrow pit. Pottery vessels were associated with each burial.

As a result of the information gained from the 1958 excavations, and from the specimens described above, it is possible to make the following tentative observations. No conclusions will be attempted until the 1959 excavation season has been completed.

1. The culture of the Coombs site is predominately Anasazi, and is believed to represent a direct extension of that culture north from the Kayenta region of northeastern Arizona.

2. A small amount of influence from the Fremont culture, to the north, is recognized; and, similarly, slight contact can be identified with the Virgin and Johnson branches of Anasazi culture, which existed to the southwest of Boulder and with the Anasazi-like culture of the Sevier Desert of west central Utah.

3. The site appears to have been occupied during late Pueblo II and Pueblo III times, between A. D. 1075 and A. D. 1275, but probably not for that entire period of time.

4. It is fairly certain that the three structures excavated last summer were occupied contemporaneously. All were constructed on sterile soil representing the surface of the hill at the time of the occupation. Thus, it would appear that structures built of stone masonry, of jacal, and of combinations of the two materials were used simultaneously.

5. Two structures, each only partly excavated in 1958, an jacal room and a stone and jacal unit, may belong to a building period later than that represented by the three excavated structures.

The 1958 season has produced a number of problems, solutions to which will be sought in 1959. Furthermore, all of the tentative observations set forth in this synopsis will be tested by another season of investigations.

ARCHITECTURAL FEATURES

Walls of structures uncovered at the Coombs site had been built by two techniques: jacal and stone masonry. Some units had been constructed entirely by one or the other method; other units consisted of combinations of the two methods. Single-roomed houses, as well as complexes of contiguous dwellings, were excavated. A row of nine rooms which apparently had been used primarily for storage purposes was a major architectural feature.

In this report the term "structure" refers to any architectural unit, whether it consists of a single room or a number of adjoining rooms. Structures are identified by letters; rooms within structures are numbered. Three structures were excavated in 1958. Structure A consists of an L-shaped unit of five dwellings and nine storage rooms. Structures B and C are single-roomed jacal dwellings.

Structure A

Structure A contains 13 excavated rooms and one which has been only partially excavated (Figs. 7, 8, and 11). The rooms were built adjoining one another in a right angled, L-shaped arrangement. The long axis of the structure is oriented North 18 West, or from southeast to northwest. At the north, a shorter row of rooms extends northeastward. In over-all dimensions the structure is 90 ft. from south to north, and 61 ft. from west to east.

Rooms in the structure have been numbered as indicated in the accompanying maps. As a matter of convenience the directions, north, south, east, and west will be used in describing walls and other features in the structure since its orientation is not far removed from the cardinal directions as noted above.

Room 1

Dimensions. All dimensions of room walls are inside measurements.

North wall--length, 6 ft. 5 in.; greatest height, 9 in.; average thickness, 6 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 5 in.; greatest height, 1 ft. 6 in.; average thickness, 12 in.; 4 courses of masonry standing.

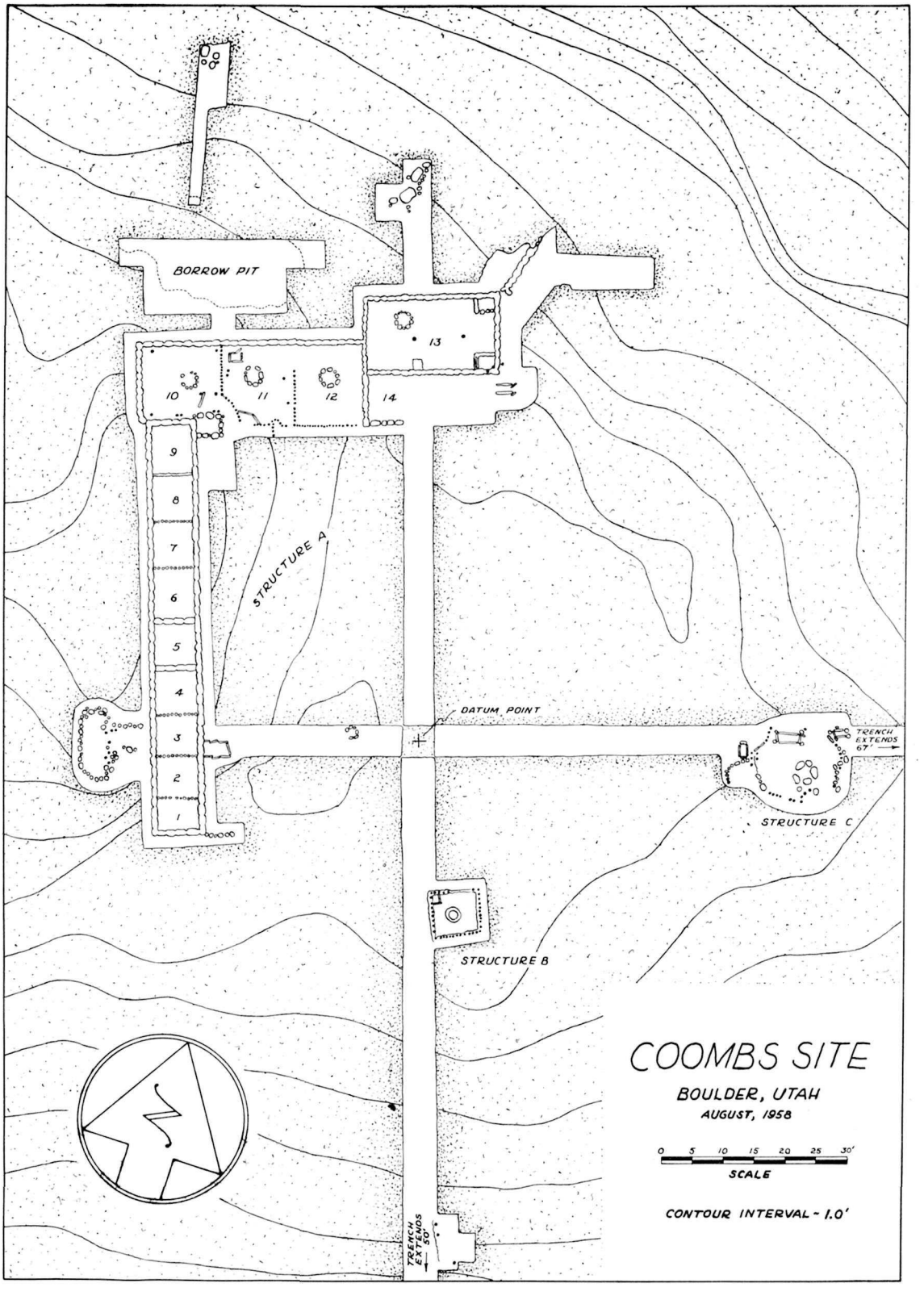


Fig. 7. Structures A, B, and C and borrow pit.

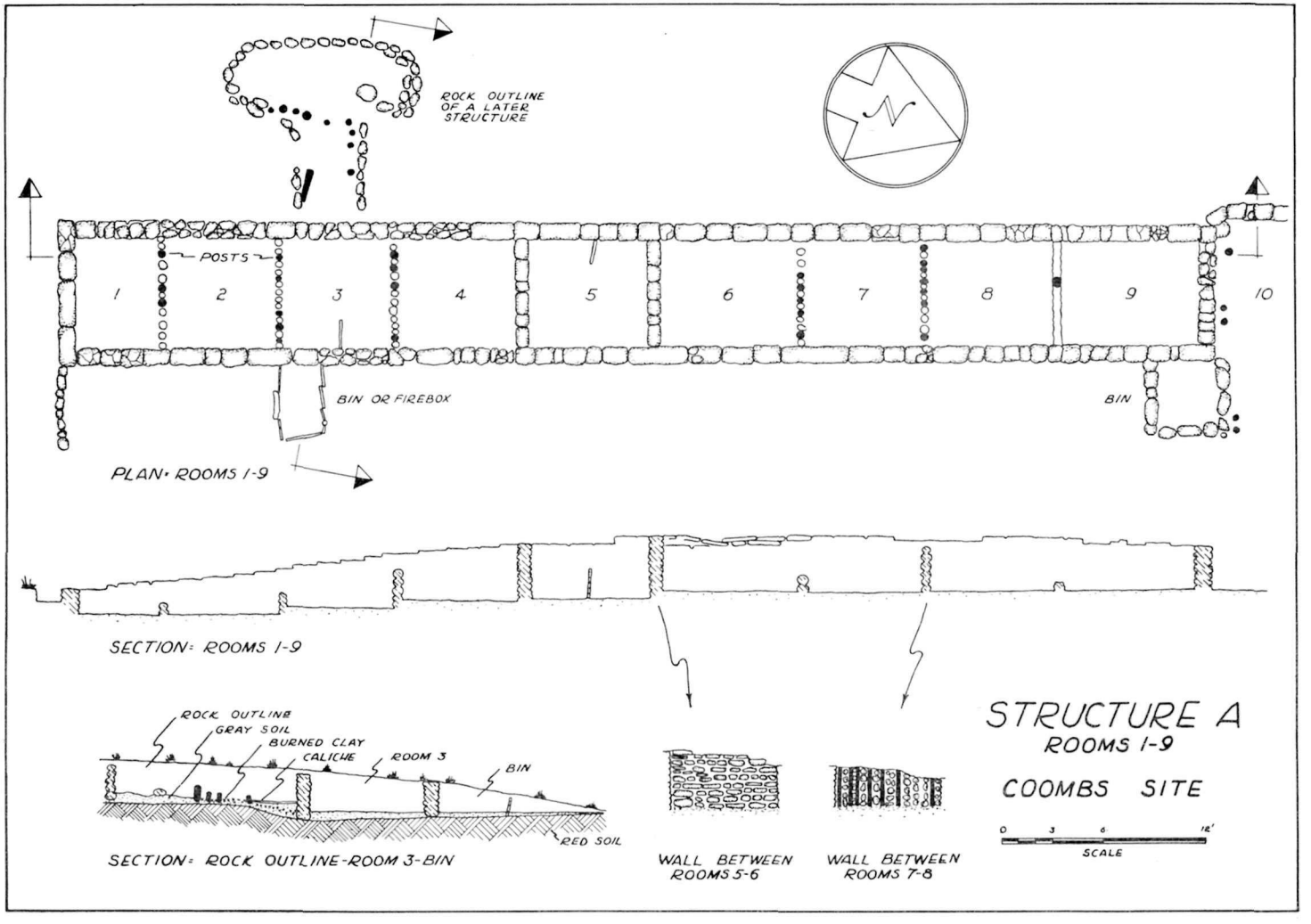


Fig. 8. Structure A, Coombs site, Rooms 1-9.

East wall--length, 5 ft. 2 in.; greatest height, 1 ft. 10 in.; average thickness, 12 in.; 4 courses of masonry standing.

West wall--length, 5 ft. 3 in.; greatest height, 2 ft.; average thickness, 12 in.; 5 courses of masonry standing.

Architectural details. Walls--the south, east, and west walls of this room are of coursed masonry which primarily is comprised of shaped slabs of fine-grained, tan sandstone. Individually the slabs range from 2 in. to 4 in. in thickness, from 10 in. to 12 in. in width, and vary in length from 10 in. to 2 ft. Edges of the stones had been dressed, apparently with mauls or hammerstones, to make them approximately rectangular in shape. For the most part, walls consist of courses one stone in width; however, in a few places two narrow stones were placed side by side in order to form the full thickness of the wall. The stones were laid in fairly horizontal courses in mud mortar. Variations in thickness of the stones made it difficult to maintain even courses. Small unshaped stones were employed as spaces between some courses or between an irregular end of one stone and its neighbor in the same course. Stones in the basal courses generally are larger, in both width and thickness, than stones in other courses, thus forming a firm footing. No remains of plaster were found on either the interiors or exteriors of walls.

The north wall of Room 1 is a thin construction of posts and small unshaped stones set in a large quantity of mud mortar. The charred bottom portions of three posts, each about 2 in. in dia., are still in place in the wall. Casts of three other posts can be seen in the mud portion of the wall. The wall had been constructed by setting the poles in line, 7 to 10 in. apart, and then placing mud around and between them. Unshaped stones, up to about 4 in. in dia., were set in the mud between the poles.

A low wall of poorly aligned small stones set in mud mortar extended east from the southeast corner of the room a distance of 5 ft. Its purpose is unknown, unless originally other walls had joined it to form a bin similar to others which will be described below that still exist along the east wall of the structure.

Floor--no well prepared floor was encountered. However, the fill within the room was removed until a reddish-brown level of soil, which was free of cultural material, was exposed. This appears to be the surface of the hill upon which the structure was built. The lowest courses of the room walls are embedded slightly in this material. No features were found upon the floor.

Observations during excavation. This room, like others in this structure, was excavated by removing the fill inside the room in arbitrary levels. The first level extended from the surface to a depth of 4 in., which carried the trench below the roots of clumps of grass growing on the site. Level 2 was from 4 in. to 12 in.; level 3, from 12 in. to 20 in.; level 4, from 20 in. to floor level, which was encountered at a depth of 24 in. in this room. In rooms which contained deposits deeper than 28 in., a fifth level extended from 20 in. to 28 in., and the sixth level was from 28 in. to floor level. The deposit within the room was fairly homogeneous from top to bottom. It consisted of debris from the room walls, gray, windblown sandy soil, and contained a small number of potsherds and other artifacts. Near the floor, small flecks of charcoal were mixed with the soil and a slight concentration of ash occurred in the center of the room; however, there was no firepit. It seems likely that this carbonized material resulted from a fire which destroyed the room and perhaps its meager contents. Lumps of hard adobe containing traces of caliche also were encountered near the floor and are thought to be remnants of the roof or the north wall. Sandstone slabs, which had been used in the outer walls, and small stones, which probably had been part of the north wall, were scattered throughout the room fill.

Specimens recovered. A few adult human skeletal remains were taken from the room. They consisted of several poorly preserved fragments of a tibia and a fibula, found in the southwest corner at a depth of 18 in., and parts of a cranium found distributed between depths of 12 in. and 20 in. in the northwest corner. These remains in no way suggest a burial, and appear to be secondary deposits. Their position in the room fill above floor level indicates that they were placed in the room sometime after its abandonment.

A stone maul was found at floor level in the southwest corner of the room. A few potsherds, some fragmentary chipped stone implements and flakes of stone, and a small collection of animal bones occurred in the room fill.

Room 2

Dimensions. North wall--length, 6 ft. 5 in.; greatest height, 1 ft. 3 in.; average thickness, 8 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 5 in.; greatest height, 9 in.; average thickness, 6 in.; wall of posts, mud, and small stones.

East wall--length, 6 ft. 3 in.; greatest height, 2 ft.; average thickness, 12 in.; 4 courses of masonry standing.

West wall--length, 6 ft. 3 in.; greatest height, 2 ft. 6 in.; average thickness, 12 in.; 6 courses of masonry standing.

Architectural details. Walls--the east and west walls of Room 2 are of masonry similar to the outer walls of Room 1. The north and south walls are built of posts and small stones set in mud mortar. The south wall separates Rooms 1 and 2 and has been described above. The north wall is identical but is better preserved. It contains charred remnants or casts of 10 vertical poles.

Floor--the deposit in this room was removed until the same reddish-brown soil was exposed as was the case in the excavation of Room 1. No prepared floor was encountered. There were no floor features.

Observations during excavation. The soil in the room was fairly uniform throughout. Near the floor level a few flecks of charcoal and hard lumps of mud were encountered.

Specimens recovered. A small number of potsherds, animal bones, and stone flakes were present in the fill. These occurred in greater number near the floor. A stone maul also was found at floor level.

Room 3

Dimensions. North wall--length, 6 ft. 6 in.; greatest height, 2 ft. 4 in.; average thickness, 8 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 5 in.; greatest height, 1 ft. 3 in.; average thickness, 8 in.; wall of posts, mud, and small stones.

East wall--length, 6 ft. 6 in.; greatest height, 2 ft. 2 in.; average thickness, 12 in.; 5 courses of masonry standing.

West wall--length, 6 ft. 3 in.; greatest height, 3 ft. 3 in.; average thickness, 12 in.; 6 courses of masonry standing.

Architectural details. Walls--the walls on the east and west sides of the room are of masonry, like those of Rooms 1 and 2. The north and south walls are of posts, stones, and mud. The north wall had contained eight vertical posts; charred portions of four still remained in place. Several of the posts did not extend to floor level, but had been incorporated into the wall after the mud had been built up several inches above the level of the floor.

A rectangular structure of thin slabs of sandstone and a broken metate had been constructed against the exterior of the east wall of this room. The structure measured 33 in. by 51 in. Its size and position suggest that it may have served as a bin; however, it contained enough charcoal and ash to indicate that it may have been used as a firebox.

West of Room 3 a concentration of basalt cobbles was revealed in an exploratory trench. Careful excavation of this area exposed the base of a poorly defined, oval-shaped cobblestone wall. Extending east from the oval arrangement of stones are two parallel lines of stones. Sections of burned posts are set into, and adjacent to, parts of the walls. Despite its poor state of preservation, it appears to have been a small dwelling or storage chamber consisting of an oval room with a side entrance passage. A few areas covered by caliche denote the floor. The oval room is 10 ft. long and 3 ft. 6 in. wide; the entrance passage is 5 ft. long and 3 ft. 6 in. wide. Most of the walls had fallen, creating the concentration of stones mentioned above. This structure must have been built after the abandonment of Structure A because its floor is 14 in. above the level of the floors in Structure A and is placed upon cultural and natural debris which had accumulated against the west wall of Room 3. Additional excavation about this feature is called for in 1959.

A small, slab-lined cist was found 23 ft. east of Room 3. It was exposed by the east-west test trench and seems to have been an isolated feature unassociated with any structure. It is 19 in. in dia., 8 in. deep, and extends a few inches down into the red, sterile sand of the hilltop.

Floor--the floor of this room is identical to those of Rooms 1 and 2. Midway along the east wall a large, thin slab of sandstone was firmly embedded in the floor at a right angle to the wall. Two other large slabs of sandstone resting almost vertically in the fill, but not embedded in the floor, were found north of the solidly placed slab. It seems obvious that the slab set into the floor served to divide the room. The other slabs may originally have been placed adjacent to it to form a bin, or they may have been resting on the roof of the structure and fell into the room when the roof collapsed.

Observations during excavation. The deposit in this room contained very few cultural remains until a depth of 25 in. was reached. At that point the sandy gray soil was replaced by a hard brown layer containing many small stones. Small bits of charcoal, ashes, and a moderate number of potsherds, were present just above floor level.

Specimens recovered. Potsherds, flakes of stone, and a few animal bones were the only kinds of specimens found in this area.

Room 4

Dimensions. North wall--length, 6 ft. 5 in.; greatest height, 3 ft. 5 in.; average thickness, 10 in.; 9 courses of masonry standing.

South wall--length, 6 ft. 6 in.; greatest height, 2 ft. 4 in.; average thickness, 8 in.; wall of posts, mud, and small stones.

East wall--length, 6 ft. 10 in.; greatest height, 2 ft. 4 in.; average thickness, 12 in.; 5 courses of masonry standing.

West wall--length, 7 ft.; greatest height, 3 ft. 5 in.; average thickness, 12 in.; 9 courses of masonry standing.

Architectural details. Walls--three walls of this room, the north, east, and west, are of masonry. The south wall is constructed of posts, stones, and mud.

Floor-- no obvious floor was found. Excavation was carried down to the sterile reddish-brown level upon which the lower courses of the walls rest. There were no features on the floor of this room.

Observations during excavation. Material excavated from this room was similar to that found in Room 3. However, at a depth of 20 in. five sections of charred and decayed wood, each about 30 in. in length, were found lying at a 45° angle in the fill. These undoubtedly were remnants of roof beams. Near floor level the soil contained much charcoal and ash and was very dark. There was more evidence of burning in here than in the three rooms previously described.

Specimens recovered. Most of the small quantity of potsherds from Room 4 was recovered from the dark soil near floor level.

Table 1. Frequencies of pottery types, Rooms 1-4.

Pottery Types	0-4 in.	4-12 in.	12-20 in.	20 in. - floor
Sosi Black-on-white	3	0	6	0
Dogoszhi Black-on-white	0	4	4	2
Black Mesa Black-on-white	1	9	4	5
Flagstaff Black-on-white	0	0	0	2
Tusayan white wares	5	10	15	2
Tsegi orange wares	1	0	2	2
Tusayan Black-on-red	1	3	3	3
Middleton Black-on-red	0	1	0	2
Middleton Red	2	0	0	0
Citadel Polychrome	0	0	1	0
Moenkopi Corrugated	51	77	206	159
Tusayan Corrugated	6	26	33	27
North Creek Corrugated	0	3	0	1
Coombs gray	0	8	0	8
Coombs gray, polished	0	0	0	1
Gray, fine sand temper	0	0	2	0
Gray, sherd and sand temper	0	0	1	0
Gray, sherd and rock temper	0	0	2	0
Turner Gray	0	1	0	2
Black-on-gray, sand temper	0	0	1	0
Black-on-gray, igneous rock and sand temper	0	0	1	0
Black-on-gray, corrugated	0	1	0	0

Rooms 1-4 were excavated as a single unit. The group of rooms was outlined by digging a narrow trench along the interiors of the masonry walls which surround these rooms. The fill from within these walls was then removed by levels. Remains of the partitions of posts, stones, and mud, which separate the rooms, were not encountered until the excavation of the entire group of rooms had almost reached floor level. Therefore, most of the artifacts and all the potsherds recovered from these four rooms are grouped together. The artifacts not previously listed include 2 bone awls, 1 drill, 15 complete or fragmentary chipped stone blades or points, 2 notched flakes, 1 shaped slab or stone used as a lid or as an abrading stone, and 1 mano. Table 1 records the number and types of sherds taken from the different levels of these rooms.

Room 5

Dimensions. North wall--length, 6 ft. 7 in.; greatest height, 3 ft. 6 in.; average thickness, 10 in.; 9 courses of masonry standing.

South wall--length, 6 ft. 5 in.; greatest height, 3 ft. 5 in; average thickness, 10 in.; 9 courses of masonry standing.

East wall--length, 6 ft. 11 in.; greatest height, 2 ft. 6 in.; average thickness, 12 in.; 6 courses of masonry standing.

West wall--length, 7 ft.; greatest height, 3 ft. 8 in.; average thickness, 12 in.; 9 courses of masonry standing.

Architectural details. Walls--all four walls of this room are of coursed sandstone slab masonry causing the room to be better preserved than those which have one or more walls of posts, stones, and mud which have not stood up as well as the masonry walls.

Floor--no well defined floor was encountered in the process of clearing this room to the level of sterile deposits. Embedded vertically in the floor level midway along the west wall was a large slab of sandstone, similar to the one found in Room 3. It butted against the west wall and was supported on the east by a large chunk of caliche. Several other smaller slabs of sandstone were found in the northwest corner of the room suggesting that they, together with the slab still in place, might have formed a bin in that section of the room.

Observations during excavation. A larger quantity of building stones was taken from this room than from adjacent rooms due to the fact that it

Table 2. Frequencies of pottery types, Room 5.

Pottery Types	4-12 in.	12-20 in.	20-28 in.	28-36 in.	36 in. - floor
Sosi Black-on-white	0	0	1	0	1
Dogoszhi Black-on-white	0	0	0	1	0
Black Mesa Black-on-white	1	1	0	0	2
Tusayan white wares	0	0	0	1	4
Tsegi orange wares	2	0	0	0	0
Tusayan Black-on-red	0	0	0	1	5
Moenkopi Corrugated	11	19	11	13	40
Tusayan Corrugated	0	5	2	18	22
Coombs gray	0	1	0	0	1
Turner Gray	1	0	0	0	0

had four masonry walls rather than only two or three as did the other rooms. Charcoal, ashes, and fire-hardened lumps of mud were found in considerable amounts in this room below a depth of 12 in. Fragments of charred wood, probably originally used in roof construction, were present near the floor. Just above the level of the charred wood there were numerous thin, irregularly shaped slabs of sandstone which also may have been used in roof construction.

Specimens recovered. A fair number of potsherds, animal bones, and flakes of stone were recovered below the 12 in. fill and the floor of Room 5. Three metates were found. Two were in the southeast corner of the room at a depth of 26 in. The third was adjacent to the large vertical slab at floor level. Three manos also came from the level of the floor. Other artifacts recovered include 1 fragment of a chipped stone point, 1 notched flake, and 1 flaking implement made from a tine of deer antler. Potsherds recovered from Room 5 are tabulated in Table 2.

Room 6

Dimensions. North wall--length, 6 ft. 3 in.; greatest height, 10 ft.; average thickness, 7 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 7 in.; greatest height, 3 ft. 6 in.; average thickness, 10 in.; 9 courses of masonry standing.

East wall--length, 8 ft.; greatest height, 2 ft. 6 in.; average thickness, 12 in.; 5 courses of masonry standing.

West wall--length, 8 ft.; greatest height, 3 ft. 8 in.; average thickness, 12 in.; 8 courses of masonry standing.

Architectural details. Walls--three walls of masonry--the south, east, and west, and one wall of poles, stones, and mud--the north, outline this room. The north wall still contained carbonized fragments of five vertical poles.

Floor--no obvious floor encountered. Excavation was continued until sterile soil, coinciding in depth with the lowest courses of the room walls, was reached. No features were found in the room.

Fig. 9. Rooms 1-9, Structure A, after excavation. Room 1 in foreground. Looking north.

Fig. 10. Rooms 1-9, Structure A, after excavation. Room 9 in foreground. Looking south. Note bin adjoining Room 9.

Observations during excavation. Several lenses of caliche, each about 2 in. thick and extending over almost half of the interior of the room, were exposed between depths of 12 in. and 28 in. This material may have come from the roof or from the north wall. Immediately above the floor level, at a depth of 30 in. to 36 in., there were numerous flecks of charcoal and some rotted wood.

Specimens recovered. That portion of the fill in which the caliche was present was almost devoid of specimens. A few sherds were found above the caliche lenses; a slightly greater number occurred below the caliche.

Room 7

Dimensions. North wall--length, 6 ft. 5 in.; greatest height, 2 ft. 6 in.; average thickness, 9 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 3 in.; greatest height, 10 in.; average thickness, 7 in.; wall of posts, mud, and small stones.

East wall--length, 6 ft. 9 in.; greatest height, 2 ft. 6 in.; average thickness, 12 in.; 5 courses of masonry standing.

West wall--length, 6 ft. 8 in.; greatest height, 3 ft. 3 in.; average thickness, 12 in.; 7 courses of masonry standing.

Architectural details. Walls--the north and south walls of Room 7 are of posts, stones, and mud; the east and west walls are of masonry. The north wall is the best preserved wall of its type in the structure. Seven charred vertical poles still remain, and there are indications that these and at least two others had formed the wooden elements of the wall. Unshaped stones, 4 to 6 in. in length, were embedded in vertical rows in the mud between the posts. The upper courses of the west wall are inclined inward 6 to 8 in. out of plumb.

Floor--this room was excavated to a depth of 39 in. where a hard, reddish-brown sterile soil was exposed. No plastered floors were encountered. There were no floor features.

Observations during excavation. Lenses of caliche, like those found in Room 6, were present in this room. At several points in the fill, small pieces of rotted wood lying in horizontal layers were noted. Pockets of charcoal occurred at floor level.

Specimens recovered. A few potsherds were recovered until a depth of 28 in. was reached. From that point down to the floor level, sherds, especially of corrugated type, were fairly abundant. A mano was found in the room fill at a depth of 22 in., and two metates were present on the floor. Some carbonized corn cobs were collected from the charcoal just above floor level.

Room 8

Dimensions. North wall--length, 6 ft. 4 in.; greatest height, 7 in.; average thickness, 6 in.; wall of posts, mud, and small stones.

South wall--length, 6 ft. 5 in.; greatest height, 2 ft. 6 in.; average thickness, 9 in.; wall of posts, mud, and small stones.

East wall--length, 7 ft. 3 in.; greatest height, 2 ft. 11 in.; average thickness, 12 in.; 7 courses of masonry standing.

West wall--length, 7 ft. 2 in.; greatest height, 3 ft. 2 in.; average thickness, 12 in.; 8 courses of masonry standing.

Architectural details. Walls--walls of posts, stones, and mud bound the north and south sides of this room. On the east and west there are masonry walls. Remains of the north wall consist of a low ridge of fire-hardened mud in which a number of stones are embedded, but in which there is only one charred pole. It has been noted that in other walls of this sort the wooden poles did not always extend to floor level. Perhaps in this case other vertical poles originally had been employed in the wall but the existing portion is so low that there is no remaining evidence of them.

Floor--the floor level of this room was established when reddish-brown, sterile soil was reached. No features were found at this level.

Observations during excavation. The upper 28 in. of this deposit were almost void of specimens, other than fallen building stones. From that level down to the floor there was evidence of burning and the dirt contained a considerable quantity of cultural material. A 24 in. long section of a charred pole 6 in. in dia. was resting horizontally in the center of the room at a depth of 28 in. It probably had been used in roof construction. Other traces of the roof, or of the north or south walls, consisted of smaller bits of charred wood and pieces of fire-hardened mud with pole impressions.

Specimens recovered. Potsherds were numerous in the lower 8 in. of fill in this room. Sherds belonging to two restorable Moenkopi Corrugated ollas and one Middleton Black-on-red jar were taken from this area. A carbonized section of a sandal and some charred corn cobs also were found in the burned material covering the floor of this room.

Room 9

Dimensions. North wall--length, 6 ft. 6 in.; greatest height, 2 ft. 6 in.; average thickness, 12 in.; 8 courses of masonry standing.

South wall--length, 6 ft. 4 in.; greatest height, 7 in.; average thickness, 6 in.; wall of posts, mud, and small stones.

East wall--length, 8 ft.; greatest height, 2 ft. 11 in.; average thickness, 12 in.; 6 courses of masonry standing.

West wall--length, 8 ft. 1 in.; greatest height, 3 ft.; average thickness, 12 in.; 8 courses of masonry standing.

Architectural details. Walls--three walls of this room, the north, east, and west, are of masonry. The south wall is of posts, stones, and mud.

An almost square-shaped structure of irregularly shaped stones set in mud mortar had been built against the exterior side of the east wall of the room. It measures 9 ft. 2 in. wide, 4 ft. 7 in. long, and has 3 courses of stones. It probably served as a bin. A metate was found in it.

Floor--as was the case in the 8 rooms previously described, no prepared floor was discernable. Therefore, excavation was continued until sterile soil was reached. No features occurred on the floor.

Observations during excavation. The fill in Room 9, down to a depth of 18 in., was almost sterile except for the presence of numerous sandstone slabs which had fallen from the walls. Below 18 in. there was a quantity of burned material including ash, charcoal, charred poles, and baked fragments of mud with impressions of poles.

Specimens recovered. Potsherds were fairly numerous below 18 in. The excavation of Rooms 6-9 followed the same procedure as was employed in clearing Rooms 1-4; therefore, most of the artifacts and potsherds taken from these rooms are grouped together. Types and occurrences of the sherds are recorded in Table 3. Artifacts removed from the fill of these rooms, but not identified with any particular room, include 1 bone awl, 2 chipped stone blades, 1 cover or abrading stone, 2 pecking stones, 4 manos, 1 maul, and

Table 3. Frequencies of pottery types, Rooms 6-9.

Pottery Types	0-4 in.	4-12 in.	12-20 in.	20-28 in.	28 in. - floor
Sosi Black-on-white	0	0	0	0	7
Dogoszhi Black-on-white	0	1	1	0	0
Black Mesa Black-on-white	0	3	0	2	3
Gallup Black-on-white	0	0	0	0	3
Tusayan white wares	0	6	4	2	16
Tsegi orange wares	0	0	2	1	2
Tusayan Black-on-red	1	1	0	1	1
Middleton Black-on-red	0	0	0	0	1 (1)*
Middleton Red	0	0	0	0	1
Tsegi Orange	0	0	3	0	0
Cameron Polychrome	0	0	0	0	2
Moenkopi Corrugated	6	74	29	265	1174 (2)
Tusayan Corrugated	2	19	10	0	349
North Creek Corrugated	0	1	0	0	0
Coombs gray	0	3	1	5	4
Coombs gray, polished	0	0	0	1	1
Gray, coarse sand temper	0	1	0	0	0
Gray, fine sand temper	0	0	0	0	2
Gray, sherd and sand temper	0	0	0	1	0
Gray, sherd and rock temper	0	0	0	1	0
Turner Gray	0	0	0	0	1
Black-on-gray, igneous rock and sand temper	0	0	0	1	1
Black-on-gray, corrugated	0	1	0	0	0

*Numbers in parenthesis indicated restorable vessels.

2 metates. Assortments of animal bones and stone flakes also were collected.

Summary, Rooms 1-9

Rooms 1-9 of Structure A were built as a unit, hence a consideration of them collectively is in order. They are referred to as a unit because the peripheral walls appear to have been bonded at the corners. The interior walls, both the masonry type and those of posts, stones, and mud, abut the outer walls. Furthermore, Room 10, which adjoined Room 9 on the north, was built separately and apparently later than the unit containing Rooms 1-9, as will be pointed out. It appears then, that a long, rectangular room of casually laid sandstone slab masonry was constructed first. Subsequently, eight cross-walls were placed in the room creating nine small rooms. The only cross-walls of masonry are associated with Room 5, which is located approximately in the center of the unit; the others are of posts, stones, and mud. It seems possible that the two masonry cross-walls were constructed in the center of the unit to give stability to the unit. The walls of posts, stones, and mud may have served more as partitions rather than as weight-bearing elements. Another possibility suggested by the presence of the two masonry cross-walls is that originally the unit contained but three rooms--those bounded by the masonry walls. Such a unit would have had a long room at either end and a small room in the center. The addition of cross-walls of posts, stones, and mud in the two end rooms produced the nine-room unit in its present form.

There are no wall openings in the unit as it stands today. Entrance to the rooms was gained either through openings in the roofs, or through doorways placed well above ground level in the side walls. If doorways had been used, they must have been at least 3 ft. above the bases of the walls, seemingly an inconvenient height. However, had the rooms served mainly for storage purposes, as they well might have, a doorway located considerably above floor level would have been quite practical.

It is reasonable to assume that the unit was covered with a flat roof of poles and packed earth or mud. Charred fragments of roof beams were found in most of the rooms; however, in no place were they found in sufficient quantity to furnish details of roof construction. Fragments of mud, containing impressions of poles, which had been hardened by fire, also were recovered from several rooms. These could have come from roofs,

or from the nonmasonry cross-walls. Their presence in Room 5, which has four masonry walls, indicates that at least some of the fire-baked mud fragments came from roofs. It is also suggested that large, thin slabs of sandstone may have been used as components of roofs, perhaps having been placed on top of the layer of earth. Such slabs were noted in the fill of several rooms, and usually were associated with other roof remains.

In none of the rooms of this unit did we find well defined floors. Neither plastered floors nor well packed levels resulting from occupation were discernable. There were but few features upon the floors of the rooms. In Rooms 3 and 5 sandstone slabs had been set in the floors to divide the rooms or possibly to form bins. There were no firepits.

From the evidence above, it appears likely that this unit was used primarily for storage purposes. The size of the rooms, the possibility that doorways may have been located high in the walls, the absence of definite floors, and the lack of firepits, all support this point of view. However, there is very little evidence of any of the materials that had been stored in these rooms. A few charred corn cobs were found in two rooms. The pottery and grinding implements found near the floors of Rooms 8 and 9 suggest that those rooms may have been in use at the time they were destroyed by fire. The other rooms of the unit appear to have burned after abandonment.

Metates and manos were found near the floors of two rooms; however, none of the metates were set in mealing bins. This would lead one to believe that, on occasion, the grinding of corn and other foodstuffs took place in rooms of this unit. In two other rooms, large, round-ended mauls were found at floor level. Could these also have been employed in food preparation?

Room 10

Dimensions. North wall--length, 12 ft. 8 in.; greatest height, 1 ft. 8 in.; average thickness, 12 in.; 4 courses of masonry standing.

South wall--length, 12 ft. 6 in.; greatest height, 2 ft. 9 in.; average thickness, 12 in.; 8 courses of masonry standing.

East wall--length, 13 ft. 6 in.; greatest height, 10 in.; average thickness, 6 in.; wall of jacal.

West wall--length, 11 ft. 8 in.; greatest height, 1 ft. 7 in.; average thickness, 12 in.; 4 courses of masonry standing.

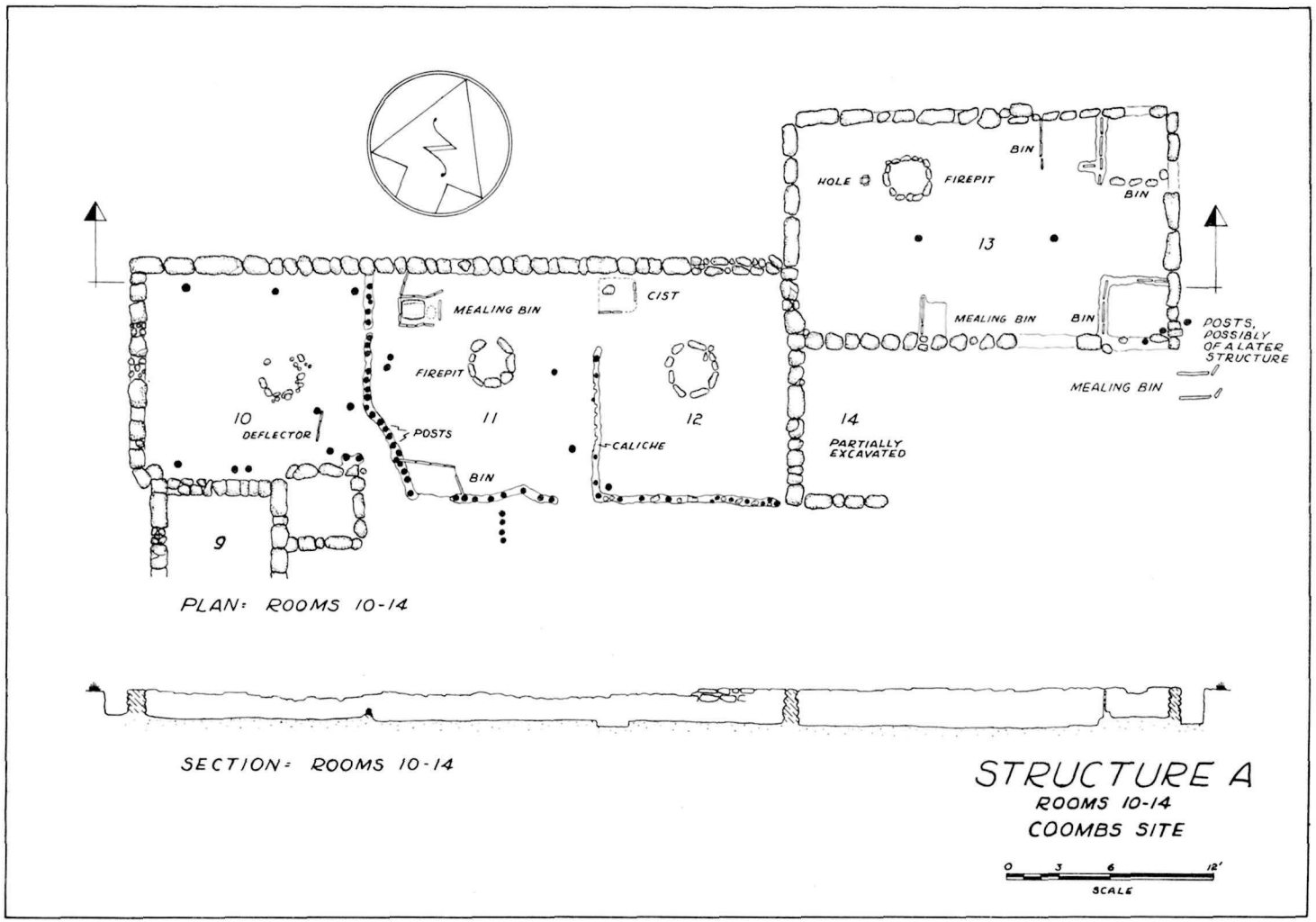


Fig. 11. Structure A, Coombs site, Rooms 10-14.

Architectural details. Walls--the north, south, and west walls of Room 10 are of masonry. The south wall coincides with the north wall of Room 9, and probably with the north wall of the bin that was built against the east wall of Room 9. It would appear that the north wall of the bin must have been high enough to have formed part of the south wall of this room; however, it also is possible that the east and south walls of the bin could have been wall height allowing the bin to be within the room (see Fig. 11 for clarification of this point). The masonry in the north and west walls differs from that in the walls of Rooms 1-9. Sandstone blocks and slabs were employed, but they are neither as uniform in thickness nor as well shaped as the slabs in Rooms 1-9. In addition, the lower courses in both walls are made up of irregular boulders of basalt of various sizes. Many are 12 to 14 in. in dia. Mud was used as mortar, and large quantities of it were required in the lower courses because of the rounded nature of the stones used in those parts of the walls. The unevenness of the slabs set above the bases of the walls resulted in irregular courses, although apparently an attempt to lay them horizontally had been made.

The east wall is of jacal construction, a combination of vertical posts and mud. The charred butts of 24 posts, each about three inches in dia., were still in place in the wall when it was uncovered. The mud that had been placed between and plastered over these closely spaced posts was of caliche, a deposit rich in calcium carbonate which produces a very hard substance when dry. It was plastered on both sides of the posts in coats about one inch in thickness. This wall, rather than being straight for its entire length, is angled in order to allow space for an entrance into the room (Fig. 11). A doorway in all likelihood was located in the southeast corner of the room.

Floor--an obvious floor of hard caliche extends over most of the northern half of the room, but on the same level to the south a softer, reddish, ash-containing level was encountered. Possibly the southern portion of the floor was destroyed during or after the time the room was burned. A shallow, stone encircled firepit is located on the floor slightly east of the center of the room. It is approximately 34 in. in dia., and 3 in. deep.

There are three postholes in the floor parallel to the north wall, and six alongside the south wall. Sections of charred posts were in them at the time of excavation. All of these posts are within 1 ft. of either the

Table 4. Frequencies of pottery types, Room 10.

Pottery Types	0-12 in.	12-20 in.	20 in. - floor
Sosi Black-on-white	0	0	6
Dogoszhi Black-on-white	0	0	6
Black Mesa Black-on-white	1	3	(2)*
Tusayan white wares	0	0	34
Tsegi orange wares	2	0	2
Tusayan Black-on-red	0	0	6
Medicine Black-on-red	0	0	1
Citadel Polychrome	0	0	(1)
Moenkopi Corrugated	3	9	132
Tusayan Corrugated	3	2	31
Coombs gray	0	2	5
Coombs gray, polished	0	0	1
Gray, fine sand temper	0	0	41
Gray, sherd and sand temper	0	0	1
Gray, partially fired	1	0	6
Turner Gray	0	0	1
Black-on-gray, sand temper	0	0	1

*Numbers in parenthesis indicate restorable vessels. Whole but not completely identifiable vessels include:

Gray miniature ladle	0-12 in.
Black-on-gray bowl	20 in. -floor.

north or south wall, making it difficult to understand how they would have been effective in supporting the roof, but no other explanation of their use is apparent.

In the southeast corner of the floor, between the firepit and the doorway, three thin stone slabs are set vertically in the floor. They could have served as a deflector to prohibit drafts coming through the doorway from blowing across the firepit and scattering ashes and sparks through the room. One end of the 20 in. long alignment of slabs abuts a post set in the floor. Another post is located 20 in. from this post. Had slabs been placed between these two posts, the deflector would have been lengthened and hence made more useful.

Observations during excavation. Within 4 in. of the surface a large quantity of sandstone slabs set on edge was encountered in the northern portion of the room. These proved to be an 8 ft. wide section of the upper portion of the north wall which had toppled into the room. It fell as a unit, retaining the horizontal arrangement of stones in courses. Seventeen courses of sandstone slabs and blocks were present. When standing, the courses would have averaged 3 in. in thickness, resulting in a section of wall 4 ft. 3 in. high. Adding this height to the height of the still standing section of north wall, 1 ft. 8 in., a total height of 5 ft. 11 in. is obtained. It is thus possible to state that the original height of Room 10 must have been between 6 and 7 ft., since the roof must have raised the height 6 to 8 in. above the tops of the walls. The presence of this fallen section of wall over most of the northern part of the room may explain why the floor in this area of the room is better preserved than it is in the southern half of the room.

The fill of this room, to a depth of 24 in., contained quantities of wall and roof remains. In addition to the fallen section of the north wall, there were numerous individual stones that had fallen from other walls, many charred fragments of roof beams and poles from the jacal wall, lumps of baked mud, as well as many thin, irregularly shaped, sandstone slabs which also must have been employed in the construction of the roof. A few grinding implements were recovered from this debris suggesting that they may have been on the roof of the room.

Below the bulk of the roof and wall remains, and extending to the floor, was a fairly soft, ashy layer in which a great number of grinding implements,

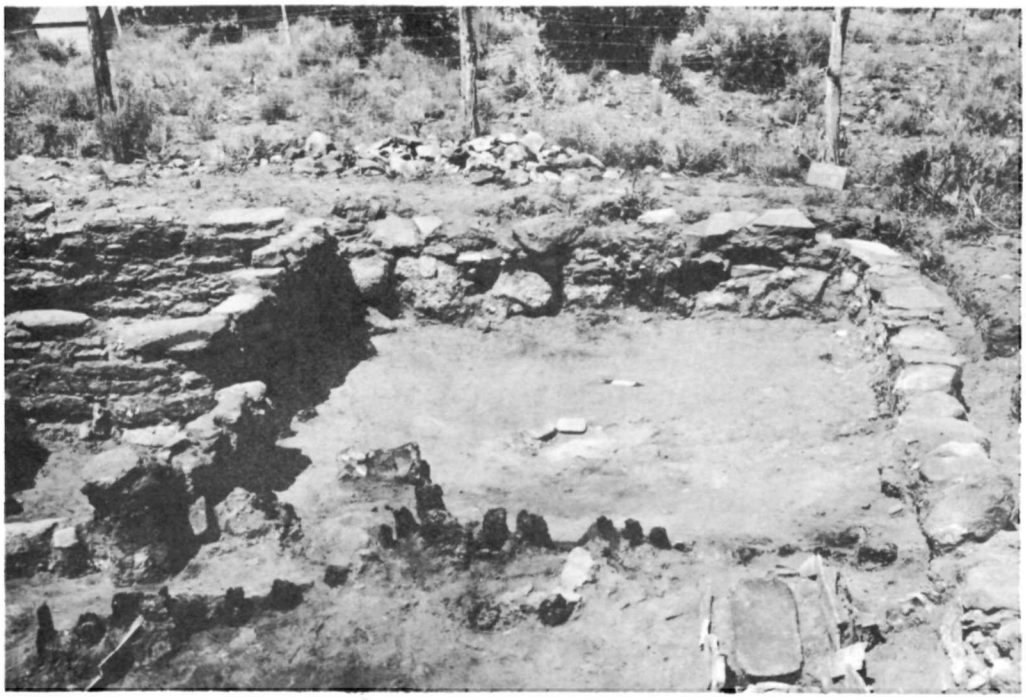


Fig. 12. Room 10, Structure A, after excavation. Looking west.

Fig. 13. Collapsed north wall of Room 11, Structure A. Looking south.

a few other artifacts, five cracked pottery vessels, and a fair quantity of potsherds were present. A few charred corn cobs were found in this carbonized material.

It is apparent that the building of Room 10 postdates the building of the unit containing Rooms 1-9 for the following reasons. Room 10 was located so as to use the north wall of Room 9. The south end of the west wall of Room 10 is angled in order to join the west wall of Room 9. The east wall of Room 10 has a jog in it in order to provide an entryway alongside the bin on the east wall of Room 9.

Specimens recovered. Specimens were not numerous in the upper 24 in. of the fill of Room 10. A few potsherds (Table 4) and five manos were found. However, in the ashy deposit resting on the floor, grinding tools were numerous. Forty-seven manos, 3 metates, 1 mortar, and 2 pestles came from this stratum. Two mauls, 3 awls, 1 drill, 7 complete or fragmentary chipped stone points or blades, 1 notched flake, 5 polishing pebbles, 1 shaped stone cover or abrading stone, 1 pecking stone, and a quantity of potsherds also were recovered from the lower deposit. Would it be out of order to conclude that this room had been used for grinding purposes?

Room 11

Dimensions. North wall--length, 12 ft. 9 in.; greatest height, 1 ft. 10 in.; average thickness, 1 ft 1 in.; 4 courses of masonry standing.

South wall--length, 9 ft. 10 in.; greatest height, 10 in.; average thickness, 5 in.; wall of jacal.

East wall--length, 12 ft. 7 in.; greatest height, 11 in.; average thickness, 6 in.; wall of jacal.

West wall--length, 13 ft. 6 in.; greatest height, 10 in.; average thickness, 6 in.; wall of jacal.

Architectural details. Walls--this room joins Room 10 on the east and shares the east wall of Room 10. The north wall is of the same type of masonry found in Room 10. The south, east, and west walls are of jacal. In the south wall, eight sections of charred posts still are in place and are encased in caliche. This wall does not seem to have existed in the southeastern corner of the room. The base of the east wall has six charred posts and casts of several posts in the fire-hardened caliche. It apparently did not extend to the north wall, leaving room for a doorway into Room 12 to the east.

to the east.

Floor--a fairly hard packed surface of mud and caliche marks the floor of this room. As was the case in Room 10, it is best preserved in the northern area of the room.

A firepit is located a little north of the center of the room. It is 33 in. in dia., and has sloping sides covered with flat pieces of sandstone and basalt.

In the southwest corner of the room a bin had been formed by building an L-shaped wall of sandstone slabs set on edge in the floor. It measures approximately 3 ft. by 1 ft. 8 in.

A mealing bin, complete with metate and mano, is located on the floor near the northwestern corner of the room. The bin is rectangular and is outlined by thin slabs of sandstone set on edge. It measures 2 ft. 6 in. by 1 ft. 6 in. Two-thirds of the interior of the bin consists of a sloping platform of mud upon which the metate rested. The remaining third of the structure has a catch basin into which the meal would fall after it had been ground, and a small flat area of mud upon which a mano could be rested. A sandstone slab covered the bottom of the catch basin. A metate was found in an upside down position on the sloping mud platform, and a mano rested on the flat area next to the catch basin. Two thin pieces of stone are set on edge between the bin and the north wall of the room. In this area a metate and a mano were found. This does not look like another mealing bin, but may have been an area in which metates and manos used interchangeably with those in the mealing bin were kept. The metate found in this area has a much rougher surface than the one found in place in the mealing bin. Perhaps in the grinding of corn the rough surfaced metate had been used first to produce a coarse meal, and then the smoother surfaced metate had been employed to grind the meal to a finer consistency.

Four postholes, each containing carbonized pieces of wood, occur in the floor. Two are located close to one another near the west wall; the other two are near the east wall and are 4 ft. apart. They possibly served as roof supports.

Observations during excavation. The upper part of the north wall fell into the room as a unit, maintaining the pattern of courses as in Room 10. Fifteen courses of stones still remained in place, although lying horizontally, indicating that this wall was approximately the same height as the north wall of Room 10. The excellent state of preservation of the mealing bin probably is due to the fact that it had been covered first with debris from the roof, then with windblown soil, and finally by the section of wall which toppled over it.

Very little cultural material was found in the upper 12 in. of fill. From that level to the floor there was a large amount of charcoal and ash presumably representing burned roof timbers. Potsherds and other artifacts were found in some number on the floor.

A line of four burned posts extended south a distance of 2 ft. 6 in. from about midway along the exterior side of the south wall of Room 11. Their purpose was not discerned.

Specimens recovered. Potsherds were infrequent above the layer of carbonized debris (Table 5). Between that material and the floor, sherds were numerous and four restorable vessels were obtained. They include 1 Black Mesa Black-on-white bowl, 1 Moenkoipi Corrugated olla, 1 Tusayan Corrugated olla, and 1 gray miniature olla. Also recovered from near the floor were 3 metates, 4 manos, 4 mauls, 1 bone awl, 1 drill, 6 complete or fragmentary chipped stone points or blades, 1 notched flake, 1 cover or abrading stone, 5 polishing pebbles, 2 pecking stones, and 4 hammerstones.

Room 12

Dimensions. North wall--length, 10 ft. 6 in.; greatest height, 1 ft. 10 in.; average thickness, 1 ft. 1 in.; 3 courses of masonry standing.

South wall--length, 10 ft. 3 in.; greatestheight, 1 ft. 2 in.; average thickness, 6 in.; wall of jacal.

East wall--length, 12 ft. 6 in.; greatest height, 2 ft.; average thickness, 11 in.; 3 courses of masonry standing.

West wall--length, 12 ft. 7 in.; greatest height, 11 in.; average thickness, 6 in.; wall of jacal.

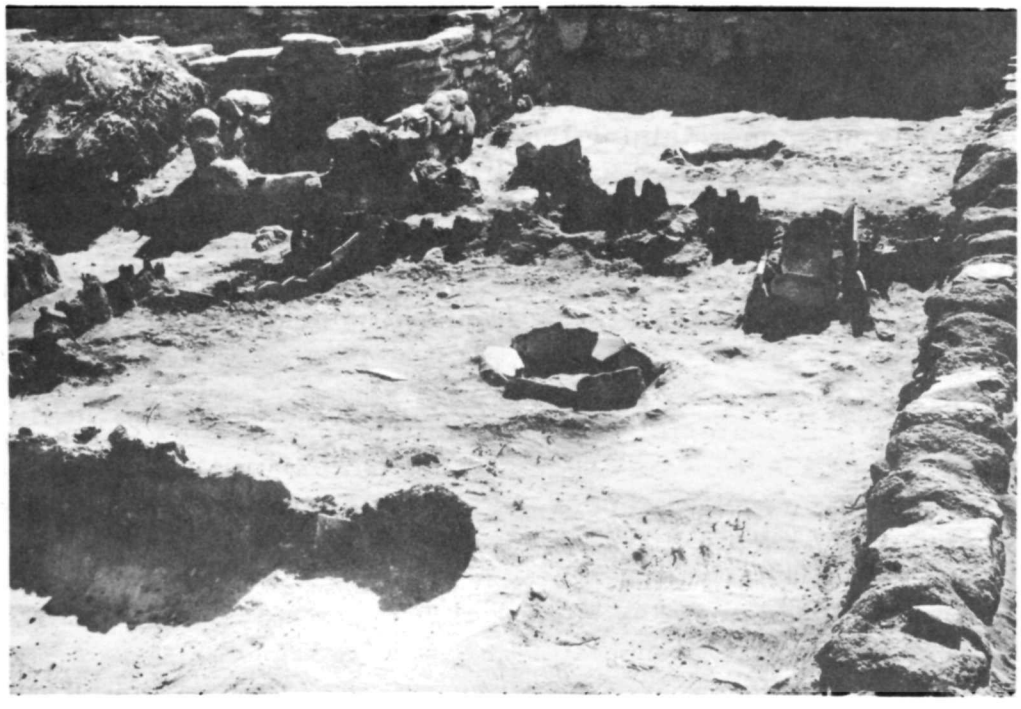


Fig. 14. Rooms 10 and 11, Structure A. Room 11 in foreground. Looking west.

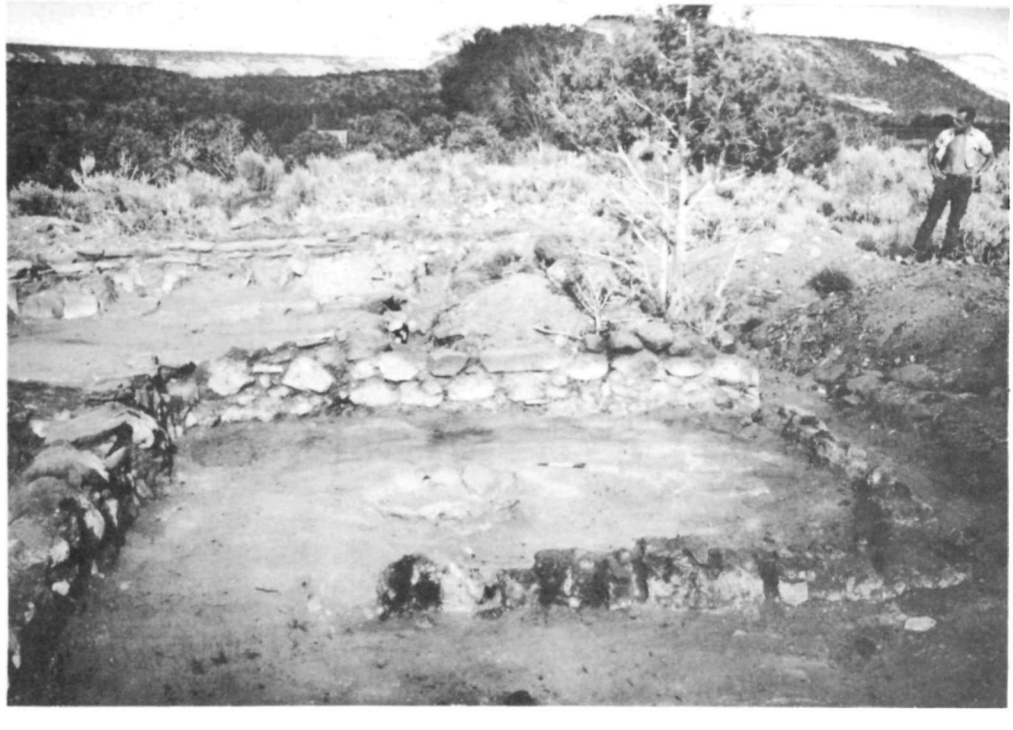


Fig. 15. Structure A. Looking east. Room 13 in background.

Table 5. Frequencies of pottery types, Room 11.

Pottery Types	0-4 in.	4-12 in.	12 in. - floor
Sosi Black-on-white	1	0	0
Dogoszhi Black-on-white	0	0	15
Black Mesa Black-on-white	0	0	3 (1)*
Mancos Black-on-white	0	1	0
Tusayan white wares	0	1	27
Tsegi orange wares	1	0	30
Tusayan Black-on-red	0	0	3
Middleton Red	0	0	3
Tusayan Polychrome	0	1	0
Citadel Polychrome	0	0	17
Dogoszhi Polychrome	0	0	1
Moenkopi Corrugated	5	40	199 (1)
Tusayan Corrugated	4	30	95 (1)
Coombs gray	0	1	12
Coombs gray, polished	0	1	0
Gray, fine sand temper	0	1	1
Gray, sherd and sand temper	0	0	2
Gray, partially fired	0	0	1
Turner Gray	0	1	0
Turner tooled	0	1	8
Black-on-gray, igneous rock and sand temper	0	1	0

*Numbers in parenthesis indicate restorable vessels. Whole, but not completely identifiable vessel:

Gray, miniature olla 12 in.-floor.

Architectural details. Walls--the north wall is of masonry and represents an extension of the north walls of Rooms 10 and 11. The south wall is very poorly preserved and required lengthy and careful excavation before it was located. It is of jacal construction and contains small, burned fragments of 10 rather widely spaced posts. Small stones are embedded in the caliche between several of the posts making it look as though the wall closely resembled the cross-walls of posts, stones, and mud present in Rooms 1-9. The east wall is of masonry formed of large blocks and uneven boulders of basalt set in mud mortar. Presumably the section of wall still standing served as a base for upper courses which had been built of sandstone slabs. The west wall is of jacal and coincides with the east wall of Room 11 which has been described above. Entrance into this room seems to have been through the west wall from Room 11.

Floor--a fairly obvious floor was encountered beneath a thick charcoal deposit. It is composed of hard packed earth containing caliche.

A firepit is located slightly north of the center of the floor. It is oval in plan and measures 3 ft. 4 in. long, 3 ft. wide, and is 10 in. deep. The sides are sloping; they are covered with flat pieces of sandstone and basalt.

A subfloor cist, which appears to have been abandoned and purposely filled during the period of occupation, is located in the northwest corner of the room. It is about 2 ft. square, and 6 in. deep. It is situated in front of part of the area that is believed to have been a wall opening between this room and Room 11. The cist had been filled with a large rock and with trash, and the vertical slabs which line the south and east edges are broken off even with the floor. It may have been abandoned and filled in order to provide a wider passage between the two rooms.

Observations during excavation. A short section of the west end of the north wall had fallen into the room as an aggregate. Fifteen courses of stones retained their original relation to one another.

The same stratigraphic arrangement of deposits was found in this room as has been noted for Room 11. The upper 12 in. of fill contained a small number of specimens and consisted mainly of windblown material laid down after the room had been destroyed by fire. A layer of charcoal, ash, and pieces of burned roof timbers, several inches thick covered the floor. On the floor, beneath the burned material, a large quantity of potsherds was

Table 6. Frequencies of pottery types, Room 12.

Pottery Types	0-12 in.	12 in. - floor
Sosi Black-on-white	0	(1)*
Black Mesa Black-on-white	2	6
Flagstaff Black-on-white	0	1
Tusayan white wares	2	5
Tsegi orange wares	0	2
Tusayan Black-on-red	0	2
Citadel Polychrome	0	(1)
Moenkopi Corrugated	156	352(2)
Tusayan Corrugated	1	2(1)
Coombs gray	0	2
Coombs gray, polished	0	3
Gray, coarse sand temper	0	1
Gray, fine sand temper	0	2
Turner Gray	0	(1)

*Numbers in parenthesis indicate restorable vessels. Whole, but not completely identifiable vessels:

Black-on-gray bowl; gray ladle 12 in. - floor.

found. The recovery of eight restorable vessels from the floor of the room indicates that the room probably was destroyed while in use.

Specimens recovered. Some potsherds were recovered from above the stratum of carbonized remains, but their frequency was much greater beneath that level (Table 6). The eight partially restorable or completely restorable vessels taken from the floor include 1 Sosi Black-on-white jar, 1 Citadel Polychrome bowl, 2 Moenkopi Corrugated ollas, 1 Tusayan Corrugated olla, 1 Turner Gray bowl, 1 black-on-gray bowl, and 1 gray ladle. A stone mortar, 4 manos, 6 complete or fragmentary chipped stone points or blades, and 5 awls also were found near the floor.

Room 13

Dimensions. North wall--length, 20 ft. 3 in.; greatest height, 2 ft. 2 in.; average thickness, 9 in.; 3 courses of masonry standing.

South wall--length, 20 ft. 10 in.; greatest height, 2 ft. 1 in.; average thickness, 11 in.; 2 courses of masonry standing.

East wall--length, 12 ft. 6 in.; greatest height, 2 ft.; average thickness, 10 in.; 4 courses of masonry standing.

West wall--length, 12 ft.; greatest height, 2 ft.; average thickness, 12 in.; 4 courses of masonry standing.

Architectural details. Walls--all walls of Room 13 are of masonry. Their upper courses had consisted of rectangular-shaped blocks and slabs of sandstone laid up more or less horizontally. Most of these upper portions of the walls had collapsed. The lower courses, the majority of which are still in place, are of unshaped sandstone and basalt boulders. Large amounts of mud mortar were required in the lower courses because of the uneven, rounded nature of the stones. No doorway was encountered.

The walls forming the southeastern corner of the room were found to be poorly preserved. While cleaning them two vertical sections of charred posts, resting on top of the wall remnants, were found. A third post was discovered a short distance to the east when the outside face of the east wall of the room was cleared. A mealing bin was encountered 19 in. south of this corner of Room 13. Near it were three metates, two manos, and a considerable amount of burned mud and ash. Additional excavation in this

area may reveal that an jacal structure had been built there after the abandonment of Room 13.

Floor--a hard packed floor of mud and caliche was found beneath a thick artifact-bearing layer of ash and charcoal. The floor is not smoothly plastered. It exhibits areas of hard caliche which are better preserved than the spots where the caliche is not present. Upon the floor a number of features were encountered.

A firepit, approximately 2 ft. 6 in. in dia. and 4 in. deep, is located on the northwest part of the floor. Its sloping sides are covered with slabs of sandstone and basalt.

To the west 10 in. from the firepit a small, 4 in. sq., slab-lined hole is located. It resembles a sipapu.

Four bins had been built upon the floor of Room 4. One is a mealing bin, the other three look like storage bins. The mealing bin is located next to the south wall and is in a poor state of preservation. It would appear to have been crushed when the south wall of the room collapsed. It had consisted of a rectangular, slab-outlined bin approximately 2 ft. 6 in. by 1 ft., 8 in. in size. Only fragments of a few slabs remained in place in the west wall; others had been crushed. Two metates and three manos were obtained from the vicinity of the bin. Two of the bins referred to as storage bins are adjacent to one another in the northeast corner of the room; the third is in the southeast corner. They vary somewhat in size, but average about 3 ft. sq. Walls of the bins were made in several ways. The one in the southeast corner of the room has walls of sandstone slabs covered by thick coatings of caliche. The two in the northeast corner have a dividing wall of slabs encased in caliche, but other walls are of unplastered slabs set on edge or of cobblestones.

Two large postholes, each containing charred sections of posts, were found evenly spaced along the center line of the long axis of the room. Posts in these positions undoubtedly served as roof supports. The size of this room probably necessitated the use of such supports.

Observations during excavation. The western half of the south wall had toppled into the room as a unit retaining its pattern of horizontal courses. Fifteen such courses still were in place, relative to one another. Their height when added to the height of the standing portion of the south wall shows

Fig. 16. Room 13, Structure A. Looking west. Rooms 10, 11 and 12 in background.

Fig. 17. Firepit and small slab-lined hole in floor of Room 13, Structure A. Note posthole in foreground.

the room originally stood 6 ft. to 7 ft. high. The stones in the remainder of the south wall and in the other walls of the room were scattered when the upper portions of the walls were destroyed.

The room was consumed by fire, apparently while it was occupied. A layer of ash, charcoal, hard lumps of mud, and fragments of burned timbers, all considered to be remnants of the burned roof, covered most of the floor. Many artifacts and several crushed pottery vessels were found in this stratum. Only a small amount of ash covered the floor along the eastern wall of the room, suggesting that the eastern part of the roof did not burn.

In several areas in the fill of this room, at a level above the roof remains, thin slabs of sandstone lying more or less horizontally were uncovered. These slabs led us to consider the possibility that the room had been reoccupied after the conflagration, and that these stones represented a floor built on top of the collapsed roof elements. However, after clearing the level on which these stones occurred, and after considering the nature of the deposits above this level, it seems more likely that the flat slabs had been a part of the roof and had dropped into the room when it collapsed. Furthermore, there is reason to believe that the walls of the room were destroyed at the same time the roof burned, which would have made reoccupation impossible. That portion of the south wall which toppled into the room apparently did so while the fallen roof was still burning because the lower edges of all the stones in that section of wall are fire-reddened.

Several metates, manos, and other artifacts were found in the upper zone of the roof debris, or at a slightly higher level. Seemingly they were on top of the roof when it fell, leading one to believe that the roof may have been a work area.

The yield of artifacts, potsherds, animal bones, and flakes of stone was much greater from and below the carbonized debris than it was from above that level.

Specimens recovered. Although some of the potsherds and artifacts found in Room 4 came from the upper part of the fill, the majority of the specimens were located within a few inches of the floor or were resting upon it (Table 7).

Table 7. Frequencies of pottery types, Room 13.

Pottery Types	0-12 in.	12 in. - floor
Sosi Black-on-white	0	9
Dogoszhi Black-on-white	2	2
Black Mesa Black-on-white	7	14 (1)*
Flagstaff Black-on-white	1	0
Gallup Black-on-white	0	6
Shato Black-on-white	0	1
Tusayan white wares	15	17
Tsegi orange wares	3	8
Tusayan Black-on-red	3	15 (1)
Middleton Black-on-red	2	3
Middleton Red	0	4
Tsegi Red-on-orange	0	2
Tusayan Polychrome	0	1
Citadel Polychrome	0	3 (1)
Moenkopi Corrugated	290	1802 (1)
Tusayan Corrugated	62	145
Coombs gray	17	5
Coombs gray, polished	0	1
Gray, fine sand temper	7	0
Gray, sherd and sand temper	1	0
Gray, sherd and rock temper	0	3
Turner Gray	2	5
Sevier Gray	0	(2)
Black-on-gray, sand temper	0	1
Black-on-gray, igneous rock and sand temper	1	0

*Numbers in parenthesis indicate restorable vessels. Whole, but not completely identifiable vessel:

Gray, miniature pitcher 12 in. -floor.

Twenty-three manos, 7 metates (2 associated with the mealing bin), 2 circular sandstone slabs, 2 bone awls, 1 bone scraping implement, 6 complete or fragmentary chipped stone points or blades, 1 notched flake, 3 covers or abrading stones, 2 basalt balls, 2 pecking stones, 1 hammerstone, 1 stone pendant, 7 restorable pottery vessels, and a large collection of potsherds were taken from this room. The restorable, or partially restorable, vessels consisted of 1 Black Mesa Black-on-white bowl, 1 Tusayan Black-on-red bowl, 1 Citadel Polychrome bowl, 1 Moenkopi Corrugated olla, 2 Sevier Gray jars, and 1 gray miniature pitcher. Three adult human bones, portions of a femur, a fibula, and a tibia, also were found at floor level.

Room 14 (not completely excavated)

Dimensions. North wall--length, unknown; west wall not encountered; average thickness, 11 in.; 2 courses of masonry standing.

South wall--length, unknown, only partially excavated; average thickness, 10 in.

East wall--not excavated.

West wall--length, 8 ft. 3 in.; average thickness, 11 in.; 3 courses of masonry standing.

Room 14 has not been completely excavated. It will be further described in the report to be prepared after the 1959 field season. However, enough of the north, west, and south walls have been cleared to show that this room was built before either Rooms 12 or 13.

Summary, Structure A

Evidence obtained by survey and excavation of Structure A, and as a result of a careful examination of the corners and walls of the rooms after excavation, suggests that the structure evolved in the manner described below and illustrated in Fig. 18. Four stages in the development of the structure are postulated. These depict the probable plan of the structure at four periods during its growth. It is not implied that the times between stages were either of particular length or of equal duration. No attempt to trace the nuances of development, which most certainly took place between the stages, has been attempted. Moreover, although there is definite evidence to substantiate the majority of our suppositions, a few of the ideas presented are simply opinions.

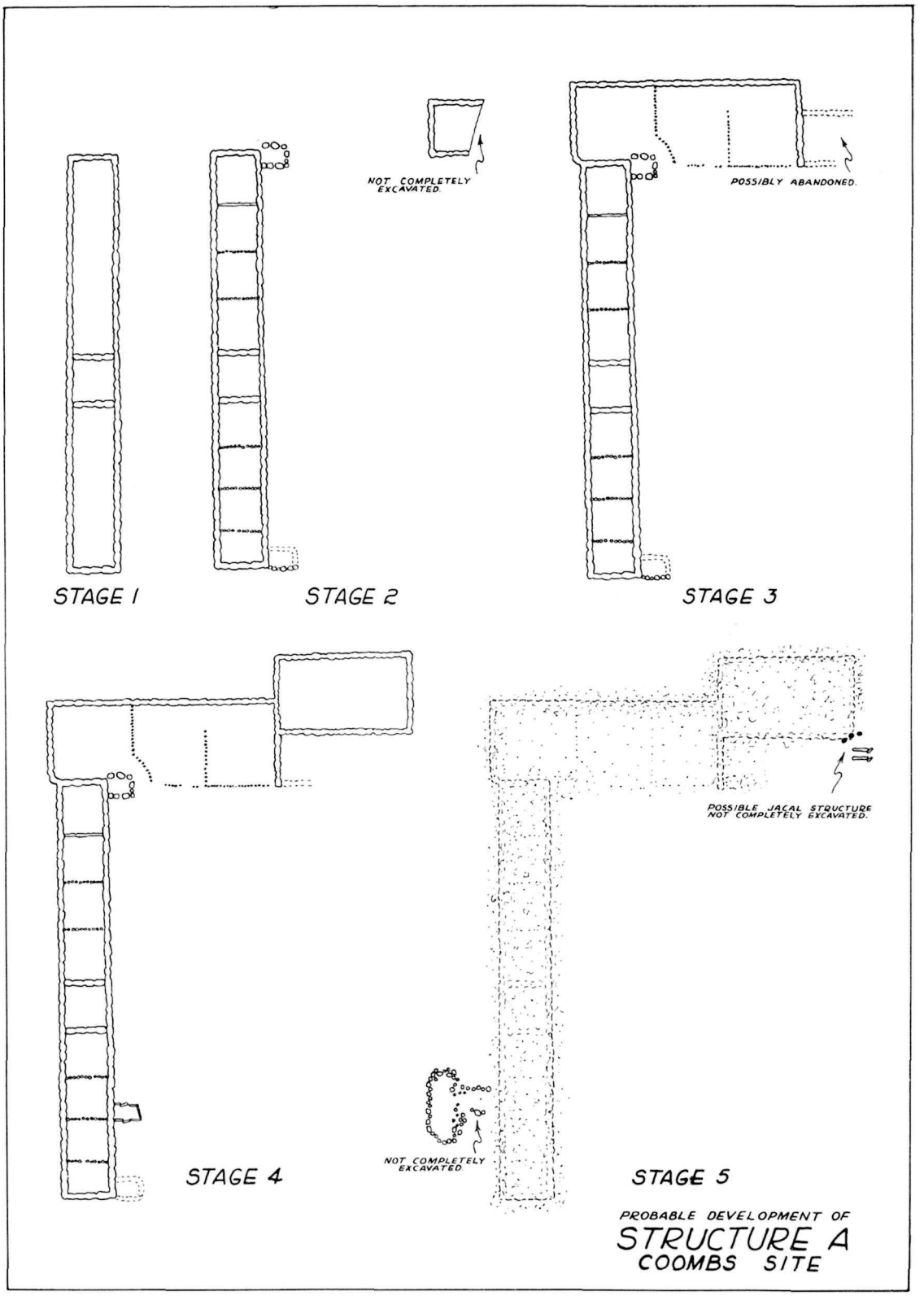


Fig. 18. Probable development of Structure A, Coombs site.

Stage 1. A long masonry unit containing three rooms was built first. The walls which form the outline of this building were fashioned during a single period of construction. The two cross-walls within the unit not only divide it into three rooms, but strengthen it as well.

Stage 2. Additional cross-walls of posts, stones, and mud were added to the original unit resulting in a nine-roomed unit (Rooms 1-9) believed to have been primarily used for storage purposes. By this time it is possible that a room (Room 14) had been constructed to the east of the long unit. Despite the fact that only the north, west, and a portion of the south walls of this room have been excavated to date, they show this room to have been built before the rooms to the north and west of it.

Stage 3. Three large habitation rooms (Rooms 10, 11, and 12), constructed of masonry and jacal, were placed between the north end of the long unit and Room 14. Whether or not Room 14 continued to be occupied is not certain.

Stage 4. The large habitation room (Room 13) was added to the eastern end of the building. The structure at this point reached its maximum size.

Stage 5. Sometime after the abandonment of the structure, which appears to have followed a destructive fire, a small building of stones and jacal was placed to the west of it. There also is some evidence that an jacal structure might have been built over the southeast corner of Room 13. Both of these features will be more completely excavated in 1959.

It is likely that a number of jacal structures existed in the vicinity of Structure A and were occupied simultaneously with the larger building. Two such dwellings (Structures B and C) were excavated in 1958. Moreover, it is apparent from surface indications that other units built of masonry exist at the site. Their relationships to Structure A can be determined only after additional excavations have been completed.

Structure B

Structure B is a small dwelling of jacal located 37 ft. southeast of Room 1 of Structure A (Figs. 7 and 19).

Table 8. Frequencies of pottery types, Structure B.

Pottery Types	0-18 in.	18 in. - floor
Sosi Black-on-white	10	0
Black Mesa Black-on-white	11	0
Flagstaff Black-on-white	14	0
Tusayan white wares	31	3
Tsegi orange wares	12	3
Tusayan Black-on-red	6	0
Middleton Black-on-red	1	1
Tsegi Orange	1	0
Tsegi Red-on-orange	2	0
Citadel Polychrome	6	1
Moenkopi Corrugated	598	73
Tusayan Corrugated	97	18
North Creek Corrugated	2	8
Coombs gray	31	7
Coombs gray, polished	2	2
Gray, fine sand temper	34	0
Gray, poorly fired	2	0
Turner Gray	3	0
Black-on-gray, sherd and sand temper	1	0
Black-on-gray, sand temper	4	0
Black-on-gray, igneous rock and sand temper	1	0
Black-on-gray, corrugated	1	0

Dimensions. North wall--length, 8 ft.; greatest height, 1 ft. 4 in.; average thickness, 6 in.; wall of jacal.

South wall--length, 7 ft. 1 in.; greatest height, 11 in.; average thickness, 9 in.; wall of jacal.

East wall--length, 6 ft. 8 in.; greatest height, 1 ft. 2 in.; average thickness, 9 in.; wall of jacal.

West wall--length, 7 ft. 6 in.; greatest height, 1 ft. 3 in.; average thickness, 9 in.; wall of jacal.

Architectural details. Walls--all of the walls of Structure B are of jacal. The charred lower sections of the majority of the posts are in place. They are from 3 in. to 6 in. in dia. and were placed from 5 in. to 10 in. apart in the wall. Mud, containing a large quantity of caliche, was inserted between the posts and plastered over both the insides and outsides of them. Small rocks are embedded in the caliche between most of the posts. The bottoms of the posts are rotted, but there are no indications that they were set into the ground below the floor level of the structure. A 5 ft. wide break in the north wall suggests that the doorway to the structure may have been located at that point.

Floor--patches of caliche 1/2 in. to 1 1/2 in. in thickness are present on the floor implying that originally it had been plastered with this material. A firepit, 2 ft. 6 in. in dia. and 4 in. deep, is located slightly southwest of the center of the room. It is encircled by a thick rim of caliche which stands 2 in. above the level of the floor. In three places small, thin slabs of stone line the sides of the firepit.

A small bin was formed in the northwest corner of the room by setting two sandstone slabs on edge at a right angle to one another. It is rectangular in shape and measures 1 ft. 2 in. by 1 ft. 6 in.

Observations during excavation. This structure was located when the long north-south test trench, which, extended from one side of the site to the other, exposed the line of charred posts that were part of the west wall of the dwelling. The tops of these posts, as well as the tops of those in the other walls, were reached about 4 in. below the present surface of the site.

Extending from about 12 in. below the surface to the floor of the dwelling was a mass of carbonized material representing the remains of the

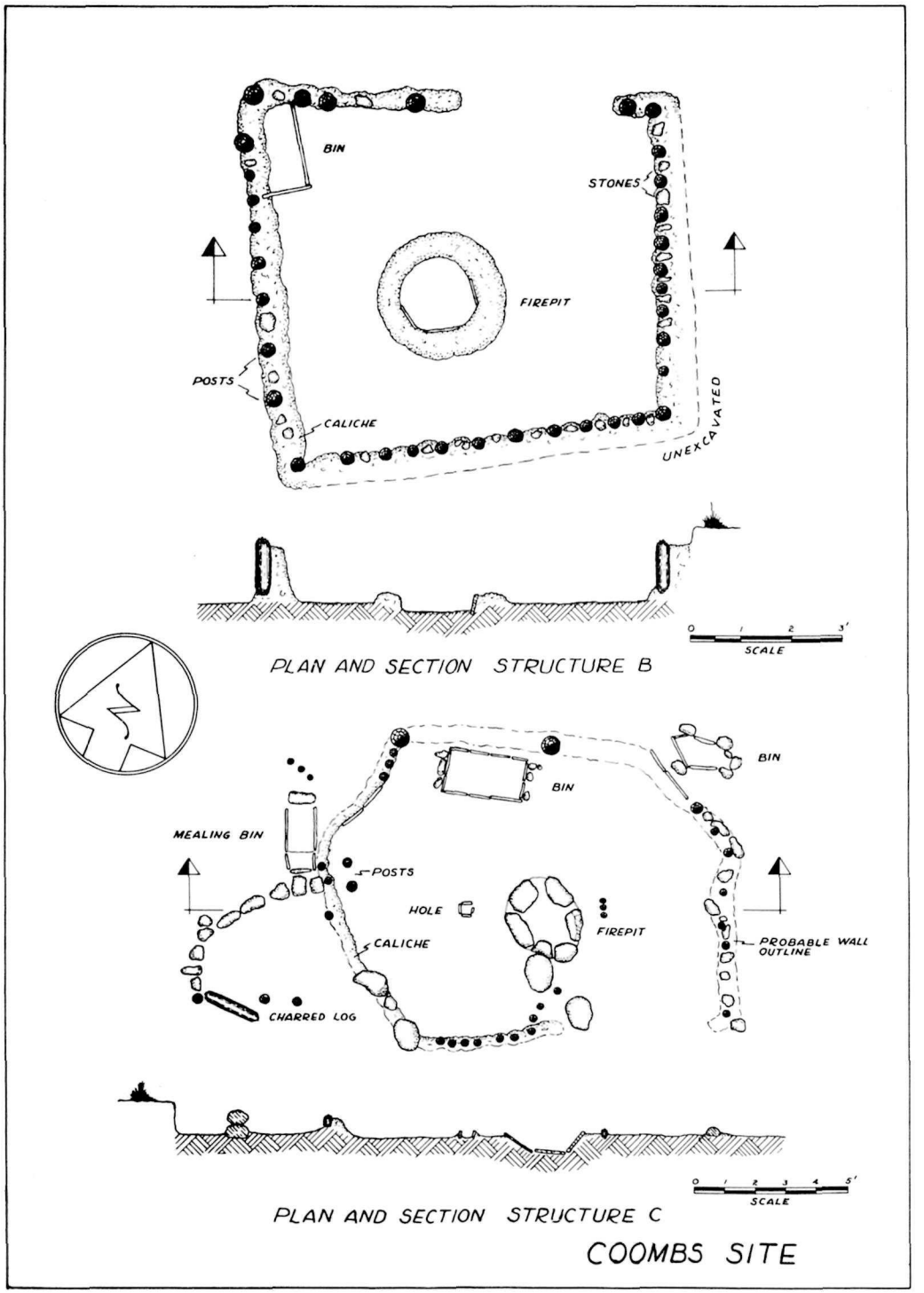


Fig. 19. Plan and section, Structure C.

roof and of the walls. Numerous lumps of baked mud with impressions of poles, sections of burned wall and roof timbers, thin slabs of sandstone, and charcoal and ash were included in this debris. The roof must have been fashioned of horizontal timbers and packed earth and, as seems to have been the case in some of those previously described, had flat slabs of stone laid upon it. It was impossible to detect any pattern in the roof timbers which could furnish details of roof construction. The majority of the potsherds and artifacts found in this room came from the upper part of fill. It looks as though this structure had been abandoned prior to its destruction by fire.

Specimens recovered. Potsherds, which occurred throughout the fill of this structure, make up the bulk of the collection from this room (Table 8). From near the floor the following artifacts were recovered: 1 ball of basalt, 3 manos, 3 bone awls, 2 drills, 5 complete or fragmentary chipped stone points or blades, and 4 notched flakes.

Structure C

Structure C is a single-roomed dwelling of jacal located 84 ft. east of Room 3 of Structure A (Figs. 7 and 19).

Dimensions. North-south axis--length, 9 ft. 9 in.
East-west axis--length, 12 ft. 6 in.
Greatest height of walls--10 in.
Average thickness of walls--6 in. All walls of the dwellings are of jacal.
Antechamber--dia., 4 ft. 8 in. Wall of cobblestones and posts.

Architectural details. Walls--tracing the walls of this structure was a difficult task because they are almost completely destroyed. However, after a long period of troweling, during which we were led up several blind alleys, we believe that we have correctly outlined the plan of the structure. It is approximately hexagonal in shape with an anteroom on the west.

Walls of the dwelling had been built of vertical posts encased in caliche mud. Stones of varying sizes had been set in the mud between the posts. Only small, badly decayed sections of some of the posts and a few of the stones remained in place in the bases of the walls.

Fig. 20. Structure B, after excavation. Looking east.

Fig. 21. Firepit and south wall of Structure B. Looking south.

A curved wall of basalt cobblestones and a few posts is attached to the western side of the dwelling. It may have formed an antechamber, although we cannot be certain that the entrance to the dwelling was through it. Perhaps the doorway was in the southeast corner of the room since there is a gap in the south wall. If that had been the case, the small room built onto the western side of the structure may have been a storage chamber.

Floor--we did not encounter a level that could positively be identified as a floor. However, from the position of the firepit and other features which had been associated with the floor we were able to determine its former location.

A firepit, approximately 2 ft. 10 in. in dia. and 6 in. deep, occupies an area a short distance south of the center of the room. Its sloping edges and its floor are lined with flat pieces of stone.

One foot west of the firepit there is a 4 in. sq. slab-lined hole. It is identical to the one found in the floor of Room 13, Structure A.

A rectangular bin, constructed of vertical stone slabs, is located adjacent to the north wall. It is 2 ft. 6 in. long and 1 ft. 4 in. wide. It may have been a mealing bin. Three manos were found in the bin, but no metate was associated with it.

Several burned stubs of small posts are set into the floor. They do not appear to have been roof supports.

Two bins, which are located outside of the room, may have been associated with it. One is next to the west wall, and was used as a mealing bin. It is fashioned of slabs set on edge in a rectangular arrangement, and contained a metate and a mano when uncovered. It is 2 ft. 4 in. long and 10 in. wide. The other bin is outside the northeastern part of the dwelling and is irregularly shaped. Its sides are formed of slabs and cobblestones. It measures 1 ft. 10 in. in length and 11 in. in width. It probably was used for storage purposes.

Observations during excavation. The difficulty of tracing the walls of this room, due to their poor state of preservation, has been pointed out. Another condition which complicated the excavation was the presence in and around the structure of a great number of large and small stones, most of which originally must have been in the walls of the structure.

Fig. 22. Structure C, after excavation. Looking west.

Fig. 23. Firepit and small slab-lined hole in floor of Structure C.

Table 9. Frequencies of pottery types, Structure C.

Pottery Types	4-12 in.	12 in. - floor
Sosi Black-on-white	7	0
Dogoszhi Black-on-white	5	0
Black Mesa Black-on-white	16	0
Gallup Black-on-white	1	0
Tusayan white wares	24	1
Tsegi orange wares	2	0
Middleton Black-on-red	1	0
Middleton Polychrome	2	0
Tsegi Red-on-orange	1	0
Tusayan Polychrome	5	0
Citadel Polychrome	2	14
Moenkopi Corrugated	294	109
Tusayan Corrugated	125	6
North Creek Corrugated	11 (1)*	0
Coombs gray	17	21
Coombs gray, polished	3	1
Gray, coarse sand temper	1	0
Gray, fine sand temper	0	1
Gray, sherd and sand temper	1	0
North Creek Gray, 2	2	0
Turner Gray	3	2
Black-on-gray, sand temper	2	0
Black-on-gray, corrugated	1	0

* Numbers in parenthesis indicate restorable vessels.

It appears that this structure, like Structure B, was not occupied at the time of its destruction. A few pieces of burned wood and fragments of fire-reddened mud with casts of posts attest to destruction of the dwelling by fire.

Specimens recovered. The yield of specimens from Structure C was moderate. A metate, 1 mortar, 1 pestle, 10 manos, 1 maul, 2 pecking stones, 4 bone awls, 8 complete or fragmentary chipped stone points or blades, and 2 notched flakes were obtained from the floor of the room. Three manos were found in the bin along the north wall. The mealing bin just outside the structure to the west contained a metate and a mano. Potsherds were not numerous, but were more frequent in the upper part of the fill of the structure (Table 9).

Probable jacal structure

In the north-south exploratory trench, 77 ft. south of the datum point, an occurrence of charred wood and chunks of burned adobe were suggestive of another jacal structure. The trench was expanded to the east in an attempt to trace the structure, but it was in such a destroyed condition that the project was abandoned because it was too time consuming for the information it was producing. Perhaps additional work will be undertaken here in 1959.

NONARCHITECTURAL FEATURES

Borrow pit

Two test trenches, one oriented east-west and the other extending north-south, placed across the hilltop north of Structure A revealed deep midden deposits. When first encountered, the possibility that this feature might represent a subterranean structure that had been filled with trash after abandonment was suggested. However, excavation of a large portion of the deposit proved the trash-filled hole to have been a borrow pit, presumably dug to obtain caliche which was used in wall construction and as plaster on floors and walls. Village refuse was placed in the pit, and at least three burials had been interred in it. The three burials will be described in another section of this paper. The deposit contained much ash and charcoal and quantities of potsherds and broken animal bones.

The south and east sides of the pit were traced, the north and south sides were located, and approximately half of the pit was cleared of refuse. The extremely irregular nature of the sides and bottom rule out the possibilities of its having been used as a dwelling, kiva, or subterranean storage chamber. It looks as though caliche was taken from the pit by digging out small areas of it at intervals. The stratigraphic arrangement of the deposits in the pit, as revealed in a vertical section, indicates that refuse and burials were placed in the pit during the period that caliche was being taken from it. This resulted in some mixing of the cultural and natural deposits.

The pit was excavated by levels, and a record of the types of potsherds present in each level was obtained (Table 10). These results probably do not present a completely accurate record of the stratigraphic arrangement of pottery because some rodent activity and some disturbance of deposits by caliche diggers was apparent.

Nature of deposits on the site

Profiles of the sides of the long east-west and north-south exploratory trenches, dug across the eastern part of the site, furnish us with information relative to the surface of the hill upon which the village was built and the nature of the deposits that have accumulated upon that surface since the site was abandoned. The north-south trench was 230 ft. long; the east-west

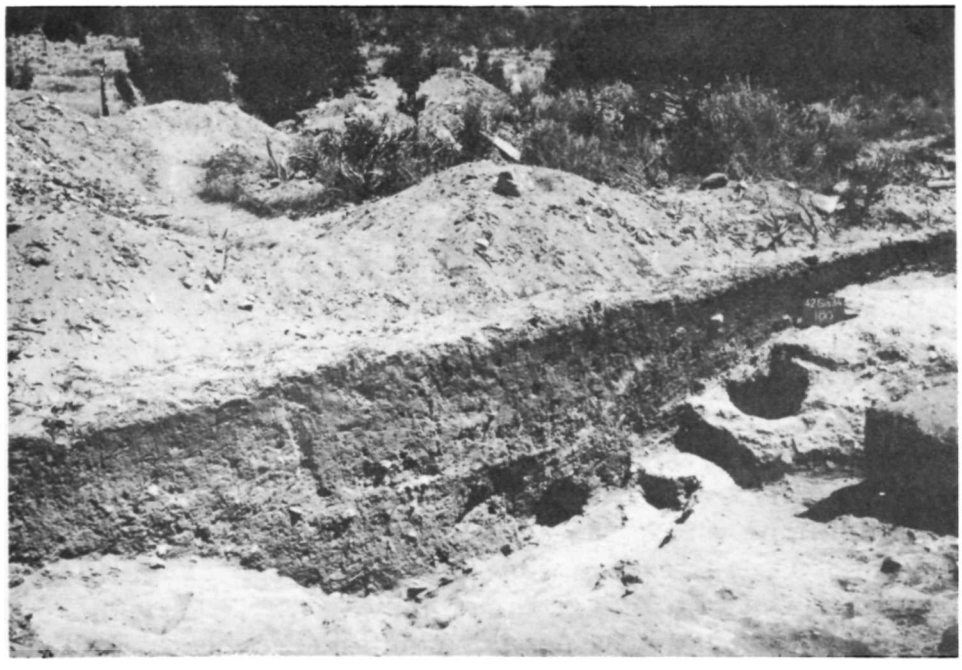


Fig. 24. Cross-section of borrow pit. Dark soil is midden deposit; white soil in foreground and on sides of pit is caliche. Burial 1 was taken from the pit dug into the caliche. Burial 3 extended into the concavity at the bottom of the midden deposit. Looking northeast.

Fig. 25. Borrow pit, showing midden deposits and caliche. Looking west.

Fig. 26. Location of the east-west test trench, before excavation. Looking east.

Fig. 27. North-south test trench, during excavation. Looking north.

trench extended for 200 ft. Both were excavated down into sterile, red, sandy-clay soil for their entirety.

In both trenches, across the top of the hill, deposits are fairly uniform. The surface upon which the village was built consists of a fairly hard, brownish-red soil containing sand and clay. All structures excavated to date, with the exception of the small, rock-outlined room west of Structure A and a possible jacal structure built over the southeastern corner of Room 13 of Structure A, were built upon this surface. Above this sterile soil there is a stratum of unconsolidated, dark gray soil ranging from 6 in. to 12 in. in thickness. It contains ash, flecks of charcoal, potsherds, animal bones, and stone artifacts and flakes. Between these two zones there is some blending of the red soil with the gray culture-bearing deposit. The upper 2 to 4 in. of soil are sandier than the level just below it and contain plant roots and some humus.

On both the northern and eastern sides of the site the red subsoil slopes in general conformity with the sides of the hill. However, on the south, the top of the deposit seems to be quite uneven although the present surface of the slope of the hill is fairly smooth. This causes the soil above the red stratum to be variable in thickness, ranging from 12 in. to 30 in. Mixed with the dark gray culture-bearing level is a large amount of sand. Today, prevailing winds are from the south; during the summer of 1958 they blew with sufficient velocity to deposit sand against the south side of the hill almost daily. This condition must have existed while the site was occupied.

The test trenches reveal that some village refuse was scattered over the top and sides of the hill adjacent to the structures. The potsherds recovered from both trenches, with the exception of those found in the irregular deposits on the south slope of the site, are tabulated in Tables 11 and 12. The north-south trench contained the following artifacts: 3 metates, 24 manos, 5 bone awls, 2 drills, 47 complete or fragmentary chipped stone points or blades, 1 notched flake, 2 polishing pebbles, 1 pecking stone, a small piece of carbonized cord, and a few burned corn cobs. From the east-west trench the following artifacts were obtained: 3 metates, 7 manos, 5 bone awls, 1 flake made from a tine of deer antler, 1 drill, 1 snubnosed scraper, and 17 complete or fragmentary chipped stone points or blades.

Table 10. Frequencies of pottery types, borrow pit.

Pottery Types	4-12 in.	12-24 in.	24-36 in.	36 in. - bottom
Sosi Black-on-white	18	32	6	2
Dogoszhi Black-on-white	4	9	7	1
Black Mesa Black-on-white	22	66	33	19
Flagstaff Black-on-white	2	1	4	1
Puerco Black-on-white	3	4	1	0
Escavada Black-on-white	0	2	1	0
Shato Black-on-white	0	0	1	0
Tusayan white wares	38	49	32	4
Tsegi orange wares	19	19	15	8
Tusayan Black-on-red	4	19	18	6
Middleton Black-on-red	3	1	0	1
Middleton Red	1	1	2	0
Tsegi Orange	0	0	0	1
Tsegi Red-on-orange	0	0	3	0
Cameron Polychrome	1	0	1	0
Tusayan Polychrome	0	7	3	0
Citadel Polychrome	14	4	2	2 (1)*
Moenkopi Corrugated	538 (1)	776	581	210
Tusayan Corrugated	75	90	123	46
North Creek Corrugated	0	0	4	1
Coombs gray	26	64	49	26
Coombs gray, polished	7	11	11	2
Gray, vesicular basalt temper	1	7	6	1
Gray, coarse sand temper	2	7	5	0
Gray, fine sand temper	2	8	5	6
Gray, sherd and sand temper	1	1	1	0
Gray, sherd and rock temper	1	8	6	4

Pottery Types	4-12 in.	12-24 in.	24-36 in.	36 in.-bottom
Gray, poorly fired	2	10	15	1
North Creek Gray, 1	0	4	2	3
North Creek Gray, 2	0	1	0	0
Turner Gray	2	11	19	0
Turner tooled	1	2	0	0
Black-on-gray, sherd and crushed rock temper	0	1	0	0
Black-on-gray, sherd and sand temper	0	1	2	2
Black-on-gray, sand temper	0	1	2	0
Black-on-gray, igneous rock and sand temper	0	10	8	0
Black-on-gray, corrugated	0	2	5	0
Hurricane Black-on-gray	0	0	1	0

*Numbers in parenthesis indicate restorable vessels. Whole, but not completely identifiable vessels:

Gray, miniature bowl	12-24 in.
Gray, miniature bowl	36 in.-bottom.

During the initial exploratory digging at the site seven short test trenches were dug in and north of Structure A. The artifacts taken from these trenches include 3 metates, 15 manos, 5 bone awls, 1 drill, 13 complete or fragmentary chipped stone points or blades, 1 notched flake, 2 covers or abrading stones, 2 polishing pebbles, 1 pecking stone, 1 axe, and 1 mortar.

The southern flank of the hill appears to have more midden material upon it than is found on any other part of the site. Perhaps the majority of the trash from the village was dumped on this area. It is from this region that Morss, and local diggers, have removed several burials. Burying the dead in refuse heaps was a common practice of the Anasazi. The 1959 excavation will thoroughly test this area.

A collection of animal bone fragments was obtained from the excavations. The great majority of them came from the test trenches between the structures or from the refuse in the borrow pit. Identified bone fragments may be of significance in indicating preference for the flesh of certain animals but are not necessarily indicative of the number of animals consumed. Among the bone fragments there are 187 identified as mule deer, 92 bighorn sheep, 23 rabbit, 10 coyote, 5 pocket gopher, 1 beaver, 1 porcupine, and a small number of unidentified bird bones. Apparently mule deer and bighorn sheep were most commonly eaten. Deer was either preferred, or was more readily available, than bighorn sheep.

Table 11. Frequencies of pottery types, north-south test trench.

Pottery Types	0-6 in.	6-18 in.
Sosi Black-on-white	21	33
Dogoszhi Black-on-white	11	0
Black Mesa Black-on-white	77	57
Flagstaff Black-on-white	2	5
Escavada Black-on-white	1	1
Shato Black-on-white	2	2
Tusayan white wares	38	59
Tsegi orange wares	19	19
Tusayan Black-on-red	13	8
Middleton Black-on-red	0	2
Middleton Red	5	2
Middleton Polychrome	0	2
Tsegi Orange	0	1
Tsegi Red-on-orange	0	4
Cameron Polychrome	0	4
Tusayan Polychrome	0	2
Citadel Polychrome	0	2
Moenkopi Corrugated	1157	1117
Tusayan Corrugated	101	101
North Creek Corrugated	6	9
Snake Valley Corrugated	1	0
Coombs gray	85	39
Coombs gray, polished	13	7
Gray, coarse sand temper	2	1
Gray, fine sand temper	14	6
Gray, sherd and sand temper	2	1
Gray, sherd and rock temper	4	6
Gray, poorly fired	2	3
North Creek Gray, 1	2	3
North Creek Gray, 2	4	0
Turner Gray	12	3
Black-on-gray, sand temper	0	1
Black-on-gray, igneous rock and sand temper	5	6
Black-on-gray, corrugated	2	4

Table 12. Frequencies of pottery types, east-west test trench

Pottery Types	0-4 in.	4-12 in.	12-20 in.
Sosi Black-on-white	12	30	4
Dogoszhi Black-on-white	6	11	0
Black Mesa Black-on-white	43	36	4
Flagstaff Black-on-white	0	3	0
Shato Black-on-white	2	0	0
Tusayan white wares	41	56	2
Tsegi orange wares	14	19	1
Tusayan Black-on-red	3	10	1
Middleton Red	6	4	1
Citadel Polychrome	3	11	2
Moenkopi Corrugated	1096	831 (2)*	185 (2)
Tusayan Corrugated	33	69	13
North Creek Corrugated	2	6	0
Coombs gray	28	32	8
Coombs gray, polished	10	2	2
Gray, vesicular basalt temper	0	1	0
Gray, coarse sand temper	0	1	1
Gray, fine sand temper	4	3	0
Gray, sherd and sand temper	0	2	0
Gray, sherd and rock temper	3	0	0
Gray, poorly fired	1	1	0
North Creek Gray, 2	1	1	0
Turner Gray	5	2	4
Black-on-gray, sherd and sand temper	1	0	0
Black-on-gray, sand temper	0	1	0
Black-on-gray, igneous rock and sand temper	1	1	1
Black-on-gray, corrugated	2	0	0

Numbers in parenthesis indicate restorable vessels.

POTTERY

by

Florence C. Lister

Analysis of pottery obtained in the 1958 excavations conducted at the Coombs site sustains and strengthens the architectural and material culture evidence that the prehistoric inhabitants of this pleasant southern Utah valley unquestionably were culturally allied to aboriginal peoples of the Kayenta area of northeastern Arizona. Indeed, if the sherds so far recovered are indicative of the total picture, the inhabitants of the Coombs site not only were oriented toward the Kayenta hearth but, to a surprising degree, were free of contact with other groups living to their north, east, and west. Of a total of 23,668 sherds recorded, a mere 248 represent fragments of pottery types from outside the three series of the Tusayan wares (Table 13).

The Kayenta affiliation is most obvious in the black-on-whites and red wares. Of the former, 1994 sherds of Tusayan White Ware of the Kayenta Series, as listed by Colton (Colton, 1955), were tabulated. There were no pieces of black-on-white pottery which could not be fitted into descriptions of Kayenta Tusayan types with the exception of one small fragmentary bowl of Mancos Black-on-white of San Juan White Ware and 22 sherds of Chaco Canyon types and 8 of Puerco Black-on-white of Cibola White Ware.

All Coombs black-on-white sherds are thought to be Pueblo II and early Pueblo III types, having a uniformity of characteristics of paste, temper, and surface finish and distinguishable from each other only by decorative treatment. Classification of Pueblo II pottery always is made difficult by a complex blending and subtle fusion of design elements, gradually transforming the thin-lined, fussy Pueblo I styles into the rigid conventionalizations of Pueblo III. However, it was felt that with some degree of accuracy Coombs black-on-white pottery could be divided into five types: Black Mesa Black-on-white, Sosi Black-on-white, Dogoszhi Black-on-white, Shato Black-on-white, and Flagstaff Black-on-white. Not all sherds in each division have the diagnostic features as described by Colton. Yet, within each of the five groupings finally achieved, there is an over-all consistency of treatment.

Black Mesa Black-on-white, in the Kayenta region a style developed and abandoned entirely within the Pueblo II period, was found to be the

Table 13. Frequencies of pottery types, Coombs site.

TUSAYAN GRAY WARE	
Tsegi Series	
Moenkopi Corrugated	16,269
Tusayan Corrugated	2,722
Coombs gray, igneous rock and sand temper	884
Coombs gray, polished	134
Gray, coal temper	20
Virgin Series	
North Creek Corrugated	96
North Creek Gray, 1	21
North Creek Gray, 2	15
Johnson Series	
Gray, coarse sand temper	38
Gray, fine sand temper	160
Gray, sherd and rock temper	51
Gray, poorly fired	67
TUSAYAN WHITE WARE	
Kayenta Series	
Sosi Black-on-white	338
Dogoszhi Black-on-white	142
Black Mesa Black-on-white	809
Flagstaff Black-on-white	56
Shato Black-on-white	18
Tusayan white wares	631

Possible Virgin Series

Black-on-gray, sherd and crushed rock temper	1
Black-on-gray, sherd and sand temper	10
Hurricane Black-on-gray	1

Johnson Series

Black-on-gray, sand temper	28
Black-on-gray, igneous rock temper	70
Black-on-gray, corrugated	29

TSEGI ORANGE WARE

Tsegi orange wares	320
Medicine Black-on-red	1
Tusayan Black-on-red	202
Citadel Polychrome	84
Cameron Polychrome	13
Tusayan Polychrome	23
Dogoszhi Polychrome	2
Tsegi Orange	13
Tsegi Red-on-orange	23
Tsegi Black-on-orange	1

SAN JUAN RED WARE

Little Colorado Series

Middleton Black-on-red	44
Middleton Polychrome	34
Middleton Red	58

UTAH DESERT GRAY WARE

Fremont Series

Turner Gray-Variety II	156
Turner tooled	15
Turner corrugated	1

Salt Lake Series	
Sevier Gray	30
Snake Valley Series	
Snake Valley Corrugated	2
INTRUSIVES:	
CIBOLA WHITE WARE	
Puerco-Chaco Series	
Gallup Black-on-white	13
Escavada Black-on-white	9
Puerco Black-on-white	8
SAN JUAN WHITE WARE	
Mancos Black-on-white	6
Total	23,668

most common black-on-white pottery at the Coombs site (809 sherds), making up slightly less than half of all black-on-whites recovered. Four restored bowls were assigned to this type. Black Mesa Black-on-white is the most variable type dealt with in this study. Generally speaking, in design treatment it does not show the heavy broad-lined decoration found to the south but seems to be somewhat closer to the thin-lined Kana-a style of Pueblo I. A possible subtype may be indicated by a number of sherds, classified as Black Mesa, but appearing to be better than the average in application of slip and execution of design. These may have been produced at a time near the end of the history of that type when the potters were beginning to adopt higher standards used on Flagstaff Black-on-white. These superior sherds were kept separate for further study after upcoming excavations. Almost all such examples have fine quartz sand temper, a heavy lustrous white interior slip, and, when not coated with a red wash, have polished tan to brown exteriors. Designs consist almost entirely of rather narrow lines, spirals, and solid triangles.

Sosi Black-on-white is represented by 338 sherds and by portions of three bowls and one olla. One bowl carries the collection's only example of the "orange peel" layout of design found frequently on Kayenta Pueblo II vessels. One hundred and forty-two sherds of its companion ware, Dogoszhi Black-on-white, were recovered. There were no restorable Dogoszhi pieces. Both types are given a life span of 90 years by Colton, from A. D. 1060 to A. D. 1150. Shato Black-on-white (18 sherds), in reality a black-on-gray interior and a corrugated exterior, is insignificant in the Coombs collection. It was made in its hearthland for approximately 100 years, from A. D. 1050 to A. D. 1150.

Basing an opinion upon a microscopic analysis of temper, it is felt that all the first three types mentioned (Black Mesa, Sosi, and Dogoszhi) were both imported and made locally. Potters of the Kayenta area normally made use of varying amounts of quartz sand for tempering materials in gray and white wares. The light colored cores of these black-on-white sherds provide little contrast to the whitish temper. However, in the valley at Boulder in which the Coombs site is located, there are many boulders of igneous origin and sands containing igneous materials which seem to have been utilized in all locally produced pottery. It is impossible to determine whether the particles of angular rock were artificially crushed or whether they were used in the form in which they weathered from boulders. Light cores of the Coombs black-on-whites are thickly speckled with dark granules of these sands. So

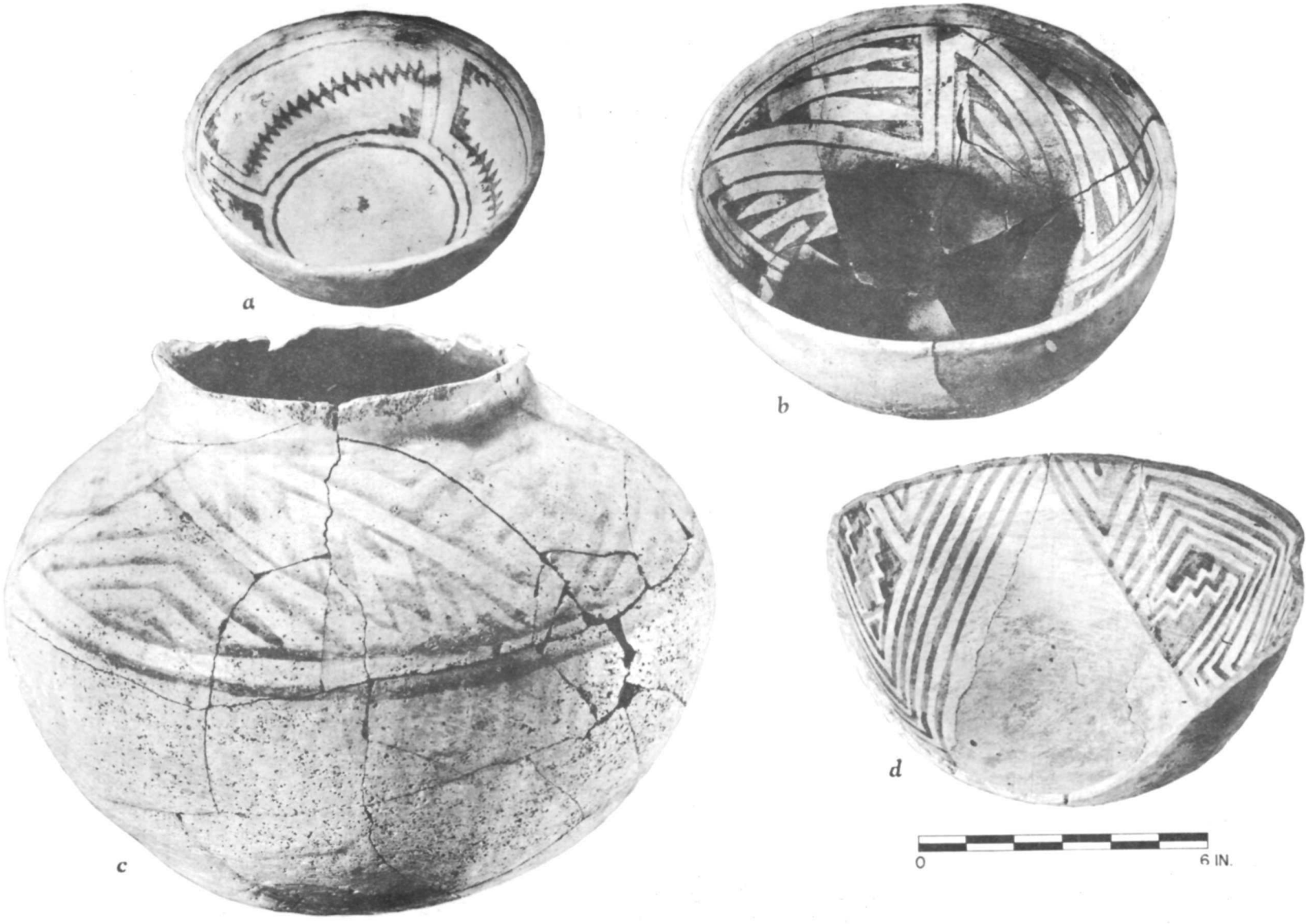


Fig. 28. Vessels of Tusayan White Ware, Kayenta Series. Flagstaff Black-on-white bowl, a; Black Mesa Black-on-white bowl, b; Sosi Black-on-white olla, c; Sosi Black-on-white bowl, d.

it is thought that Black Mesa, Sosi, and Dogoszhi pottery traditions generally were followed in every detail except temper.

Pueblo III black-on-white pottery styling was introduced into the Coombs area in the form of Flagstaff Black-on-white. This is a type considered by Beals, Brainerd, and Smith as late Pueblo II (Beals, Brainerd, and Smith, 1945), or as Pueblo III (A. D. 1125-1200) by Colton (Colton, 1955). Fifty-six sherds of Flagstaff Black-on-white appear in the Coombs collection. All have very fine quartz sand tempering. Therefore, if our theory that locally made pottery contained igneous temper is correct, these sherds would seem to affirm importation, though not necessarily directly from the San Francisco Mountains region. Flagstaff Black-on-white type pottery came to be copied in other sections of northeastern Arizona and is believed to have been the forerunner of the Pueblo III classic styles such as Tusayan Black-on-white and Kayenta Black-on-white, neither of which have so far turned up in the Coombs excavations.

One complete Flagstaff Black-on-white bowl found in the borrow pit with the burial of a child shows a design with a threefold rotational symmetry rather than the fourfold symmetry of the usual Flagstaff style or the twofold symmetry of the later Pueblo III types. Further, it seems to be of an early stage in Flagstaff stylistic development having an uncomplicated pinnate line pattern with the white slip still in excess of the black painted decoration. Its well smoothed and polished exterior carries a fugitive red wash.

What is believed to have been a locally made black-on-gray type is present (70 sherds). In only one respect are these unlike the black-on-grays of the surrounding areas They are tempered with crushed trachytic rock or sands containing large amounts of feldspar whereas the Tusayan-Johnson tradition employed quartz sand tempering. Their surfaces are pitted, scraped, and occasionally polished. Average thickness is .3 cm. (1/8 in.). Paste color varies from dull gray to off-white. Decorations, done in a watery carbon paint, are of the Black Mesa style current throughout Pueblo II times and include use of pinnate lines, diamonds (both open and filled), checkerboard, and, rarely, hatching.

Some of the black-on-grays have corrugated exteriors. Of 29 sherds recorded, 18 have Moenkopi-type corrugations and 11 have Tusayan-type corrugations. These also are tempered with crushed igneous rock.

It is felt these black-on-grays can fall within the framework of the Tusayan Gray Ware, though they may be termed a Coombs variation in recognition of tempering difference.

Other black-on-grays present in the sherd collection have sand temper (28 sherds) and may be put into the Johnson Series. Similar sherds have been recovered by survey crews working both the right bank of the Colorado River and the canyon bottom itself. No black-on-gray types other than Lino Black-on-gray so far have been set up for the Kayenta region. The sand tempered black-on-grays found in the reservoir area neither fit Lino descriptions nor, when considering associated sherds, do they fit Lino time limits. Most probably they are of the Johnson Black-on-gray classification. Although Colton has suggested that the Johnson Branch may not be a valid one, in the matter of the black-on-gray pottery, sherds recovered by survey and Coombs excavation workers may give credence to the classification in this section.

Red wares comprise 3 1/2 percent of the total sherds recovered. They were of the two general categories of red pottery found across northeastern Arizona and southern Utah: San Juan Red Ware and Tsegi Orange Ware.

Middleton Black-on-red, Middleton Polychrome, and Middleton Red, all Pueblo II San Juan Red Ware types known to occur in Anasazi sites north and west of the Colorado River, are found among the Coombs sherds. They suggest some contact with the Virgin Branch of the Zion area. One whole piece of Middleton Black-on-red, a water jar, was recovered from the debris on the floor of Room 8, Structure A. It has the Dogoszhi style hatching also characteristic of the Tsegi Orange Ware black-on-reds, a constricted mouth, and two lug handles. Middleton sherds differ from the reds of the Tsegi Orange Ware group in having sand temper and in being unslipped. Their paste is compacted and shiny with abundant quartz granules incorporated, giving it somewhat the appearance of peanut brittle in cross-section. Generally, the Middleton types are thinner than their Tsegi Orange counterparts east of the Colorado River. Furthermore, they do not seem to weather as badly.

At the Coombs site, Tsegi Orange Ware types of considerable variety outnumber the San Juan Red Wares eight to one and have been identified as Medicine Black-on-red, Tusayan Black-on-red, Cameron Polychrome, Citadel Polychrome, Tusayan Polychrome, Dogoszhi Polychrome, Tsegi Orange, Tsegi Black-on-orange, and Tsegi Red-on-orange. In addition to

709 sherds, 6 restorable bowls came from the excavations, 3 of them being Citadel Polychrome, 1 Tusayan Polychrome, and 2 Tusayan Black-on-red. All Tsegi Orange Ware imports have varying amounts of sherd fragments added to sand temper and, with the exception of the Tsegi types, are slipped. Some reds are thought to have been made locally in the Boulder vicinity. Igneous, rather than quartz, sand was used as temper, the dark inclusions being very obvious in the orange and red paste. Only in the Pueblo III period types, Tusayan Polychrome (23 sherds), Tsegi Black-on-orange (1 sherd), and Dogoszhi Polychrome (2 sherds), was no igneous material observed, but obviously such a small sample is almost meaningless. These particular pottery styles, dating from what might have been the final years of the village's life, may not have been duplicated by Coombs potters. On the other hand, absence of igneous tempered sherds may be a mere accident of excavation.

Medicine Black-on-red (only one sherd found) and Cameron Polychrome (13 sherds) are said by Colton (Colton, 1956) to have had a 50-year life span, lasting from A. D. 1050 to A. D. 1100, after which they were replaced by the Pueblo III reds. Tusayan Black-on-red (202 sherds) was produced for approximately 100 years, from A. D. 1050 to A. D. 1150, thus, in northeastern Arizona at least, bridging Pueblo II and Pueblo III times. Citadel Polychrome, the most common polychrome (84 sherds) so far found at the Coombs site is dated as early Pueblo III, A. D. 1125 to A. D. 1175. Tusayan Polychrome, considered to have come into use in middle Pueblo III, continued in use throughout the remainder of the Pueblo III period (A. D. 1150-1300). It is weakly represented in the Coombs collection (23 sherds). Only two sherds of Dogoszhi Polychrome (A. D. 1250-1300) were obtained. None of the late Pueblo III polychromes, which employ white paint in addition to black and red, were present in this sample.

In the matter of design treatment, it is interesting to note that, as elsewhere in the Kayenta area, the designs used on the black-on-reds of both the San Juan and Tsegi wares were almost entirely the hatching introduced on Dogoszhi Black-on-white. However, with the beginnings of the application of more than one painted color on a single pot there was a switch to broad-lined Sosi technique. Also, with the development of red pottery in the Kayenta culture came the use of crushed sherd fragments as tempering materials. This was an innovation in the Kayenta pottery making process, although neighboring related peoples of the Virgin and Johnson branches had been experimenting previously with the use of sherds in their grays and black-

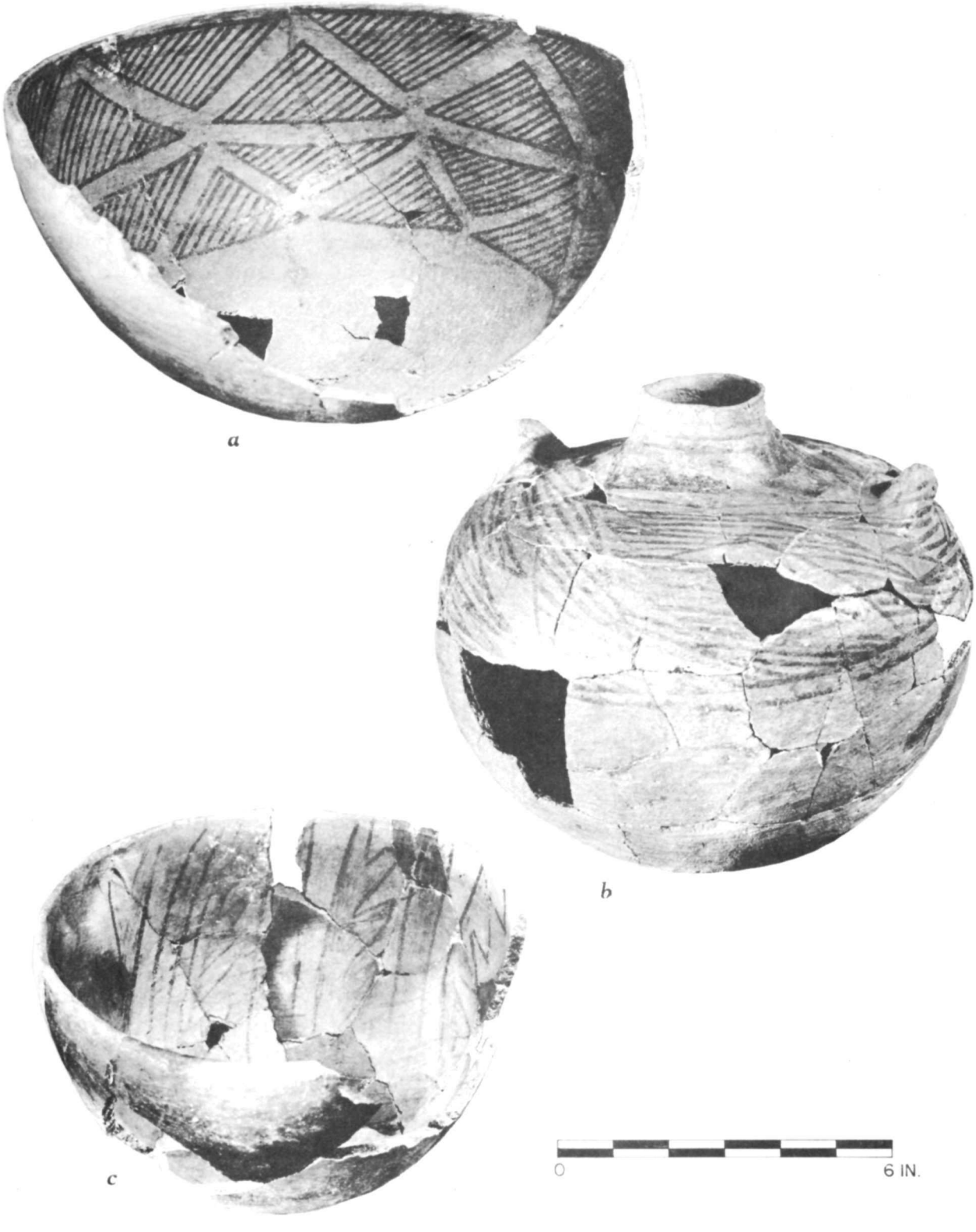


Fig. 29. Vessels of Tsegi Orange Ware and San Juan Red Ware. Tusayan Black-on-red bowl, a; Middleton Black-on-red jar, b; Citadel Polychrome bowl, c.

on-whites. It is believed that the same Kayenta potters were capable of making both the red and the white wares. However, sherd tempering was used only for red pottery, sand being utilized for white. Decorative treatment on red wares progressed from fine-lined to broad-lined designs at the same period in which the reverse development was taking place in white ware manufacture. Rigidly set cultural patterns of particular designs and treatment, being applicable to only certain pottery wares, were unviolated. For example, never at Boulder, or elsewhere, do we find a Citadel Polychrome with sand temper and a Flagstaff "busy" layout. That type was always sherd and sand tempered with a Sosi style treatment.

The most difficult, and in many ways the most unsatisfactory, job of classifying the Coombs potsherds developed with the gray wares. A microscopic examination was made of each sherd. Of a total of 1418 plain gray sherds, 1038 are tempered with igneous materials. Also found to contain igneous tempering was a complte gray bowl 20.2 cm. (7 1/2 in.) in dia. and 8.7 cm. (3 3/8 in.) in height, a miniature gray olla 7.2 cm. (2 3/4 in.) in height and 7.6 cm. (2 7/8 in.) in greatest dia., and another bowl fragment.

These igneous materials often are sands weathered from trachytic and andesitic rocks, containing not only black granules, but white quartz grains and others stained with iron oxide. Some of the individual tempering particles are small, but most are large and, when incorporated into the clay walls of the pots, either protrude through the surface or bulge into numerous small bumps like a rash of pustules. Other tempering materials are crushed igneous rocks, again both fine and coarse, grading from dull black chunks of basalt to shiny splinters of volcanic glass.

The use of a large quantity of assorted kinds of igneous temper at present appears to have been a development confined to the Boulder valley. A survey of the cluster of sites scattered over the ridges near the Coombs site produced the same high percentages of sherds with igneous temper. However, most Anasazi sherds recovered by the two right bank surveys and the roving survey, covering the entire 185 mi. stretch of terrain from the damsite to the Dirty Devil River, were quartz sand tempered. The absence of igneous temper most probably is due to its unavailability in the sandstone canyons along the river rather than to any cultural determinants. However, it must be noted that, although Fremont potters living on the fringes of this Anasazi occupied region, and Pueblo peoples of western Utah, both utilized igneous rocks and sands, it was not a common Tusayan trait.

Even from the Henry Mountain region, a great laccolithic uplift, there were few igneous tempered sherds recovered. Some gray sherds found in the vicinity of the town of Escalante have crushed igneous temper, but not in the amount or coarseness of those at Boulder and they appear to be aberrant Fremont rather than Anasazi in origin.

The igneous tempered grays, which hereafter are called Coombs gray, as a convenience, not as the proposed name of a new type, average 4 to 7 mm. (1 1/2 in. to 2 3/4 in.) in thickness. Surfaces are scraped, with striations very evident. In many instances deep irregular grooving resulted from pulling the large grains of rock or sand through the wet clay in the smoothing process. Some gouges have sharp edges. Thirty-five sherds have tinges of a fugitive red paint on their exteriors.

One group of 20 sherds, all from the same feature in the excavation, was found to be tempered with chunks of coal. These were termed "thud" ware in the laboratory because of their heavy dull quality and are the results of an unsuccessful experiment. They are pitted, due to volitilization of the coal near the surface, and crazed, cracked, and warped by the gases liberated in the firing process. Two had a narrow fillet applique.

In addition to the Coombs gray variations, some 160 sherds are tempered with fine quartz sand and 38 with coarse sand. One restorable small mouthed jar, with coarse sand temper and a coat of fugitive red, was uncovered with the burial of a child. It stands 26.6 cm. (10 1/2 in.) high and is 23.9 cm. (9 3/8 in.) in greatest dia. Of fine quartz tempering were a solid handled ladle measuring 16.7 cm. (6 5/8 in.) in length, a portion of a second ladle and bipartite handle, two miniature loop handled pitchers approximately 7.2 cm. (3 in.) in height, a miniature olla 11.1 cm. (4 1/2 in.) in height and 8.7 cm. (3 1/4 in.) in greatest dia. and a small dark gray olla 10.1 cm. (4 1/4 in.) high, 11.3 cm. (4 1/2 in.) in dia. and 7.8 cm. (3 1/4 in.) in opening of orifice.

These sand tempered grays might well correspond to the Johnson Gray classification set up by Julian Steward (Steward, 1941). The coarse sand examples are duplicated in the Steward type sherd collection which was obtained from Johnson Canyon and environs, just west of the reservoir limits. Johnson Gray, or something closely akin to it, was collected in the Lister survey of the canyons south of Boulder. It seems to occur only rarely in the more northern sites.

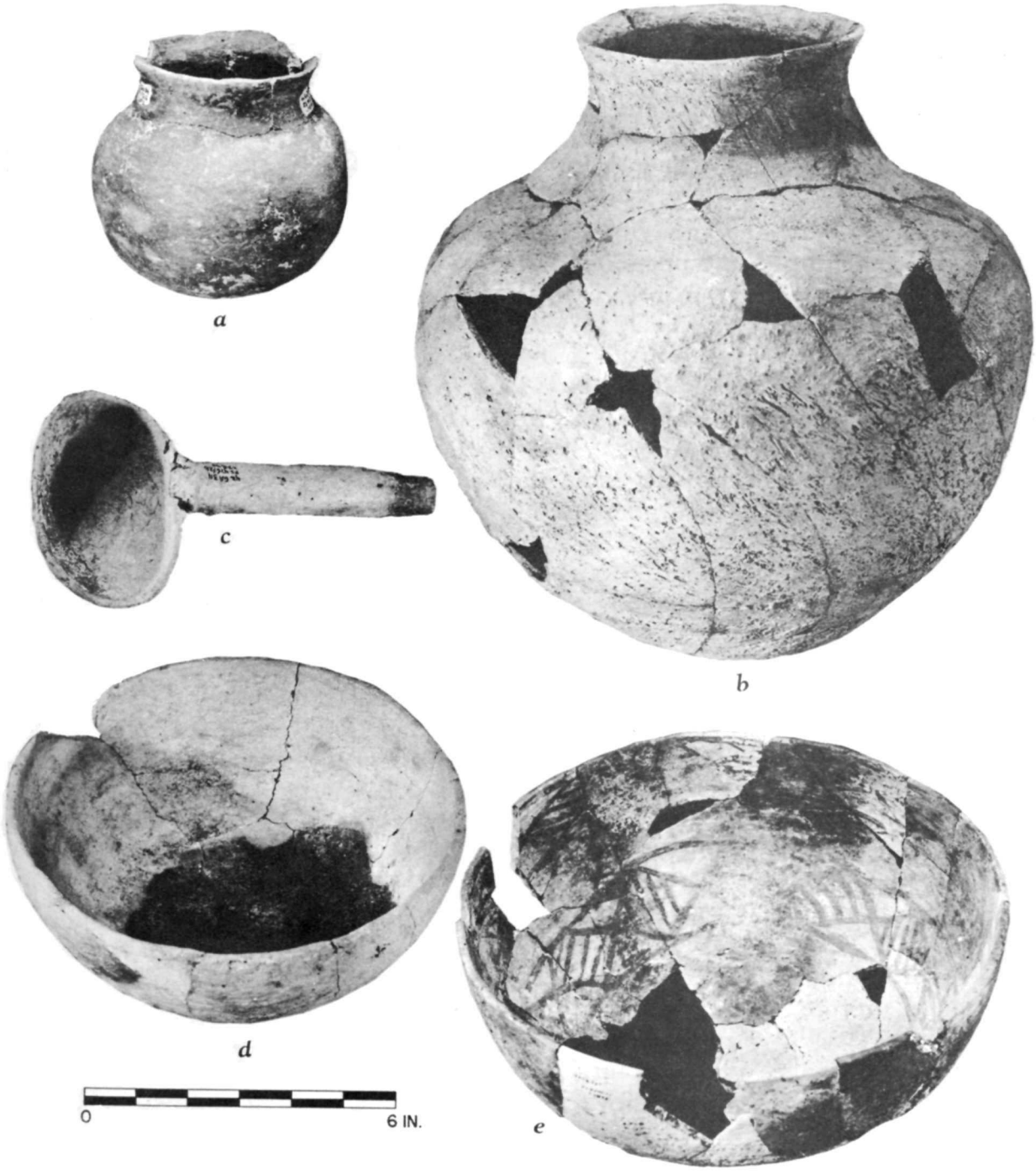


Fig. 30. Vessels of gray ware. Jar, a; Johnson Gray jar, b; ladle, c; bowl, d; black-on-gray, igneous temper, e.

Other gray sherds (79) were found to have mixed tempering materials, either sand and sherd fragments or, more often crushed rock and sherd. Probably these show some linkage to the west where Virgin Branch pottery of Pueblo II contained sherd fragments as well as sand. Possibly they are the result of a local experimentation similar to that going on all over the Anasazi area during the Developmental Pueblo period.

A small group of poorly fired or completely unfired sherds (67) was tempered with very fine sand. Occasional bits of some kind of organic material had burned out during firing, leaving holes in the paste. Most of these sherds had a silty mud-like appearance and most probably were molded with the fingers rather than being coiled. Since many of them were found to be portions of miniature bowls, it seems likely these might represent childrens' efforts at copying adult craft. Similar gray pottery is mentioned by Steward as occurring in the Johnson area (Steward, 1941) and it also was found at excavations in Paragonah in western Utah (Meighan, et al., 1956). It occurs in small amount in the surveys of the right bank of the Colorado River and in excavations conducted in Davis Gulch, a tributary to the Escalante River. Two miniature bowls of this type of gray measure approximately 2.7 cm. (1 1/8 in.) in dia. One of these was filled with a bit of pulverized clay. A third bowl was 3.3 cm. (1 3/8 in.) in height and 5.1 cm. (2 1/16 in.) in dia. One miniature ladle was 7.5 cm. (2 7/8 in.) in length.

Three groups of grays are felt to be definite intrusives, each from a different culture variant. The Anasazi representative of these (36 sherds) has been assigned to the North Creek Fugitive Red type of the Tusayan Virgin Series. These, in turn, have been subdivided, with one group (21 sherds) having fine quartz sand temper and relatively smooth surfaces and a second group (15 sherds) having coarser, decomposed sandstone temper speckled all over the surfaces. Both groupings are of a distinctive slate to purplish color with traces of a fugitive red wash on their exteriors.

A second gray intrusive was Sevier Gray (30 sherds), a type attributed to Utah Desert Gray Ware which centered in the Sevier Desert region of west central Utah. The sherds obtained in the Coombs excavations were from two small vessels which were so badly crushed that nothing can be guessed of their shapes. One had a single row of nubs placed at regular intervals around the exterior. Steward (Steward, 1936) sets the eastern limits of Sevier Gray at approximately the Fremont River, north of the Coombs site.

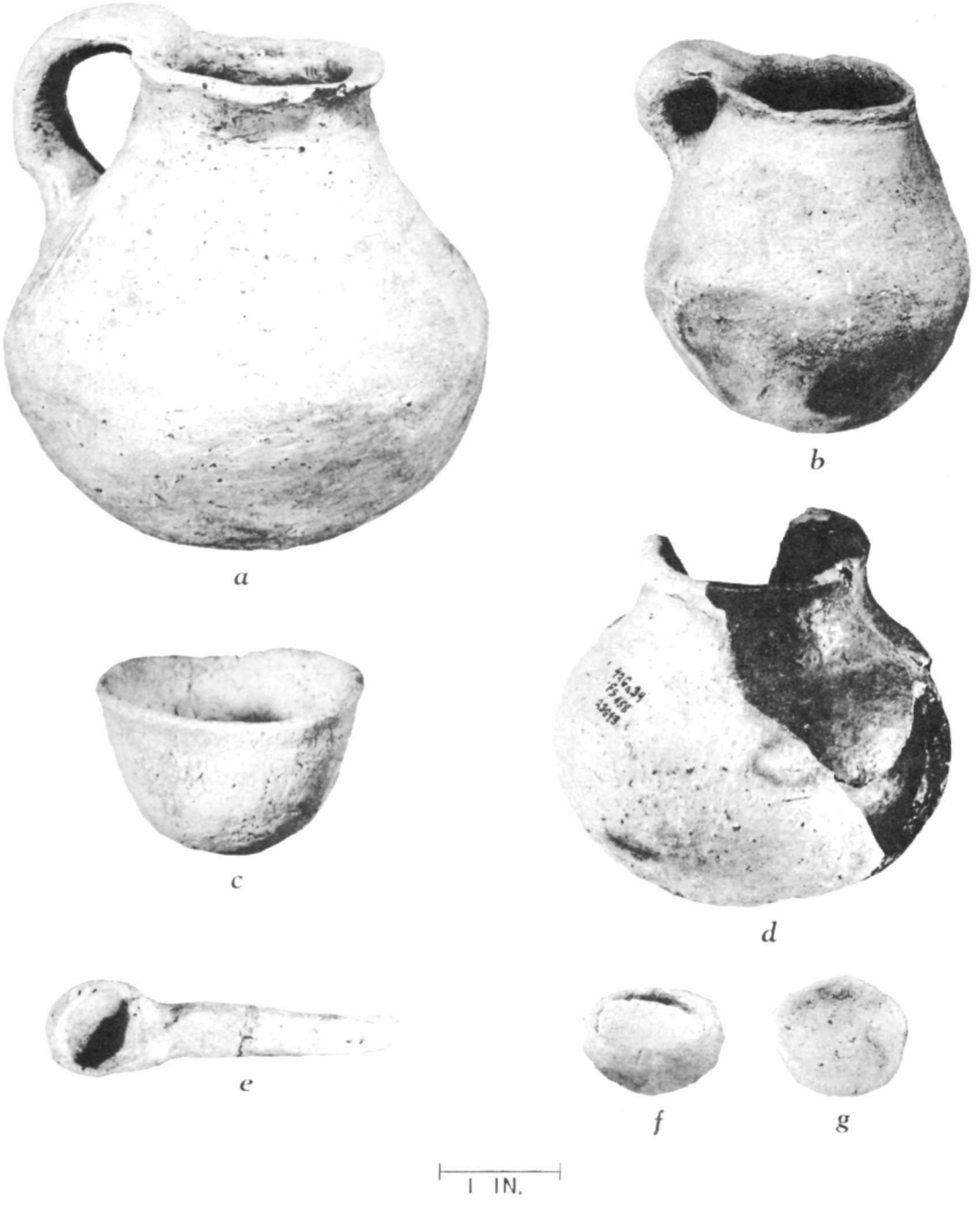


Fig. 31. Minature vessels of gray ware. Pitchers, a, b; bowls, c, f, g; jar, d; ladle, e.

Most important of the intrusive grays, so far as numbers are concerned, were the Fremont ceramics found scattered throughout all levels of the various features. These also are included in Utah Desert Gray Ware. They comprise approximately 11 percent of the plain gray wares of all types, less than .7 percent of the total sherds tabulated. Their number (172 sherds) was more than three times that of any other intrusive. Fifteen such sherds were tooled and one was corrugated. A well used, circular, concave base sherd may have been employed as a rotating base upon which to begin bottom coils when making pots. A portion of a bowl with a polished tan exterior and a salmon pink interior may possibly be of Fremont manufacture. All these sherds belong to the Turner Gray-Variety II classification, a ware which is characteristic of Fremont sites a few miles to the north originally described by Noel Morss (Morss, 1931) as type sites for delineation of the Fremont culture.

Definitions of Fremont pottery as stated by Wormington (Wormington, 1955) and Gunnerson (Gunnerson, 1957) emphasize the great range of variability within the two types so far established. It is doubtful if two technicians would agree sherd by sherd as to which were rightfully Turner Gray-Variety II. The extensive use of igneous materials in Coombs-made pottery further complicates the present task of classification. When one begins to work with "degrees" of temper size or core coloration, analysis becomes increasingly subjective and unreliable. A re-examination of sherds from Morss's type sites shows a great amount of sand (both quartz and basaltic) mixed with the diagnostic crushed igneous rock temper, large granules as frequent as small, a paste often dark but blending through gray to almost white, a surface occasionally polished but as often unpolished and striated. All Coombs sherds thought to be Fremont ware were checked against a collection obtained at the Morss sites and were found to come within the limits of variation prevalent there.

The importance of the presence of this small quantity of Turner Gray-Variety II pottery lies in the establishment of definite contact between Fremont and Anasazi peoples somewhat south of the previously known Fremont range. The Upper Colorado River Basin Archeological Salvage Project surveys throughout adjoining valleys and canyons further extends Fremont influence, indicating a fingering probe through regions presumably dominated by Anasazi peoples, down certain corridors, such as Trachyte and Escalante canyons, to the Colorado River, and then slightly eastward toward the San Juan. Finding Fremont pottery at the Coombs site was not unanticipated.

The amount is disappointingly small, however. On the other hand, in collections of potsherds obtained from Fremont sites, Anasazi sherds are never numerous. One must conclude, therefore, that even though these two peoples lived as virtual neighbors, probably sharing a similar sort of life based on seasonal rhythms of sun and harvest, they felt little need or desire for intercourse.

The 19,089 sherds of corrugated pottery from the Coombs site fit into Pueblo II and Pueblo III types described by Colton for the Kayenta area. They make up 87 1/2 percent of all pottery recovered. Tusayan Corrugated is not as numerous as Moenkopi Corrugated. In surveys of the surrounding areas, Tusayan Corrugated is more common than Moenkopi Corrugated. For Coombs dwellers Moenkopi was by far the most popular, as the totals of sherd counts indicate: Tusayan Corrugated--2722, Moenkopi Corrugated--16,269.

Separation of these two types is based primarily upon surface treatment so that the subjective judgment of the analyst necessarily is involved. In a whole pot, daylight, playing on a large expanse of the surface, highlights ridges and shadows depressions to such a degree that corrugations seem more pronounced than they do on a small sherd. Admittedly then, more Tusayan Corrugated sherds might be present than are indicated by the count. However, the percentages of Tusayan Corrugated to Moenkopi Corrugated among restored vessels is consistent with the sherd analysis. None of the 12 large corrugated vessels recovered was of Tusayan Corrugated, nor were any of the four small ones. Two Tusayan Corrugated vessels were among the six restored medium-sized jars.

It is interesting to note that a well made ware such as Tusayan Corrugated, with its neat, regular coils and precise finger imprints forming an intentional part of the design, was being created and used alongside an indifferently designed, sloppily executed type such as Monekopi Corrugated. It is unlikely that Moenkopi can be considered a degeneration of Tusayan technique because the time spans were parallel, with the exception of an apparent earlier beginning for Tusayan. Colton (Colton, 1955) dates Tusayan Corrugated as A. D. 950-1275 and Moenkopi Corrugated as A. D. 1050-1275.

Moenkopi Corrugated coils usually were wider (average 6 mm.) than Tusayan Corrugated, irregularly overlapped, haphazardly pinched or indented, often smeared or flattened so as to appear as clapboards or even fairly smooth surfaced. Sometimes faint lines were scratched vertically over the coils while they were still wet. Few sherds from reconnaissances on both sides of the Colorado River were as crudely made as the general run of Moenkopi Corrugated from the Coombs site.

It was not felt necessary for the scope of this preliminary study, which was conceived as a tool for temporal and aerial determination, to attempt further division within the Tusayan or Moenkopi Corrugated types such as was done by the Rainbow Bridge-Monument Valley project (Beals, Brainerd, and Smith, 1945). Their breakdown within the corrugated types into rough coiled and flat coiled was considered too time consuming for our present purposes.

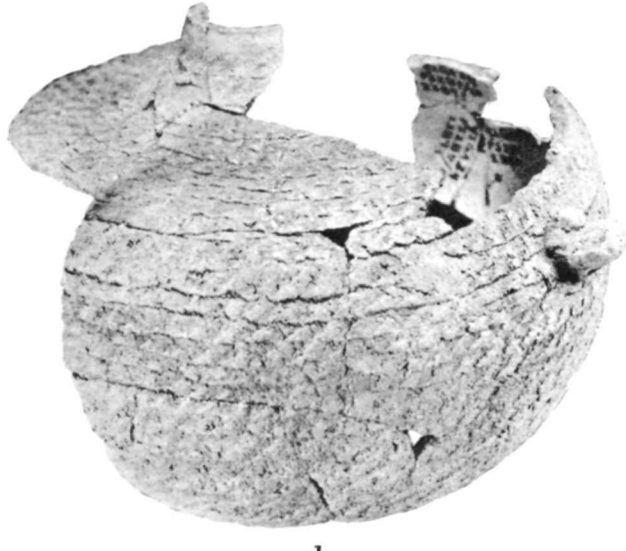
Restorable corrugated pots range in size from a miniature olla 6 cm. (2 3/8 in.) high found with a burial to large jars averaging 40 cm. (16 in.) in height and 35 cm. (13-14 in.) in greatest dia. Probably they were used as storage containers. The fact that many were found in the floor debris of the rooms thought to be storage chambers would suggest such utilization. All but one were wide mouthed. The larger jars had pointed bottoms, requiring some sort of a ring or a shaped depression in the dirt floor of the storage room to support them in an upright position.

Medium-sized corrugated jars, some with a single handle, average 23 cm. (9 in.) in height and 23 cm. (9 in.) in greatest dia. Another group of smaller corrugated jars average 12.1 cm. (4 3/4 in.) in height and 12.7 cm. (5 in.) in greatest dia. Vessels of these two sizes were most probably cooking pots. They are blackened as if from use over fires.

Coombs corrugated pottery differs from Kayenta types in the same way that the plain grays differ--temper. No over-all microscopic study was attempted, but a spot check indicates that at least 90 percent have crushed igneous rock or igneous sand temper. An impression obtained from this study of the corrugated sherds is that those with sand temper were more skillfully executed. It is felt that they were Kayenta area imports, and that the igneous tempered ones were produced by local potters.

Fig. 32. Moenkopi Corrugated vessels. Miniature, a; small, b; medium, c; large, pointed bottom, d; large, round bottom, e.

a



b

Fig. 33. Corrugated vessels. Tusayan Corrugated, a; North Creek Corrugated, b.

Virgin Branch corrugated pottery is present in the form of North Creek Corrugated, distinguished by a gritty sand temper and dark, slate colored surface, over which a fugitive red had been applied. The coils of this type are narrow but quite flattened. One partially restorable jar of North Creek Corrugated has a shape unique in the Coombs collection. It resembles a large seed jar, with a small mouth and lug handles. The bottom of the interior has irregularly spaced pitting as though seeds or pellets had been dropped through the mouth while the clay was still moist.

A further clue of Virgin influence is the appearance of fugitive red on either interiors or exteriors of 187 sherds. It may be a circumstance of the retentiveness of the deeper depressions that the major portion of such sherds with the red wash were Tusayan rather than Moenkopi. These sherds also were tempered with igneous sands. The practice of the application of a postfiring coating of a red paint on corrugated pottery is said by Colton to be found on occasion in the Virgin Valley but not in the San Juan drainage.

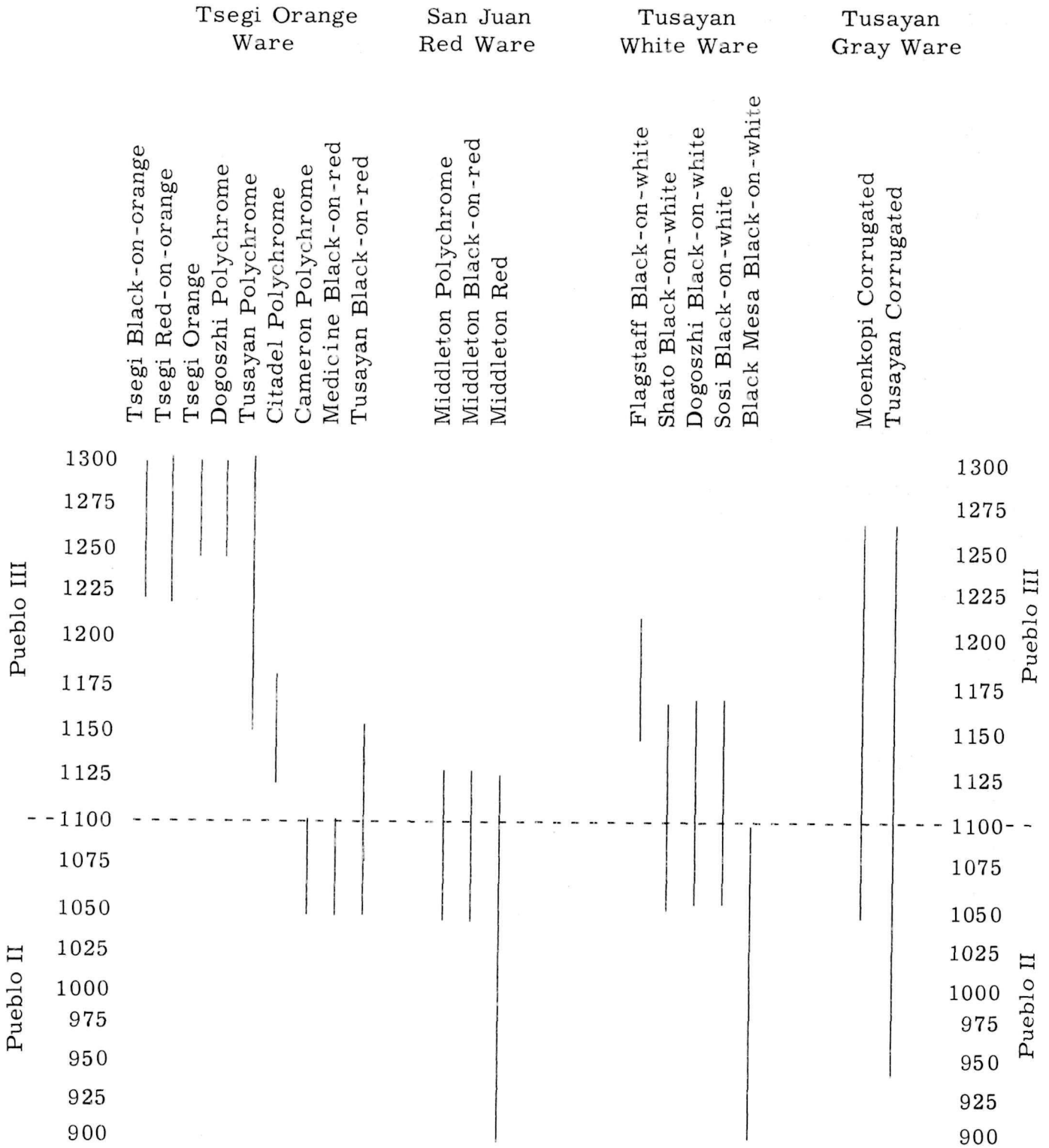
Fugitive red was rather common in early times--Basket Maker III and Pueblo I--in the Kayenta Lino wares but was abandoned by the time in which the Coombs village was occupied. Its seemingly frequent use by the Coombs inhabitants may have been a trait shared with both the Virgin Branch of the Tusayan Anasazi culture to the west of the Boulder area and with other western Utah Pueblo groups who made considerable use of this form of decoration. On Coombs pottery unfired red occurred on the exteriors of 51 sherds of black-on-white bowls (particularly those belonging to the poorest and the best of the black-on-whites, Black Mesa and Flagstaff styles) and on interiors (9 sherds) and exteriors (35 sherds) of gray wares. Presumably many other sherds lost their red coating either through natural weathering or in the washing process in the laboratory. Practically no survey sherds, obtained as they were from site surfaces, have lingering hints of such deliberate coloration, although many have acquired a reddish hue from the brilliantly colored soils in which they have lain. The reasons why potters should choose to apply an unfired, and hence impermanent, red wash on some pots when they were able to produce a true red pottery are not understood, particularly when the pottery receiving such attention was primarily utilitarian. Sherds studied in this analysis do show that a well made Tusayan Corrugated vessel with a red wash would have resulted in a striking piece of ceramics.

At this stage of the unfolding of the history of the Coombs site, ceramic conclusions are premature. Material recovered to date implies an occupation of the site from about A. D. 1075 to A. D. 1275, with the peak at A. D. 1100 to A. D. 1150 (Table 14). Three types have beginning dates somewhat earlier, about A. D. 900 to A. D. 950. One of these, Tusayan Corrugated, represents a minor percentage of the total corrugated sherds. A second, Middleton Red, actually may be undecorated body sherds of Middleton Black-on-red, dated by Colton from A. D. 1050 to A. D. 1130. Black Mesa Black-on-white, considered the most common black-on-white type at the Coombs site, varied considerably from Kayenta style and perhaps also varied in time of manufacture. Types such as the Tsegi Black-on-oranges and Red-on-oranges, Dogoszhi Polychrome, and Tusayan Polychrome on the late end of the time range are very few in number, but inasmuch as they were found buried in various parts of the fill and were not surface sherds, they cannot be summarily dismissed as unindicative of time of village occupation. It is hoped some stratigraphy will be found in future excavations to provide a better time skeleton for the site.

The few black-on-white intrusive sherds show some contact at the Pueblo II-Pueblo III level, direct or indirect, with the San Juan, Chaco Canyon, and Rio Puerco of Arizona areas. Gray intrusives point to Fremont, Sevier, and Virgin contact. None of these outside influences was at all potent. It might be said that Coombs citizens basked in a southern exposure toward Navajo Mountain and the colorful Kayenta lands beyond, and, if not oblivious to others living near them, certainly they were ceramically independent of them.

If we were to follow the precedent of other Southwestern ceramists, it might be that we would set apart a series of pottery types, paralleling those of the Tusayan wares, on the basis of temper difference. Perhaps this step will be deemed necessary after next season's work when further study warrants firmer conclusions.

Table 14. Ranges in time of pottery types.



ARTIFACTS AND ORNAMENTS

Artifacts from the Coombs site are mainly of stone and bone; however, there are a few specimens of antler and two items of carbonized vegetable fiber.

Artifacts of chipped stone

Most of the artifacts in this category are classified as either blades (the stemless specimens) or points (those specimens that are notched). No connotation as to use is inferred by the terms. Undoubtedly most of the smaller blades were employed on arrows. These artifacts were chipped from various kinds of chalcedonies, predominately jasper.

Stemless blades. An arbitrary distinction has been made between large blades and small blades. The large blades are over 4.5 cm. (1 3/4 in.) long and do not exhibit as fine chipping as do the small blades. Several types of large stemless blades, all of which are more or less symmetrical, may be recognized.

1) Large, triangular, wide straight base (Fig. 34 a, b). A straight edged, triangular blade. The base is broad and straight. Chipping is fair and most specimens exhibit some retouching along the edges. A typical example measures 6.3 cm. (2 1/2 in.) long, 3.2 cm. (1 1/4 in.) wide, and .6 cm. (1/4 in.) thick. Frequency: 5.

2) Long, narrow, parallel edged, straight base (Fig. 34 c, d). A relatively long, narrow blade whose edges are straight and parallel one another near the basal portion of the blade. The base is straight. Chipping is good and has resulted in thin blades A complete specimen is 8.9 cm. (3 1/2 in.) long, 2.5 cm. (1 in.) wide, and .3 cm. (1/8 in.) thick. Frequency: 3.

3) Large, triangular, convex edges, round or straight base (Fig. 34 e-i). A blade of variable length whose sides are usually somewhat convex. Bases may be round or straight. They are fairly thick and frequently are poorly chipped. A few specimens exhibit some retouching on the edges. Lengths range from 4.5 cm. (1 3/4 in.) to greater than 7.6 cm. (3 in.); widths from 2.2 cm. (7/8 in.) to 3.8 cm. (1 1/2 in.); and they average

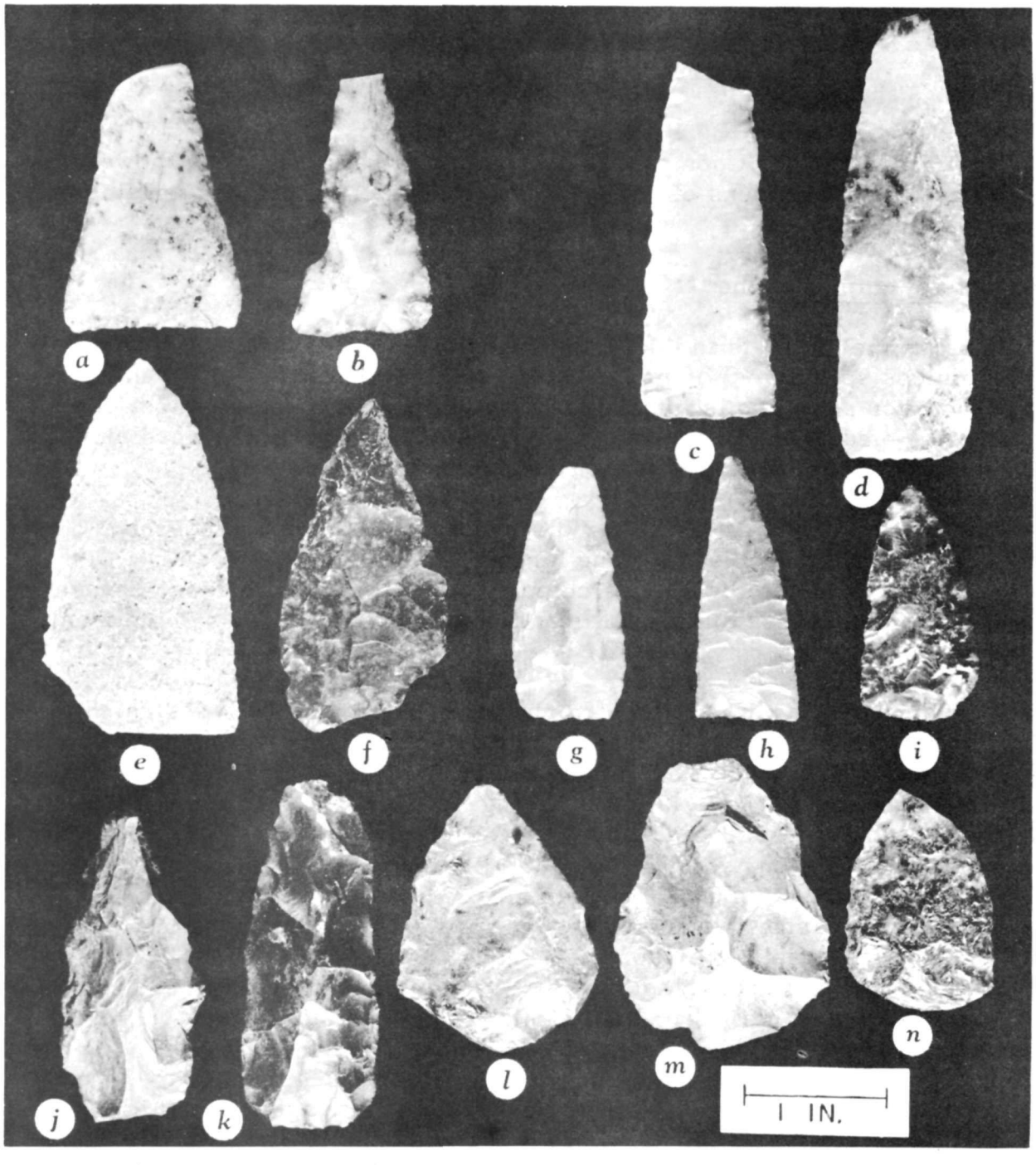


Fig. 34. Large blades. Triangular, wide straight base, a, b; long, narrow, parallel edged, straight base, c, d; triangular, convex edges, round or straight base, e-i; long, narrow, thick, j, k; broad, triangular, convex edges, round or straight base, l-n.

.6 cm. (1/4 in.) in thickness. Frequency: 26.

4) Long, thick, narrow (Fig. 34 j, k). These are crudely flaked and thick in cross-section. Edges are slightly convex or parallel for a distance. Bases are rounded or straight. A typical specimen measures 6.6 cm. (2 5/8 in.) long, 2.5 cm. (1 in.) wide, and 1.2 cm. (1/2 in.) thick. Frequency: 3.

5) Broad, triangular, convex edges, round or straight base (Fig. 34, l, n). A relatively broad blade in relation to its length. Edges are convex and most bases are round. Crude flaking produces a blade that usually is thick in cross-section. A complete specimen measures 5.7 cm. (2 1/4 in.) long, 4.1 cm. (1 3/8 in.) wide, and 1.5 cm. (5/8 in.) thick. Frequency: 10.

Small blades are less than 5.7 cm. (2 1/4 in.) in length. Most of them are narrow in relation to their length, and are further characterized by excellent chipping. The edges of many specimens are slightly serrated. Three types are distinguishable.

1) Small, narrow, straight edged, concave base (Fig. 35 a-o). As a rule these small blades exhibit very fine chipping. Edges are straight to slightly concave. Bases are concave. They are thin in cross-section. Complete blades in our collection range from 2.1 cm. (7/8 in.) to 5.7 cm. (2 1/4 in.) in length, from 1.2 cm. (1/2 in.) to 1.9 cm. (3/4 in.) in width, and average .3 cm. (1/8 in.) in thickness. Frequency: 29. This is the most commonly occurring type of chipped stone artifact found at the Coombs site in 1958.

2) Small, narrow, straight edged, round base (Fig. 35 p). This blade resembles the type above, except for its round base. Frequency: 5.

3)Small, narrow, straight edged, straight base (Fig. 35 q, r). A straight base distinguishes this type from the small blades above. Frequency: 10.

Side-notched points. All of the side-notched points may be placed in one category. Side-notched, stem narrower than shoulders (Fig. 36 a-f). Although there is considerable variation in size among the points of this type, the smallness of our sample does not warrant separating them. Edges

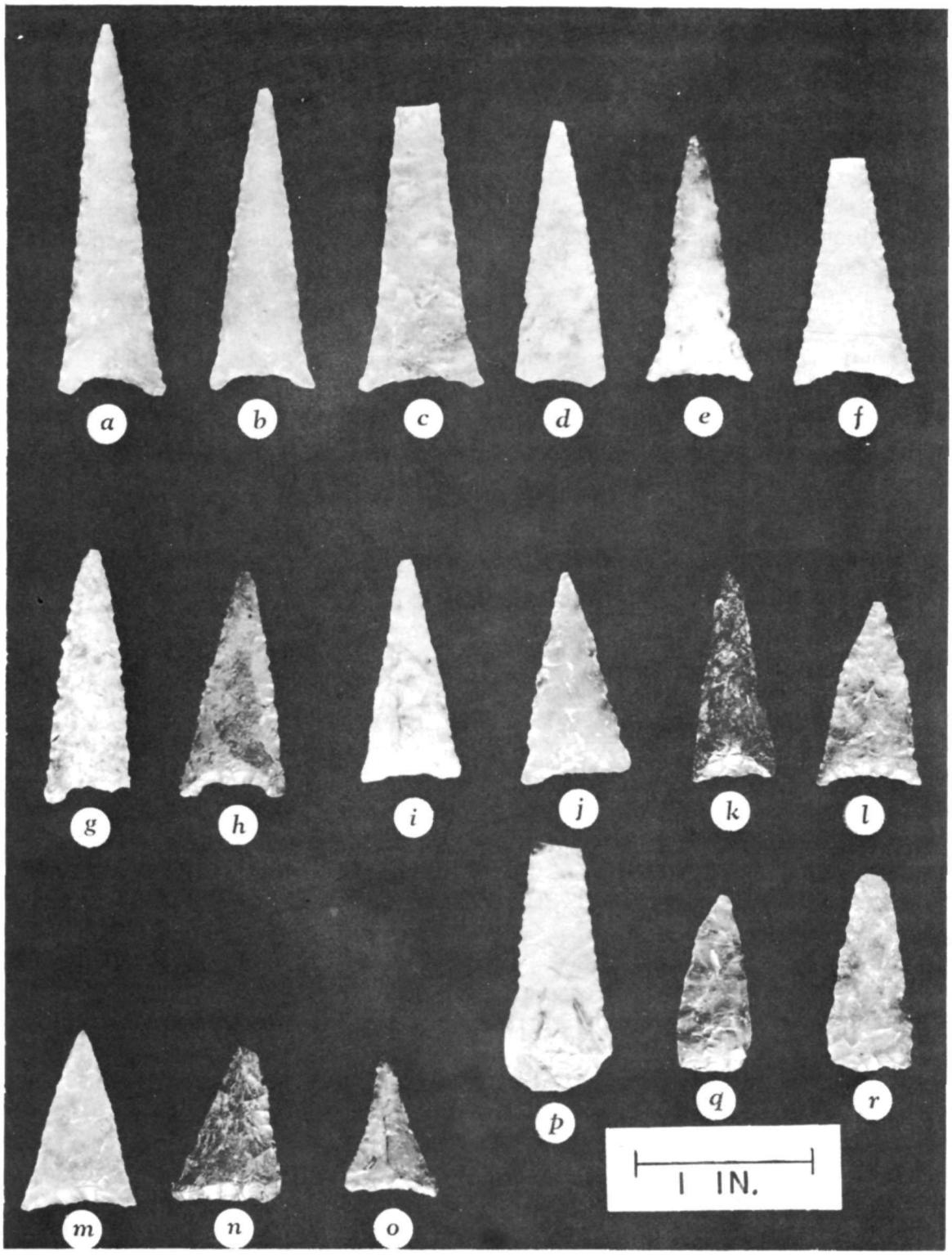


Fig. 35. Small blades. Narrow, straight edged, concave base, a-o; narrow, straight edged, round base, p; narrow, straight edged, straight base, q, r.

of these points are straight or slightly convex. Notches were placed in the edges near the bases of the points. Bases, which are narrower than the shoulders, are straight or somewhat rounded. In proportions, some of these points are broad; others are narrow. Chipping is fair. Length varies from 2.5 cm. (1 in.) to 5.7 cm. (2 1/4 in.), width from 1.2 cm. (1/2 in.) to 2.2 cm. (7/8 in.), thickness averages .4 cm (1/8 in.). Frequency: 6.

Diagonal-notched points. Several types of points may be identified in this class, although our collection is small.

1) Diagonal-notched, shouldered, straight stem (Fig. 36 g-i). These points have triangular bodies, and straight, round based stems. Edges of the bodies are straight to convex. Chipping is fair. Length ranges from 2.8 cm. (1 1/8 in.) to 4.8 cm. (1 7/8 in.), width from 1.6 cm. (5/8 in.) to 2.0 cm. (3/4 in.), and thickness averages .4 cm. (1/8 in.). Frequency: 3.

2) Diagonal-notched, sloping shoulders, tapered stem (Fig. 36 j). This triangular bodied, straight edged point has a short tapered stem. Chipping is fair. Length 2.4 cm. (1 in.), width 1.6 cm. (5/8 in.), thickness .4 cm. (1/8 in.). Frequency: 1.

3) Diagonal-notched, barbed, tapered stem (Fig. 36 k). In proportions, this point is narrow. Edges are straight except for a slight flaring at the barbs. The tapered stem is short. Chipping is very good. Measurements of the fragmentary specimen are: length 3.6 cm. (1 3/8 in.), width 1.8 cm. (3/4 in.), thickness .3 cm. (1/8 in.). Frequency: 1.

4) Diagonal-notched, barbed, straight stem (Fig. 36 l-n). This type of point has long barbs, and a narrow, straight, square based stem. Edges of the triangular body are straight. Chipping is very good. A typical specimen measures: 2.4 cm. (1 in.) long, 1.7 cm. (3/4 in.) wide, and .3 cm. (1.8 in.) thick. Frequency: 4.

Drills. All of the drills in our collection have narrow shafts and some sort of an expanded base (Fig. 37 a-e). Some specimens have bases that are slightly wider than the shaft; others have bases four times as wide as the shaft. The basal ends of some are well fashioned; others are unshaped. One example is T-shaped (Fig. 37a). Another specimen had been made from a broken blade (Fig. 37 b). Frequency: 9.

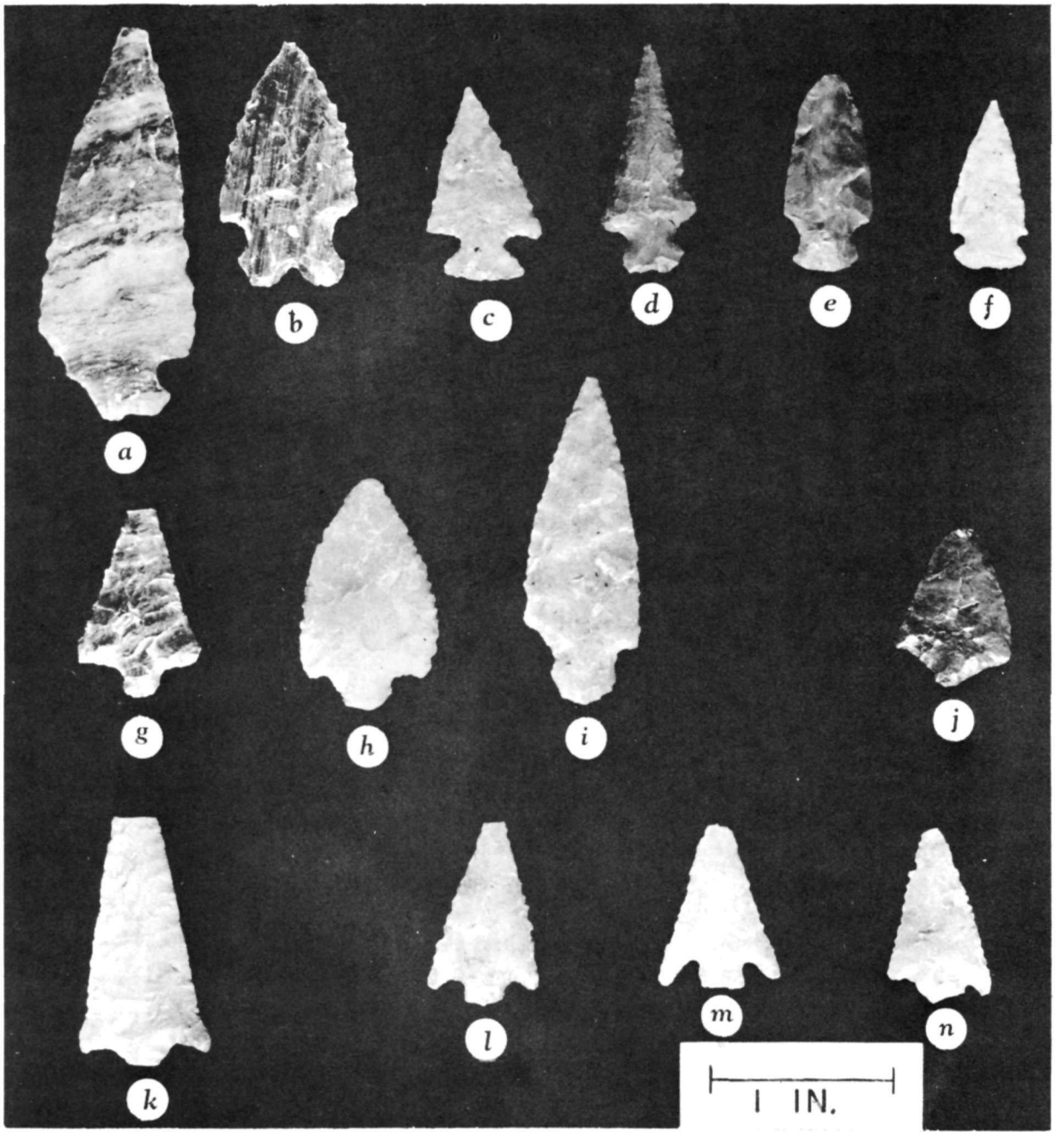


Fig. 36. Points. Side-notched, stem narrower than shoulders, a-f; diagonal-notched, shouldered, straight stem, g-i; diagonal-notched, sloping shoulders, tapered stem, j; diagonal-notched, barbed, tapered stem, k; diagonal-notched, barbed, straight stem, l-n.

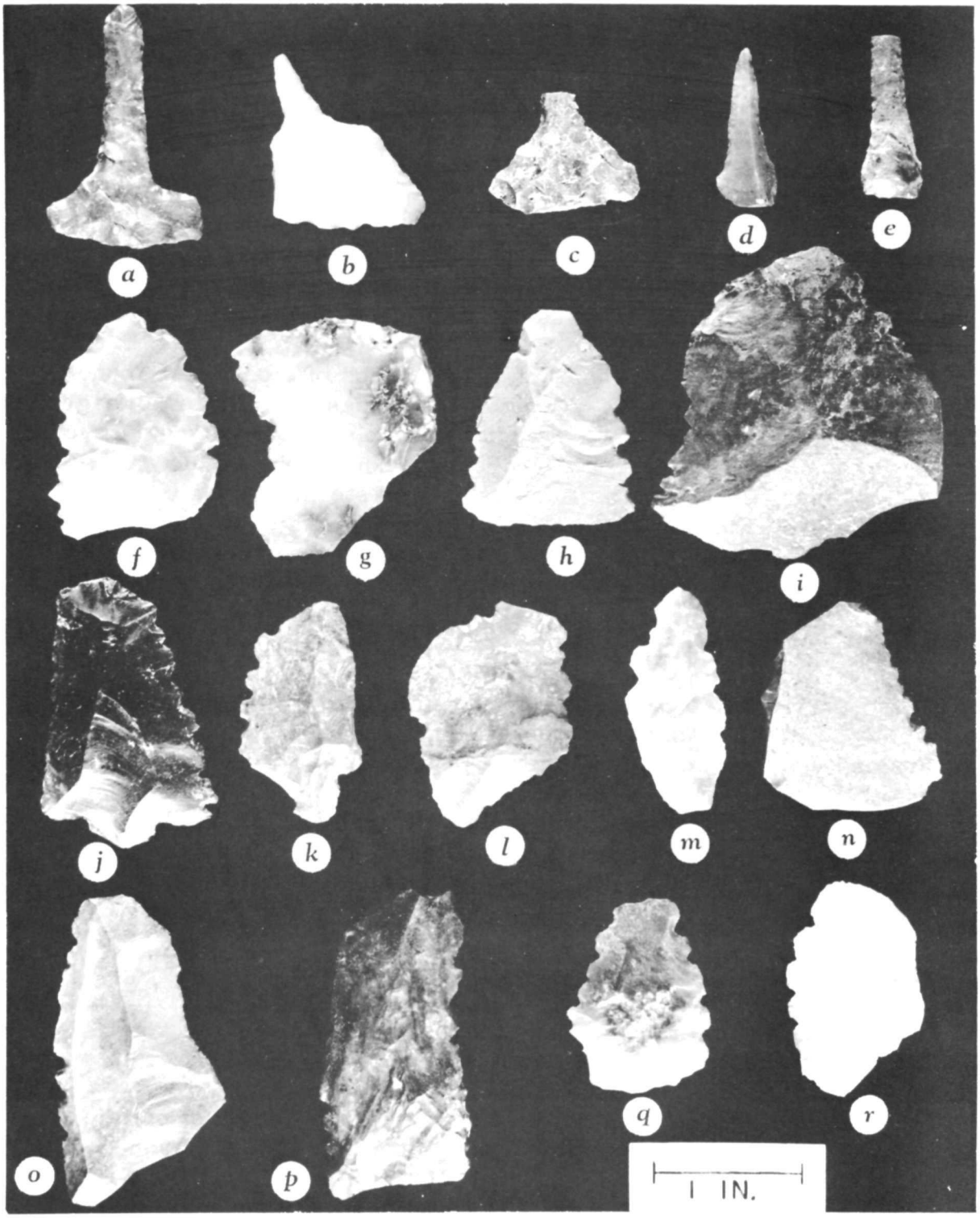


Fig. 37. Drills and notched flakes. Drills, expanded base, a-e; notched flakes, f-r.

Notched flakes, or saws. These artifacts consist of thin flakes of stone, one or more edges of which had been notched or serrated (Fig. 37 f-r). They could have served very well as saw-like cutting implements. Frequency: 18.

Utilized flakes. Among the large number of stone flakes that were recovered from all areas excavated, there are a few that show a little fine chipping along one or more edges. This may represent purposeful retouching of the flakes to produce cutting edges, or it may represent the dulling of naturally sharp edges through use.

Lids or abraders. Fragments of shaped slabs of stone were found in several of the areas excavated. Most of the pieces are of thin, fine-grained sandstone whose edges had been shaped by chipping. They appear to have been both rectangular and circular in shape. Some are of such size as to suggest that they had served as lids for bins or storage vessels; others appear to have been fairly small and in view of their smooth, fine-grained surfaces may have been used as abrading stones for objects which required a high degree of polish. Frequency: 12.

Artifacts of ground stone

The technique of shaping stone by abrading, or polishing, primarily was employed in the manufacture of milling stones. Metates and manos, mortars and pestles, and a few other artifacts were produced by this method.

Metates. Metates are relatively flat, or grooved, slabs of stone upon which the mano was propelled in the grinding of grains or seeds. They were made from vesicular basalt, trachyte, and rarely, fine-grained sandstone. The following types were obtained from the Coombs site:

1) Flat, with shallow oval grinding depression (Fig. 38 d). A typical specimen measures 37.8 cm. (15 1/2 in.) long, 28.1 cm. (11 1/2 in.) wide, and 5.7 cm. (2 1/4 in.) thick. The greatest diameter of the grinding depression is 13.4 cm. (5 1/2 in.); its depth is 2.5 cm. (1 in.). Frequency: 5.

2) Troughed (trough does not extend over entire length of metate) (Fig. 38 c). A typical specimen measures 40.2 cm. (16 in.) long, 31.8 cm. (12 1/2 in.) wide, and 8.8 cm. (3 1/2 in.) thick. The trough is 25.6 cm. (10 1/2 in.) wide, and 1.9 cm. (3/4 in.) deep. Frequency: 6.

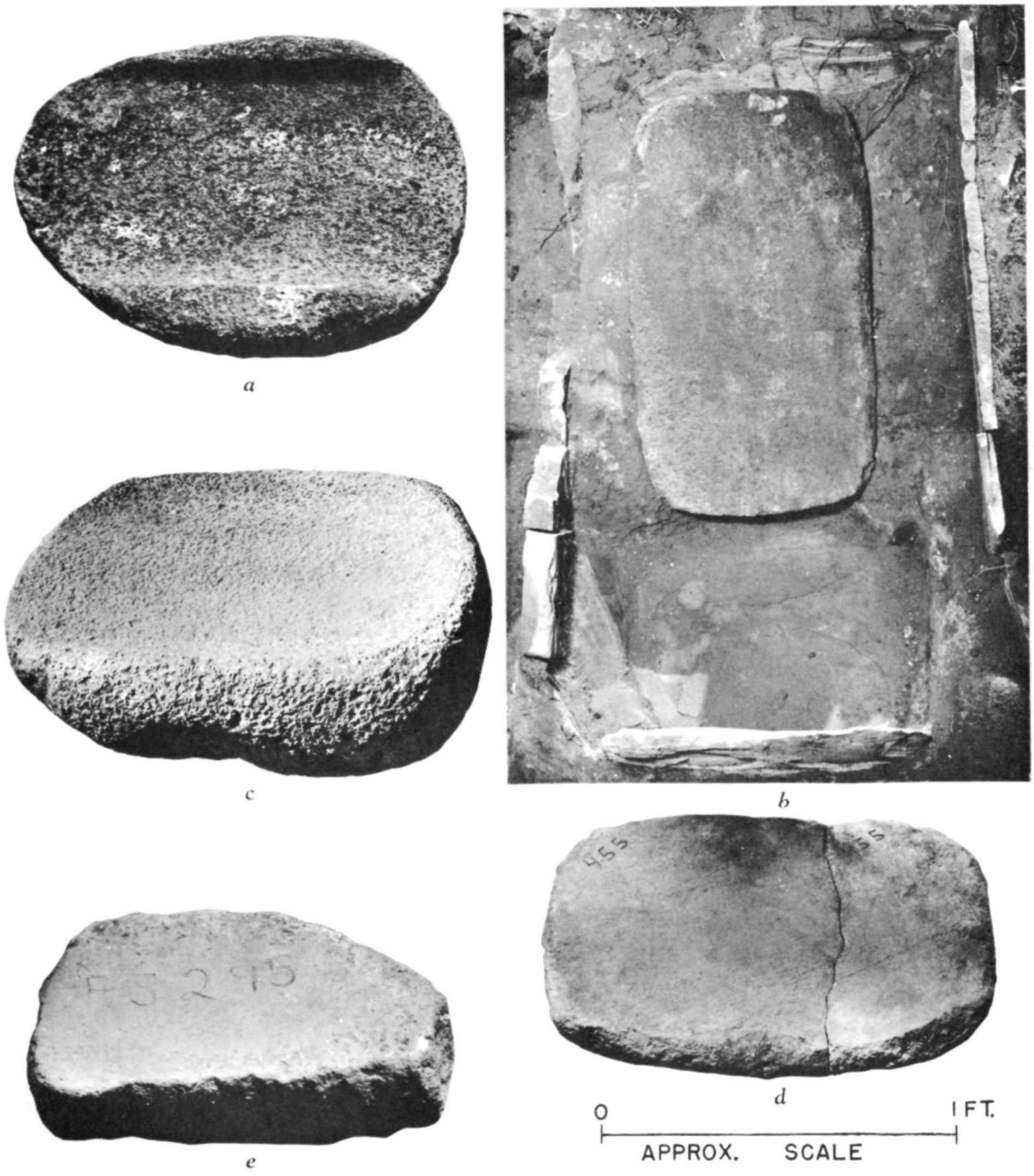


Fig. 38. Metates. Full-troughed, a; full-troughed in mealing bin, b; troughed, c; flat, shallow oval grinding depression, d; slab, flat grinding surface, e.

3) Slab, flat grinding surface (Fig. 38 e). A typical specimen measures 29.5 cm. (12 in.) long, 23.6 cm. (9 1/2 in.) wide, and 7.6 cm. (4 in.) thick. Frequency: 12.

4) Full-troughed (trough extends full length of the metate) (Fig. 38 a). A typical specimen measures 42.7 cm. (17 in.) long, 31.2 cm. (12 1/4 in.) wide, and 9.4 cm. (4 in.) thick. The trough is 25 cm. (10 1/4 in.) wide, and 2.5 cm. (1 in.) deep. Frequency: 4.

Manos. Manos were manipulated as hand stones upon the grinding surfaces of metates in the milling process. Various types were found at the Coombs site. Those that are described as rectangular actually have rounded corners and their edges are frequently slightly convex. The dimensions of all types of manos are not listed. Measurements of only the most frequently occurring types are given. An average size for all manos would be approximately 19 cm. (7 1/2 in.) long, 9.5 cm. (3 3/4 in.) wide, and 2.5 cm. (1 in.) thick. Those types that are described as large are of greater size; those that are listed as small are smaller than the average size.

1) Rectangular, one grinding surface--faceted. Usually made of vesicular basalt. Frequency: 11.

2) Large, thick, rectangular, one grinding surface--flat, grooved edges (Fig. 39 a). A typical specimen measures 22.8 cm. (9 in.) long, 10.8 cm. (4 1/4 in.) wide, and 5.7 cm. (2 1/4 in.) thick. Fashioned from vesicular basalt as a rule. Frequency: 30.

3) Large, thin, rectangular, one grinding surface--flat (Fig. 39 c). A typical specimen measures 20.6 cm. (8 1/8 in.) long, 11.4 cm. (4 1/2 in.) wide, and 1.9 cm. (3/4 in.) thick. Made of trachyte. Frequency: 30.

4) Small, rounded, two grinding surfaces--rounded (Fig. 39 d). Most of the small manos are made of sandstone. Frequency: 20.

5) Small, rounded, one grinding surface--rounded. Frequency: 24.

6) Small, rounded, one grinding surface--flat. Frequency: 4.

7) Small, thin, rectangular, one grinding surface--flat. Frequency: 6.

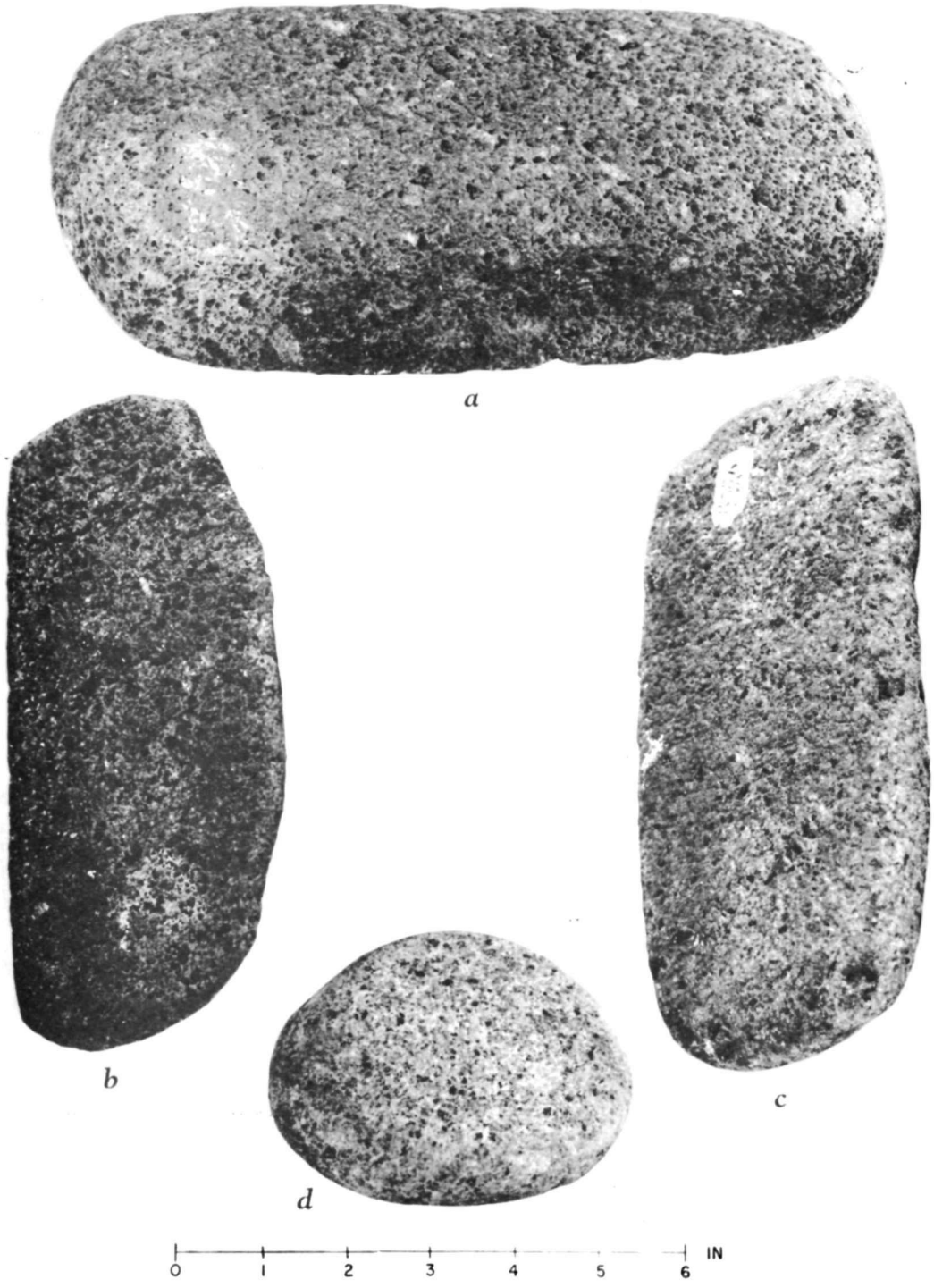
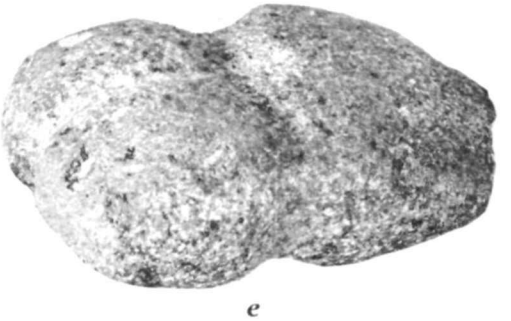


Fig. 39. Manos. Large, thick, rectangular, one grinding surface, flat, grooved edges, a; rectangular, two grinding surfaces, flat, cross-sections usually wedge-shaped, b; large, thin, rectangular, one grinding surface, flat, c; small, rounded, two grinding surfaces, rounded, d.

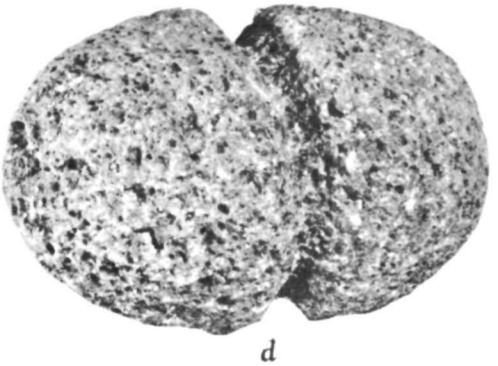
a

b

c



e



d

Fig. 40. Mortars and pestles, mauls, axes. Mortar, slab, with long pestle, a; mortar, hemispherical with short pestle, b; mauls, full-grooved, c, d; axe, e.

8) Rectangular, two grinding surfaces--flat, cross-sections usually wedge-shaped (Fig. 39 b). A typical specimen measures 20.3 cm. (8 in.) long, 10.1 cm. (4 in.) wide, and 2.5 cm. (1 in.) thick. Most specimens are made of fine-grained sandstone or of vesicular basalt. Frequency: 26.

9) Small, circular, two grinding surfaces--rounded. Frequency: 6.

10) Fragments of indeterminate shape. Frequency: 18.

Mortars. All mortars, with but one exception, are oval or hemispherical in outline and were fashioned from vesicular basalt (Fig. 40 b). The one exception was made from a thick, square-shaped slab of trachyte (Fig. 40 a). The smallest mortar is 12.1 cm. (4 3/4 in.) in dia. and 8.5 cm. (3 3/8 in.) high. The grinding hole is 8.2 cm. (3 1/4 in.) in dia. and 4.4 cm. (1 3/4 in.) deep. The largest specimen is 19 cm. (7 1/2 in.) in dia. and 11.4 cm. (4 1/2 in.) high. The grinding hole is 10.2 cm. (4 in.) in dia. and 6.3 cm. (2 1/2 in.) deep. Frequency: 4.

Pestles. Pestles are cylindrically-shaped stones with rounded ends (Fig. 40 a, b). They were made from vesicular basalt or trachyte. A large, heavy specimen measures 7.6 cm. (3 in.) in dia. and is 8.9 cm. (3 1/2 in.) long. A longer, but lighter specimen is 5.7 cm. (2 1/4 in.) in dia. and 13 cm. (5 1/8 in.) long. Frequency: 3.

Mauls. Heavy, full-grooved mauls of vesicular basalt were used as pounding tools (Fig. 40 c, d). The grooves encircle the middle of the mauls resulting in a double ended implement. They are oval in outline. A typical example measures 9.2 cm. (3 5/8 in.) in dia. and is 13 cm. (5 1/8 in.) long. An aberrant specimen was made from a flat slab of trachyte. It also is full-grooved. Frequency: 10.

Axes. One axe of trachyte was recovered (Fig. 40 e). It is full-grooved and has a second groove encircling the poll end at a right angle to the full groove. The bit is broken. It measures 14.8 cm. (5 7/8 in.) in length, 10.2 cm. (4 in.) in width, and 4.4 cm. (1 3/4 in.) in thickness. Frequency: 1.

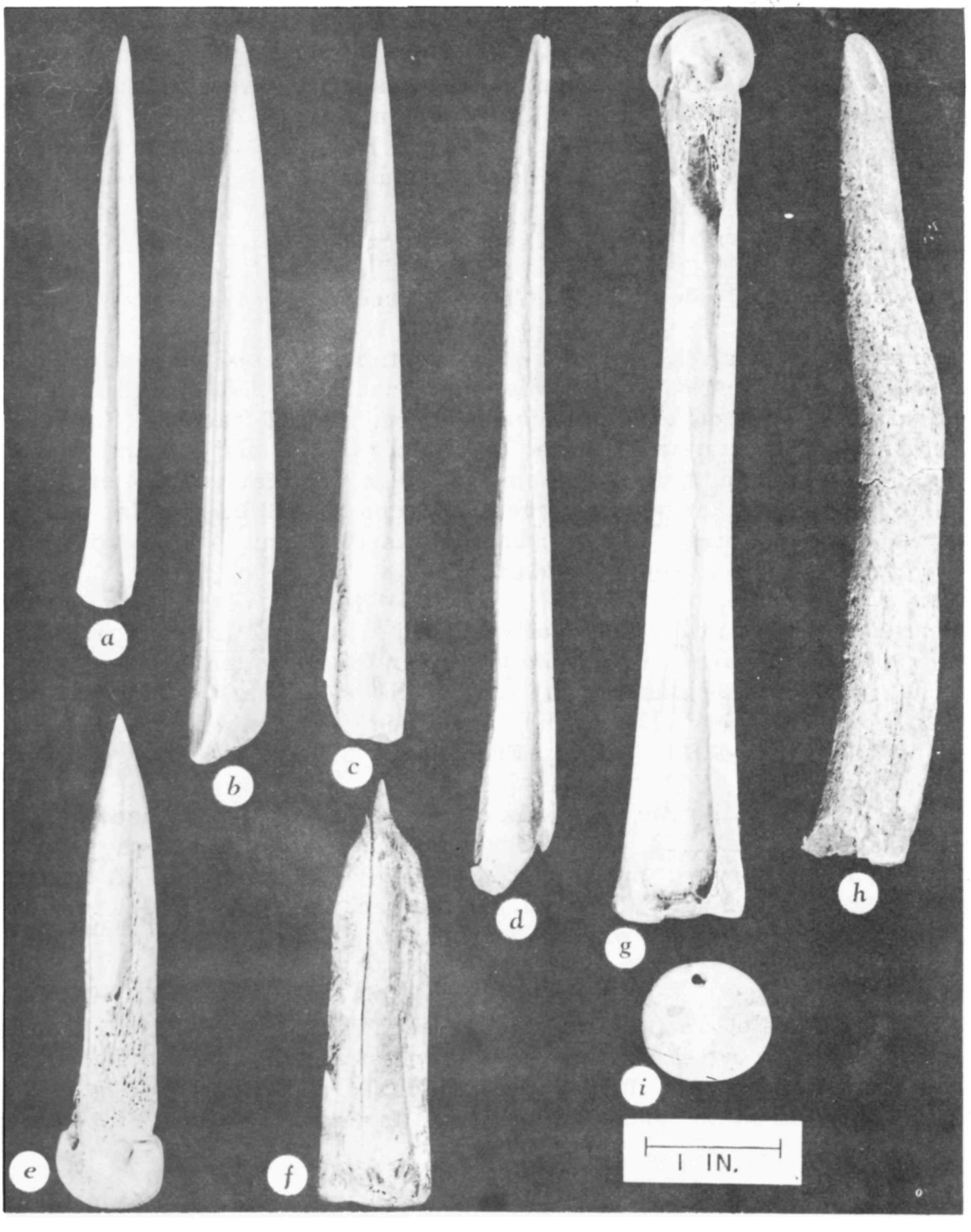


Fig. 41. Bone and antler implements, ornament. Awls, narrow, long pointed, a-d; awls, broad, short pointed, e, f; scraping implement of bone, g; chipping implement of antler, h; stone ornament, pendant, i.

Balls. Several balls of vesicular basalt or trachyte were found. Their use is unknown. A typical specimen measures 4.2 cm. (1 5/8 in.) in dia. Frequency: 3.

Artifacts of naturally-shaped stones

Hammerstones or pecking stones. These artifacts usually were prepared from waterworn pebbles or cobbles. Their natural shape was altered little, if any, except on their ends or edges, which were employed for hammering or pecking.

One type is approximately round and its entire surface is battered. Frequency: 5.

Another type consists of a flat, oval, waterworn cobble with battered edges. Frequency: 7.

A third type was made from an elongated pebble, the ends of which show the results of pecking or hammering. Frequency: 4.

Polishing pebbles. Polishing implements also were obtained from naturally-shaped stones. Small, waterworn pebbles, such as these, probably were utilized for smoothing the walls of clay vessels during their manufacture. Frequency: 18.

Artifacts of bone or antler

Deer bone and antler were favored for certain kinds of artifacts.

Awls. Bone awls probably were employed in both sewing and basket making. The entire collection of awls obtained from the Coombs site had been made from splinters of bone. In some instances the splinters had been taken from the shafts of bones; in other cases the splinters include part of a joint of a bone. When part of a joint was retained, it formed the head of the awls. Two types of awls may be identified.

1) Narrow, long pointed (Fig. 41 a-d). These awls have long, gradually tapering points. Their over-all length varies considerably. Specimens range from 8 cm. (3 1/8 in.) to 17.5 cm. (6 7/8 in.) in length; most of them are approximately 1.5 cm. (5/8 in.) in width. Two unique specimens are included. One is double pointed. The second has a small groove in the point

to facilitate pushing the sewing element through a hole (Fig. 41 d). Frequency: 41.

2) Broad, short pointed (Fig. 41 e-f). The bone splinters from which these awls were made tend to be broader than those from which the previously described type were shaped. The points of these awls are short, abruptly formed, and sometimes blunt. A typical specimen measures 8.5 cm. (3 3/8 in.) long, and 2.2 cm. (7/8 in.) wide. Frequency: 6.

Scraping implement. (Fig. 41 g). This implement was made from one-half of a cannon bone of a deer. The bone had been split lengthwise, and the surfaces along the break had been polished. The edges of the middle part of the bone are quite smooth and fairly sharp. It could have been employed as a two-handed scraping tool, possibly for removing flesh or hair from hides in the tanning process. It is 18 cm. (7 1/8 in.) long. Frequency: 1.

Chipping implements. (Fig. 41 h). Tines of deer antler appear to have been used as tools for chipping flint. Several pieces of the proper length for such implements and with rounded points were obtained. Frequency: 2.

Items of vegetable fiber

Two fragmentary items of charred vegetable fiber were recovered.

Cordage. This is a short piece of twisted fiber cordage. It has a 3-yarn braided strand approximately .6 cm. (1/4 in.) in dia. Frequency: 1.

Sandal. The item consists of a small, very fragile, charred section of what appears to be the toe of a multiple-warp cord sandal. Several warp elements of 2-yarn cord are identifiable, and the wefts look to be of single-ply yarn. Further details of weaving could not be determined. Frequency: 1.

Ornaments

Ornaments were exceedingly rare among the specimens obtained from the Coombs site. Several fragments of shaped potsherds, one with a hole drilled through it, may originally have served as ornaments. The only complete ornament is a pendant.

Circular stone pendant. (Fig. 41 i). This pendant was ground from a piece of fine-grained, orange colored siltstone. It is 2.5 cm. (1 in.) in dia. and .3 cm. (1/8 in.) in thickness. A small hole is located near the edge. Frequency: 1.

BURIALS

Burials of three individuals were removed from the site during the 1958 excavations. All had been interred in the midden-filled borrow pit north of Structure A. Two of the burials were of infants; the third was that of a child.

Burial 1

A fragmentary infant skeleton was found in a pit which had been dug through a part of the refuse deposit and into the caliche on the east side of the borrow pit. The burial had been made at a time when the pit was only partially filled with refuse as evidenced by undisturbed midden deposits overlying the burial pit. The pit in which the body had been placed is approximately 20 in. in dia., and the bottom of it is 3 ft. below the surface.

The bones of the infant are very fragile and are partly decayed. Portions of the cranium, the mandible, and fragments of ribs, vertebrae, and the long bones were recovered. The fragmentary condition of the skeleton made it difficult to determine the exact nature and position of the burial; however, it appears to have been placed on its back, head to the west.

Above the bones, and in a position to indicate that they had been placed on the chest of the infant, was a nested group of two pottery vessels and several large potsherds. The vessels are a Sosi Black-on-white bowl, and a Moenkopi Corrugated miniature olla.

Burial 2

Another burial of an infant was found 3 ft. southwest of Burial 1 and a few inches lower. It had been placed in the midden material in the borrow pit, and had been disturbed by rodents.

Parts of the cranium and several fragmentary pieces of ribs and the long bones were found. The head had been placed to the west. Adjacent to the head a gray miniature olla had been deposited. Several fragments of antler also were found near the burial.

Fig. 42. Burial 1, borrow pit. Looking north.

Fig. 43. Burial 3, borrow pit. Looking west.

Burial 3

The burial of a 6 to 8 year old child also was taken from the refuse in the borrow pit. It was almost directly below Burial 2 at a depth of 55 in. below the surface.

This skeleton was in a fair state of preservation. The cranium, the mandible, and pieces of most of the other bones of the skeleton, except the hand and foot bones, were present. The body had been flexed and placed on its left side, head to the west.

Seven pottery vessels were grouped around the head and torso of the individual. They consist of a small Moenkopi Corrugated olla, a gray miniature pitcher, a Johnson Gray jar, a Shato Black-on-white ladle, a Flagstaff Black-on-white bowl, a Tusayan Black-on-red bowl, and a Tusayan Polychrome bowl. A chipped stone point, one notched flake, and one mano also were found adjacent to the burial.

Other human skeletal remains

It seems probable that other burials had been placed in the borrow pit, for several isolated finds of human bones were made at various points in the refuse which filled the pit. These may have been disturbed by individuals digging for caliche or by burrowing rodents.

Human bones also occurred in other excavated areas, but not under circumstances which would lead one to believe that they were burials. Fragments of a tibia and a fibula and parts of a cranium, all of adult size, were scattered near the floor of Room 1 of Structure A. In Room 13 of Structure A, sections of three adult human bones, a tibia, a fibula, and a femur, were present at floor level. A well preserved adult mandible was removed from the contact zone between the gray, refuse-containing soil and the red, sterile soil 7 ft. north of Room 13 of Structure A.

OBSERVATIONS

This report has been designed to record the first season's excavations at the Coombs site. It is to be considered a preliminary report, and will be followed by a final report after another season of field work. Although conclusions would be out of order at this point in our investigations, a few tentative observations will be made, and matters requiring additional attention at the site will be pointed out.

The portion of the site excavated in 1958 shows very strong relationships to the Kayenta branch of Anasazi culture which centered in northeastern Arizona. This relationship is most obvious in the ceramic remains, 95.9 percent of which are Kayenta types. Certain architectural forms, notably the building of long rows of masonry-walled structures, also show similarity to the northeastern Arizona area. The dominant type of projectile point, a narrow, triangular, concave based point, likewise resembles a type commonly found in the Kayenta region. Other similarities to Kayenta culture may become apparent when a thorough comparative study is made of the Coombs site material after another season of field work. The correspondences noted above are only those that have resulted from a classification of the pottery obtained to date, from observations made during the excavation of a part of the site, and as a result of a preliminary examination of the artifacts recovered.

It seemed logical that some elements of the Fremont culture would be found at the Coombs site, since only a short distance to the north and east, in the Fremont River drainage, numerous sites of the Fremont culture are known to exist. In fact, before we started our excavations we knew that some Anasazi influence was present at the site, but we believed that we would also encounter Fremont culture once digging got under way. However, only small scale influence from the Fremont area is indicated. A few Fremont sherds have been recovered, and it is possible that the practice of building structures with walls of both masonry and jacal may prove to be a Fremont characteristic. We expected to find a larger quantity of Fremont material than has turned up to date.

Slight contact with peoples to the south and west of Boulder also is evidenced by a few potsherds from the Johnson and Virgin branches of Anasazi culture, which existed in southwestern Utah and from the Anasazi-like culture of the Sevier Desert of west central Utah.

The Coombs site is so dominated by Kayenta culture that it appears to represent a direct extension of that culture north from its center in northeastern Arizona. The Johnson and Virgin branches of southwestern Utah also were influenced by the Kayenta culture, and one might suspect that the Coombs site should be assigned to one of the other of these branches. However, from the information on hand, we are fairly certain that the culture of the Coombs site belongs to the Kayenta branch rather than to either the Johnson or Virgin branches.

Through pottery we not only are able to establish cultural affiliations between the Coombs site and other areas, but it also furnishes us our best mechanism for dating the site. As has been demonstrated in the section on pottery most of the ceramic material obtained from the site belongs to types that have been attributed to the Anasazi of the Kayenta region. Periods of manufacture assigned these wares cover the late Pueblo II and Pueblo III stages, that is, from approximately A. D. 1075 to A. D. 1275. However, it is not necessarily implied that the site was occupied for this entire period. Pottery also strongly suggests that all three of the structures excavated in 1958 were occupied contemporaneously. Similar evidence is presented by stratigraphy.

It has been suggested in the foregoing sections of this report that certain areas of the site should be investigated in more detail in 1959. Additional work should be undertaken in the following localities: 1) adjacent to the southeast corner of Room 13, Structure A, where possibly an jacal structure exists; 2) in Room 14 of Structure A, which has not been completely excavated; 3) in the rock-outlined room west of Structure A, which may date from a later period than does Structure A; and 4) along the southern slope of the hill where there appear to be midden deposits and burials. Furthermore, additional sections of the site, not previously examined, should be trenched or excavated next summer. The hilltop west of Structure A should be tested for additional structures. It appears that some masonry structures exist in that area, and jacal units also may be encountered. Search for a kiva in the vicinity of Structure A should be continued. If there is as much Kayenta influence at the Coombs site as is indicated by the pottery, one would expect to find one or more kivas.

Finally, all of the tentative observations listed above should be looked upon as hypotheses to be tested by additional field work. It may be of interest to the reader, and is certainly a concern of the writer, whether a larger sampling of the site will yield information in support of our present ideas or will necessitate revisions in our current opinions.

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