

UNIVERSITY OF COLORADO STUDIES

SERIES IN ANTHROPOLOGY

No. 9

CONTRIBUTIONS TO MESA VERDE ARCHAEOLOGY: I  
SITE 499, MESA VERDE NATIONAL PARK, COLORADO

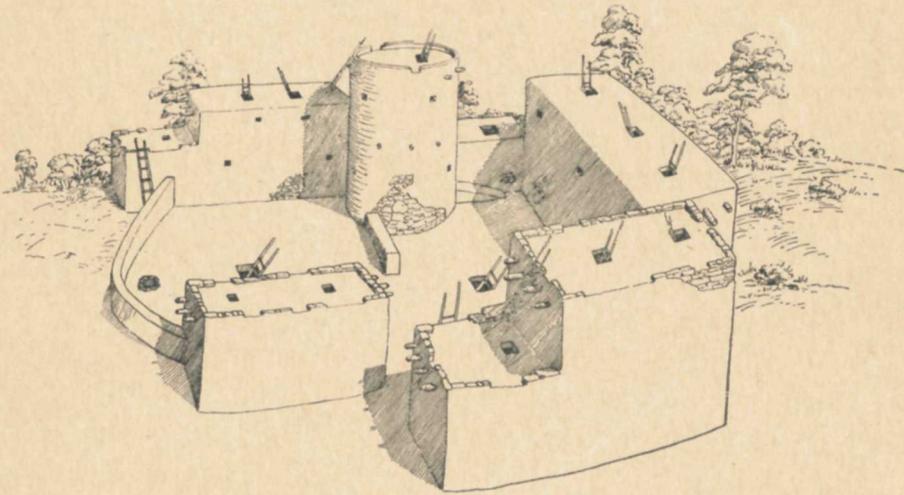
BY

ROBERT H. LISTER

WITH A CHAPTER ON POTTERY

BY

FLORENCE C. LISTER



UNIVERSITY OF COLORADO PRESS  
BOULDER, COLORADO, SEPTEMBER, 1964

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PROFESSOR OF ANTHROPOLOGY

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The following students participated in the excavation of Site 499: Judith Deutsch, Edith Farkas, and Oscar Muscarella, College of the City of New York; Elizabeth Bagby, Northwestern University; Shulamath Caine, University of Pennsylvania; Lee Dodge, Radcliffe College; Charles Hayes, III, Harvard University; Glen Cole, Reed College; Priscilla Fleming, Tulane University of Louisiana; William Aaron, Marianne Hojby, Donald Maling, Earle Meyer, and Robert Slabaugh, University of Colorado. Ruth and Edmund Churchill, Antioch College, were present for a portion of the session.

Clifford Merithew, a student at a later field session, prepared the schematic restoration of the site included as Figure 1 in this report. Glen Cole did the initial analysis of the pottery from the site. Subsequently, Florence C. Lister restudied the collection and reorganized the data to coincide with a more recent system of classification.

Terah L. Smiley of the Laboratory of Tree Ring Research, University of Arizona, provided the tree ring dates. Identification of the animal bones was accomplished by Wayne Coon, a graduate student, assisted by Lowell Swenson, of the University of Colorado Museum. I am most appreciative of the efforts of all of these individuals toward making this report more complete.

Our sincere thanks are extended to Oscar W. Carlson, Superintendent of Mesa Verde National Park during our work there, and to his staff for the many courtesies and assistance cheerfully extended us while we were in the field. Without their aid our program could not have been accomplished. The National Park Service provided us with housing facilities, certain excavating tools, some laborers, photographic assistance, and a great deal of guidance.

We are particularly grateful to Don Watson, then Park Archeologist, for his splendid cooperation and innumerable aids, and to Archeologist James A. Lancaster who assisted us throughout our excavations and who brought his many years of archaeological experience to bear upon excavation and interpretative problems. I have never worked with a finer person than Al Lancaster. I learned much from him, as did all of our students.

Permission to conduct excavations in Mesa Verde National Park was granted by the Department of Interior after consultation with Jesse L. Nusbaum, Department Consulting Archeologist.

ROBERT H. LISTER  
Boulder, Colorado  
August, 1963

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No. 9

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## I. INTRODUCTION AND SUMMARY

This report will describe the excavation of and analyses of data and specimens obtained from Site 499, Mesa Verde National Park, Colorado. It will not include discussions of the environment of the Mesa Verde area, the history of the Mesa Verde, the archaeological collections obtained from the region and archaeological research conducted there, or a summary of Mesa Verde prehistory. Those subjects have been thoroughly covered by such recent writers as J. O. Brew (1946:15-31), Deric O'Bryan (1950:5-7, 15-18), Don Watson in Lancaster et al. (1954:1-6), Erik Reed (1958:6-10), and Joyce Herold (1961:5-44).

Site 499 is situated at the northern end of Chapin Mesa, the largest of several elongated mesas which comprise the Mesa Verde in southwestern Colorado. The elevation of the site is about 7,700 feet, and the adjacent mesa top has a stand of pinyon pine and juniper characteristic of the region. The site proper was overgrown with sagebrush and grasses prior to excavation.

Numerous excavated and unexcavated sites of Pueblo II and Pueblo III age exist in the area. They are referred to as the Far View or Mummy Lake group, taking their name from Far View House which was excavated by J. W. Fewkes more than 45 years ago or the much discussed reservoir known as Mummy Lake.

Recently Arthur Rohn (1963:441-455) published the results of his studies of soil and water conservation practices on Chapin Mesa. He concludes that the density of settlement of the Far View area in Pueblo II and Pueblo III times is directly related to the Mummy Lake water collection system which provided a domestic water supply for nearby residents as well as irrigation water for farming terraces in the vicinity.

Prior to excavation, Site 499 had been described in the Archaeological Site Survey of Mesa Verde National Park as a pueblo belonging to the Pueblo II-III period which consisted of 12 rooms with two kiva depressions and a tower. Rooms were estimated to have stood approximately one story; the tower was estimated to have been taller. Its suggested age was based

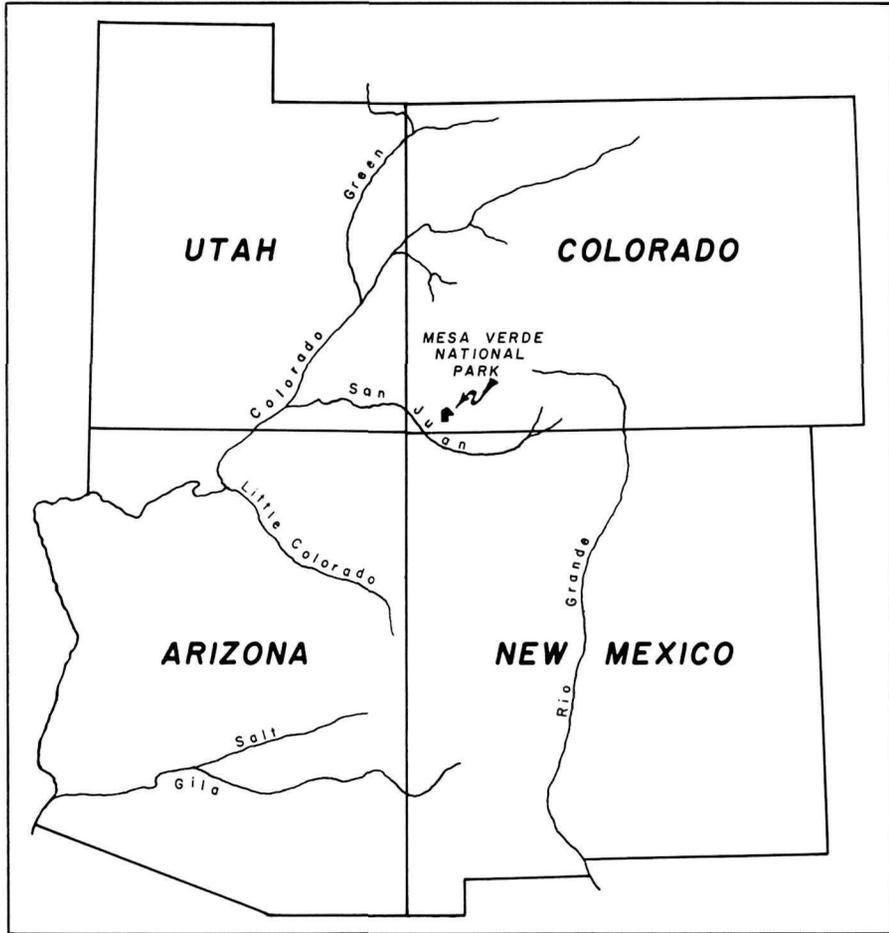


FIGURE 2. Location of Mesa Verde National Park in the Southwestern United States.

upon visible architectural features and types of pottery collected from the pueblo and associated refuse heap. As will be noted below, the surveyors, Lancaster and Abel, described the site quite correctly. Of course excavation revealed numerous details about the structure and its history which could not be determined from surface observation alone.

Site 499 was chosen for excavation when, after discussions with National Park Service personnel, it was decided that the clearing of a site with a tower and kivas should shed further light upon the connection between those

types of features and because pottery collected from the surface of the ruin included Mancos, McElmo, and Mesa Verde Black-on-whites. Further information was desired about those types and their relationships with one another.

The National Park Service also wished to have several more sites in the Far View area excavated in order that a more comprehensive interpretation of the prehistory of that section of Chapin Mesa could be presented to visitors.

With that in mind, National Park Service archeologists stabilized the site following its excavation by rebuilding the walls that were in a poor state of preservation, by establishing a drainage system to facilitate the removal of water from melting snows and rains from the site, and by other techniques directed toward the preservation of the structure.

During the summers of 1954 and 1955, several hills of corn, beans, and squash were planted in the dirt that had been dug through in the excavation of the trash mound of the site. This uncompacted, ash-impregnated soil proved very fertile and all three plants produced crops each summer, once the garden plot was surrounded by a high fence to keep out the deer. The plants received only the natural moisture from summer rains.

An experimental corn field has been planted on the lower end of Chapin Mesa each summer since 1928. It has seldom failed to yield at least a partial crop. However, since Site 499 is about 700 feet higher than the experimental field, a test plot at the greater elevation was desired. The experiment proved the practicality of horticulture under aboriginal conditions at that elevation.

The pages that follow describe the excavation of Site 499 and the interpretations and inferences drawn from analyses of architectural features, artifacts, burials, and information collected during the digging and from laboratory studies. Some statements of a comparative or distributional nature are included but more thorough and comprehensive observations will be undertaken in a later report in this series following the presentation of data upon sites 866 and 875.

In summary it can be stated that Site 499 was built in part over an earlier pueblo, evidence for which was encountered beneath the floors of the northern rooms of the site and in Kiva A. The earlier structure was not completely traced because of the desire to preserve as much of the later structure as possible so that it could be displayed as part of the interpretative program of Mesa Verde National Park.

The first village, probably of early Pueblo II age, had walls of poorly shaped masonry a single stone in thickness. Only a few foundation stones remained in place but indications were that it was L-shaped and included at least five rooms. South of the rooms, and within the angle of the L, was a

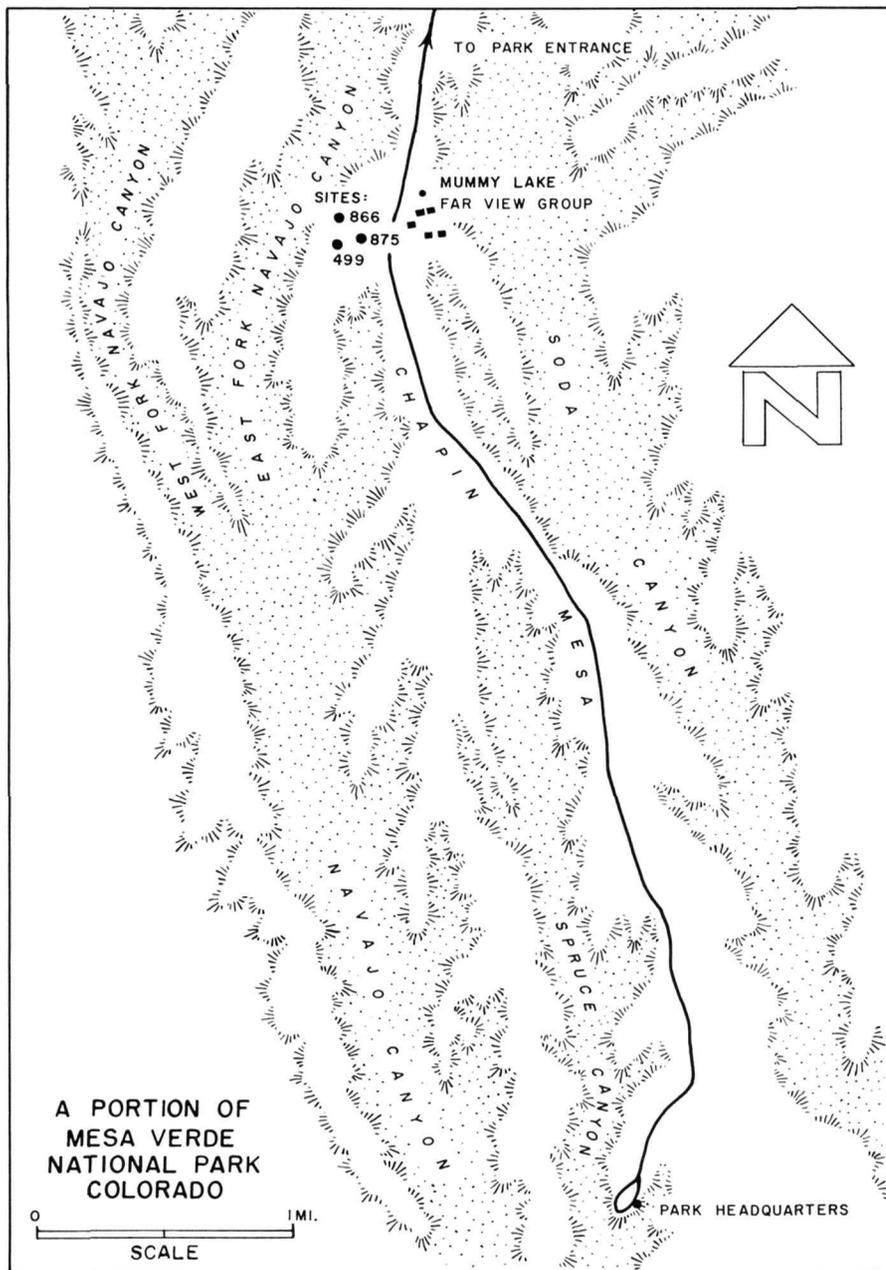


FIGURE 3

circular kiva which seems to have had an underground passage leading to one of the rooms.

This village was abandoned, and apparently most of the stones employed in its construction were reused in the building of the later village at the same location, Site 499, or in neighboring habitations. The period of time between the abandonment of the first village and the beginning of Site 499 does not appear to have been great.

Site 499 was commenced by building a row of three masonry-walled rooms over the ruins of the rooms of the first village and remodeling the original kiva by lining its walls and adding a southern recess to it. A tower also was constructed west of the kiva. Subsequently a row of three additional rooms was added to the east of the kiva and a passage, partly subterranean, was built connecting the kiva with the tower.

A small room, used for milling operations, was built at the northwest corner of the village and a wall extended across the site from the tower to the southern end of the eastern row of rooms. This resulted in a compact, approximately rectangular unit surrounded on three sides by the tower and rows of rooms and on the south by a masonry wall. Within the courtyard created by the encircling elements was a subterranean kiva. Refuse from this village was deposited a short distance to the south of the structure in what we have termed Trash Mound 1.

At a slightly later date the village was enlarged by the addition of a row of three rooms extending south from the tower and two rooms south of the eastern row of rooms. This created a second courtyard in which another kiva was built. An underground passage was dug between the two kivas. A wall connecting the southern ends of the room blocks enclosed the second courtyard. The southwestern part of this addition was built over the original trash mound and thereafter most trash was dumped farther to the southeast in Trash Mound 2.

At its maximum stage of development, Site 499 contained 12 ground-floor rooms and a tower arranged in a rectangle-like shape about two courtyards, each of which contained a kiva. The two kivas and the tower were connected by passageways. It is likely that the pueblo stood two stories high in places and the tower was even higher. A total of 15 to 18 rooms may have been in use at the time of greatest occupation. Conceivably 40 to 50 individuals resided in the village.

Artifacts and pottery recovered from the pueblo and trash mounds — as well as the architectural features of the rooms, tower, and kivas — indicate an early Pueblo III age for the site. Two reliable tree ring dates were obtained. Both are A.D. 1123. One date came from a piece of charcoal collected from the bottom of Trash Mound 2, the area of trash deposit after the site reached its maximum size. Because the fragment of charcoal came

from the bottom of the trash, it is believed that it was placed in the refuse early in the history of the deposit following the addition of the second kiva and its flanking rooms to the pueblo.

A.D. 1123 thus marks an approximate midpoint in the life of the village. It was occupied for periods of time both prior to and subsequent to that date and probably spanned the period of time between A.D. 1100 and 1150. Its abandonment must have occurred when the building boom in the Far View area had subsided; otherwise the walls of the deserted village would have been torn down and the shaped stone carried away and incorporated in other buildings in the vicinity.

Obtained from the site were 19,250 potsherds and 33 whole or restorable vessels. For the most part they form a homogeneous collection typical of the Mesa Verde with but few intrusives. Five types of pottery make up 96 percent of the sherds. Distribution of these types indicates that during the life of the village Mancos Corrugated was the most common utility ware but Mesa Verde Corrugated was gaining in favor. McElmo Black-on-white was the preferred decorated type. Mancos Black-on-white, a type in greater use earlier, was declining in popularity while Mesa Verde Black-on-white was yet to gain the importance it reached later. An early Pueblo III date is indicated by this pottery complex.

The assortment of artifacts and ornaments also is characteristic of the Mesa Verde during the time the pueblo is thought to have been in existence. It includes many milling stones and other implements of ground stone. Chipped stone artifacts and all types of ornaments are scarce. Bone piercing and scraping tools are common.

Ten human burials were recovered. Nine were taken, together with associated funerary offerings, from the refuse deposit and one was found on the floor of Kiva B.

Subsistence was based upon the cultivation of corn, beans, and squash. Deer and turkey furnished the bulk of the meat for the village. Other useful wild plants and animals were collected and hunted.

## II. EXCAVATION OF THE REFUSE DEPOSITS

When Site 499 was cleared of the growth of trees, brush, and grass which covered the area, it was apparent that a fairly large trash mound existed southeast of the village and that possibly another smaller deposit of trash lay to the south of the pueblo. Subsequent testing verified the existence of the two deposits. The one south of and extending in part beneath the village is labeled Trash Mound 1 since it is the earlier of the two, and the deposit to the southeast of the pueblo is identified as Trash Mound 2.

### TRASH MOUND 2

The refuse deposit southeast of the pueblo was excavated first. A system of grid lines was established to divide the area into units six feet square. A zero line was surveyed through the center of the long axis of the mound (north 35° west). Parallel lines were then established at six-foot intervals to the right and left of the zero line. These lines were labeled R (right) 1, R2, etc., to the right of the zero line, and L (left) 1, L2, etc., to the left of the zero axis. Then a set of lines six feet apart at right angles to those just described was surveyed, thus establishing a set of squares. The second set of lines was identified by letters A, B, C, etc. Wooden stakes were placed at the corners of the squares. A square was identified by the lines which intersected at the lower left-hand corner of the square as one stood on a lettered line facing northwest, A0, AR1, AR2, etc. (see Figure 4).

Each square of the trash mound was excavated as a unit. The dirt was carefully removed by shovel, hand picks, and trowels and examined for specimens and information which might be significant in reconstructing the history of the site. Dirt was removed from the squares in a single level since the bottom of the culture-bearing deposit was reached at depths of from 9 to 12 inches below the surface.

A number of artifacts of stone and bone and a large quantity of potsherds were removed from Trash Mound 2; however, no burials nor whole pottery vessels were encountered. Artifacts and pottery obtained from this deposit are described in later sections of the report.

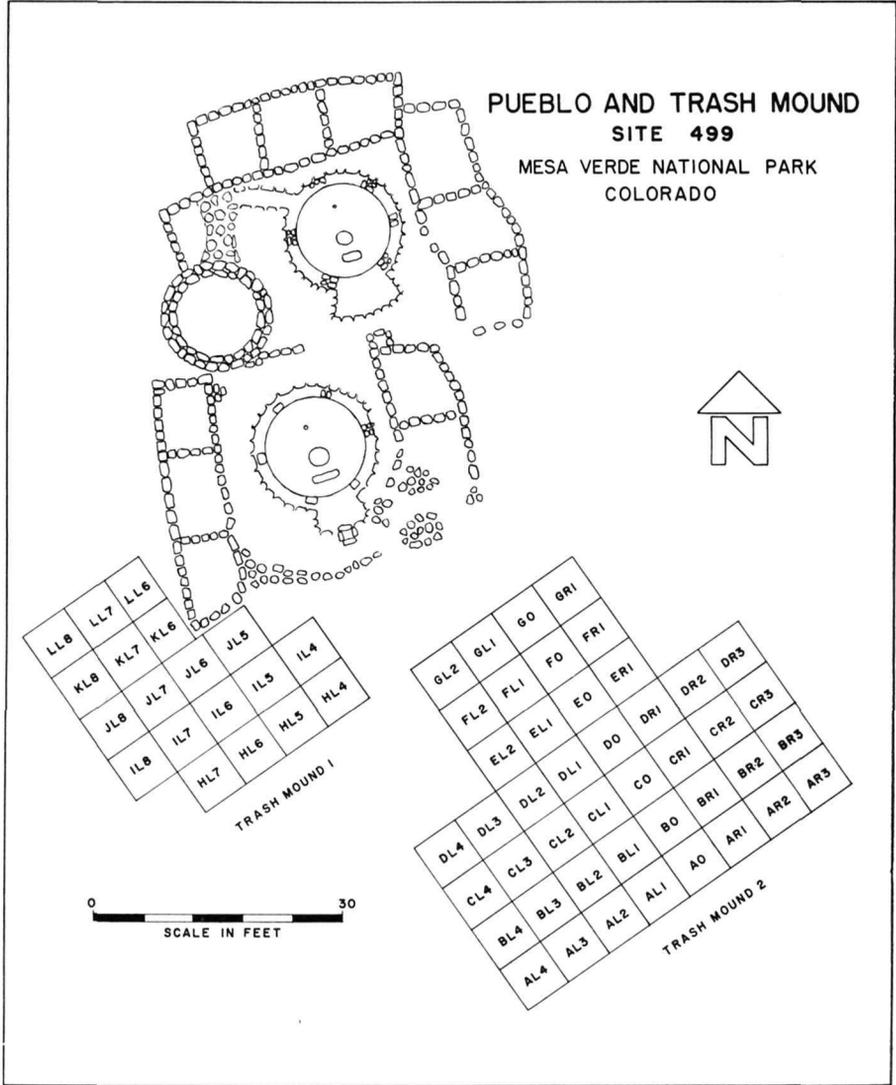


FIGURE 4

## TRASH MOUND 1

A series of test pits in the area south of the village revealed that a small deposit of fairly deep refuse existed there. The grid system established for Trash Mound 2 was expanded to include this deposit and excavation followed the same procedure outlined above. Some of the units of this midden were excavated in two levels since refuse had accumulated to depths of 28 inches in places and it was thought that stratigraphic data might be obtained; however, analysis of materials from the two levels indicates no significant differences. As excavation of the refuse approached the walls of Room 9, it became apparent that the room had been built upon the trash deposit. However, excavations were not extended beneath the walls of the room. In fact, squares KL6 and LL6 were not completely excavated to avoid undercutting the walls of the room.

A collection of artifacts and potsherds as well as nine partial or almost complete human skeletons, some with associated burial furnishings, were recovered from Trash Mound 1. They are described elsewhere in the report. Two dog skeletons were encountered. One was almost complete. Associated with it was a pottery vessel suggesting that the dog had been buried with its own bowl for food and water.

## GENERAL OBSERVATIONS

As explained elsewhere, the relative ages of the two trash deposits have been determined by the types of potsherds recovered from them. One tree ring date was obtained from Trash Mound 2. The sequence of development of the two middens also is demonstrated by the fact that at one stage the village expanded over part of Trash Mound 1. Once Trash Mound 2 was established, Trash Mound 1 probably was not completely abandoned—some pottery types typical of the later occupation of the site occur there.

No burials were located in Trash Mound 2. Presumably deaths occurred in the pueblo after trash was deposited in that area since Trash Mound 2 was in use for about one-half of the life of the village. Perhaps because interment was initiated in Trash Mound 1, that area continued to be employed as the burial place by tradition, or possibly the greater depth of the deposits there made it more practical to continue to place burials in that area.

### III. EXCAVATION OF THE PUEBLO

Site 499 consists of 12 masonry-walled surface rooms and a tower arranged in a roughly rectangular plan around two subterranean kivas. The descriptions and measurements of each unit and the observations noted during excavation and specimens recovered from each unit follow.

#### ROOM 1

##### DIMENSIONS

In listing dimensions of all architectural features, inside measurements are given for wall lengths; wall heights are in relation to the floor level of the room. Thus, the lengths and heights of some walls common to two rooms vary depending upon the room in which the measurements were taken.

North wall — length, 8 ft.; greatest height, 18 in.

South wall — length, 7 ft. 2 in.; greatest height, 26 in.

East wall — length, 7 ft. 8 in.; greatest height, 14 in.

West wall — length, 8 ft. 6 in.; greatest height, 14 in.

Average thickness of walls — 12 in.

##### ARCHITECTURAL DETAILS

*Walls:* Foundations for the walls had been prepared by digging shallow trenches and setting lines of large flat rocks in the trenches. The walls were then built upon these foundation stones, most of which were wider than those employed in the wall, thereby forming a solid base for the wall. No apparent doorways.

North wall — maximum of three courses of stones standing. Both large and small stones employed.

South wall — maximum of four courses of stones standing. Only large stones used. Wall but one stone wide.

East wall — maximum of three courses of stones standing. Only large stones used. Wall a single stone in width. Some stones have pecked faces.

West wall — maximum of three courses of stones standing. Both large and small stones used in the wall. Outside faces of most large stones are pecked.

*Floor:* Hard-packed, sandy floor. No firepit.

##### OBSERVATIONS DURING EXCAVATION

A large number of stones, many of which undoubtedly had been incorporated in room walls, were removed from the room fill during excavation. A rodent burrow was encountered adjacent to the east wall. A concentration of charred vegetal remains was found in the fill. Exploratory excavations were extended to 6 inches below the level of the floor.

##### SPECIMENS RECOVERED

In addition to a few potsherds and some obsidian and chert flakes, which occurred throughout the fill, two stone axes and a restorable Mesa Verde Corrugated jar were found on or adjacent to the room floor.

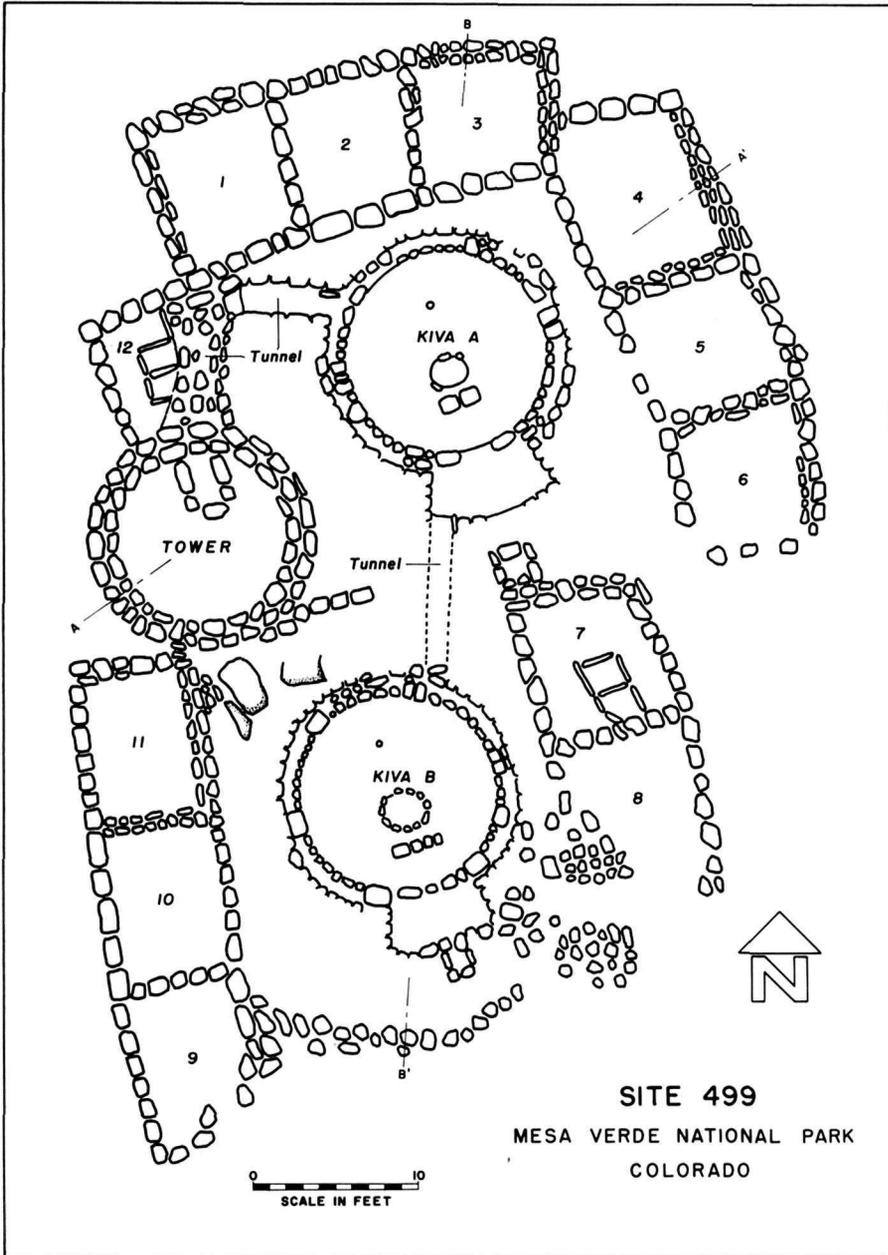


FIGURE 5

## Frequencies of potsherds:

Types	Room Fill	Beneath Floor
Chapin Gray	2	4
Mancos Corrugated	40	6
Mesa Verde Corrugated	9	7
Mancos Black-on- white	7	1
McElmo Black-on- white	7	5
Mesa Verde Black-on- white	4	1
Totals	69	24

## ROOM 2

## DIMENSIONS

North wall—length, 7 ft. 8 in.;  
greatest height, 28 in.

South wall—length, 6 ft.; greatest  
height, 22 in.

East wall—length, 8 ft.; greatest  
height, 34 in.

West wall—length, 8 ft.; greatest  
height, 14 in.

Average thickness of walls—15 in.

## ARCHITECTURAL DETAILS

*Walls:* All walls are a single stone  
in width and are in poor condition.  
Some stones exhibit pecked surfaces.  
No wall openings.

North wall—maximum height of four  
standing courses of stones.

South wall—maximum of two courses  
of stones standing. It is badly  
slumped to the south. Most of this  
wall had fallen into Kiva A.

East wall—maximum of six courses of  
stones standing.

West wall—maximum of three courses  
of stones standing.

*Floor:* A hard-packed dirt floor  
slopes to the north. No firepit.

## OBSERVATIONS DURING EXCAVATION

The dirt fill of this room was red in  
color and contained many stones

which had fallen from the walls. A  
rodent burrow penetrated the west  
wall. Two large sandstone slabs, lying  
horizontally, were encountered just  
above floor level. The tops of a row of  
four stones, oriented east-west, were  
revealed just below floor level. They  
appear to have been part of a wall of  
an earlier structure.

## SPECIMENS RECOVERED

Beneath the sandstone slabs men-  
tioned above, a group of five manos  
and one stone axe was found. Four  
additional manos resting in a cache,  
one above another, a rubbing stone,  
and several worked stones also were  
recovered from the room.

## Frequencies of potsherds:

Types	Room Fill	Beneath Floor
Chapin Gray	8	1
Mancos Corrugated	69	12
Mesa Verde Corrugated	22	4
Cortez Black-on-white	1	
Mancos Black-on-white	11	1
Mancos Black-on- white, Corrugated exterior	1	
McElmo Black-on- white	12	3
Mesa Verde Black-on- white	1	
Mesa Verde Polychrome	2	
Totals	127	21

## ROOM 3

## DIMENSIONS

North wall—length, 7 ft.; greatest  
height, 27 in.

South wall—length, 6 ft. 10 in.; great-  
est height, 16 in.

East wall—length, 6 ft. 5 in.; great-  
est height, 21 in.

West wall—length, 7 ft.; greatest  
height, 34 in.

Average thickness of walls—12 in.

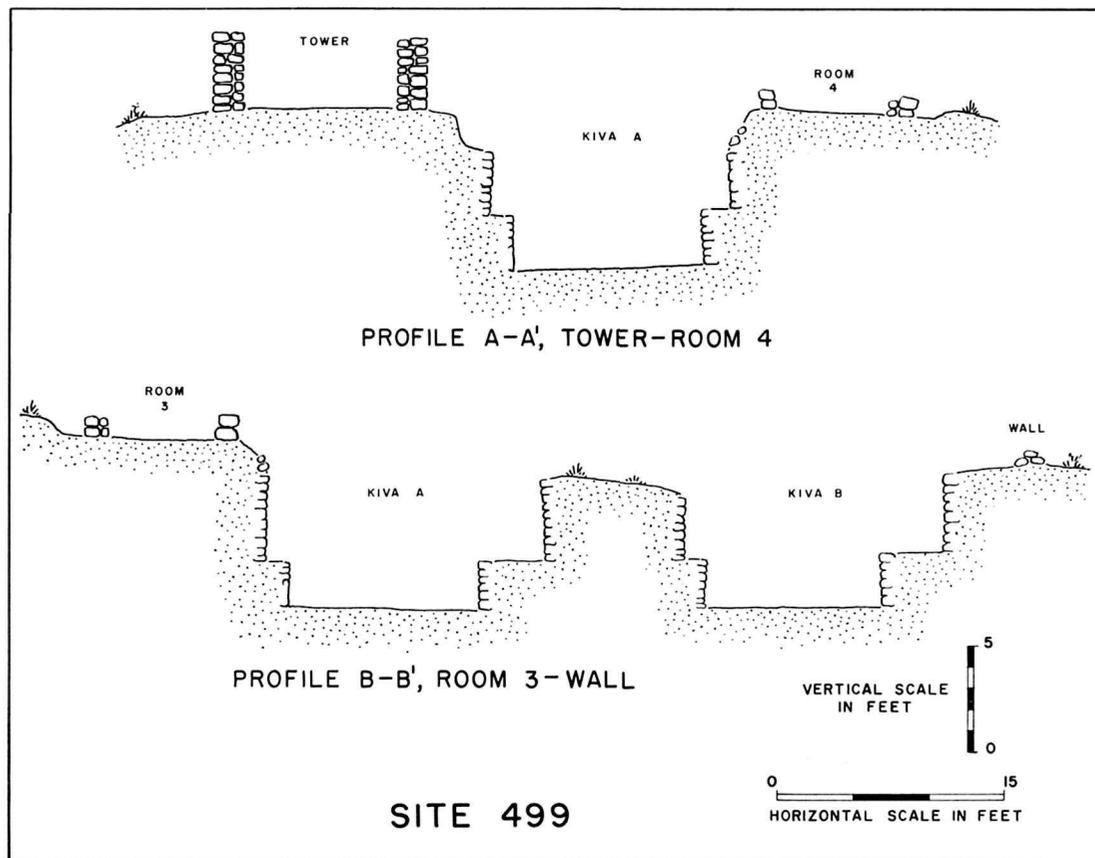


FIGURE 6



PLATE 1. Site 499, before clearing, looking northwest



PLATE 2. Site 499, after clearing, looking northwest. Mound at left covers tower.



PLATE 3. Site 499, during excavation, looking north. Mound at left covers tower. Individuals in foreground working in Kiva B.



PLATE 4. Site 499, during excavation, looking north. Individual on left is clearing Room 9; individual in center is sweeping pilasters of Kiva B.

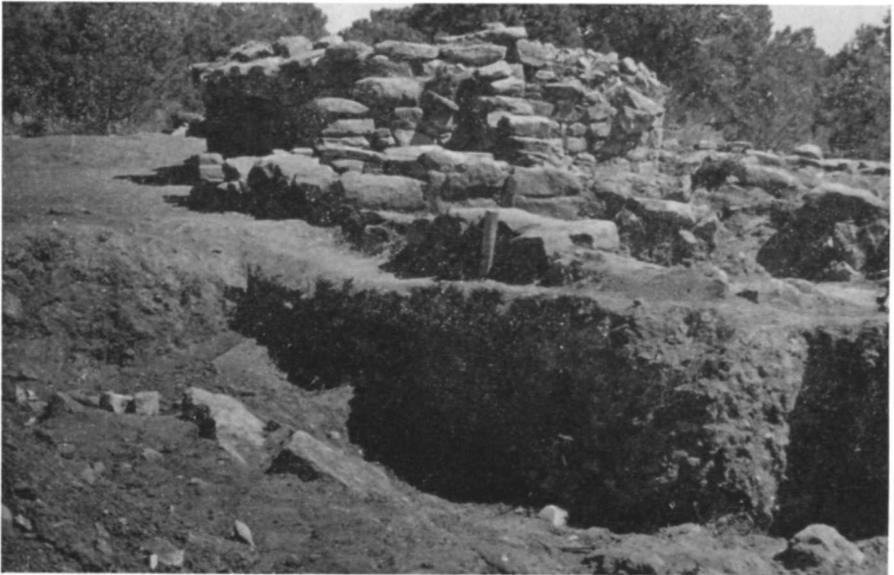


PLATE 5. Relationship of Trash Mound 1 to Room 9. Note depth of refuse and fact that foundation of Room 9 is built on the trash deposit. Tower in background.



PLATE 6. Room 11, looking east. Note flagstone floor and fact that part of eastern wall has toppled outward as a unit.



PLATE 7. Site 499, after excavation, looking south



PLATE 8. Site 499, after stabilization, looking south

## ARCHITECTURAL DETAILS

*Walls:*

North wall — maximum of six courses of masonry standing. Most of the courses are two stones in width. A foundation of large stones underlies the wall.

South wall — maximum of two courses of stones standing. Wall is one stone wide and is badly slumped to the south.

East wall — maximum of three courses of stones standing. Both large and small stones used in the wall which is two stones wide in most places.

West wall — maximum of six courses of stones standing. Wall is one stone in width.

No evidence of doorways.

*Floor:* Several large flat stones were revealed at floor level suggesting that the floor may have been covered, at least partially, with flagstones. The remainder of the floor is hard-packed dirt. A few stones of the wall of an earlier structure were found below the floor level. No firepit.

## OBSERVATIONS DURING EXCAVATION

The dirt fill in this room contained many stones which had fallen from the walls and a great number of roots from a small pinyon pine tree which grew in the vicinity. Several concentrations of small bits of charcoal occurred.

## SPECIMENS RECOVERED

A metate was found leaning against the west wall of the room. A group of artifacts was found associated with a rectangular slab of sandstone uncovered just above floor level. The slab was broken in half, but when fitted together is of the right size to have served as a hatch cover. Just above the slab two manos were found, and a group of four bone awls was recovered from beneath it. Also recovered from the fill in the room, in

addition to potsherds, were a rubbing stone, a fragment of a mano, and some small bits of malachite.

Frequencies of potsherds:

Types	Room Fill	Beneath Floor
Chapin Gray	1	
Mancos Corrugated	73	6
Mesa Verde Corrugated	13	1
Mancos Black-on-white	13	
McElmo Black-on-white	23	
Tusayan Polychrome	2	
Totals	125	7

## ROOM 4

## DIMENSIONS

North wall — length, 6 ft.; greatest height, 20 in.

South wall — length, 7 ft. 5 in.; greatest height, 26 in.

East wall — length, 9 ft. 6 in.; greatest height, 17 in.

West wall — length, 10 ft.; greatest height, 26 in.

Average thickness of walls — 16 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — stands two courses high. Wall of large pecked stones, one stone in width.

South wall — maximum of four courses standing. Both large and small stones with pecked faces employed in wall.

East wall — maximum of two courses of masonry standing. Well-shaped large and small stones combined in this wall. The base of it had slumped, and the wall had fallen to the east.

West wall — two courses of masonry of single stone width are still standing.

No wall openings.

*Floor:* The hard dirt floor of this room was encountered 6 inches above the base of the walls. No features were found on the floor. No firepit.

## OBSERVATIONS DURING EXCAVATION

It was obvious during the excavation of this room that the west wall had slumped and that most of it had fallen into Kiva A. The east wall had collapsed to the east. Testing beneath floor level revealed the remains of a wall of an earlier structure. This wall, located in the northern portion of the room, was traced and found to extend beneath the west wall of Room 4, through Room 3, and into Room 2 beneath the levels of the floors. There must be a relationship between this feature and a passage associated with an early phase of Kiva A described below.

## SPECIMENS RECOVERED

A few potsherds were found in the fill and on the floor of this room. A flat stone slab rested on the floor.

Frequencies of potsherds:

Types	Room Fill	Beneath Floor
Chapin Gray	3	
Mancos Corrugated	30	4
Mesa Verde Corrugated	16	
Mancos Black-on-white	6	
McElmo Black-on-white	10	5
Mesa Verde Black-on-white		1
Totals	65	10

## ROOM 5

## DIMENSIONS

North wall — length, 8 ft.; greatest height, 26 in.

South wall — length, 7 ft. 3 in.; greatest height, 12 in.

East wall — length, 7 ft. 8 in.; greatest height, 9 in.

West wall — length, 6 ft. 3 in.; greatest height, 6 in.

Average thickness of walls — 13 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — maximum of four courses standing. Both large and small stones used. Inner face of the wall made of large stones with pecked faces.

South wall — poorly preserved. Most of the wall is only one course high and is built of a combination of large and small stones.

East wall — maximum of two courses standing. This wall had settled and most of it had fallen to the east of the room.

West wall — only a few rocks of the basal course remained of this wall. Apparently most of the wall collapsed into Kiva A.

No doorways.

*Floor:* The shallow fill in this room was removed to the bases of the walls, but no well-defined floor was encountered. No firepit.

## OBSERVATIONS DURING EXCAVATION

A large number of roots occurred in the fill of this room.

## SPECIMENS RECOVERED

Fragments of a large Mancos Corrugated jar were found along the north wall.

Frequencies of potsherds:

Types	Room Fill
Mancos Corrugated	26
Mesa Verde Corrugated	1
Mancos Black-on-white	3
McElmo Black-on-white	4
Total	34

## ROOM 6

## DIMENSIONS

North wall — length 8 ft.; greatest height, 12 in.  
 South wall — length, 7 ft.; (incomplete).  
 East wall — length, 6 ft. 6 in. (incomplete); greatest height, 12 in.  
 West wall — length, 4 ft. 4 in. (incomplete); greatest height, 15 in.  
 Average thickness of walls — 15 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — most of the wall one course of masonry in height. Both large and small stones used in construction. Inner faces of some of the large stones are pecked.

South wall — represented by only three stones.

East wall — maximum of three courses standing. Both large and small stones used. The eastern wall of this room apparently had settled and fallen to the east, as had the east walls of Rooms 4 and 5. A small section of the southern end of the wall is missing.

West wall — only a portion of this wall, standing to a maximum height of three courses, remains.

No wall openings.

*Floor:* The fill in this room averaged about 6 inches deep. The excavation was levelled off at the bases of the walls. No definite floor was encountered. No firepit.

## OBSERVATIONS DURING EXCAVATION

Very little fill remained to be taken from this room after the fallen masonry was removed from it.

## SPECIMENS RECOVERED

A few small potsherds and a bone awl were taken from this room.

## Frequencies of potsherds:

Types	Room Fill
Mancos Corrugated	38
Mesa Verde Corrugated	8
Mancos Black-on-white	2
McElmo Black-on-white	5
Mesa Verde Black-on-white	2
Mesa Verde Polychrome	1
Total	56

## ROOM 7

## DIMENSIONS

North wall — length, 5 ft. 7 in.; greatest height, 14 in.

South wall — length, 8 ft. 4 in.; greatest height, 19 in.

East wall — length, 7 ft. 1 in.; greatest height, 19 in.

West wall — length, 9 ft. 6 in.; greatest height, 11 in.

Average thickness of walls — 12 in.

Milling Bin 1 (south)	Milling Bin 2 (north)
Lengths of sides:	Lengths of sides:
North — 20 in.	North — 24 in.
South — 18 in.	South — 20 in.
East — 23 in.	East — 16 in.
West — 20 in.	West — 28 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — maximum of three courses standing. Both large and small stones used. The ventilator shaft of Kiva A adjoins this wall on the north.

South wall — maximum of three courses standing. Only large stones, placed end to end, used in this wall.

East wall — maximum of two courses standing. All large stones.

West wall — only a single course of large irregularly shaped stones remains.

No indication of doorways.

*Floor:* Hard-packed dirt. Two milling bins constructed of vertical slabs were located in the southern half of the room. One bin had been built next to the south wall of the room, and the second bin joined it to the north. Neither contained metates. No firepit.

## OBSERVATIONS DURING EXCAVATION

A great many rocks from the collapsed walls of the room were taken from its interior.

## SPECIMENS RECOVERED

One mano had been incorporated into the west wall of the room. Another was found lying just outside the west wall. A number of potsherds were taken from the southern milling bin. From the room fill, a smoothing stone was recovered.

Frequencies of potsherds:

Types	Room Fill
Chapin Gray	4
Mancos Corrugated	24
Mesa Verde Corrugated	15
Mancos Black-on-white	2
McElmo Black-on-white	16
Mesa Verde Black-on-white	2
Total	63

## ROOM 8

## DIMENSIONS

North wall—length, 8 ft.; greatest height, 12 in.

South wall—missing.

East wall—length, 8 ft. (incomplete); greatest height, 9 in.

West wall—length, 6 ft. (incomplete).

Average thickness of walls—12 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall—maximum of three

courses standing. Wall of large stones, a single stone in width.

South wall—missing.

East wall—a line of large irregularly shaped stones is all that remains of this wall.

West wall—poorly defined. Most of it had fallen into Kiva B.

No wall openings.

*Floor:* No well-defined floor was revealed. The excavation was levelled off at the bases of the north and east walls. No firepit.

## OBSERVATIONS DURING EXCAVATION

Very little remained of this room. It is likely that the west wall had toppled into the kiva, but there is only slight evidence of the other three walls. Perhaps after the room was abandoned its wall stones were used elsewhere.

## SPECIMENS RECOVERED

A small number of potsherds were found adjacent to the north wall.

Frequencies of potsherds:

Types	Room Fill
Chapin Gray	1
Mancos Corrugated	18
Mesa Verde Corrugated	6
Mancos Black-on-white	6
McElmo Black-on-white	9
Total	40

## ROOM 9

## DIMENSIONS

North wall—length, 6 ft.; greatest height, 22 in.

South wall—missing.

East wall—missing.

West wall—length, 8 ft.; greatest height, 15 in.

Average thickness of walls—14 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — maximum of five courses standing. Wall consists of large stones with pecked faces.

South wall — fallen. Few, if any, of the stones are in original positions. The southern part of Room 9 was built over Trash Mound 1, a factor which probably contributed to the collapse of walls of that part of the room since the unconsolidated nature of the refuse would have served as a poor foundation for them.

East wall — a single course of stones is in place at the northern end of the wall, but the remainder of the wall had fallen.

West wall — two courses still standing. The wall, made of rock shaped by pecking, is a single stone in thickness.

No doorways.

*Floor:* The fill in this room was removed to the level of the bases of the north and west walls. A definite floor was not found. No fireplace.

## OBSERVATIONS DURING EXCAVATION

This room extended over Trash Mound 1 south of the village.

## SPECIMENS RECOVERED

The fill of this room contained many potsherds, two bone awls, a polishing stone, and a pecking stone.

Frequencies of potsherds:

Types	Room Fill
La Plata Black-on-red	1
Chapin Gray	4
Moccasin Gray	1
Mancos Gray	3
Mancos Corrugated	106
Mesa Verde Corrugated	33
Cortez Black-on-white	1
Mancos Black-on-white	20

McElmo Black-on-white	43
McElmo Black-on-white, Corrugated exterior	1
Mesa Verde Black-on-white	5
Total	218

## ROOM 10

## DIMENSIONS

North wall — length, 6 ft. 5 in.; greatest height, 19 in.

South wall — length, 6 ft.; greatest height, 16 in.

East wall — length, 8 ft. 6 in.; greatest height, 11 in.

West wall — length, 9 ft.; greatest height, 15 in.

Average thickness of walls — 15 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall — maximum of four courses standing. Wall is a combination of large and small stones.

South wall — maximum of five courses standing. All stones are large and well shaped by pecking. Wall is a single stone in thickness. The lower course of stones is slightly wider than those above it, forming a narrow offset between it and the upper part of the wall.

East wall — stands to maximum height of two courses. Only large stones are present. Most of this wall had fallen to the east into Kiva B.

West wall — maximum of two courses standing. It was built of large rectangular stones, with pecked faces, set end to end.

No wall openings.

*Floor:* Two floors were encountered in this room. The upper floor of packed dirt was exposed at the level of the bases of the north, east, and west walls. However, the south wall had an offset at this level and then

extended to a greater depth. Six inches below the offset in the wall a very rough flagstone floor was reached. On this floor, in the south end of the room, a large assortment of artifacts was found. No firepit.

#### OBSERVATIONS DURING EXCAVATION

This room, like Room 9, had been built over Trash Mound 1. The softness of this deposit may have been the reason for paving the lower floor of the room with flagstones.

#### SPECIMENS RECOVERED

From the fill above the upper floor in this room a mano was obtained. On the upper floor were found a metate, a hammerstone, and several manos. Included in the group of artifacts found on the lower flagstone floor were 7 metates, 21 manos, 3 fragmentary manos, 1 stone axe, 4 pecking stones, 2 bone awls, 1 bone flesher, 1 leg bone of a turkey, and fragments of a Mesa Verde Black-on-white bowl and a Mesa Verde Corrugated jar.

A Mancos Corrugated jar was buried beneath the lower floor. Its mouth, which was covered by a thin oval sandstone slab, was level with the floor. Within the jar was a large straight-stemmed projectile point or knife.

Frequencies of potsherds:

Types	Room fill above upper floor
Chapin Gray	1
Mancos Gray	3
Mancos Corrugated	11
Mesa Verde Corrugated	8
Mancos Black-on-white	2
McElmo Black-on-white	13
Mesa Verde Black-on-white	3
Tusayan Polychrome	1
Total	42

## ROOM 11

#### DIMENSIONS

North wall—length 6 ft. 5 in.; greatest height, 48 in.

South wall—length, 6 ft. 8 in.; greatest height, 26 in.

East wall—length, 8 ft. 2 in.; greatest height, 48 in.

West wall—length, 7 ft. 11 in.; greatest height, 18 in.

Average thickness of walls—16 in.

#### ARCHITECTURAL DETAILS

##### *Walls:*

North wall—maximum of seven courses standing. Both large and small stones are employed in this wall. The large stones are well shaped by pecking.

South wall—maximum of four courses of large and small stones standing.

East wall—maximum of ten courses of stone standing. Both large and small stones used. The wall tilts to the east and apparently did so during occupation because a stone buttress is built against the exterior of the wall at its north end. It appears as though many rocks from this wall fell into Kiva B.

West wall—well-shaped, large, pecked stones stand to a maximum height of three courses.

No apparent doorways.

*Floor:* Flagstones covered the floor, except in the northwest corner of the room. There was no firepit.

#### OBSERVATIONS DURING EXCAVATION

In and adjacent to this room were numerous shaped building stones which had fallen from the room walls as well as from the walls of the tower just to the north.

#### SPECIMENS RECOVERED

A bone awl, a bone weaving implement, and a number of sherds were found in this room.

## Frequencies of potsherds:

Types	Room Fill
Chapin Gray	3
Mancos Corrugated	43
Mesa Verde Corrugated	13
Cortez Black-on-white	1
Mancos Black-on-white	20
McElmo Black-on-white	16
Mesa Verde Black-on-white	5
Total	101

## ROOM 12

## DIMENSIONS

North wall—length, 6 ft. 8 in.; greatest height, 10 in.

South wall—this room abuts against the tower. The tower wall forms the south wall of the room.

East wall—A section of the passage between the tower and Kiva A runs through this room. Apparently the rock and dirt covering of the passage formed at least the lower portion of the east wall. No evidence of masonry on top of the passage roof was found.

West wall—length, 8 ft. 3 in.; greatest height, 22 in.

Average thickness of walls—15 in.

Milling Bin 1 (south)	Milling Bin 2 (north)
Lengths of sides:	Lengths of sides:
North—20 in.	North—28 in.
South—17 in.	South—20 in.
East—19 in.	East—24 in.
West—19½ in.	West—18 in.

## ARCHITECTURAL DETAILS

*Walls:*

North wall—maximum of two courses standing. All large stones.

South wall—tower wall.

East wall—roof of tower-Kiva A passage.

West wall—maximum of three courses standing. Wall consists of a row of large stones with pecked faces.

No wall openings.

*Floor:* Two milling bins of vertical stone slabs were located on the floor adjacent to the covered passage between the tower and Kiva A. The bins occupy almost one-half of the floor space in the room. There is just enough room between the bins and the west wall of the room to allow a person to kneel beside the bins. The bins did not contain metates at the time of excavation. The floor of the room is of dirt. No fireplace.

## OBSERVATIONS DURING EXCAVATION

In attempting to reconstruct the order of the building of this room and the features within it, the following sequence of events is suggested: At one time there was a ground level doorway through the north side of the tower wall. This doorway may have opened into Room 12 or led simply to the outside of the tower. A passage was then constructed between the tower and Kiva A. The doorway in the tower wall was used as the entrance to the passage. A trench was dug from inside the tower, through the doorway in a northerly direction for several feet, then it turned east and was stepped down to a lower level and entered the west side of Kiva A just above the banquette between Pilasters 2 and 3. That section of the tunnel which extended north was roofed by a large number of rough sandstone slabs and rocks set in dirt or mud. This thick rock and dirt cover of the passage blocked over 2 feet of the top of the lower doorway; however, the bottom of the doorway was lowered over a foot by the trench dug through it, making this section of the completed passage almost 2½ feet high.

If Room 12 had existed before the tower-Kiva A passage was constructed,

almost half of the floor space within the room would have been needed for the construction of the roof to the passageway. Two milling bins were then built on the floor of the room adjacent to the passage cover. On the other hand, had no room existed in this area prior to the building of the passage, Room 12 could have been formed by building two walls, one on the north and the other on the west to enclose the triangular-shaped space between the tower and the passage roof. The milling bins could have then been built within the room. In my estimation Room 12 was constructed after the tower-Kiva A passage had been built.

#### SPECIMENS RECOVERED

Three fragmentary manos were recovered from Room 12. One was found beside Bin 2; a second rested on the passage roof; the third was incorporated into the west wall of the room. One bone awl also was obtained from this room.

Frequencies of potsherds:

Types	Room Fill
Chapin Gray	2
Mancos Corrugated	34
Mesa Verde Corrugated	5
Mancos Black-on-white	4
McElmo Black-on-white	13
McElmo Black-on-white, Corrugated exterior	1
Total	59

#### KIVA A

##### DIMENSIONS

Diameter, floor level — 12 ft. 3 in.

Diameter, above banquette — 14 ft. 5 in.

Greatest depth of kiva, floor level to top of masonry wall — 6 ft. 3 in.

Average height of banquette above floor level — 2 ft. 11 in.

Average width of banquette — 1 ft. 3 in.

Southern recess — height above floor level, 2 ft. 9 in.; width at north (between Pilasters 1 and 6), 4 ft. 11 in.; width at south, 8 ft.; average depth of recess (north to south), 4 ft. 4 in.; height from floor of southern recess to top of ventilator shaft, 3 ft. 7 in.

Ventilator tunnel — height of entrance, 2 ft. 3 in.; width of entrance, 1 ft. 5 in.; length from kiva entrance to rear of ventilator shaft, 8 ft. 10 in.

Ventilator shaft — height, 6 ft. 4 in.; surface opening, 1 ft. 7 in. by 1 ft. 4 in.

Pilasters — average width, 2 ft.; average height, 1 ft. 7 in.

Deflector — height, 1 ft.; width, 2 ft. 3 in.; thickness, 10 in.

Firepit — diameter, east-west, 2 ft. 2 in.; diameter, north-south, 1 ft. 9 in.; depth, 5 in.

Sipapu — diameter 7 in.; depth, 5 in.

Niches — No. 1: height, 4 in.; width, 5 in.; depth, 7 in./No. 2: height, 4 in.; width, 6 in.; depth, 7 in./No. 3: height, 7 in.; width, 9 in.; depth, 8 in./No. 4: height, 10 in.; width, 11 in.; depth, 16 in.

Axis, ventilator tunnel — deflector — firepit — sipapu — North 16° West.

#### ARCHITECTURAL DETAILS

*Walls and banquette:* The masonry of both the wall and the banquette of Kiva A is a combination of large stone slabs and coarse stone masonry. The bases of both banquette and wall above the banquette consist predominately of vertically placed slabs of sandstone. Areas between the slabs are filled with small spalls of stone. Above the slabs, coursed masonry consisting of sandstone blocks of varying sizes is present.

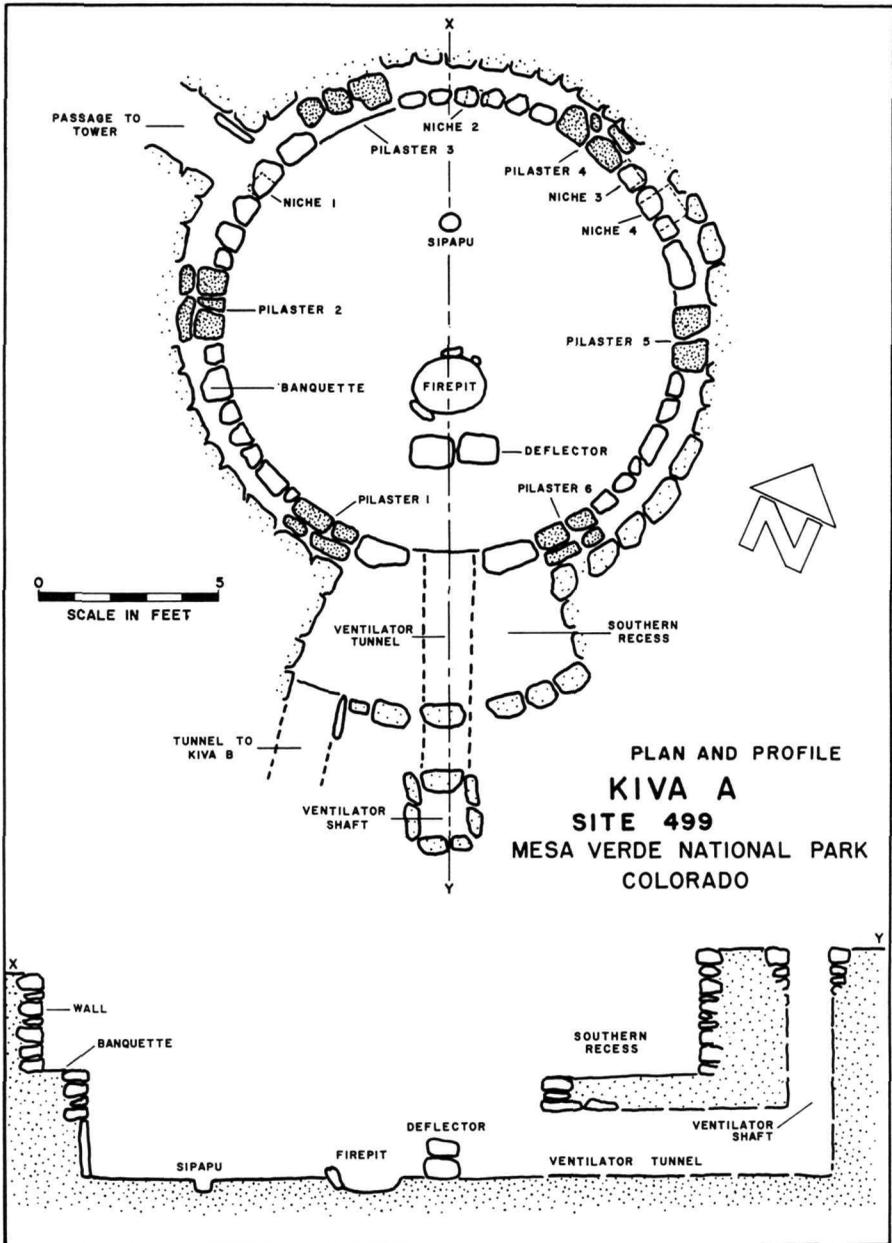


FIGURE 7

The banquette is fairly well preserved; however, the wall above the banquette is in bad condition in several places. One section of the wall stands 4 feet 4 inches above the banquette, but in most places it averages only 2 feet 10 inches in height. A large portion of the wall between Pilasters 4 and 5 contained no masonry. Later probing in this area showed it to have been a passage to another room or cist as explained below. It is obvious that the top of the kiva wall crumbled considerably after the roof collapsed. The northern part of the kiva was dug to bedrock, and along its eastern side the rock was actually cut into, so that the base of the banquette on the northeast rests on bedrock.

The masonry in the walls of the southern recess is poorly preserved. No slabs are present in the foundations of these walls. The floor of the southern recess is plastered with mud.

Six pilasters of stone are spaced at fairly regular intervals upon the banquette. They are constructed of larger and better-shaped stones than are employed in either the wall or the banquette. Pilaster 3 is represented by only three stones which had formed part of the lower courses of masonry; however, the other pilasters each stand over 2 feet high. The tops of several pilasters had been pushed away from the wall behind them by the weight of debris which had accumulated upon them.

Four niches are located in the northern part of the banquette between Pilasters 2 and 5. One contained a piece of petrified wood; the others were empty.

*Ventilator:* The ventilator system, constructed at the south side of the kiva, consists of a horizontal tunnel dug from the face of the banquette and extending beneath the southern recess to a point outside the kiva wall. There it is intersected by a vertical shaft

leading to the surface. The horizontal tunnel is faced with stone masonry only at its entrance, and the vertical shaft is lined only at the ground surface. The remainder of the passage is without any facing.

*Floor:* The northern half of the floor of Kiva A is on bedrock; the southern half consists of several layers of mud plaster. It is possible that the rock section of the floor originally was plastered, but no evidence for it was encountered. Plastering of half of the floor seems to have been a means of levelling it since the bedrock dips to the south. A deflector, a firepit, and a sipapu occur on the floor.

The deflector is built of coursed masonry. It is a single stone in thickness and stands to a height of two courses. The firepit is oval in outline and unlined except for two small stones set into its edge. It contained a large quantity of wood ashes. The sipapu is cut into the rock floor in the northern half of the kiva.

#### OBSERVATIONS DURING EXCAVATION

Before excavation the kiva was marked by a circular depression ringed by a large quantity of fallen building stone. Debris was removed from the kiva in three levels.

Level 1 extended from a horizontal datum plane level with the top of the kiva wall debris to the bottom of the kiva depression (0 inch-31 inches). Removing this material levelled the kiva deposit so that lower fill could be removed in horizontal units. It was anticipated that by excavating this level from the center of the kiva depression out towards the encircling stone the tops of the kiva wall would be encountered. However, this did not prove to be the case. The upper parts of the kiva walls had crumbled badly and were not exposed by the excavation of this level. The top of the ventilator shaft was exposed in this stratum.



PLATE 9. Kiva A, looking south. Note sipapu, firepit, deflector, and unexcavated entrance to ventilator tunnel.



PLATE 10. Kiva A, Niches 3 and 4



PLATE 11. Kiva A, base of banquette. Note use of vertical slabs and masonry.



PLATE 12. Clearing passage between Kiva A and tower. Individual with shovel is standing in part of passage which was probably originally roofed with planks or poles. Note individual on right crawling into covered tunnel.



PLATE 13. Kiva B, looking north. Note entrance to tunnel leading to Kiva A slightly above Niche 3 in upper right of photo. Sipapu has not been cleared and firepit only partially excavated.



PLATE 14. Kiva B, looking north. Note deflector, firepit, sipapu, and plastered floor.

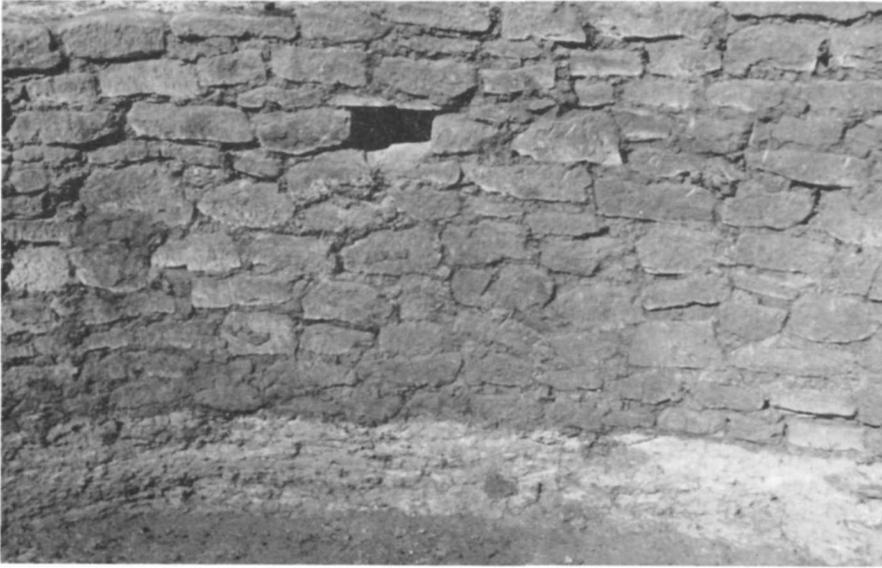


PLATE 15. Kiva B, banquette and Niche 1. Note complete use of masonry.



PLATE 16. Kiva B, Niche 3. Above it is opening to passage leading to Kiva A.

Level 2 consisted of deposits from the bottom of the kiva depression to within 12 inches of the floor of the kiva (31 inches–106 inches). Shortly after starting this level, the wall and pilasters on the west side of the kiva were encountered. The interior of the structure was then outlined and excavation continued by removing layers of fill until the banquette was exposed. A test trench was dug to locate the floor of the kiva, and Level 2 was terminated 12 inches above the floor.

Level 3 included the lower 12 inches of the deposits in the kiva (106 inches–118 inches). This level was carefully troweled to expose floor features and any artifacts that might have been left on the floor.

Throughout the fill of Kiva A, especially in Level 2, a large number of stones were encountered. They undoubtedly came from the collapsed walls of the tower and rooms adjacent to the kiva.

While exploring for the kiva wall in Level 1, a small section of a wall, four courses high and five stones in length, was encountered between the remains of the tower and the kiva. Since the masonry rested on loose fill and was not attached to any identifiable wall, its origin presented a problem. However, after the tower had been excavated it was revealed that at one time a wall had extended eastward from the southern section of the tower.

A small section of the wall was in place, and it is believed that the wall fragment exposed while excavating the kiva was a portion of the same wall which had been pushed from its original position as the site fell into ruin. Possibly the wall may have divided the courtyard of the pueblo in half, separating one kiva from the other, or at an earlier stage in the history of the site it may have marked the southern limit of the village.

In addition to a large quantity of fallen building stones, the kiva contained a fill of grey-brown dirt. This is the sort of material that occurs as the surface soil in the vicinity of the site. Mixed with the dirt were ashes and village refuse. A few small fragments of charred wood were found during the excavation of the kiva, but neither their quantity nor location suggests that the roof of the kiva had burned and fallen into the structure. One small lens of wood ashes was encountered toward the top of the banquette in Level 2. It appears to have resulted from a small fire in the kiva after considerable fill had accumulated on the floor following abandonment.

During the stabilization of Kiva A a portion of the east wall had to be removed and rebuilt because of its precarious condition. This exposed an earlier kiva wall just behind the one built by the last users of the kiva. The stabilization further revealed a passage leading from the kiva just above the banquette south of Pilaster 4. Its entrance was indicated by the absence of masonry in that section of the kiva wall. The opening was 27 inches wide at its mouth, and its sides flared out as it penetrated eastward beneath the west wall of Room 4.

A test trench was dug through the floor of Room 4, but the nature of the structure into which the passage led was not determined. The passage was filled with many burned stones, unlike the deposits in the later structures. It does not appear to have been used by the last occupants of the pueblo. It may have led into a large cist, a shallow subterranean room, or more likely into one of the rooms of the earlier village indicated by the fragmentary walls extending beneath the floors of Rooms 2, 3, and 4.

## SPECIMENS RECOVERED

Level 1 of Kiva A produced a stone hoe, a rubbing stone, a pecking stone, two complete and seven fragmentary manos, and one miscellaneous artifact of bone.

In Level 2, two polishing stones, two rubbing stones, two pecking stones, one complete and six fragmentary manos, five bone awls, two bone weaving tools, one tubular bone bead, a piece of petrified wood (from Niche 4), and one miscellaneous bone artifact were found.

## Frequencies of potsherds:

Types	Level 1	Level 2	Level 3	Vent. Shaft	Niche 3	Niche 4
La Plata Black-on-red	1		1			
Chapin Gray	13	20	8	3		1
Mummy Lake Variety		1				
Mancos Gray	7	9	1			
Grooved variation	2					
Moccasin Gray		1				
Mancos Corrugated	410	780	320	12	1	2
Mesa Verde Corrugated	137	281	80			
Chapin Black-on-white		2				
Cortez Black-on-white	2	8				
Mancos Black-on-white	80	127	16	6		
Mancos Black-on-white, Corrugated exterior	1	2				
McElmo Black-on-white	154	229	64	5		2
McElmo Black-on-white, Corrugated exterior	1					
Mesa Verde Black-on-white	24	33	3			
Mesa Verde Polychrome			1			
Gallup Black-on-white		1				
Totals	832	1494	494	26	1	5

## KIVA B

## DIMENSIONS

Diameter, floor level — 11 ft. 5 in.  
 Diameter, above banquette — 13 ft. 10 in.

From Level 3 the following specimens were recovered: a chipped stone knife, two bone awls, one polishing stone, one pecking stone, five fragmentary manos, a metate, and a lapstone. Two large sherds, comprising about one-half of a Mesa Verde Black-on-white bowl, were found beneath a slab of stone in front of the ventilator tunnel. A stone pendant and a rubbing stone were collected from the entrance of the ventilator tunnel. Potsherds were found throughout the fill of the kiva.

Greatest depth of kiva, floor level to top of masonry wall — 5 ft. 4 in.  
 Average height of banquette above floor level — 3 ft.  
 Average width of banquette — 1 ft. 2 in.

Southern recess—height above floor level, 2 ft. 9 in.; width at north (between Pilasters 1 and 6), 4 ft. 10 in.; width at south, 6 ft. 8 in.; average depth of recess (north to south), 3 ft. 4 in.; height from floor of southern recess to top of ventilator shaft, 2 ft. 10 in.

Ventilator tunnel—height of entrance, 2 ft. 4 in.; width of entrance, 1 ft. 7 in.; length from kiva entrance to rear of ventilator shaft, 5 ft.

Ventilator shaft—height, 5 ft. 8 in.; surface opening, 1 ft. square.

Pilasters—average width, 1 ft. 4 in.; average height, 1 ft. 9 in.

Deflector—height, 1 ft. 4 in.; width, 2 ft. 10 in.; thickness, 8 in.

Firepit—diameter, east-west, 2 ft.; diameter, north-south, 2 ft. 2 in.; depth, 7 in.

Sipapu—diameter, 3 in.; depth, 5 in.

Niches—No. 1: height, 5 in.; width, 6 in.; depth, 7 in./No. 2: height, 6 in.; width, 6 in.; depth, 12 in./No. 3: height, 12 in.; width, 13 in.; depth, 16 in./No. 4: height, 5 in.; width, 5 in.; depth, 7 in.

Axis of ventilator tunnel—deflector—firepit—sipapu—North 18° West.

#### ARCHITECTURAL DETAILS

*Walls and banquette:* Coursed stone masonry is employed in both the walls and the banquette of Kiva B. Slab foundations are not used. As was the case in Kiva A, the banquette is fairly well preserved, but the tops of the walls have crumbled to a large extent. The wall above the banquette stands 2 feet 6 inches high in one place but elsewhere averages only 1 foot 7 inches in height. The masonry walls of the southern recess are similar to those of the remainder of the kiva. A floor of plastered mud covers the bottom of the southern recess.

The six pilasters, spaced fairly

evenly on the banquette, are built of larger and better faced stone than is employed in the walls and banquette. Pilasters 1, 2, and 6 are well preserved; Pilasters 3, 4, and 5 lean outward from the kiva wall. Apparently the weight of debris from the collapsed kiva walls and from the walls of adjacent rooms was sufficient to push the tops of these three pilasters out from their original positions. The entrance to the tunnel connecting Kiva B to Kiva A is just above the banquette east of Pilaster 4.

Four niches occur in the banquette. One is located just south of Pilaster 2, a second is between Pilasters 3 and 4, the third just east of Pilaster 4, and the fourth to the west of Pilaster 6. Three of them are small, and had been built by simply omitting a rock or two of masonry. The fourth (Niche No. 3) has a rear wall consisting of a stone slab and a thin stone lintel which has broken in half. It has a plastered floor of mud. All of the niches were empty when excavated.

The ventilator consists of a horizontal tunnel which had been dug from the banquette face, beneath the southern recess, to a point where it joins a vertical shaft which extends to the ground surface. It is faced with stone only at its entrance in the kiva and at ground level.

*Floor:* Part of the floor of Kiva B is cut into a deposit of caliche which overlies the bedrock. Several layers of mud plaster cover the floor. A deflector, a firepit, and a sealed sipapu are the floor features.

The deflector is built of masonry, a single stone in thickness. It stands four courses high. The firepit is circular in outline and completely lined with small stones. Several large sherds were found in the ashes in the firepit.

The sipapu was not visible when the kiva floor was first cleared; however, careful examination of the

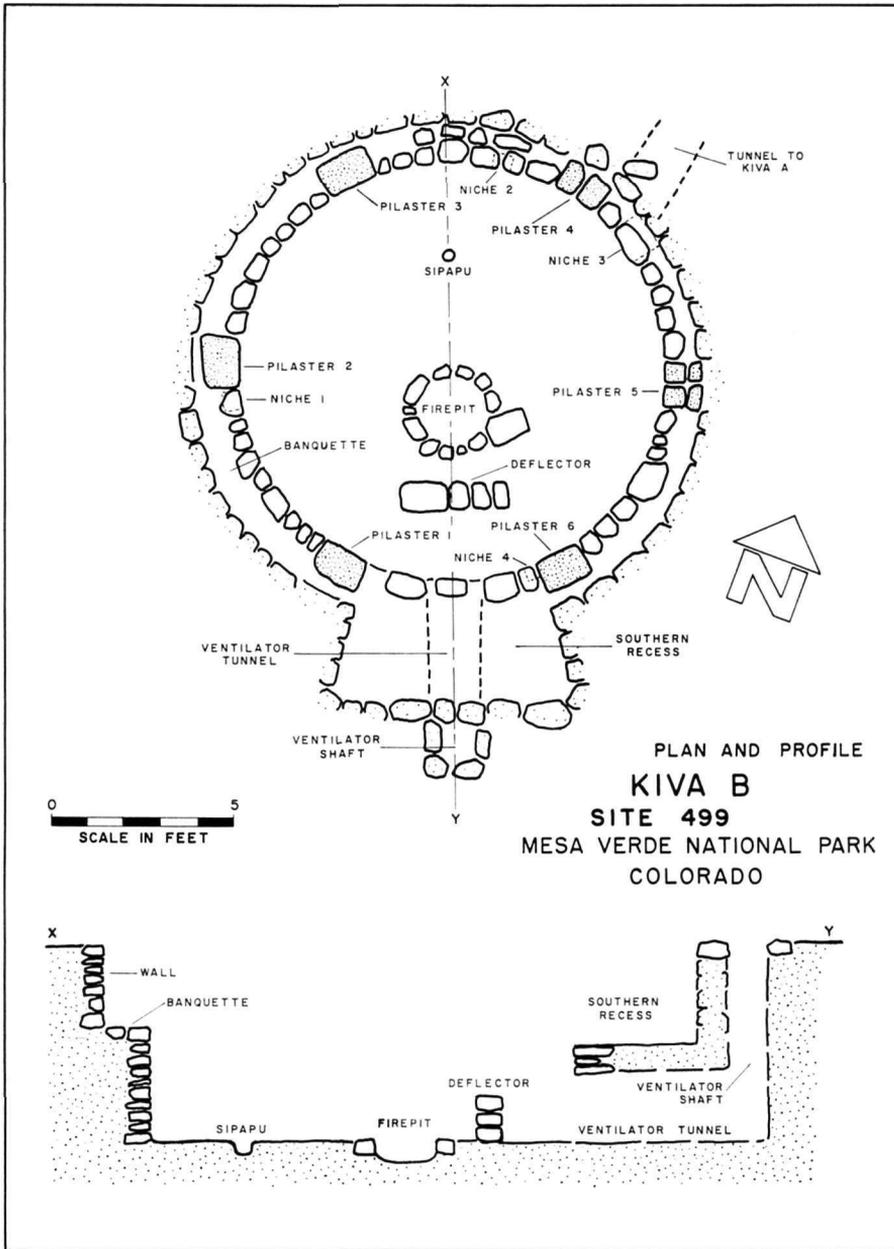


FIGURE 8

plaster in the area where the sipapu normally occurs revealed a small circular area of slightly different color than that in the rest of the floor. This proved to be the sipapu which had been filled with mud some time before the abandonment of the kiva. It is cut into caliche and bedrock.

A human skeleton was found on the floor of the kiva between the deflector and the entrance to the ventilator tunnel.

#### OBSERVATIONS DURING EXCAVATION

A well-defined circular depression surrounded by stones marked the location of Kiva B before excavation. It was excavated in three levels, similar to the method of excavation employed in Kiva A. Level 1 extended from the level of the wall debris to the bottom of the circular depression (0 inch-24 inches). Level 2 was dug to within 12 inches of the kiva floor (24 inches-82 inches). Level 3 consisted of the lower 12 inches of the kiva fill (82 inches-94 inches).

The top of the kiva wall was not encountered in Level 1; however, the upper part of the ventilator shaft was exposed in this level. Shortly after beginning Level 2, the wall and pilasters of the structure were encountered. Excavation followed the same technique used in Kiva A.

Fallen building stones, many of which came from the tower and surrounding rooms, as well as from the tops of the kiva wall, were present in the fill in large quantity. Mixed with the dirt surrounding the kiva and with the dirt in the lower part of the kiva fill was a large amount of caliche. Since the bottom of the kiva had been cut into a stratum of caliche, it is likely that the caliche would have been spread on the surface about the kiva since it was the last deposit to have been removed from the kiva pit by its diggers. After the abandonment

of the kiva, some of this caliche-impregnated dirt comprised the first debris to be deposited in the earlier levels of the kiva. Ash and general village refuse also were included in the fill of Kiva B.

Near the floor, a few badly decayed pieces of wood were encountered. They are not suitable for tree ring dating. The roof of the kiva apparently did not burn. Convex-faced building stones, which had been used in the tower wall, were found in the fill of Kiva B almost to the level of the floor. This suggests that the tower must have collapsed shortly after the site was abandoned, or at least soon after the roof of Kiva B collapsed or was removed.

#### SPECIMENS RECOVERED

In addition to potsherds, which occurred from top to bottom in the kiva debris, the following cultural items were collected.

Level 1 produced one mano, a pecking stone, one chopper-like implement, a portion of a McElmo Black-on-white jar, and two stone objects of unknown use. From Level 2 came one projectile point, a stone knife, a rubbing stone, a pecking stone, one metate, two fragmentary manos, one full-grooved hammer, two bone awls, and one bone weaving tool. In Level 3 were found a lapstone, two rubbing stones, a pecking stone, two manos, four bone awls, and one full-grooved axe. From the entrance to the ventilator tunnel a mano, two metates, and a bone awl were recovered.

Several large fragments of pottery were found on the banquette. It is likely that a number of pottery vessels had been left on the banquette when the kiva was abandoned, but they had been crushed and the sherds scattered by the falling debris which fell into the kiva. Between Pilasters 2 and 3 large sections of a McElmo Black-on-white canteen and a Mesa Verde Black-on-

white bowl were present. Fragments of an undecorated bowl and several non-restorable vessels were found between Pilasters 1 and 2, and one-half of a McElmo Black-on-white bowl rested

on the banquette between Pilasters 5 and 6. From the ashes of the firepit a Mancos Corrugated jar and a mano were recovered.

Frequencies of potsherds:

Types	Level 1	Level 2	Level 3	Top of Bench	Vent. Shaft
La Plata Black-on-red	1				
Tusayan Black-on-red		1			
Chapin Gray	7	7	6		1
Mummy Lake Variety	1				
Moccasin Gray	1	1			
Mancos Gray	1	3			
Mancos Gray					
Grooved variation		1			
Mancos Corrugated	257	511	56	17	7
Mesa Verde Corrugated	100	154	9		2
Chapin Black-on-white	2	3			
Cortez Black-on-white	5	4			
Mancos Black-on-white	41	80	11	1	
Mancos Black-on-white, Corrugated exterior	3	3			
McElmo Black-on-white	97	172	18	5	4
Mesa Verde Black-on-white	24	24	1		
Mesa Verde Polychrome	1				
Escavada Black-on-white		1			
Tusayan Polychrome	2				
Totals	543	965	101	23	14

*Burial:* An almost complete human skeleton (Burial 1) was found on the floor of the kiva between the deflector and the entrance to the ventilator tunnel. The position of skeleton, as well as other factors mentioned in the section on burials, indicates that the individual had been killed or wounded before being thrown or placed in the kiva. Five large slabs of stone had been thrown or piled on top of the body.

#### TOWER

##### DIMENSIONS:

Diameter, floor level — 9 ft. 8 in.

Diameter, top of standing wall — 11 ft. 4 in.

Greatest height of wall (southern section) — 5 ft. 4 in.

Average thickness of wall — 29 in.

Doorway to Kiva A passage: Height of doorway (tower floor to doorway lintel) — 38 in. Width of doorway — 14 in. Length of trench cut into tower floor — 3 ft. Width of trench cut into tower floor — 14 in. Depth of trench cut into tower floor — 19 in.

##### ARCHITECTURAL DETAILS

*Walls:* The tower wall stands eight

to nine courses in height. Most of the courses of masonry consist of two rows of large stones placed side by side, although on occasions single stones the width of the wall were utilized. The majority of the stones had been shaped by pecking. Some have slightly curved outer faces. Numerous spalls of sandstone and potsherds were employed as chinking between courses of masonry. A narrow doorway at the base of the wall on the north opens into the passage to Kiva A. No other wall openings were discernible.

*Floor:* Hard-packed dirt. A trench cut into the tower floor and lined with rocks facilitated entry into the tunnel leading to Kiva A.

The trench was dug through the doorway to heighten the tunnel, for the roof of the tunnel blocked over 2 feet of the top of the doorway. Without the trench, the entrance to the tunnel would have been only about 14 inches high; with the trench the height of the tunnel entrance was increased to almost 2½ feet.

#### OBSERVATIONS DURING EXCAVATION

The large number of building stones removed from the interior of the tower and from around the tower during excavation would indicate that the structure originally stood to a height of 16

to 18 feet. Thickness of the wall, which was about twice that of the rooms, also suggests that it was built to stand to considerable height. The eastern section of the wall tilted dangerously outward, and had to be rebuilt during the stabilization of the site.

Ten inches above the floor of the tower a number of large fragments of hard adobe mud and small pieces of decayed wood and charcoal were encountered. These suggest that the structure had been roofed with wooden beams covered by a layer of mud. No evidence was recovered, or observed in that portion of the tower still standing, to indicate whether or not floors had existed between ground level and the ceiling.

The tower was excavated in two levels. Level 1 extended from the surface to a depth of 28 inches; Level 2 was carried to floor level.

#### SPECIMENS RECOVERED

From Level 1 of the tower, the upper level, a collection of potsherds, two fragmentary manos, a pecking stone, and a bone awl were obtained. Level 2 produced a larger number of potsherds, three manos, an abrading stone, a bone awl, and a worked bone fragment.

#### Frequencies of potsherds:

Types	Level 1	Level 2	Sherds used as wall chinks
Chapin Gray	16	21	
Mummy Lake Variety	1		
Moccasin Gray		1	
Mancos Gray	1	2	
Mancos Corrugated	146	239	
Mesa Verde Corrugated	44	61	
Chapin Black-on-white	2		
Cortez Black-on-white	3		
Mancos Black-on-white	38	51	9
Mancos Black-on-white, Corrugated exterior	2	3	

McElmo Black-on-white	50	115	8
McElmo Black-on-white, Basket marked	1		
McElmo Black-on-white, Corrugated exterior		1	
Mesa Verde Black-on-white	12	20	3
Mesa Verde Polychrome	1	2	2
Wingate Black-on-red	1		
Tusayan Polychrome	1		
Undecorated reds:			
La Plata Black-on-red	13		
Tsegi Orange Wares	21		
Totals	353	516	22

## TOWER-KIVA A PASSAGE

## DIMENSIONS

- Width of passage entrance in tower  
— 14 in.
- Height of passage entrance in tower  
(bottom of trench to passage roof)  
— 28 in.
- Width of passage entrance in Kiva A  
— 17 in.
- Average width of passage — 17 in.
- Average height of covered portion of  
passage — 30 in.
- Length of passage, tower to Kiva A  
— 15 ft.

## ARCHITECTURAL DETAILS

*Walls:* Some description of this feature was presented when Room 12 was discussed. Those details will not be repeated.

That portion of the passage curving northeast from the tower had been constructed by digging a trench, lining it in places with large vertical slabs of stone, and then roofing it with a thick layer of slabs and irregularly shaped stones set in a large quantity of mud mortar. The slabs and stones in the tunnel roof are not arranged in courses but exhibit a random spacing. In a few places, pairs of slabs are tilted over the top of the tunnel to form a crude vaulting.

The east-west section of the passage,

which opens into Kiva A, consists of a trench which appears to have been completely lined on each side by large stone slabs placed vertically. No roof remained over this part of the passage; however, it does not appear that a roof of stones or mud was employed here. Instead it is presumed that a roof of wooden poles, or planks, and a layer of dirt covered this section of the passage. No rocks were recovered from above or from within the trench, which would have been the case had the roof been built of stone and mud.

*Floor:* The passage floor is of dirt. West of Kiva A the passage floor is approximately level. Five feet nine inches from the entrance to Kiva A the floor has a vertical step causing it to rise 14 inches in height. From there the floor slopes gradually upward until it emerges into the tower. The floor of the passage entrance in Kiva A is 7 inches above the kiva banquette. The opening is located between Pilasters 2 and 3, just above Niche 1.

## OBSERVATIONS DURING EXCAVATION

The east-west section of the passage was excavated by removing the fill from the unroofed trench; however, the covered part of the passage had to be opened by laboriously tunneling in from each end of the feature using crow bars and short-handled shovels and picks.

Most of the stones in the roofed section of the passage were smoke blackened. Since the passage is several feet higher than the floor of Kiva A, it is obvious that smoke from the kiva entered the passage.

#### SPECIMENS RECOVERED

One fragmentary mano was recovered from near the tower entrance to the passage. A small collection of sherds was obtained from the fill in the passage.

Frequencies of potsherds:

Types	
Chapin Gray	2
Mancos Corrugated	20
Mesa Verde Corrugated	3
Mancos Black-on-white	6
McElmo Black-on-white	12
Mesa Verde Black-on-white	5
Total	48

#### KIVA A-KIVA B TUNNEL

##### DIMENSIONS:

Length — 9 ft. 4 in.

Depth from ground surface to floor of tunnel — approximately 3 ft. 6 in.

Opening in Kiva A — height, 19 in.; width, 16 in.

Opening in Kiva B — height, 21 in.; width, 21 in.

#### ARCHITECTURAL DETAILS

The tunnel extends from the rear of the southern recess of Kiva A to an area just above the banquette east of Pilaster 4 in Kiva B. It had been dug in very hard dirt containing a large amount of caliche and had no lining.

#### OBSERVATIONS DURING EXCAVATION

The tunnel may have served as a passageway between the two kivas, but its dimensions would have limited its use to individuals of small size. Its construction must have been a difficult task. Reopening it with crow bars and shovels was no simple matter.

#### SPECIMENS RECOVERED

Two polishing stones and a mano were found in the tunnel near its opening in Kiva A. A few potsherds were found in the fill.

Frequencies of potsherds:

Types	
Mancos Corrugated	10
Mesa Verde Corrugated	2
Total	12

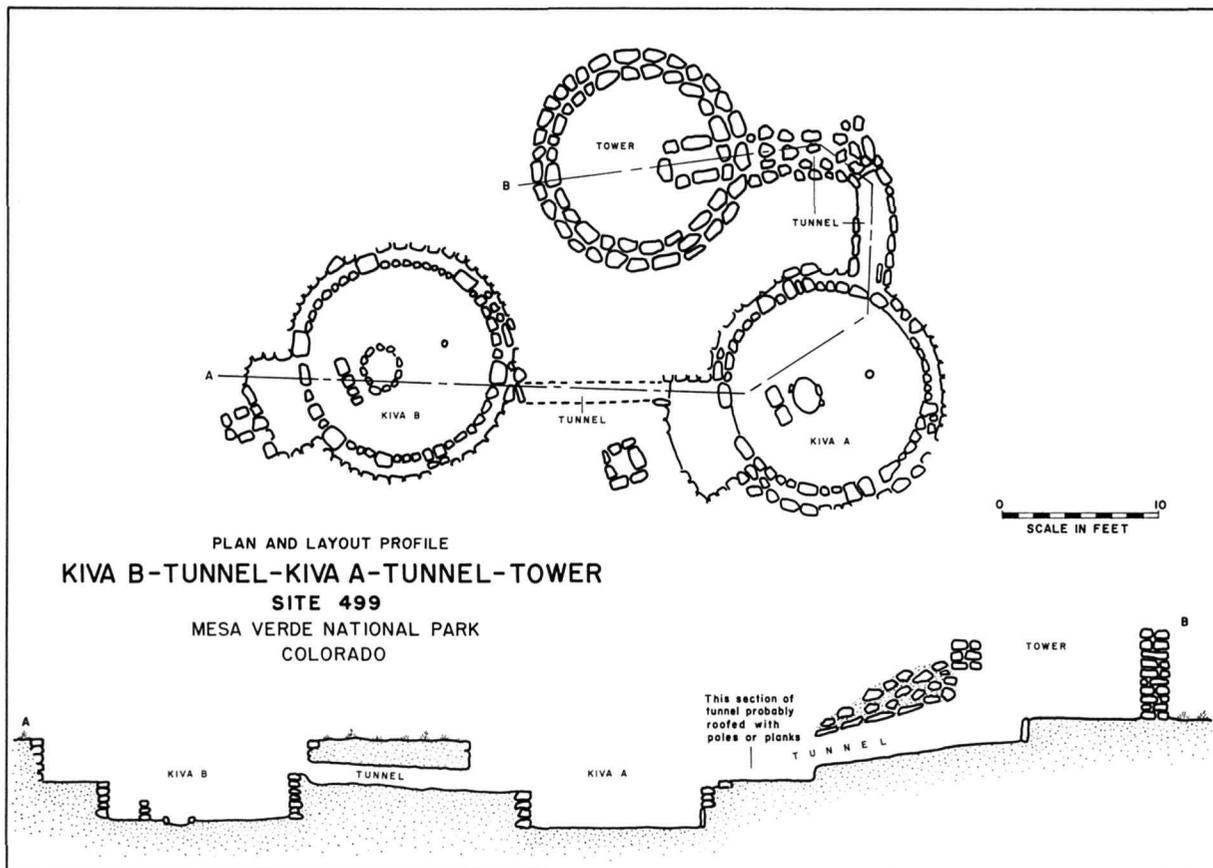


FIGURE 9

## IV. ARCHITECTURAL DEVELOPMENT

### THE FIRST VILLAGE

(See Figure 10 for a visual presentation of the data discussed in this section.)

During the course of the excavation and stabilization of Site 499 evidence was obtained to indicate that remnants of an earlier village underlay the northern part of the site and that Kiva A originally had been associated with that earlier structure. The evidence consisted of a wall foundation of single coursed masonry which extended beneath the floors of Rooms 2, 3, and 4 and the fact that Kiva A had been remodeled. It was not felt that removal of the later features in order to completely trace the earlier remains would be practical since it was planned to display Site 499 as part of the interpretative program of the park, and it was desired that as much of the later village as possible be preserved.

Although but few elements of the first village were encountered, and these were not thoroughly explored, it is quite apparent that it did exist. Its components, size, and shape cannot be determined, but several suggestions may be made based upon the meager remains uncovered and knowledge of other villages of comparable age in the Mesa Verde area. It is probable that a row of three or four single-story rooms, whose southern walls are indicated by the alignment of stones beneath Rooms 2, 3, and 4, extended in an east-west direction. It also is likely that a few rooms extended south from the eastern end of this row resulting in an L-shaped unit of five or six rooms. South of the habitations was a circular kiva with a ventilator shaft located some distance back of the south wall. The features of this kiva had been largely obliterated by later remodeling; however, it probably had slabs of stone set in the bases of the banquette and wall but the upper portion of the wall was unlined.

These features were revealed during stabilization when the eastern section of the wall of Kiva A was removed and replaced in order to strengthen it. The stabilization work also made it apparent that a passage had led from the kiva probably to a surface room east of the kiva. The passage had not

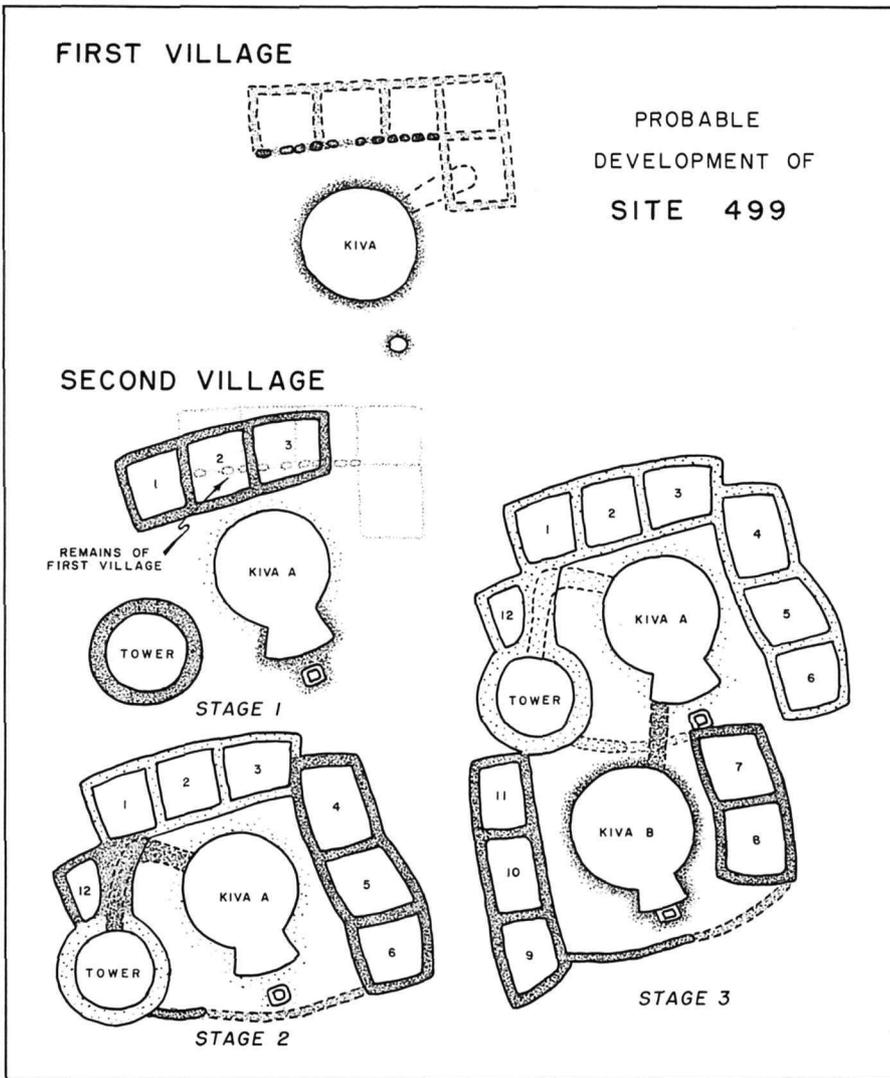


FIGURE 10

been used during the occupation of the later village and in all likelihood was an element of the first village before the building of towers and connecting them to kivas became the practice.

It does not appear that a long period of time elapsed between the abandonment of the first village and the construction of the initial portion of the

later village. It is apparent that the majority of the stones used in the first village were taken from the site and were reemployed in later buildings.

#### THE SECOND VILLAGE, SITE 499

Following the abandonment of the original village the site was reoccupied and construction of a new village was commenced. It is this village that is referred to as Site 499 throughout this report. Whether the new occupants razed the earlier village and reused the building stones previously employed or whether inhabitants of other villages in the vicinity had previously stripped the village cannot be determined. Apparently it was advantageous for the new settlers to remodel the earlier kiva rather than dig a pit for a new one.

Three stages in the development of the second village may be recognized. Neither the exact succession of construction within a stage nor the time that elapsed between stages can be stated, but the entire life of the village probably did not cover a span of time greater than 50 years. The following stages then simply represent three discernible architectural complexes in the development of the village.

*Stage 1:* At the completion of this stage three contiguous rooms of single and double coursed masonry, Rooms 1, 2, and 3, had been built in part over the remains of the first village. South of the rooms was a kiva, Kiva A, and to the west a circular tower with a ground-level entrance to the north had been erected. The kiva had been fashioned by remodeling the ceremonial chamber used by the first residents of the site. Masonry was placed in sections of the banquette and wall and a masonry-lined recess was added to the south. The roof of the kiva was likely level with the ground surface.

*Stage 2:* An enclosed rectangular unit was produced by adding Rooms 4, 5, and 6 of single and double coursed masonry east of the kiva, by placing Room 12 between the tower and Room 1, and by building a wall across the southern end of the structure between the tower and Room 6. In the center of the unit was a level courtyard from which the kiva ladder protruded.

A connecting passage was built between the tower and Kiva A. It led north from the tower entrance, where it was semisubterranean and had sides and roof of large rocks and slabs set in mud mortar, then turned abruptly east, became completely underground, and entered the kiva just above the banquette between Pilaster 2 and 3. The below-ground portion of the passage probably was roofed with poles or planks. Room 12, a small, triangular-shaped unit, was created between the tower, Room 1, and the mass of stones and mud which formed the sides and roof of the above-surface portion of the tower-kiva passageway. The room was too small to have served

as a habitation, but it did contain two metate bins on the floor. It apparently functioned as a communal milling center.

Connecting the tower with the kiva was a development of Stage 2. It does not seem to have been contemplated when the tower was first built or the entrance to the tower would have been placed on the east so that only a short, straight connecting passage to the kiva would have been required.

*Stage 3:* The pueblo reached its final form with the addition of Rooms 7 and 8 on the east, and 9, 10, and 11 on the west. Both single and double coursed masonry were employed in their construction. When a wall was built connecting Rooms 8 and 9 on the south, a second courtyard was created, and in it Kiva B was placed. Like Kiva A, its roof was probably level with the ground surface. At least part of the wall which marked the southern limit of Stage 2 was retained to separate the two courtyards.

A tunnel was dug to connect Kiva B with Kiva A. It passed from the rear of the southern recess of Kiva A to the north side of Kiva B where it emerged just above the banquette between Pilasters 4 and 5. It looks as though the necessity of connecting the two kivas dictated the placement of Kiva B and therefore the rooms associated with it. In order for a passage to be dug between the two kivas, Kiva B had to be placed on one side of the axis of Kiva A rather than directly in line with it to avoid the ventilator system of Kiva A. The axis of Kiva B was placed 11 feet west of the axis of Kiva A. This caused the entire courtyard of Stage 3 to be built to the west of the first courtyard rather than in line with it.

#### GENERAL OBSERVATIONS

Following the abandonment of Site 499 the village gradually fell into ruins. It did not burn, with the possible exception of the tower roof. Apparently few if any of the stones used in its walls were carried away for re-employment in other buildings, which was a general practice at Mesa Verde. This suggests that the end of the occupation of the site took place at a time when new houses were not being built in the Far View area and perhaps at a time when many mesa top dwellings were being vacated in favor of sites in the caves in the nearby canyon walls.

There is evidence that at least some of the rooms of the pueblo stood two stories in height. Some walls of Rooms 10 and 11 had collapsed as units. When the height of a collapsed wall is added to that of the basal portion which remained in place, a resulting height of at least 10 feet is obtained. This is sufficient for a two-story structure. Elsewhere, in several places, the quantity of fallen building stones which covered room remains was adequate to suggest double tiers of rooms. Most of the bases of room walls were of proper width and contained large enough stones to have supported

a two-story building. Whether sections of the pueblo were built as two-story units originally, or whether the second-floor rooms were added as later enlargements, cannot be determined.

The tower must have stood 16 to 18 feet high, judging from the amount of fallen masonry in and about it. It probably was cylindrical from bottom to top and must have been entered through a hatchway in the roof or from Kiva A once its ground-level doorway was blocked by the passage to Kiva A. If it originally contained floors above ground level, no evidence for them remained.

No doorways or other types of wall openings were encountered; therefore, it is presumed that all rooms were entered through hatchways in their roofs. Had doorways been present, their lower sections should have been visible in several of the better preserved walls. No firepits were found in any of the rooms.

## V. POTTERY

FLORENCE C. LISTER

At the time the ceramic remains from Site 499 were first studied, few published technological works dealing with Mesa Verde pottery from the Mesa Verde itself had appeared. Subsequently Leland Abel's study of that particular pottery was printed as one of the handbooks from the Museum of Northern Arizona (Abel, 1955). Site 499 sherds and whole or restored vessels then were restudied and fitted into the suggested framework.

A further analysis of Mesa Verde pottery is at present being done by participants in the Wetherill Mesa Project. Arthur H. Rohn, one of the archaeologists for the project, has been kind enough to furnish us with a brief resume of his proposed taxonomic revisions. In order to bring this report in line with works which will be appearing as a result of the excavations nearing completion on Wetherill Mesa Project, some of Rohn's ideas and those of some of the other workers on the Wetherill Mesa Project have been incorporated herein.

However, because of the regrettable lapse of time between excavation and reportage and the discarding of the bulk of sherds other than what was considered a representative collection, it has been impossible to adhere strictly to the new name structure. Much of such change is a mere shifting of lines and emphasis, and therefore the basic conclusions to be drawn from the ceramic data collected have remained unchanged through the various vicissitudes of taxonomic dilemma.

Table 1 is a tabulation of the potsherds and whole or restorable vessels recovered from Site 499. The types represented, their frequencies, and distributions are shown. In addition, the 33 whole or partial vessels are described at the end of this chapter.

A total of 19,250 classifiable sherds were recovered and studied from Site 499. Yet little new technological data about Mesa Verde ceramics can be offered because, with the exception of a mere 47 sherds, all can be fitted reasonably well into types already known and described as indigenous to the Mesa Verde. Their value may be said to lie in their apparent conformity and lack of technological experimentation, for, pottery-wise at least, they



represent a "pure" tradition with only those foreign influences which also are reflected in the pottery of nearby contemporaneous settlements. They can be thought of as generally corresponding to published description with only minor variations in design and construction.

More precise descriptions of all types recovered will be given in a later report in this series which will include a comparative statement dealing with the ceramics of the three sites excavated by the University of Colorado. For the purpose of this aspect of the ceramic study — relative dating — the sherds from Site 499 provide an acceptable framework, and their specific provenience furnishes a basis for opinions on the growth of the settlement. Association of types at Site 499 may or may not confirm current ideas as to sequence of or overlapping of manufacture.

The original study of the pottery from Site 499 was made by Glen Cole, for two years a graduate assistant. Although his work was sound, it was done prior to taxonomic discussions of Mesa Verde pottery published by the Museum of Northern Arizona and the later revisions made by National Park Service personnel. Therefore, much of Cole's work is now out of date. Also, subsequent tree ring dates obtained conflict with some of his theories. Nevertheless, his aid was most valuable and is herewith acknowledged.

#### GRAY WARE

Mesa Verde Gray Ware at Site 499 is of five types: Chapin Gray, Moccasin Gray, Mancos Gray, Mancos Corrugated, and Mesa Verde Corrugated. This is virtually the complete repertory of gray pottery for the Mesa Verde, ranging in time from Basket Maker III through Pueblo III.

At the outset, it must be pointed out that the crushed rock tempered plain gray, now called Chapin Gray to contrast it with sand tempered Lino Gray, and said by Abel (1955:21) to have been produced in Basket Maker III and Pueblo I, seems, however, to have continued to be made contemporaneously with the banded and corrugated types of later times. Furthermore, it is obvious that such plain grays as were manufactured at Mesa Verde were far more diversified as to temper than Abel supposed. Other excavations on the Mesa Verde by Lancaster and Pinkley (Lancaster et al., 1954:69) and O'Bryan (1950:90) have uncovered plain grays through Pueblo II. Off the Mesa Verde in the Ackmen area (Martin, 1936:98-110), along the La Plata drainage (Morris, 1939:193), at Alkali Ridge (Brew, 1946:257), and in the San Juan Triangle southeast of the Colorado River (Lipe et al., 1960:158) plain grays have been found in obvious contemporaneity with corrugated styles through Pueblo III. Thus the terminal data of A.D. 900 given by Abel should be pushed up to the concluding era

of aboriginal occupation of the northern San Juan, perhaps even as late as A.D. 1300.

The tabulations shown in Table 1 reveal that, although apparently early sherds are present, they are by no means important and may well represent material from the settlement which underlies Site 499, drift from elsewhere along the thickly populated Chapin Mesa, or as stated above, were produced later than previously supposed. Their presence may imply their prolonged production at Site 499 as elsewhere in the area, or they may emphasize the notable lack of distinction between body sherds of plain gray (Chapin Gray) and neck-banded gray (Moccasin Gray and Mancos Gray). Pueblo II style plain gray with a rim fillet, termed Mummy Lake Variety by Rohn, is present in small quantity. Further work possibly may show this variety to have been made during a brief span of years and thus give it considerable value as a dating tool. Otherwise, it may be seen that plain gray pottery is virtually worthless as an aid to reckoning time of site occupation.

Corrugated styles are infinitely more important at Site 499, approximately one-half of the total yield being of this category. The Pueblo II-early Pueblo III type, Mancos Corrugated, is dominant. As in any classification based on progression of stylistic change, transitional forms are the most difficult to pigeonhole. However, when taking into consideration the primary black-on-white complex present (Mancos-McElmo — which is considered to be the running mate of Mancos Corrugated in Pueblo II-early Pueblo III horizons), categorization of the questionable sherds as Mancos Corrugated is justified. In fact, it is likely that classification of Mesa Verde Corrugated should have been more restrictive. Heretofore, it has been thought that the refinements which characterize Mesa Verde Black-on-white were operative in corrugated pottery also. If this is true, Mesa Verde Corrugated should appear to Mancos Corrugated in the same ratio as Mesa Verde Black-on-white appears to Mancos-McElmo Black-on-whites. Looking at 499 figures, however, one can see that although Mancos-McElmo Black-on-whites outranked Mesa Verde Black-on-white 13 to 1, Mancos Corrugated outranked Mesa Verde Corrugated by only 4 to 1.

#### WHITE WARE

San Juan White Ware (Basket Maker III to late Pueblo II) and Mesa Verde White Ware (mid Pueblo II to late Pueblo III) are present in quantity, and it is primarily through their study that age of the site can be determined. A few Chapin Black-on-white sherds, one of the earliest decorated types of the northern San Juan, occur. Again, it is possible these had their origin in other sites in the vicinity and were carried at a later date into the refuse of Site 499.

The earliest significant black-on-white pottery at Site 499 is Mancos Black-on-white. This type, usually employing iron paint but occasionally decorated with carbon paint, is dated by Abel (1955:57) at A.D. 950 to 1150. This is a long span of time, and certainly one allowing for much of the evident change and experimentation.

The main black-on-white at Site 499 is McElmo Black-on-white, said by Abel (1955:39) to have been made between A.D. 1130 and 1200. Although it is a type about whose total complex of design characteristics archaeologists are not in complete agreement, at Site 499 — according to this sorting — McElmo Black-on-white outnumbers Mancos Black-on-white 2 to 1. It can be argued that Mancos Black-on-white and McElmo Black-on-white must have overlapped for considerably more than the 20 years inferred by Abel's approximate dates, and that the early 1100's saw both the Mancos iron paint and the McElmo carbon paint traditions in use in the same village. Human reluctance to accept change being what it is, there no doubt were numerous women who thought grandmother's way was best and continued to use the old-fashioned paints of mineral derivation carried in an organic medium. Others more adventuresome decorated their pots with carbon paint. Both, however, during this period of overlap used the same design elements in much the same manner. As time went on, iron paint went out of style, although exceptions are to be found, and designs were increasingly combined into what was becoming a highly formalized Mesa Verde pattern.

The occurrence of some Mesa Verde Black-on-white and its so-called polychrome variation, assigned a span of time from A.D. 1200 to 1300 by Abel (1955:41), implies occupation of the site until the approaching twilight of life on the mesa tops. Because their number is not great, 438 sherds, it is not suggested that Site 499 continued to be used extensively right up to the final withdrawal from the mesas though it is conceivable that a family or two might have lingered after others had moved on, presumably over the cliff edges into dwellings in the arch roofed caves.

It should be observed that the dates assigned Mancos Black-on-white and Mesa Verde Black-on-white do not allow for an overlap; however, Mancos Black-on-white was found in association with Mesa Verde Black-on-white at Site 499 and several other mesa top sites. The same situation seems apparent in some of the cliff dwellings. This relationship has been noted with such frequency that there must have been a time when both types were used, if not manufactured, simultaneously.

#### RED WARE

Local red pottery, San Juan Red Ware, is represented by 3 sherds of Abajo Red-on-orange and 32 sherds of La Plata Black-on-red, both Pueblo I types more characteristic of regions where Mesa Verde culture is found

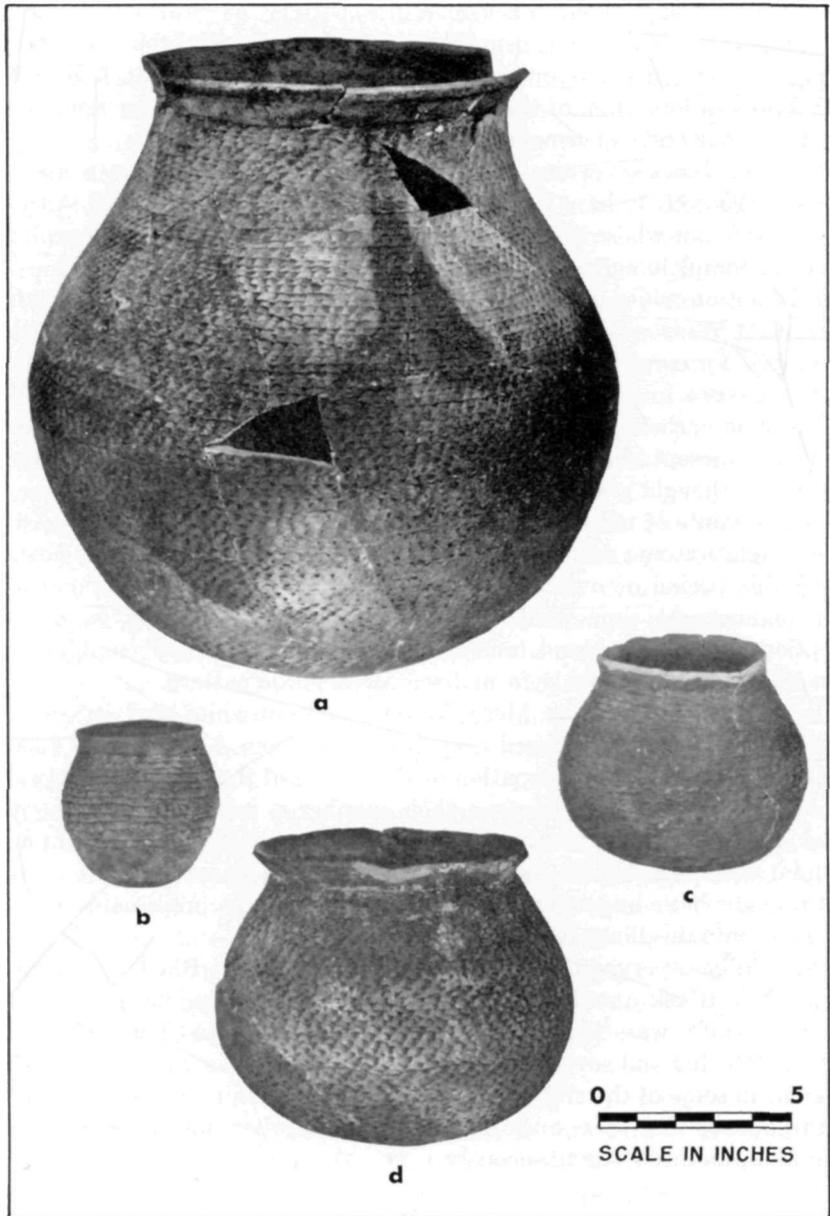


PLATE 17. Mesa Verde Gray Ware, complete or restored vessels. (a) Mesa Verde Corrugated jar, Room 1. (b) Mancos Corrugated jar, Refuse, KL6. (c) Mancos Corrugated jar, Room 10. (d) Mancos Corrugated jar, Kiva B.

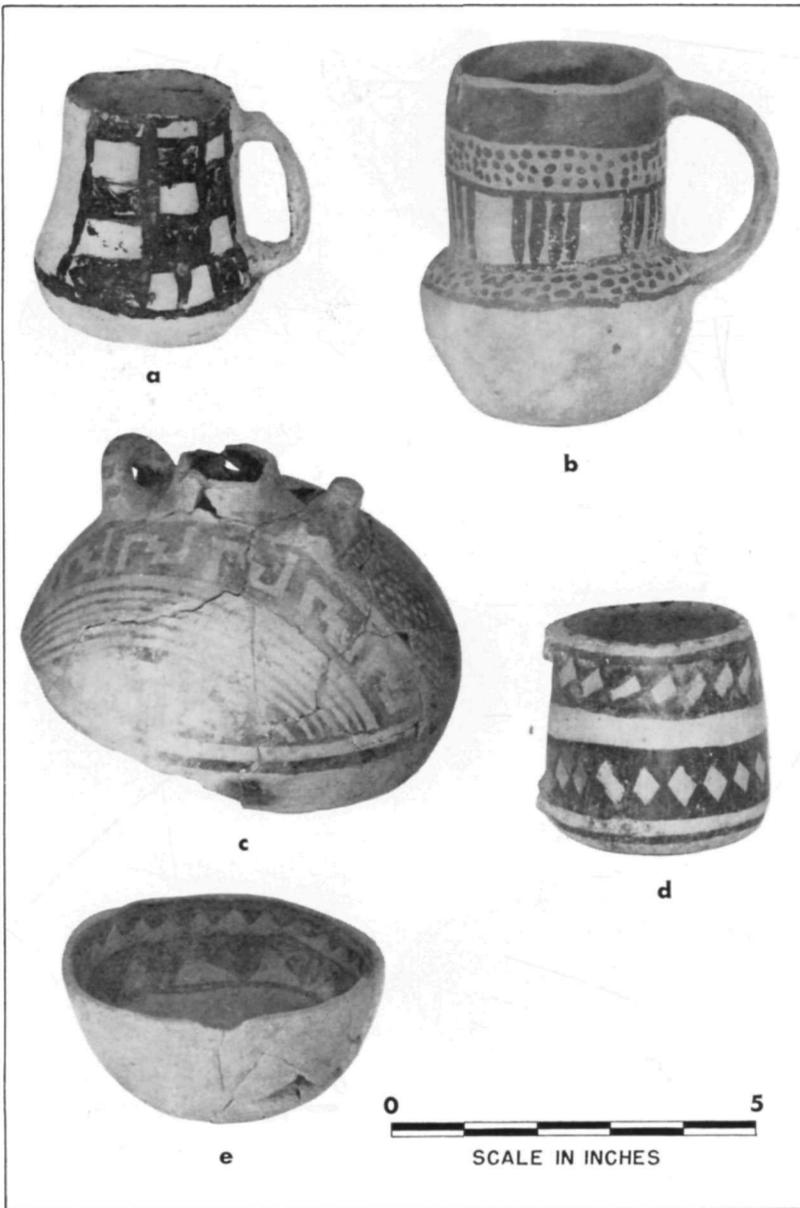


PLATE 18. San Juan White Ware and Mesa Verde White Ware, complete or partial vessels. (a) McElmo Black-on-white pitcher, Burial 4. (b) Mancos Black-on-white pitcher, Burial 10. (c) McElmo Black-on-white canteen, Kiva B. (d) McElmo Black-on-white mug, Burial 7. (e) McElmo Black-on-white bowl, Burial 10.

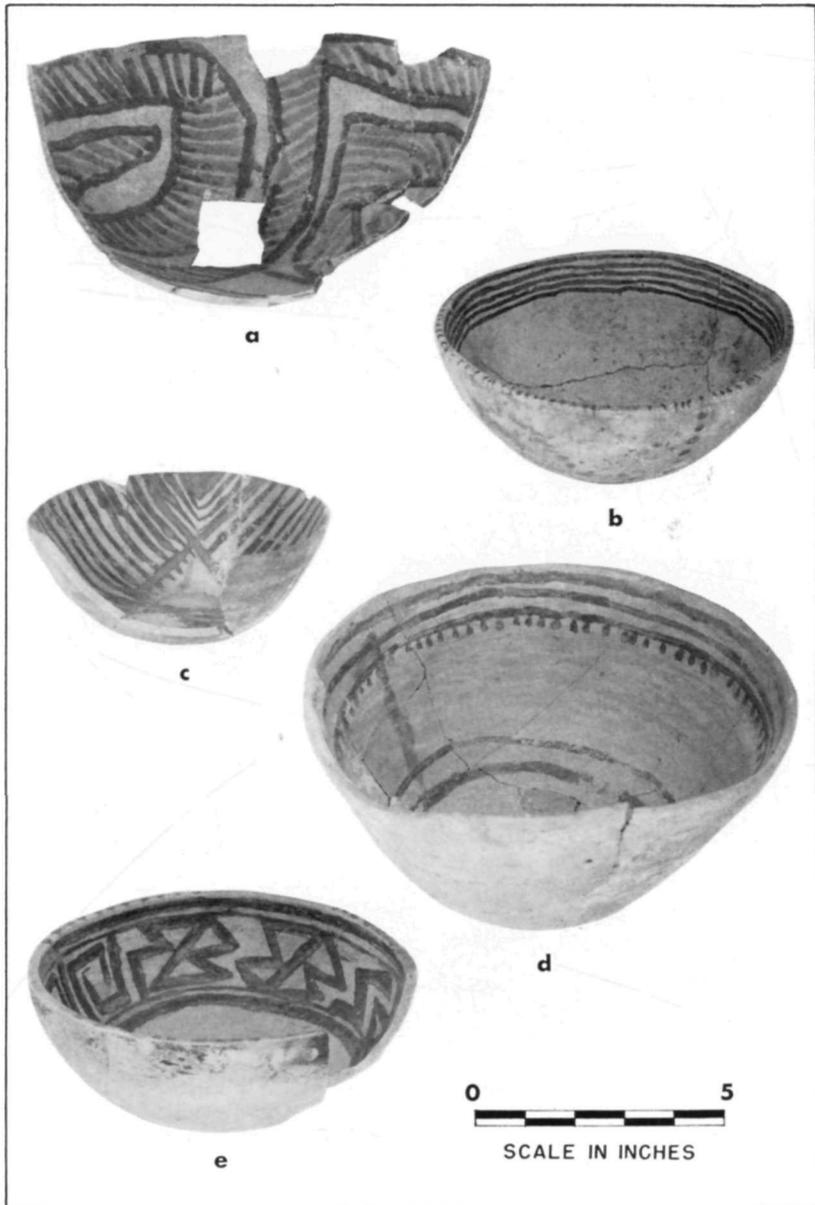


PLATE 19. San Juan White Ware and Mesa Verde White Ware, complete or partial vessels. (a) Chapin Black-on-white bowl fragment, Refuse, IL7. (b) McElmo Black-on-white bowl, Burial 7. (c) McElmo Black-on-white bowl, Refuse, KL6. (d) McElmo Black-on-white bowl, Refuse, ILS with dog burial. (e) McElmo Black-on-white bowl, Burial 7.

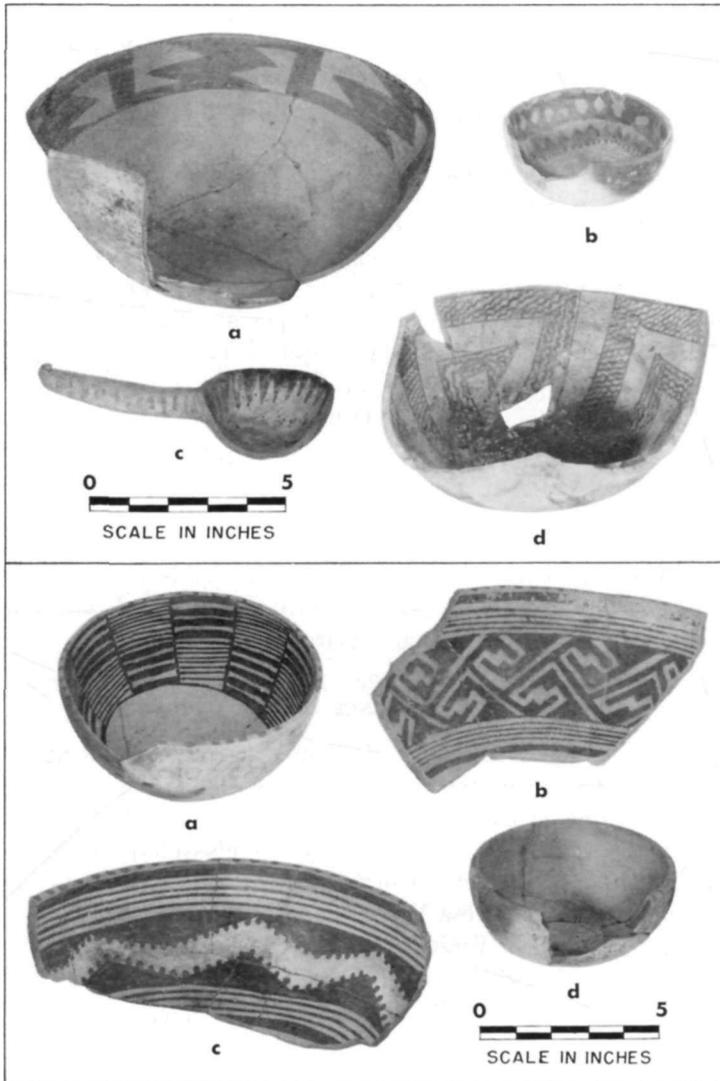


PLATE 20. Top. San Juan White Ware, complete or partial vessels. (a) Mancos Black-on-white bowl, Burial 4. (b) Mancos Black-on-white ladle bowl, Refuse, ILS. (c) Mancos Black-on-white ladle, Refuse, JL6. (d) Mancos Black-on-white bowl fragment, Refuse, JL6.

Bottom. Mesa Verde White Ware, complete or partial vessels. (a) Mesa Verde Black-on-white bowl, Refuse, KL6. (b) Mesa Verde Black-on-white bowl fragment, Room 10. (c) Mesa Verde Black-on-white bowl fragment, Kiva B. (d) Mesa Verde White Ware bowl, Kiva B.

away from the Mesa Verde itself and known to have been retained into later times. In fact, some La Plata Black-on-red not only survived but was made well into Pueblo II but in greatly diminished importance.

#### INTRUSIVES

It is characteristic of the sites on the Mesa Verde that trade pottery is met only infrequently. In this regard, Site 499 is highly typical.

Most numerous are sherds of Kayenta wares, 2 from a single Pueblo II Sosi Black-on-white vessel and 37 fragments of Tsegi Orange Ware assigned to Pueblo II—mid Pueblo III. Specific red types are Tusayan Black-on-red, Citadel Polychrome, and Tusayan Polychrome. These types from the Kayenta country were spread through trade over the entire expanse of the San Juan, and their appearance at Mesa Verde comes as no surprise.

Chaco Canyon was the center of development most closely allied with Mesa Verde and from there, or nearer Chaco colonies, came seven sherds of black-on-white — three Escavada Black-on-white and four Gallup Black-on-white, both Pueblo II types. Chaco red pottery, Wingate Black-on-red of Pueblo II times, is represented by one sherd. Actually this red ware seems to have had its center of origin south of Chaco Canyon itself but is the most common red in the Chaco sites of late horizon.

#### TEMPORAL SIGNIFICANCE OF THE POTTERY

The approximate age and length of occupation of Site 499 may be estimated from the types of pottery used and discarded by its occupants. It is apparent from Table 1 that the bulk of the potsherds recovered from the site — 18,478 out of 19,250 sherds — may be classified into five types: Mancos Corrugated, Mesa Verde Corrugated, Mancos Black-on-white, McElmo Black-on-white, and Mesa Verde Black-on-white.

According to Abel (1955) these types may be dated as follows:

Mancos Corrugated . . . . .	900	1100	
	— ----- —		
Mesa Verde Corrugated . . . . .		1100	1300
		— ----- —	
Mancos Black-on-white . . . . .	950	1150	
	— ----- —		
McElmo Black-on-white . . . . .	1050	1130	1200
	----- ----- —		
Mesa Verde Black-on-white . . . . .	1050		1200 1300
	----- ----- —		

Rohn's tentative revision of Abel's classification would place the beginning of McElmo Black-on-white as early as 1050 and Mesa Verde Black-on-white at 1050 or 1100. These dates are indicated by dashed lines in the diagram above. From evidence at Site 499 and elsewhere, Rohn's dates for these types seem more realistic, and it also is apparent that an overlap should exist between Mancos Corrugated and Mesa Verde Corrugated as demonstrated by the constant association of these types in some deposits.

Because all five pottery types mentioned above occur throughout Site 499, the village must have existed when all of these types were in use. Therefore, the site most likely was occupied from about A.D. 1100 to approximately 1150, or in early Pueblo III times according to the Pecos Classification or in the McElmo Phase of the Gila Pueblo system of classification. Two tree ring dates of A.D. 1123 verify this assumption.

Included among the remaining sherds are some intrusives, most of which are of proper age to represent items obtained from elsewhere through trade during the existence of Site 499. However, a few intrusives and a small number of sherds and one restorable vessel of locally made pottery are types which predate Site 499. As mentioned previously, these may represent heirloom pieces or could have been derived from the village underlying 499 or neighboring villages of earlier age. It is not unusual to find small assortments of Pueblo I or even Basket Maker III pottery in Mesa Verde sites of Pueblo II and Pueblo III ages (Reed, 1958:158; Lancaster et al., 1954:69-80).

Table 2 presents the distribution by percentages of the five principal pottery types of Site 499 in the various parts of the village and trash mounds. The areas listed in the table represent units which may be relatively dated in the history of the growth of the village. For example, Trash Mound 1 can be associated with Stages 1 and 2 of the pueblo's development; Trash Mound 2 was a feature of Stage 3. The section of this report dealing with architectural development of the site (see Chapter IV) explains our concept of the three-stage growth of the structure. Table 2 also shows the frequencies of the total numbers of the three black-on-white types found in the various areas of the village and the ratios of the black-on-white types to one another.

These figures allow for further inferences about the history of the village. The rather close similarity between the frequencies and ratios of pottery types in Trash Mound 2 — the later refuse deposit — and all units of the village imply that all rooms, the two kivas, and the tower must have been in use generally until the period of abandonment of the site. Only Trash Mound 1 — the original midden — shows significant differences in pottery distribution from the remainder of the site. It contains refuse deposited during Stages 1 and 2 of Site 499, while Trash Mound 2 and the fill of the architectural units of the site contained sherds related to Stage 3.

TABLE 2. Pottery distribution, selected types

Areas of site, and building stages with which they were associated Percentages or ratios of pottery types	Trash Mound 1 Stages 1 and 2	Trash Mound 2 Stage 3	Rooms 1-6, 12 Stages 1 and 2	Rooms 7-11 Stage 3	Kiva A Stages 1 and 2	Kiva B Stage 3	Tower Stage 1
Mancos Corrugated	.49	.47	.60	.44	.55	.52	.44
Mesa Verde Corrugated	.10	.16	.14	.16	.15	.14	.12
Mancos Black-on-white	.16	.08	.09	.10	.07	.09	.10
McElmo Black-on-white	.17	.23	.14	.21	.16	.18	.18
Mesa Verde Black-on-white	.01	.02	.02	.03	.02	.03	.04
Total: Mancos, McElmo, Mesa Verde Black-on-whites	.34	.33	.25	.34	.25	.30	.32
Ratio of McElmo Black-on-white to Mancos Black-on-white	1-1	3-1	2-1	2-1	2-1	2-1	2-1
Ratio of McElmo Black-on-white to Mesa Verde Black-on-white	17-1	11-1	7-1	7-1	8-1	6-1	5-1
Ratio of Mancos Black-on-white to Mesa Verde Black-on-white	16-1	4-1	5-1	3-1	4-1	3-1	3-1
Ratio of Mancos Corrugated to Mesa Verde Corrugated	5-1	3-1	4-1	3-1	4-1	4-1	4-1

The approximately 50-year period of time during which the village existed saw a rise in popularity of Mesa Verde Corrugated. It comprised 10 percent of the total sherds in Trash Mound 1, 16 percent in Trash Mound 2. There was a ratio of 5-1 between Mancos Corrugated and Mesa Verde Corrugated in Trash Mound 1 and only a 3-1 ratio in Trash Mound 2. Similarly, McElmo Black-on-white increased in use at the expense of Mancos Black-on-white. The ratio between McElmo Black-on-white and Mancos Black-on-white in Trash Mound 1 was 1-1, while in Trash Mound 2 the ratio increased to 3-1. McElmo Black-on-white increased from 17 percent in Trash Mound 1 to 23 percent in Trash Mound 2 while Mancos Black-on-white decreased from 16 percent in Trash Mound 1 to 8 percent in Trash Mound 2. Mesa Verde Black-on-white was found in small amounts in all areas excavated. It only increased from 1 to 2 percent from Trash Mound 1 to Trash Mound 2, but significantly its ratio to other black-on-white types indicates it to have been on the rise in popularity.

Thus, it is inferred that the inhabitants of Site 499 used Mancos Corrugated as their principal culinary pottery, but Mesa Verde Corrugated had been introduced and was being used in increasing quantities. McElmo Black-on-white was the most commonly employed decorated pottery, but

Mancos Black-on-white had not gone completely out of style and was used in declining amounts. Mesa Verde Black-on-white apparently was still in a developmental stage and, although it was gaining in favor, it was not yet in widespread use. The pottery from Site 499 agrees quite well with the generally accepted ceramic situation in the Mesa Verde area between 1100 and 1150.

The collection of identifiable whole or restorable vessels also shows preference for the same five types of pottery represented by the great majority of the potsherds. Of the 31 classifiable vessels only one — a Chapin Black-on-white bowl — is not of this group, and its classification which is based upon lack of craftsmanship may be open to question. Decorated vessels are more numerous than culinary pieces, the reverse of the situation in respect to potsherds. This is to be expected, however, since most whole vessels were recovered from burials and decorated pots were favored as funerary offerings. McElmo Black-on-white vessels are most frequent. Mesa Verde Black-on-white whole or restorable pieces occurred in larger proportion than did sherds of the same type. This may reflect choice of the better decorated types for burial furnishings and for use in kivas. Two Mesa Verde Black-on-white bowls came from the kivas.

#### COMPLETE OR PARTIAL VESSELS

##### MESA VERDE GRAY WARE

###### MANCOS CORRUGATED

*Small jar.* Wide mouthed, slightly pointed bottom. Lightly indented overlapping corrugations, irregular. Coils average 4 per inch. Lower one-third of vessel smooth. Height,  $4\frac{3}{4}$  in.; greatest diameter,  $4\frac{1}{2}$  in.; diameter of orifice,  $2\frac{7}{8}$  in. Provenience: Trash Mound 1, KL6, associated with Burial 7. (Plate 17, b)

*Small, squat jar.* Wide mouthed, flat bottom. All-over indented corrugations. Coils average 5 per inch. Height,  $3\frac{1}{2}$  in.; greatest diameter,  $4\frac{5}{8}$  in.; diameter of orifice, not obtainable. Provenience: Trash Mound 1, KL6, associated with Burial 7.

*Jar.* Wide mouthed, round bottom. All-over indented corrugations. Coils average 5-6 per inch. Height, 8 in.; greatest diameter,  $9\frac{3}{8}$  in.; diameter of orifice,  $5\frac{3}{4}$  in. Provenience: Kiva B, fire pit. (Plate 17, d)

*Jar.* Wide mouthed, round bottom. All-over indented corrugations. Coils average 5 per inch. Height, 11 in.; greatest diameter,  $11\frac{1}{4}$  in.; diameter of orifice,  $7\frac{1}{4}$  in. Provenience: Room 5, fill.

*Jar.* Wide mouthed, flat bottom. All-over indented corrugations. Coils average 6 per inch. Height,  $6\frac{1}{4}$  in.; greatest diameter,  $6\frac{1}{8}$  in.; diameter of orifice,  $3\frac{3}{4}$  in. Provenience: Room 10, beneath lower floor. (Plate 17, c)

###### MESA VERDE CORRUGATED

*Large jar.* Wide mouthed, low shoulder typical of Pueblo III, tapered bottom. Fine all-over indented corrugations. Coils average 6-7 per inch. Small coil of clay applied on one side below rim. Height, 16 in.; greatest diameter,  $14\frac{1}{2}$  in.; diameter of orifice,  $7\frac{1}{4}$  in. Provenience: Room 1, fill. (Plate 17, a)

## UNDECORATED WHITE WARE

*Small bowl.* Tapered rim. Smoothed and lightly polished on both surfaces, sherd temper. Height,  $2\frac{1}{2}$  in.; greatest diameter,  $5\frac{1}{4}$  in. Provenience: Kiva B, level 2, top of banquette. (Plate 20, bottom, d)

*Large jar.* Base only, indented, sherd temper. No measurements obtainable. Provenience: Trash Mound 1, KL7, associated with Burial 8.

## SAN JUAN WHITE WARE

## CHAPIN BLACK-ON-WHITE

*Bowl.* Fragment only. Tapered rim. Design employs broad line hatching, very poorly executed. It is more typical of later Pueblo II black-on-white designs but quality of workmanship indicates an earlier period of manufacture. Black rim. No measurements obtainable. Provenience: Trash Mound 1, IL7. (Plate 19, a)

## MANCOS BLACK-ON-WHITE

*Bowl.* Fragmentary. Tapered rim. Design consists of squiggled hatching in geometric panels. Black rim. Height,  $4\frac{7}{8}$  in.; estimated greatest diameter, 9 in. Provenience: Trash Mound 1, JL6. (Plate 20, top, d)

*Bowl.* Fragmentary. Tapered rim. Design of solid zigzags separated by broad vertical lines in band beneath rim. Vessel is badly warped. Height,  $5\frac{1}{2}$  in.; greatest diameter,  $10\frac{1}{2}$  in. Provenience: Trash Mound 1, IL7, associated with Burial 4. (Plate 20, top, a)

*Pitcher.* Design of polka dots in two horizontal panels, one around neck and other encircling shoulder, panels connected by longitudinal groups of parallel lines. Wide, solid band at top of neck. Parallel horizontal lines on outside of handle. Height, 5 in.; diameter at shoulder,  $3\frac{3}{4}$  in. Provenience: Trash Mound 1, LL7, associated with Burial 10. (Plate 18, b)

*Pitcher.* Fragmentary. Visible design consists of a horizontal band with longitudinal hatching encircling the shoulder, and hatched geometric elements on the neck. Measurements unobtainable. Provenience: Trash Mound 1, JL6.

*Ladle.* Handle and bowl style. Handle is round, hollow, with upturned perforated end. Bowl design of solid, elongated pendant triangles extending downward from rim. Series of parallel lines on handle. Length,  $8\frac{5}{8}$  in.; diameter of bowl,  $3\frac{1}{4}$  in. Provenience: Trash Mound 1, JL6. (Plate 20, top, c)

*Ladle.* Bowl only of handle and bowl style. Bowl design consists of two bands, one of two rows of solid triangles joined at their apexes, other of solid up-pointing triangles with dots along lower edge. Diameter of bowl, 5 in. Provenience: Trash Mound 1, IL8. (Plate 20, top, b)

## MESA VERDE WHITE WARE

## McELMO BLACK-ON-WHITE

*Bowl.* Square rim. Interior design of five carelessly executed parallel lines encircling vessel below rim. Rim is ticked. Exterior has four vertical rows of dots which extend from rim to bottom of vessel dividing it into quarters. Because of the rim ticking some workers might prefer to classify this specimen as Mesa Verde Black-on-white but, basing an opinion upon the poor quality of workmanship, it is considered to be McElmo Black-on-white. Height, 3 in.; diameter,  $7\frac{3}{8}$  in. Provenience: Trash Mound 1, KL6, associated with Burial 7. (Plate 19, b)

*Bowl.* Square rim. Design consists of an encircling panel framed top and bottom by broad lines. One half of panel contains interlocking rectangular key elements, other half is a stepped line design. Rim has three groups of tick marks. This specimen also might be considered the later Mesa Verde Black-

on-white type because of the band layout and square rim; however, in view of the generally inferior craftsmanship it has been classified McElmo Black-on-white in this study. Height, 3 in.; diameter,  $7\frac{5}{8}$  in. Provenience: Trash Mound 1, KL6, associated with Burial 7. (Plate 19, e)

*Bowl.* Tapered rim. Design of longitudinal hatching extending downward from rim, lines of irregular width and unevenly spaced. Two diamond shaped spaces left undecorated in bottom of vessel. Height,  $2\frac{5}{8}$  in.; diameter,  $6\frac{1}{8}$  in. Provenience: Trash Mound 1, KL6. (Plate 19, c)

*Bowl.* Tapered rim. Deep, slanting sides. Design consists of three poorly executed encircling lines below the rim, lowest line is ticked, and two circular lines in bottom of vessel. Height,  $5\frac{1}{2}$  in.; diameter,  $9\frac{1}{2}$  in. Provenience: Trash Mound 1, IL8, associated with dog burial. (Plate 19, d)

*Bowl.* Tapered rim. Design of two rows of solid triangles below rim and an encircling line in bottom of bowl. Vessel is warped. Height, 2 in.; greatest diameter,  $4\frac{1}{2}$  in. Provenience: Trash Mound 1, LL7, associated with Burial 10. (Plate 18, e)

*Bowl.* Fragment. Square rim. Interior design of seven broad circular lines beneath rim. Rim ticked. Exterior apparently had four designs resembling bird tracks. Height,  $2\frac{1}{4}$  in.; estimated diameter,  $6\frac{1}{2}$  in. Provenience: Kiva B, level 2, top of banquette.

*Bowl.* Fragment of large vessel. Square rim. Designs made up of cross hatched panel encircling vessel below rim. Groups of tick marks on rim. Measurements unobtainable. Provenience: Trash Mound 1, IL6, associated with Burial 2.

*Bowl.* Fragment of large vessel. Square rim. Interior design of five broad lines going around the vessel below rim. Rim is ticked. Measurements unobtainable. Provenience:

Trash Mound 1, IL6, associated with Burial 2.

*Bowl.* Fragment of small vessel. Tapered rim. Design of nested triangles and geometric lines, square area in bottom left undecorated. Black rim. Height,  $2\frac{1}{4}$  in.; diameter, unobtainable. Provenience: Trash Mound 1, JL7.

*Jar.* Fragment of large vessel. Design not observable. Flattened strap handle on shoulder. Measurements unobtainable. Provenience: Kiva B, level 1.

*Canteen.* Fragment. Design on upper half of vessel consists of bands of stepped keys, parallel lines, and cross hatching extending across vessel from side to side. Pair of loop lugs, one on either side of mouth of vessel. Estimated height, 5 in.; estimated diameter,  $6\frac{1}{2}$  in.; diameter of orifice, 1 in. Provenience: Kiva B, level 2, top of banquette. (Plate 18, c)

*Small mug.* Sides slightly incurved at top, bottom flat. Square rim. Handle missing. Two decorative panels encircle exterior. Each panel has two rows of opposing triangles meeting to leave diamond shaped areas between them. Circular line around bottom of vessel. Rim is ticked. Height,  $3\frac{1}{8}$  in.; greatest diameter,  $3\frac{1}{8}$  in. Provenience: Trash Mound 1, KL6, associated with Burial 7. (Plate 18, d)

*Small pitcher.* Crudely made. Design consists of two vertical checkerboard panels. Black rim. Height,  $3\frac{1}{2}$  in.; greatest diameter, 3 in. Provenience: Trash Mound 1, IL7, associated with Burial 4. (Plate 18, a)

#### MESA VERDE BLACK-ON-WHITE

*Bowl.* Square rim. Design consists of ten vertical panels filled with parallel horizontal lines. Lines in the panels are arranged alternately. One panel has a series of fine lines at the top, thick lines at the bottom. The next has thick lines at the top, fine lines at the

bottom, etc. Circular area in bottom of vessel left undecorated. Rim ticks spaced in four groups. Height,  $3\frac{1}{4}$  in.; diameter,  $6\frac{3}{4}$  in. Provenience: Trash Mound 1, KL6, associated with Burial 7. (Plate 20, bottom, a)

*Bowl.* Fragmentary. Square rim. Interior design covers most of vessel, consists of two opposing interlocking triangular designs and two opposing series of chevrons. Design units separated by vertical panels containing horizontal hatching. Two rows of square shaped elements encircle the exterior of the vessel below the rim. Rim is ticked. Height, 3 in.; diameter unobtainable. Provenience: Kiva A, level 2.

*Bowl.* Fragment of large vessel. Square rim. Design of broad band beneath rim with diamond shaped units between areas of longitudinal hatching.

Rim is ticked. Measurements unobtainable. Provenience: Trash Mound 1, LL7, associated with Burial 10.

*Bowl.* Fragment of large vessel. Square rim. Decoration is a wide horizontal panel framed by one broad line and four narrow lines at top and bottom. Solid interlocking frets make up the center of the panel. Rim is ticked. Measurements unobtainable. Provenience: Room 10, fill. (Plate 20, bottom, b)

*Bowl.* Fragment of large vessel. Square rim. Design is a wide horizontal panel framed above and below by one broad line and four narrow lines. Two rows of solid ticked triangles form the center of the panel. Rim is ticked. Measurements unobtainable. Provenience: Kiva B, Level 2, top of banquette. (Plate 20, bottom, c)

## VI. ARTIFACTS AND ORNAMENTS

The collection of artifacts and ornaments from the site consists of a typical assortment of early Pueblo III age from the Mesa Verde area. With the exception of a few miscellaneous items, all specimens and their provenience and descriptions are included in the following tables. An illustration of a typical specimen of each type is presented.

Not included in the tabulations are five fragmentary grooved or notched stone specimens which may have been axes or mauls. They are too small for identification. There are four pieces of worked sandstone whose original shape cannot be determined. One appears to have been somewhat conical in form and has a hole drilled through it from apex to base. A thin oval-shaped piece of sandstone had served as a lid for the pottery vessel imbedded in the floor of Room 10. Several fragments of bone artifacts are not classifiable. Six appear to be shaft sections of awls, fleshers, or flakers. One may be a piece of a whistle. It is a broken section of bird bone with a hole drilled through it. Two concretions and a piece of petrified wood also were recovered from the site.

Stone flakes of various shapes and sizes, struck from rocks which break with a conchoidal fracture, and cores from which such flakes were struck were common finds. The flakes are not listed among the artifacts, but in all likelihood they were effectively used as cutting devices until their edges became dull.

Metates are preponderantly of the flat slab type; fifteen whole or fragmentary examples were collected. Only two trough metates were recovered. The flat slab type replaced the trough variety in late Pueblo II-early Pueblo III times in the Mesa Verde area (Morris, 1939:133; Brew, 1946:147-48; Lancaster et al., 1954:109). All manos are approximately rectangular, are thin in cross section, and are the two-handed variety. They were used on the flat slab metates and their grinding surfaces are of sufficient length to reach from one side to the other of the metate.

Rubbing stones, flat abraders, and polishing pebbles could have been used to polish floors, smooth wall plaster, rub hides during the tanning process, and the smaller specimens to smooth the surfaces of pottery vessels while they were being fashioned. Two large, flat, smooth stones are identified as

lapstones. They conceivably were rested on a person's lap and small artifacts and ornaments of stone, bone, or shell could have been shaped or polished upon their slightly concave faces.

Pecking stones are common. They usually are made of small water smoothed boulders and are battered and shaped by use. Two broken *tcama-hias*, thought to have served as skinning knives or hoes, were collected.

Both notched and grooved hammers and axes occur. Several hammers resemble axes which have been dulled through use.

Chipped stone implements are scarce, reflecting a situation noted by previous workers in the area. A small, side-notched projectile point was most frequent at Site 499; six examples were collected. Brew (1946:233) and O'Bryan (1950:109-11) have pointed out the repeated occurrence of this type in Pueblo II-Pueblo III times. Two projectile points of other types, four knives, two flake scrapers, and a hoe blade complete the small inventory of chipped stone artifacts.

Bone implements are dominated by awls of various shapes and sizes fashioned from both bird and mammal bones. An implement, the flesher or end scraper made of animal humeri, is present. Characteristic of the San Juan (Morris, 1939:121-122), it is said to have made its appearance in Pueblo II times and continued into Pueblo III (Brew, 1946:242). A few piercing tools have marks upon them suggesting their use as weaving implements.

Ornaments are represented by only three pendants, two of stone, one of pottery.

**METATES - SITE 499**

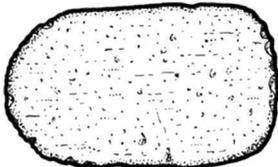
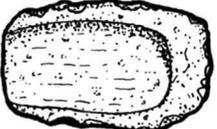
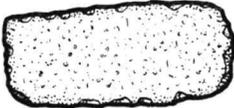
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<p><b>FLAT SLAB :</b></p>  <p align="center">Top</p>  <p align="center">Side</p>  <p align="center">End</p>	Room 3	16"	9 1/2"	1 3/4"	Sandstone	
	Room 8				Sandstone	Fragmentary
	Rm. 10, lower floor	10 1/2"	11 1/4"	3"	Sandstone	
	Rm. 10, lower floor	15 3/4"	9 1/4"	1 1/2"	Sandstone	
	Rm. 10, lower floor	17 1/4"	10 1/4"	2"	Sandstone	Flat grinding surface
	Rm. 10, lower floor	18"	11"	2 1/4"	Sandstone	
	Rm. 10, lower floor	15 7/8"	9"	2 1/2"	Sandstone	
	Rm. 10, lower floor				Sandstone	Fragmentary
	Rm. 10, lower floor				Sandstone	Fragmentary
	Kiva A, level 2				Sandstone	Fragmentary
	Kiva A, level 3				Sandstone	Fragmentary
	Kiva B, level 2	18 3/4"	10 1/4"	2 1/4"	Sandstone	
	Kiva B, level 3				Sandstone	Fragmentary
Kiva B, ventilator	16"	8 7/8"	1 1/2"	Sandstone		
Kiva B, ventilator	14 1/2"	10 1/4"	3"	Sandstone		
<p><b>TROUGH :</b></p>  <p align="center">Top</p>  <p align="center">Side</p>  <p align="center">End</p>	Kiva A, level 2 Surface				Sandstone Sandstone	Fragmentary Fragmentary

TABLE 3

## MANOS- SITE 499

TYPE	LOCATION	NUMBER	LENGTH	WIDTH	THICKNESS	REMARKS		
<b>SINGLE GRINDING SURFACE:</b>   <p style="text-align: center;">Top</p>  <p style="text-align: center;">Side</p>  <p style="text-align: center;">End</p>	Room 2	4	10" 11 1/2"	5" 5"	1" 7/8"	All manos of fine-grained sandstone Measurements indicate range in size. Two fragmentary.  Measurements indicate range in size. Four fragmentary.  Two fragmentary All fragmentary One fragmentary Measurements indicate range in size. One fragmentary. Fragmentary Measurements indicate range in size  One fragmentary Both fragmentary Both fragmentary All fragmentary Fragmentary Fragmentary  Both fragmentary		
	Room 7	1	8 3/4"	4 1/4"	3/4"			
	Room 10	18	7 1/8" 11"	4 1/2" 4 7/8"	1 3/8" 3/4"			
	Room 11	1	8 3/4"	4 3/4"	1 1/2"			
	Kiva A, level 1	3	8"	4 1/2"	1"			
	Kiva A, level 2	3						
	Kiva A, level 3	2	7"	3"	2 1/2"			
	Kiva B, level 1	3	9 1/4" 10 1/8"	4 5/8" 4 1/2"	1" 1 3/8"			
	Kiva B, level 2	1	9 3/4"	4 3/4"	1 1/8"			
	Kiva B, level 3	3	10 1/2" 8 3/4"	4 3/4" 5"	1 5/8" 1 3/4"			
	Tower, level 2	2						
	Tower-Kiva A passage	2						
	FL1, refuse	2						
	GO, refuse	3						
	HL6, refuse	1						
	IL6, refuse	1						
	IL7, refuse	1	9 3/4"	4 1/2"	2"			
	JL8, refuse	2						
	<b>TWO ADJOINING GRINDING SURFACES:</b>   <p style="text-align: center;">Top</p>  <p style="text-align: center;">Side</p>  <p style="text-align: center;">End</p>	Room 3	1	11 1/2"	5 1/4"		3/4"	All manos of fine-grained sandstone  Measurements indicate range in size. Three fragmentary.  Fragmentary Fragmentary
		Room 10	6	8 1/2" 11 1/2"	5" 4 7/8"		1 1/4" 3/4"	
Room 12		1						
Kiva B, level 2		1						

**MANOS (cont.)- SITE 499**

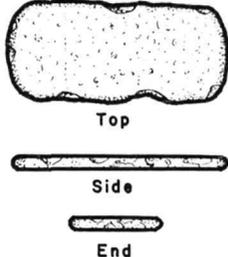
TYPE	LOCATION	NUMBER	LENGTH	WIDTH	THICKNESS	REMARKS	
<p><b>TWO GRINDING SURFACES:</b></p>  <p>Top</p> <p>Side</p> <p>End</p>	Room 2	5	5 1/2"	3"	2"	<p>All manos of fine-grained sandstone. Measurements indicate range in size. One fragmentary.</p> <p>One fragmentary</p> <p>One fragmentary</p> <p>Fragmentary</p> <p>Fragmentary</p> <p>Measurements indicate range in size. Three fragmentary.</p> <p>One fragmentary</p> <p>Measurements indicate range in size. One fragmentary.</p> <p>One fragmentary</p> <p>Fragmentary</p> <p>Fragmentary</p> <p>Both fragmentary</p> <p>Fragmentary</p> <p>Two fragmentary</p> <p>Fragmentary</p> <p>One fragmentary</p> <p>Both fragmentary</p>	
	Room 3	2	11"	5 1/4"	7/8"		
	Room 7	2	10 1/2"	5"	3/4"		
	Room 10	1	8 1/8"	4 3/4"	1 1/4"		
	Room 12	1					
	Kiva A, level 1	6	5 1/4"	4 1/4"	1 5/8"		
	Kiva A, level 2	2	6"	4"	1 5/8"		
	Kiva A, level 3	3	8"	4 1/2"	1 3/4"		
	Kiva B, level 3	2	8 1/2"	4 1/2"	2"		
	Kiva B, ventilator	1	11"	4 3/4"	1"		
	Tower, level 1	1	11 1/8"	4 1/4"	3/4"		
	Tower, level 2	1	7 7/8"	4 5/8"	1 1/8"		
	DRL, refuse						Fragmentary
	EO, refuse	1					Fragmentary
	ER1, refuse	2					Both fragmentary
	FL1, refuse	1					Fragmentary
	HL7, refuse	3		7"	4 3/4"		1"
	IL6, refuse	1					Fragmentary
	IL7, refuse	2		10 3/4"	5"		1 3/4"
	IL8, refuse	2					

TABLE 4

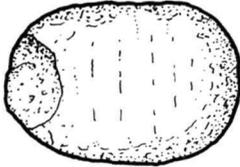
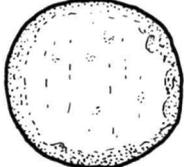
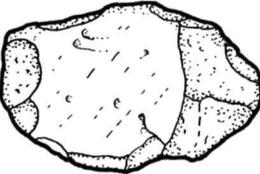
RUBBING STONES- SITE 499					
TYPE	LOCATION	GR. DIA.	LEAST DIA.	MATERIAL	REMARKS
<b>OVAL:</b> 	Room 10 Kiva A, level 1 Kiva A, level 2 Kiva A, level 2	3 7/8" 3 1/4" 3 1/2" 2 7/8"	3 1/2" 1 3/8" 1 1/8" 1 7/8"	Basalt Sandstone Sandstone Basalt	Two rubbing surfaces  Reworked axe or hammer
<b>DISCOIDAL:</b> 	DR1, refuse	2 3/4"	1"	Andesite	Two parallel rubbing surfaces
<b>IRREGULAR:</b> 	Room 2 Room 3 Room 9 Kiva A, level 2 Kiva A, ventilator Kiva B, level 2 Kiva B, level 2 Kiva B, level 3 Kiva B, level 3 BL1, refuse DO, refuse FR1, refuse	3 1/4" 2 1/8" 2 3/4" 3 1/8" 1 7/8" 3 1/8" 4 3/4" 3 1/8" 2 3/4" 3 1/4" 2 5/8" 2 1/4"	7/8" 1" 1" 2" 1" 1" 2 3/8" 2" 1 1/8" 1" 3/4" 1 1/4"	Basalt Basalt Basalt Basalt Basalt Basalt Basalt Basalt Sandstone Basalt Igneous rock Basalt Basalt	Two parallel rubbing surfaces  Also used as pecking stone Shows but slight wear

TABLE 5

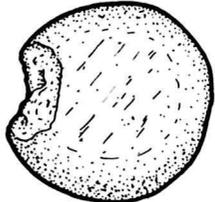
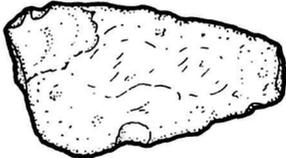
FLAT ABRADERS- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>TABULAR:</b> 	Tower, level 2 IL7, refuse	3 3/8" 2 5/8"	3 3/8" 2 3/8"	3/4" 5/8"	Sandstone Sandstone	Fragmentary, one face worn Both faces worn
<b>IRREGULAR:</b> 	ER1, refuse	4 7/8"	2 5/8"	1/2"	Sandstone	One face worn
<b>PARALLEL SIDED:</b> 	EL1, refuse	1 1/8"	5/8"	3/8"	Sandstone	All faces worn smooth

TABLE 6

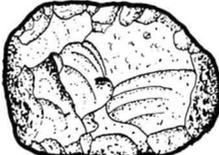
PECKING STONES- SITE 499					
TYPE	LOCATION	GR. DIA.	LEAST DIA.	MATERIAL	REMARKS
	Room 9	2 3/8"	1 1/2"	Basalt	One end battered
	Room 10	4 7/8"	3 1/2"	Basalt	
	Rm. 10, lower floor	2 1/2"	2"	Quartzite	
	Rm. 10, lower floor	3"	2 5/8"	Quartzite	
	Rm. 10, lower floor	2 3/4"	2 1/2"	Quartzite	
	Rm. 10, lower floor	2 7/8"	2 1/2"	Quartzite	Sides polished
	Kiva A, level 1	2"	1 5/8"	Rhyolite	
	Kiva A, level 2	2 1/2"	1 1/4"	Sandstone	
	Kiva A, level 3	2 1/2"	1 3/4"	Chert	
	Kiva B, level 1	2 3/4"	1 7/8"	Sandstone	
	Kiva B, level 3	4 3/8"	1 7/8"	Basalt	One end broken
	Tower, level 1	2 1/2"	1 5/8"	Chalcedony	
	FLL, refuse	2 7/8"	1 7/8"	Igneous rock	Most made of water worn pebbles
	JL5, refuse	4 3/4"	1 1/2"	Quartzite	
	JL3, refuse	2 1/8"	1 1/2"	Basalt	
	JL3, refuse	2 5/8"	1 1/2"	Quartzite	

TABLE 7

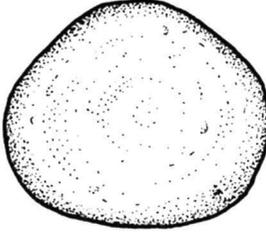
LAPSTONES- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
	Kiva A, floor	14 1/8"	5 7/8"	1 7/8"	Porphyry	Lenticular shaped; both faces smooth
	Kiva B, floor	9 1/2"	8 3/4"	2"	Porphyry	Sub-triangular shaped; both faces smooth

TABLE 8

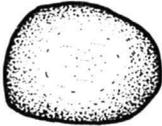
POLISHING PEBBLES- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>POTTERY POLISHER:</b> 	Room 7	1 1/2"	1 1/8"	7/8"	Basalt	One facet
	Kiva A, level 2	1 1/2"	1 1/8"	3/4"	Basalt	One facet
	Kiva A, level 2	1 1/4"	1/2"	3/8"	Basalt	Fragmentary, one facet
	Kiva A, level 3	1 1/8"	5/8"	5/8"	Basalt	Two facets
	BO, refuse	2 1/4"	1 1/4"	7/8"	Basalt	No well defined facets
	BR2, refuse	2 3/8"	7/8"	3/4"	Basalt	Fragmentary; one facet
	DL1, refuse	1 7/8"	1 1/4"	3/4"	Basalt	No well defined facets
	EL1, refuse	1 5/8"	7/8"	3/8"	Basalt	One facet

TABLE 9

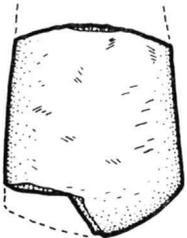
TCAMAHIAS- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
	west of tower	3 1/4"	1 3/4"	1/2"	Siltstone	Fragmentary; possibly the handle end
	FL1, refuse	4 5/8"	3 1/4"	3/4"	Siltstone	Fragmentary; approximately one-half of cutting end of implement. Excellently smoothed and polished.

TABLE 10

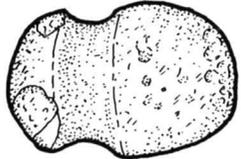
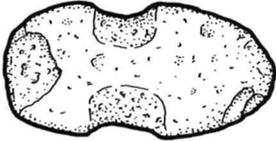
HAMMERS- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>OVAL, FULL GROOVED:</b> 	Kiva B, level 2	3 3/4"	3 1/8"	1 5/8"	Basalt	Groove on one face very shallow. Several large chips removed from poll.
<b>OVAL, 3/4 GROOVED:</b> 	West of Kiva B	4 5/8"	2 1/4"	1 5/8"	Rhyolite	Numerous chips removed from poll and bit
<b>OVAL, NOTCHED:</b> 	B0, refuse	3 3/8"	2 7/8"	1 1/2"	Andesite	Sub-triangular in cross section. Several chips removed from poll.
<b>FLAT, NOTCHED:</b> 	BL1, refuse HL7, refuse	3 1/8" 4 3/8"	2 1/2" 2 7/8"	7/8" 1 1/2"	Basalt Diorite	Parallel faces Fragmentary; remaining side has double notch

TABLE 11

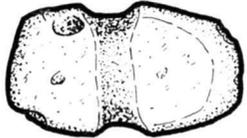
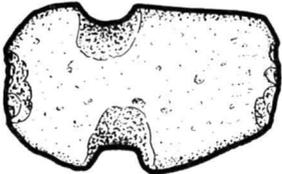
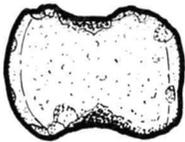
GROOVED AND NOTCHED AXES- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>FULL GROOVED, SINGLE BITTED:</b> 	Room 2	7 1/8"	3 3/8"	1 7/8"	Diorite	Well shaped and polished. Poll battered.
	Room 10				Chert	Fragmentary; bit and poll broken
	Kiva B, floor	5 5/8"	3 3/8"	2 1/8"	Diorite	Poll very battered
<b>NOTCHED, SINGLE BITTED:</b> 	Room 1	7 5/8"	4 1/2"	1 7/8"	Diorite	Bit and poll battered
	Room 1	5 3/8"	3 3/8"	2 1/8"	Diorite	Poll broken
	FL1, refuse				Rhyolite	Fragmentary
	JL5, refuse				Andesite	Fragmentary
<b>NOTCHED, DOUBLE BITTED:</b> 	FR1, refuse				Basalt	Fragmentary

TABLE 12

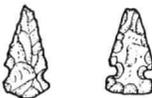
PROJECTILE POINTS AND KNIVES- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>SIDE NOTCHED POINT :</b> 	AL2, refuse BL2, refuse DO, refuse DO, refuse HL1, refuse HL6, refuse	1" 7/8" 1 3/8" 1 1/4" 1" 1 7/8"	1/2" 1/2" 1/2" 5/8" 5/8" 7/8"	1/4" 1/8" 1/4" 1/4" 1/4" 1/4"	Chalcedony Chalcedony Chalcedony Chalcedony Chalcedony Quartzite	 Tip broken   Stem broken Long-stemmed
<b>STRAIGHT STEMMED POINT:</b> 	Rm. 10, lower floor Kiva B, level 2	2 5/8" 1 7/8"	1 1/4" 3/4"	3/8" 1/4"	Chalcedony Chalcedony	Tip broken. In jar beneath floor. Tip rounded
<b>CORNER NOTCHED POINT :</b> 	Surface, north of tower	1 1/4"	7/8"	1/4"	Chalcedony	Tip and one barb broken
<b>LEAF SHAPED KNIFE :</b> 	Kiva A, level 3 DR1, refuse HL1, refuse	3 7/8" 2" 3 1/2"	1 5/8" 1 5/8" 1 1/4"	3/8" 1/4" 3/8"	Chert Quartzite Chert	Fragmentary
<b>STEMMED KNIFE :</b> 	FL2, refuse	2 1/4"	1 3/4"	1/2"	Chert	Fragmentary, stem broken
<b>UNCLASSIFIED :</b>	Kiva B, level 2	7/8"	1"	1/4"	Chalcedony	Fragmentary; mid-section only

TABLE 13

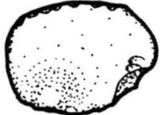
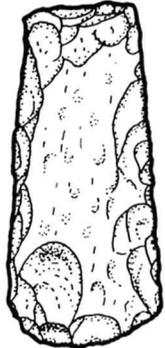
CHIPPED STONE IMPLEMENTS- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
FLAKE SCRAPER: 	AO. refuse ER2, refuse	2" 2 1/4"	1 1/2" 1 7/8"	1/2" 7/8"	Quartzite Quartzite	Scraping edge not retouched Scraping edge not retouched
HOE: 	Kiva A, level 1	8 1/2"	3 1/8"	1 1/4"	Slate	Crudely chipped

TABLE 14

**AWLS - SITE 499**

TYPE	LOCATION	LENGTH	REMARKS
<b>BIRD BONE:</b> <b>HEAD OF BONE INTACT:</b> 	Room 10 Room 11 Kiva A, level 3 Kiva B, level 3 Kiva B, level 3 Kiva B, floor Kiva B, ventilator AL2, refuse EL1, refuse	3 1/8" 4 7/8" 4 1/4" 4" 3 1/2" 3 1/4" 5 1/4" 5 3/8" 3"	Turkey tibia Point broken, turkey tibia Point broken, turkey tarso-metatarsus Turkey tibia Point broken, turkey tarso-metatarsus Associated with burial 1, turkey tibia Turkey tibia Turkey tibia Point broken, turkey tibia
<b>HEAD OF BONE PARTLY REMOVED:</b> 	Room 10, between floors Kiva B, level 2 Kiva B, level 3	3 1/2" 3" 2 1/4"	Turkey tarso-metatarsus Point broken, turkey tarso-metatarsus
<b>HEAD OF BONE REMOVED:</b> 	Kiva A, level 2 Kiva A, level 2 Kiva A, level 3 BR3, refuse JL1, refuse JL5, refuse KL6, refuse	3" 3" 4 1/4" 7/8" 2 1/8" 2" 2 5/8"	Fragmentary, point and shaft broken Fragmentary, point and shaft broken Point only; possibly a needle Fragmentary, shaft broken Fragmentary, shaft broken Point broken
<b>MAMMAL BONE:</b> <b>HEAD OF BONE PARTLY REMOVED:</b> 	Room 3 Room 3 Room 9 Room 12 Kiva A, level 2 Kiva A, level 2 Kiva A, in pilaster	7 1/4" 7 1/4" 3 1/2" 7 1/8" 8 5/8" 9 1/8" 4"	Point broken Point broken, deer metapodial Point blunt and unpolished, deer ulna
<b>HEAD OF BONE REMOVED:</b> 	Room 9 Room 10, between floors Kiva B, level 2	3 5/8" 3 1/8" 3 7/8"	
<b>SPLINTER:</b> 	Room 3 Room 6 Tower Tower CR1, refuse GO, refuse	6 5/8" 2 7/8" 4 1/4" 3 3/4" 5 1/2" 3 1/4"	Fragmentary Knife-like point Point broken; finger grip

TABLE 15

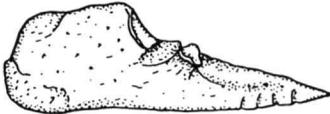
WEAVING TOOLS- SITE 499			
TYPE	LOCATION	LENGTH	REMARKS
<b>HEAD INTACT :</b> 	Kiva A, level 2	5"	Made from deer ulna
<b>HEAD REMOVED :</b> 	Room 11 Kiva A, level 2 Kiva B, level 2 DL1, refuse	3 3/4" 5 1/2" 5" 1 5/8"	Mammal bone Point worn at an oblique angle. Mammal bone Mammal bone Fragmentary; deep grooves in point. Mammal bone

TABLE 16

BONE TUBES- SITE 499				
TYPE	LOCATION	LENGTH	DIAMETER	REMARKS
	Kiva A, level 2 DL2, refuse HL5, refuse JL8, refuse	1 3/8" 2 3/4" 2 1/4" 3 1/8"	1/2" 3/8" 1/2" 5/8"	All tubes made of bird bone Both ends smoothed; scored near one end One end broken; surface highly polished Both ends smoothed Fragmentary

TABLE 17

FLESHERS- SITE 499					
TYPE	LOCATION	LENGTH	MATERIAL	REMARKS	
<b>END SCRAPER, HEAD INTACT</b> 	Room 10	11 1/4"	Tibia, Mountain sheep	Broad, spoon-like blade	
	IL8, refuse	4 3/8"	Mammal bone	Fragmentary; narrow working edge	
	JLL, refuse	3 1/2"	Mammal bone	Fragmentary; rounded working edge	
	Kiva A, level 1	4 1/8"	Ulna, deer	Rounded working edge	

TABLE 18

ORNAMENTS- SITE 499						
TYPE	LOCATION	LENGTH	WIDTH	THICKNESS	MATERIAL	REMARKS
<b>CIRCULAR PENDANT:</b> 	BL1, refuse	7/8"	7/8"	1/8"	Jet	Well finished. Random scratches on both faces. Hole drilled from both faces.
<b>SPHERICAL PENDANT:</b> 	Kiva A, ventilator	1/2"	1/2"	1/2"	Quartz	Poorly polished. Bail protrudes beyond curvature of remainder of specimen.
<b>RECTANGULAR PENDANT:</b> 	IL8, refuse	1 3/8"	7/8"	1/8"	Pottery	Made from a fine textured buff sherd.

TABLE 19

## VII. BURIALS

Ten fragmentary or almost complete human skeletons were obtained from the site. One was found in Kiva B, the others occurred in Trash Mound 1. They are described below.

*Burial 1.* Kiva B. This almost complete adult male skeleton was found on the floor of Kiva B, between the deflector and the opening to the ventilator tunnel. It was not a burial in the normal sense, for there was evidence that the individual had been injured or killed before being thrown or placed on the kiva floor. A small bone awl was present in the chest cavity suggesting that the person had been stabbed. The skeleton rested on its left side with the right leg crossed over the left. The left arm was flung back over the head. The individual's back was bent backward and the neck so twisted that the head faced to the rear. The head had been crushed by large stones which appear to have been thrown upon the ill fated person. The corpse may have been mutilated by dogs or wild animals before it was completely covered by debris in the abandoned kiva because the right hand and right radius were missing. No burial furnishings were associated with the skeleton.

*Burial 2.* Square IL6, refuse. All that remained of this infant burial, found 24 inches below the surface, were a few fragments of the cranium. Several large sherds of two McElmo Black-on-white bowls were associated with it.

*Burial 3.* Square IL7, refuse. This burial was represented by a poorly preserved infant cranium, which was encountered 7 inches below the surface. No artifacts were associated with it. In all likelihood, the burial had been disturbed.

*Burial 4.* Square IL7, refuse. This scattered, poorly preserved child skeleton was exposed 10 inches below the surface beneath a number of rocks and slabs of stone. The condition of the bones made it impossible to determine whether the burial had been flexed or extended. It seems to have been oriented north-south, head to the south. The skull was crushed and most of the smaller bones of the skeleton were missing. At the rear of the skull a small McElmo Black-on-white pitcher was found, and a short distance to the west

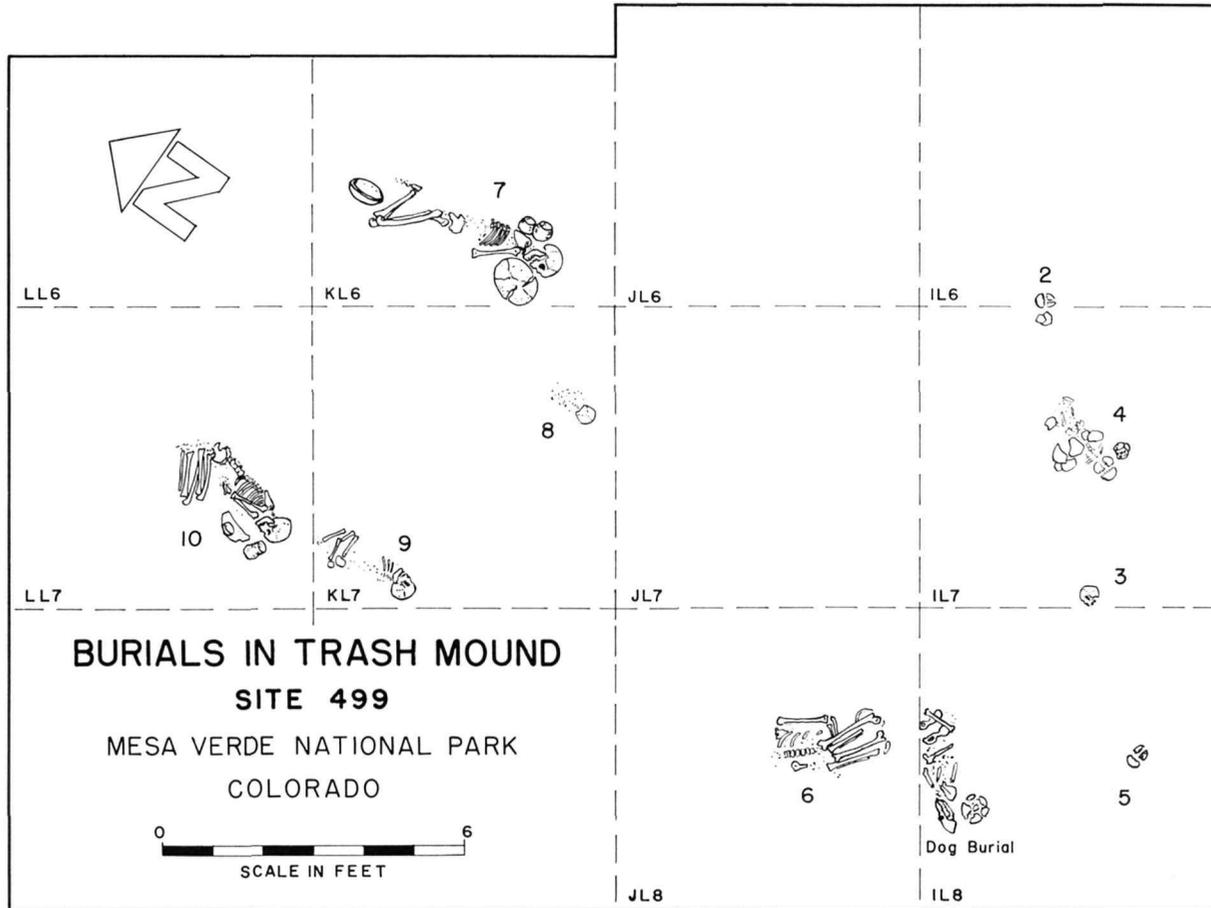


FIGURE 11

of the skull a badly warped Mancos Black-on-white bowl had been placed. A number of rodent bones were mixed with the human bones. The disturbed nature of the burial probably was due to rodent activity.

*Burial 5.* Square IL8, refuse. A few fragments of an infant cranium were all that remained of this burial. It was located only 8 inches below the surface and obviously had been disturbed. No associated artifacts occurred.

*Burial 6.* Square JL8, refuse. This burial consisted of a fragmentary adult skeleton. It was found only 10 inches below the surface and may have been mutilated by animals after burial. The body had been tightly flexed and was oriented northwest-southeast, head to the northwest. Numerous parts of the skeleton were missing, and the others were poorly preserved. The skull, bones of the hand and feet, sternum, and some of the ribs were not located. The vertebrae and those ribs present were badly decayed. No artifacts, except a small piece of polished bone, accompanied the burial.

*Burial 7.* Square KL6, refuse. An adult skeleton in a fair state of preservation was exposed 28 inches below the surface of this square. The knees of the skeleton were bent. It was oriented northwest-southeast, head to the southeast facing west. The skeleton rested in part upon bedrock. Those bones in contact with the rock were badly decayed because moisture seeping into the soil accumulated in the soil stratum just above bedrock. Six pottery vessels

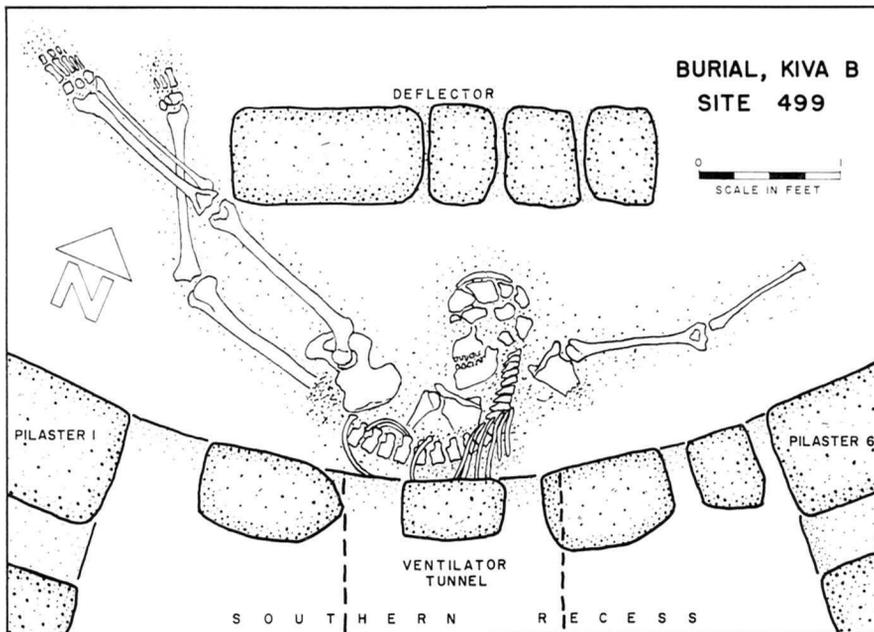


FIGURE 12

were associated with the burial. Behind the skull were located a McElmo Black-on-white mug and a small Mancos Corrugated jar. In front of the skull had been placed a small Mancos Corrugated jar and a McElmo Black-on-white bowl. A McElmo Black-on-white bowl and a Mesa Verde Black-on-white bowl were nested together near the bent knees.

*Burial 8.* Square KL7, refuse. Sixteen inches below the surface this partial child skeleton was encountered. The body had been flexed and the skeleton was oriented northeast-southwest, head to the south face down. Many of the bones of the skeleton were missing and the skull was crushed. All bones present were in a poor state of preservation. A large undecorated potsherd from the bottom of a white ware jar rested on the remains.

*Burial 9.* Square KL7, refuse. This fragmentary child skeleton was in poor condition and had been disturbed. It was found 23 inches below the surface. The body appears to have been flexed and had been oriented north-south, head to the south facing east. No artifacts accompanied the skeleton.

*Burial 10.* Square LL7, refuse. An adult burial was encountered at the bottom of this square, resting on bedrock at a depth of 23 inches below ground surface. The body had been flexed, was oriented north-south, head to the south facing west. Most of the bones of the skeleton, with the exception of the small hand and foot bones, were present; however, those bones that rested on bedrock were badly decayed as was the case with Burial 7. A small McElmo Black-on-white bowl, a Mancos Black-on-white pitcher, and a large sherd from a Mesa Verde Black-on-white bowl had been placed west of the individual's head.



PLATE 21. View of portion of Burial 1, Kiva B. Note unusual curvature of vertebral column, skull oriented toward rear of skeleton, and crushed condition of skull.



PLATE 22. Burial 4, Refuse, IL7, trowel points north



PLATE 23. Burial 6, Refuse, JL8, arrow points north

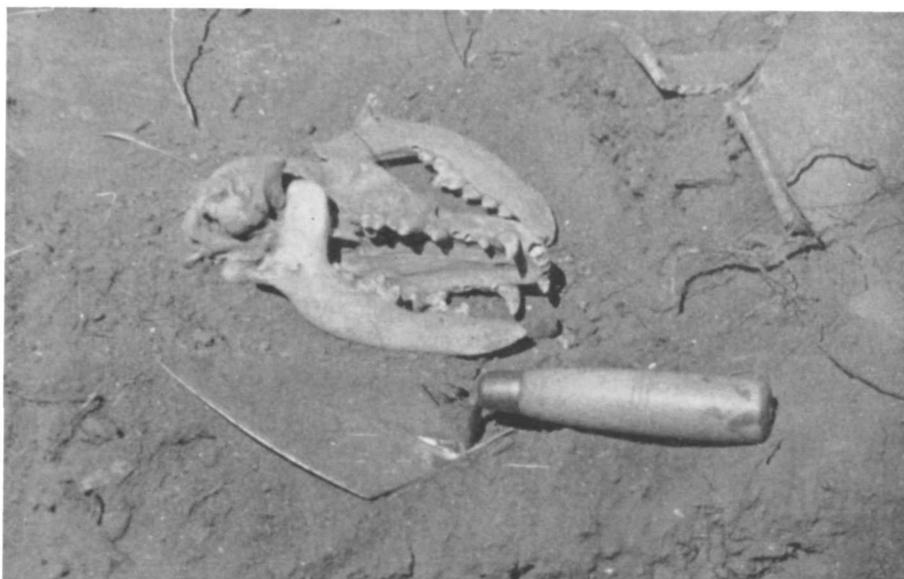


PLATE 24. Canine skull, Refuse, CL1



PLATE 25. Burial 7, Refuse, KL6, arrow points north



PLATE 26. Burial 10, Refuse, LL7, arrow points north

## VIII. FOODSTUFFS

Numerous scraps of mammal and bird bones and a small number of unmodified bones were obtained from the refuse deposits and from the fill of architectural units. The following mammals were identified from the whole bones and the fragments exhibiting diagnostic characteristics:

Coyote (*Canis latrans*), dog (*Canis familiaris*), jack rabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus auduboni*), pocket gopher (*Thomomys perpallidus*), wood rat (*Neotoma cinera*), mule deer (*Odocoileus hemionus*), and elk (*Cervus canadensis*). Deer bones occurred in greatest frequency.

All of the animals identified could have served as food although it is questionable whether the dog was so used. Two almost complete dog skeletons were found in the trash deposits. One dog appeared to have been purposely buried for it was accompanied by a pottery vessel. Presence of small rodent bones in the trash and room and kiva deposits may have resulted from the death of such animals in burrows penetrating the deposits long after their accumulation; however, their presence in the trash middens could signify their use as food animals.

The only bird bones identified, and they are quite common, are those of the turkey (*Meleagris gallopava*).

Deer and turkey not only were the chief sources of meat but their bones were most frequently employed in the manufacture of piercing and scraping implements. One large bone flesher is made of a leg bone of a mountain sheep (*Ovis canadensis*).

Only a few carbonized corn kernels and small sections of corn cobs were collected; however, undoubtedly corn was the staple food plant. Beans and squash also are presumed to have been cultivated, and a variety of wild plant foods were gathered.

## IX. DATING THE OCCUPATION

It is thought that Site 499 was occupied in early Pueblo III times to use the nomenclature of the Pecos Classification, or in the McElmo Phase of the Gila Pueblo system of classification, and was extant within a 50-year span of time between A.D. 1100 and 1150. Reasons for this assumption, some of which are presented more fully in other sections of the report, are summarized below.

### TREE RINGS

Preservation of datable specimens in the site was very poor. No wood was obtained and charcoal was rare since the only evidence of fire is in the tower. The few samples of charcoal collected were small, were of juniper for the most part, and were not datable. Four pieces of charcoal of Douglas Fir were dated. Two of the pieces do not have the bark present and have an unknown number of missing rings hence are not reliable for dating the site. They have dates of A.D. 822 and 915. The other two specimens of Douglas Fir charcoal yielded bark dates of A.D. 1123 and are considered to represent a time when the site was occupied. One specimen was collected in square EL1, Trash Mound 2 and apparently was placed there with other village refuse; the second came from the fill of the tower 10 inches above the floor. It may have been a part of the tower roof.

### POTTERY

The chapter on pottery proposes that the site existed while five principal types of pottery were in use: Mancos Corrugated, Mesa Verde Corrugated, Mancos Black-on-white, McElmo Black-on-white, and Mesa Verde Black-on-white. The relationships between these types indicate that Mancos Corrugated was the most common gray ware but that Mesa Verde Corrugated was growing in popularity. McElmo Black-on-white was the favored decorated ware, Mancos Black-on-white was declining in use, and Mesa Verde Black-on-white was still in a developmental stage. According to dates assigned these types, a situation concerning ceramics such as this probably existed between A.D. 1100 and 1150.

The occurrence of sherds also shows that Trash Mound 1 was the original refuse deposit at the site and that after the village expanded over part of that midden a second area, Trash Mound 2, was selected for the strewing of refuse.

#### ARCHITECTURE

Evidence has been presented for the existence of a village, probably of Pueblo II age, at the same location and preceding the development of Site 499. The evolution of Site 499 can be traced through the building of a small unit consisting of a row of rooms, a tower, and a kiva, to a larger rectangular unit made up of six surface rooms, the tower and kiva connected by a passage and the courtyard enclosed by a wall, to the final form of the village in which five additional surface rooms, another kiva linked to the first by a passage, and a wall enclosing a second courtyard were added.

The general format of the village coincides with O'Bryan's (1950:109) description of the architectural features of the McElmo Phase which is dated *ca.* 1050-1150. He notes that the phase is identified by unit and compound pueblos of masonry construction. Most rooms, sometimes two-storied, are grouped to the northwest of one or more kivas; the kivas are enclosed, either by walls or single tiers of rooms, on the remaining three sides. Kivas are round, have a banquette which supports six pilasters; the southern recess is an established feature, wall niches are customary. Each kiva contains a ventilator, deflector, fireplace, and sipapu. Debris was deposited to the southeast of the village.

Several features of the village plan and its construction techniques furnish means for dating the site. Lancaster and Van Cleave (Lancaster et al., 1954:93-95, 103-105) have discussed the distribution of kivas connected by passages to towers, kiva-towers as they call them, both in space and in time. They conclude that it seems doubtful if any kiva-towers excavated to the time of their report were built before A.D. 1100. It is noted by Lancaster and Pinkley (Lancaster et al., 1954:45-47) that in Pueblo II throughout the Mesa Verde area construction of tunnels to connect kivas and rooms preceded the introduction of circular towers. This situation existed in the village that underlies Site 499 where a passage connects a kiva and an adjacent surface room.

Throughout Site 499 walls contained building blocks which had been dressed on their exposed surfaces by blows of a pecking stone to produce a dimpled effect. This is a trait which makes its appearance in Mesa Verde between A.D. 1100 and 1150 (Lancaster et al., 1954:103; O'Bryan, 1950:110-111).

Both kivas at the site contain features typical of ceremonial chambers of late Pueblo II-early Pueblo III times. Each contains the seven basic kiva

features of that time: banquette, six pilasters, southern recess, deflector, firepit, sipapu, and ventilator. However, it has been observed that Kiva A is the earlier of the two. Its ventilator shaft is located several feet back of the southern recess. In Kiva B the later practice of making the ventilator shaft an integral part of the kiva was followed. The back side of the south wall of the southern recess is the inner side of the north wall of the ventilator shaft. The masonry lining of the banquette and walls of Kiva B is superior to that of Kiva A, also suggesting a later date of construction for Kiva B. In Kiva A the base of the banquette contains vertical slabs of sandstone with masonry in between and extending to the top of the banquette; in Kiva B the entire banquette has a masonry veneer.

#### ARTIFACTS

Several types of artifacts present in sufficient quantity to be typical of Site 499 have some chronological value. The flat slab metate and its associated rectangular two-handed mano, the side-notched projectile point, and the chisel-ended flesher of bone all are characteristic of late Pueblo II-early Pueblo III times in the Mesa Verde and the San Juan area.

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